

## A new Species of *Aedes* from Tahiti (Diptera: Culicidae)

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In the course of collecting mosquitoes in connection with filariasis studies on the island of Tahiti, French Oceania, S. A. Edgar and the junior author discovered the adults and larvae of an apparently undescribed, indigenous species of *Aedes*, which is herein described.

### *Aedes* (*Ochlerotatus*) *edgari*, new species

*Aedes* sp. Marks, Occ. Papers Bernice P. Bishop Mus. 20:125, 1951.

**Adult. Female.** Wing 3.2 to 3.8 mm. in length. **Head.** Proboscis 1.4 length or front femur, black, the median third yellow-brown beneath, this color expanding upward distally and usually forming a complete ring around the proboscis at the anterior end of the pale area; labellae slightly paled. Palpus about one-seventh length of proboscis, black, with a few yellowish scales at apex. Clypeus dark brown, bare. Torus brown, without scales. Vertex brown centrally with recumbent hairlike golden and dark brown scales, and erect brown setae and scales; the golden scales mostly near the midline and along eye margin; opposite upper portion of anterior pronotum a patch of flat, pale yellow scales, below this a smaller patch of dark flat scales, and below this more flat yellow scales.

**Thorax.** Scutal integument dark reddish-brown; acrostichal and dorsocentral bristles present; scales hairlike, dark brown and golden yellow, the latter found mostly on the midline, dividing posteriorly, and usually as indistinct outlines to anterior and posterior oval sublateral areas of scutum. Scutellum on all lobes with only narrow golden scales. Anterior pronotum with dark setae and occasionally a few flattened pale scales; posterior pronotum shiny, dark, with scattered, closely appressed dark scales. Pleuron dark brown, shiny, the sutures paler; patches of semi-erect, broad, yellow scales on prealar area below knob, mid and ventral sternopleuron posteriorly, and mid mesepimeron; upper mesepimeron with a patch of rather slender setae; no lower mesepimeral setae; about 5 to 8 postspiracular setae. **Legs.** Fore coxa with a small patch of flat yellow scales anteriorly at base, dark scales below, and dark setae anteriorly; mid coxa with dark scales and a narrow patch of yellow scales medially, and dark setae laterally; hind coxa yellowish with yellowish setae posteriorly and no scales. Femora dark except for a narrow pale band at base of each and a stripe of pale scales tapering distally on posterior surface of each, that on the fore femur being dorsal in position, those on femora II and III ventral. Tibiae all dark. Fore and mid tarsi each with narrow white bands at bases of segments 1 and 2, and a trace on 3; hind tarsus with white basal bands on all segments, that on 1 about one-sixth of segment, on 2 about one-third segment, on 3 about two-fifths segment, on 4 nearly half segment, and on 5 all but a few dark scales at extreme apex. Claws equal, of fore and mid tarsi toothed, of hind tarsi simple. Wing scales slender, entirely dark. Halter yellow, the knob with dark scales.

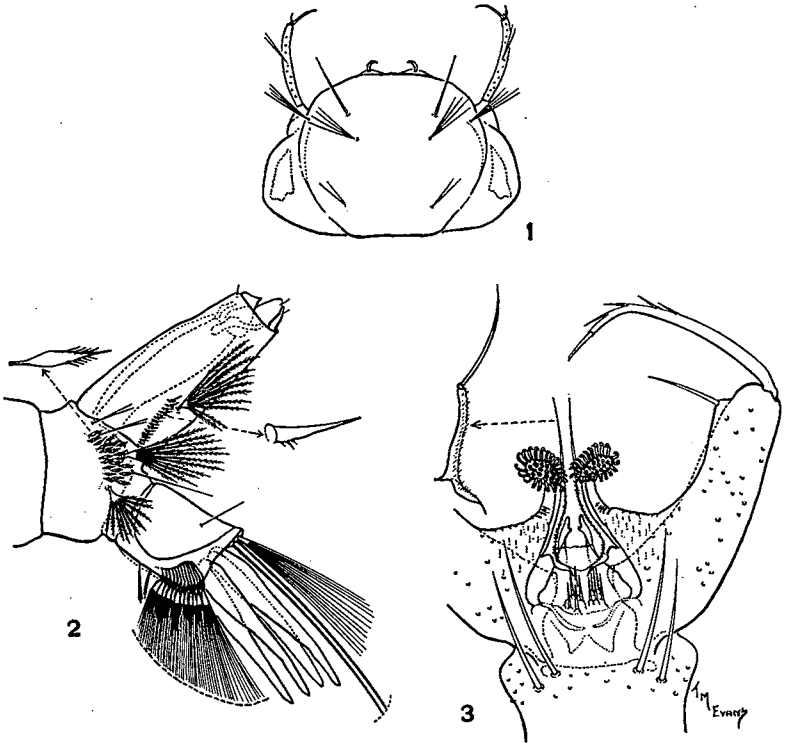
**Abdomen.** Tergites black-scaled with patches of white scales at sides of segments 1 to 7; a few yellowish scales at bases of tergites 2 to 5, not forming distinct bands; hairs along hind margins of tergites yellowish. Sternites yellowish-brown with dark scales.

**Male.** Wing 3.2 mm. long. Largely similar to the female; however, differing as follows: White ring of proboscis complete, but much narrower ventrally. Palpus nearly as long as proboscis, the third and fourth segments with white bands basally; palpus turned down distally; long hairs at apex of third segment and on fourth segment ventrally; fifth segment with shorter hairs. Fore tarsus with claws unequal, the larger one toothed; mid tarsus with claws unequal, the smaller one toothed; hind tarsus with claws small, equal,

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simple. Tergites 1 to 6 with distinct straight, white, basal bands, the lateral spots less developed; sternite 6 with a broad, pale band basally. *Genitalia* (Fig. 3). Eighth tergite with four heavy setae near posterior margin; basistyle about three times as long as basal width, with scattered long hairs dorsally and lateroventrally, and scales dorsally and laterally; shorter hairs ventrally; inner ventral (tergal) surface of basistyle with a large rounded lobe bearing scattered fine setae; from this lobe arises a bare arm, curving dorsally and then ventrally, at the end of which is an expanded knob bearing many stout, curved setae; apical lobe of basistyle weakly developed, with a single, inwardly directed, curved seta. Dististyle slender, curved, with a few hairs on apical fourth; apical appendage slender. Mesosome broad, membranous, truncate. Claspette stem slender, slightly curved, finely setose; blade slender, curved, about as long as stem; interbasal lobe with many fine hairs. Lobes of ninth tergite conical, with two or three bladelike setae, and several smaller ones. Tenth sternites rounded distally, each with a single subapical tooth and a few fine hairs near middle laterally.



*Aedes (Ochlerotatus) edgari*, n. sp. Fig. 1. Head of larva. Fig. 2. End of abdomen of larva. Fig. 3. Male genitalia. Drawn by Thomas M. Evans.

**LARVA. Head** (Fig. 2). Antenna with fine spinules; hair tuft, of 2 or 3 hairs, arising just before middle, not quite reaching apex of segment; largest terminal spine about three-fourths length of hair tuft. Preclypeal spine long, stout, curved. Preantennal hair (A) multiple; lower head hair (B) single or rarely double, long; upper head hair (C) 3 or 4 branched, slightly shorter. Mental plate triangular, about 17 teeth on each side, becoming progressively smaller toward apex.

**Thorax.** Integument smooth. Prothoracic hair O, a short, stout tuft; hairs 1-3 arising close together, but not on a plate, the posterior one simple, the other two double; hair

4 slender, triple; hairs 5-6 long, simple; hair 7 long, stout, triple; hair 8 slender, double; 9, 10, and 12 simple; 11 a very small tuft. Mesothoracic hairs 1-4 short multiple tufts.

*Abdomen* (Fig. 2). Pentad hairs 1 and 2 slender, double; 3 and 5 stout, of 9-10 hairs; 4 single. Comb a dense patch of elongate, pale spines, tapering basally and apically, the distal portion fringed. Siphon about twice as long as basal width; hair tuft arising about opposite penultimate pecten tooth, with about 12-14 finely feathered branches, the longest branch not quite reaching apex of siphon. Pecten of 13-16 teeth, the distal ones largest, each usually with 1-3 lateral teeth. Anal plate not ringing the segment. Ventral brush of about 16 tufts, the basal two not on barred area; dorsal hairs consisting of a multiple tuft and two longer, simple hairs; lateral hair single or double. Anal papillae 4, subequal, about 3.3 length of anal segment, slender, tapering.

**Holotype**, male, ex ground pool, Punaauia, Tahiti, Dec. 4, 1950 (Leon Rosen), with genitalia on slide. Paratypes, same data, 34 males and 30 females; Paea, Tahiti, Feb. 11, 1949 (W. A. Robinson), female; same locality, Mar. 21 to June 1, 1949 (S. A. Edgar), 20 females; Mataiea, Tahiti, July 11, 1950 (Bambridge & Teotea), 3 females, 1 male, associated with 3 larval and 4 pupal skins. Holotype and paratypes (U. S. N. M. No. 61305); paratypes, British Museum, Paris Museum, California Academy of Sciences, and South Pacific Commission, Noumea, New Caledonia.

The larva was described from 3 mounted on slides, taken in a ground pool, Aiurua Valley, Tahiti, Nov. 11, 1950 (B. S. Bambridge), and 10, unmounted, taken from a ground pool, Mataiea, Tahiti (B. S. Bambridge).

We take pleasure in naming the species after S. A. Edgar, of the Alabama Polytechnic Institute, who was one of the first to discover the species.

This species falls into Edwards' Group A of the subgenus *Ochlerotatus*. The male can be readily separated from all other described *Aedes* species by the unusual development of the basal lobe of the basistyle. The female most closely resembles that of *vigilax* (Skuse), but the thoracic pattern, the almost entirely dark abdomen, the unspeckled femora, and the more extensive white banding of the hind legs clearly distinguish it. The larva also resembles that of *vigilax*, but the siphon is longer in relation to its basal width, the pecten teeth are slightly stouter, the anal gills are much longer, the comb scales are more abundant and more tapering distally, and head hair C has more branches than in that species.

**Biology.** Larvae and pupae of this species have been found in five different temporary, shallow ground pools on the island of Tahiti. In each instance the aquatic forms were present in abundance and were of approximately the same stage of development. Specimens were found in association with *Culex quinquefasciatus* Say and *C. annulirostris* Skuse in one instance, and with *C. quinquefasciatus* alone in another. Only one generation of larvae of this species was found in four of these pools although water persisted in them and successive generations of the other mosquito species occurred. A second generation of the species occurred in one pool about one month after the first discovery, the pool having dried and been reflooded during this period. The pools were shaded in three instances and in the open sunlight in the other two. Larvae were found once in a pool near the sea, but the bottom of the pool was at

least 3 meters above sea level and there was little likelihood that the water was brackish.

Females have been observed feeding on man at night in nature.

**Relation to Disease.** The junior author has shown this species to be an efficient intermediate host of Tahitian strains of *Wuchereria bancrofti* in the laboratory. Its importance as a vector of filariasis in nature is not yet known.