

## TWO NEW SPECIES OF AUSTRALIAN CULICIDAE (DIPTERA).

By FRANK H. TAYLOR,

*The Australian Institute of Tropical Medicine.*

The present paper contains the descriptions of two new species of mosquitos from North Queensland, *Mucidus chrysogaster* and *Aedes (Finlaya) mackerrasi*. The former, the second Australian species of the genus, is a very interesting and most beautiful insect, of which only the female is so far known; the latter is also of interest in that it adds yet another species to the closely interwoven group of Australian *Finlaya*.

My thanks are specially due to Dr. I. M. Mackerras, B.Sc., for his kind assistance in the determination of the latter species, since I was unable to do so myself, as the Institute does not possess a male specimen of *Aedes (Finlaya) occidentalis* (Skuse). The comparative notes on the genitalia are from his pen.

No figures are published with this paper. They will be given in a subsequent publication.

*Culex (Culiciomyia) pullus* (Theo.) is here recorded for the first time from the mainland of Australia, having been taken in some numbers in the Innisfail district, North Queensland. Its larva and pupa will be described in a subsequent paper.

### ***Mucidus chrysogaster*, sp. n.**

♀. *Head* densely covered with golden narrow-curved and dark upright forked scales, the latter very numerous; a dense median row of sickle-shaped golden ones in the middle; the narrow-curved golden scales round the eyes are very prominent, widening out laterally; beneath is a small patch of black flat scales; remaining flat scales golden. Clypeus large, prominent, testaceous; palpi about one-quarter the length of the proboscis, densely covered with golden scales, except about the apical quarter, which is clothed with black scales and numerous black hairs, elsewhere these hairs being almost pale golden-brown, beneath the golden scales reaching almost to the apex; there are also a few outstanding black scales above and beneath on the apex of the second joint, giving the palps a shaggy appearance; proboscis covered with golden scales with irregular patches of black ones, labella large, reddish-brown, with dense, short, pale hairs. Eyes blue-black; there are a few pale golden hairs overhanging the eyes in the middle. Antennae with basal lobes pale testaceous, with a few small flat golden scales on their inner surface; second joint pale, considerably longer than the third; the latter to the apex brownish; pubescence pale, hairs of whorls brown. *Thorax*: scutum chocolate-coloured, covered with mixed golden and chocolate-brown, narrow-curved scales; there is a moderately broad median transverse band of golden scales reaching right across the scutum, reaching this but not passing it is a broad (about a quarter the width of the scutum) stripe of golden scales; the golden scales are very pronounced on the anterior margin of the scutum; the lateral hairs are very dense above and in front of the wing-roots, reaching about two-thirds the distance to the prothoracic lobes, brownish-black above the wing roots, black elsewhere; scutellum chocolate-brown, densely covered with pale golden sickle-shaped scales, posterior border bristles long, pale golden; prothoracic lobes prominent, black, clothed with golden narrow-curved scales and numerous long black hairs; metanotum chocolate-brown; pleurae blackish brown, with pale golden flat scales in the middle; halteres pale with dark knobs. *Abdomen*: first segment dark chocolate-brown covered with black flat scales, very hairy, the hairs blackish except on the apical margin, where they are pale golden, also a narrow, median, basal

patch of pale golden, loosely applied, flat scales; segments 2 to 4, inclusive, black-scaled with pale lemon-coloured basal banding, broadest on the second and diminishing in width to the fourth, where it is very narrow, each with two small, submedian, basal, golden spots and golden, median, lateral patches, largest on the fourth; third segment with a small subapical, golden spot toward the edge on either side; fourth flecked with scattered golden scales; segments 5 to the apex black-scaled, profusely mottled with golden scales; all segments with golden hairs on the apical margin; moderately numerous, pale golden hairs are to be seen on segments 5 to 7 inclusive; cerci reddish brown, large, clothed with numerous pale hairs; venter clothed with golden scales except the apex, which is dark-scaled. *Legs*: femora of fore legs black-scaled, heavily spotted with golden scales, with a basal golden band, knees golden; tibiae black-scaled, profusely spotted with golden scales, apex golden; first tarsal joint with basal golden banding, apex narrowly golden, remainder mottled black and golden; second to fourth joints black-scaled with moderately broad basal banding, fifth golden with a few scattered dark scales; femora, tibiae and tarsi of mid legs similar to those of the fore legs, except that the mottling is not so pronounced on the first tarsal joint and the fifth tarsals are entirely golden; femora and tibiae of hind legs similar to those of the fore and mid legs; first tarsals black-scaled, not mottled, with a basal golden band, second tarsal black with basal golden banding, third and fourth tarsals black with creamy-white basal banding, fifth tarsal creamy-white; unguis of all legs only slightly curved, equal, each with a small tooth. *Wings* with the base of the veins clothed with dense, black scales; all the cross-veins and the bases of the second and fifth longitudinal veins with dusky clouding, which extends into the cell for some distance immediately above the base of the third long vein ( $R_{4+5}$ ); the costal, sub-costal and the anterior portion of the cell  $C_{1+2}$  are distinctly yellow. The scale structure of the veins is peculiar, as there are no lateral vein scales present except toward the apices of  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_{4+5}$ ,  $M_1$  and  $M_2$ , moreover the median scales of the veins are distinctly small. The two specimens before me show the same peculiarity in this connection.

*Length*: 9 mm., not including the proboscis.

NORTH QUEENSLAND: Berner Creek, near Innisfail.

This is a very distinct species and markedly different from its congener, *M. alternans* (Westw.). It is the most striking Australian mosquito and ranks with the blue and golden *Megarhinus speciosus*, Skuse, for beauty. It was found by myself while working over a shallow rock pool, about nine feet by six feet in extent and nine inches deep, containing a large quantity of decaying vegetable matter and a large log of wood, on the side of Berner Creek; the pool was in the shade of an overhanging tree from noon till sunset. Two pupae were secured on the occasion of my first visit to this pool, and notwithstanding minute and careful search on several succeeding days no further specimens were found. A single larval case was found, which almost certainly belongs to this species on account of its large size. It is not the larval skin of *Lutzia halifaxi* (Theo.), the larvae and pupae of which were also taken in some numbers in this pool.

*Type* and paratype in the Institute Collection.

### ***Aedes* (Finlaya) *mackerrasi*, sp. n.**

♂. *Head* covered with pale narrow-curved and black upright forked scales, vertex with yellowish upright forked ones in addition, sides covered with pale flat scales, bristles bordering the eyes black. Antennae with dusky plumes; last two joints brownish, clothed with fairly dense short pale hairs; nodal hairs dusky, nearly the length of the apical segment. Palpi clothed with deep black scales, second segment with a fairly broad median white-scaled band, penultimate and apical segments with white basal banding and clothed with dusky hairs, very dense on the

penultimate and the tip of the apical segment; proboscis black, slender. Eyes black. *Thorax* reddish brown, densely clothed with pale golden narrow-curved scales, bristles pale except above the wing-roots, where they are dusky; scutellum similar to thorax, except the posterior margin, which is dusky, posterior border bristles yellowish brown; prothoracic lobes with pale narrow-curved scales and numerous dark bristles; metanotum brown; pleurae brown with patches of creamy-white, flat scales, bristles pale golden-yellow. *Wings* with a distinct violet tint, slightly longer than the abdomen, veins clothed with black scales with violet reflections; base of the second fork-cell considerably nearer the base of the wing than that of the first fork-cell, the latter longer and narrower than the former; anterior basal cross-vein shorter than the anterior and about twice its length from it. Halteres pale brown, clothed with small, pale, flat scales; knobs pale. *Legs* black with a violet iridescence; fore and mid femora white-scaled beneath, except for a narrow area of black scales apically, knees pale orange-yellow; tibiae with short golden-yellow bristles, as also the femora; first tarsal joint slightly more than half the length of the tibiae, first and second tarsals with white basal banding, remaining joints unbanded; tarsal joints 1 to 3 of hind legs basally banded with white, fourth with rudimentary white basal banding, fifth unbanded; unguis of fore and mid legs unequal, the larger with a tooth, hind unguis equal and simple. *Abdomen* clothed with violet-tinted black scales and dense lateral pale hairs; segments 2 to 6 with white basal banding; 7th with large white lateral patches extending to the dorsum but not meeting in the middle; 8th with narrow white basal banding. Side-pieces black-scaled and covered with long dense, pale hairs; appendage of claspette large and expanded in side view. Venter black-scaled, with white basal banding.

♀. Palpi black with violet iridescence, about one-seventh the length of the proboscis; latter as in ♂. Legs as in ♂; unguis all equal and uniserrate. Wings with the scales denser than in the ♂, base of second fork-cell nearer the base of the wing than that of the first, the former slightly wider; anterior basal cross-vein shorter than the anterior cross-vein and a little more than its own distance from the latter. Abdomen black, unbanded; the segments with lateral, basal, triangular spots.

*Length*: 4.5 to 5.0 mm., excluding the proboscis.

NORTH QUEENSLAND: Innisfail district (*F. H. Taylor*).

Described from a series of both sexes, bred from pupae, found in a small pool of water, about half a litre, overgrown with coarse grass above a waterfall on Berner Creek.

This species is very close to *Aedes (Finlaya) occidentalis* (Skuse), but may be distinguished by the absence of speckling with white scales on the femora and by the rudimentary white band on the fourth hind tarsal joint; also by the large and expanded appendage of the claspette, whereas in *A. (Finlaya) occidentalis* (Skuse) it is narrow and almost uniformly tapering.

It affords me much pleasure to dedicate this species to my friend Dr. I. M. Mackerras, B.Sc.

*Type* ♂, allotype ♀, and a series of paratypes in the Institute Collection.

A NOTE ON *SIMULIUM BANCROFTI*, TAYLOR, WITH THE  
DESCRIPTION OF A NEW SPECIES OF *SIMULIUM* (DIPT.).

By FRANK H. TAYLOR,  
*Australian Institute of Tropical Medicine, Townsville.*

(PLATE V.)

***Simulium bancrofti***, Taylor (Plate V, figs. 1-5).

*Head*: Width of the frons slightly less than half that of the whole head; antennae short, about two-thirds the width of the head; first three segments cyathiform, the first slightly broader than long, a little less than half the length, and slightly more than half the width of the third; second segment one-third longer than wide; segments 4-7 inclusive approximately the same length; the fourth a little wider than segments 5-7, which are all of about the same width; penultimate longer than 4-7 individually; apical segment moderately long and somewhat cone-shaped. Palpi five-jointed; first joint cyathiform, with an apical row of four bristles, the two outer ones longer than the second segment; the latter oblong, its sides nearly parallel, also with an apical row of bristles of about the length of the inner two on the first segment; first and second segments together half the length of the third, the latter somewhat obovate, tapering slightly distally; fourth almost pear-shaped, tapering basally, shorter than the third (11:14); fifth fusiform, tapering to a blunt point at both extremities and very little longer than the third, with a few scattered hairs, especially on its apex. *Legs*: fore femora and tibiae dilated; first tarsal joint tapering very slightly at its base, a little more than half the length of the tibia (27:46), outer edge with a dense fringe of spinules, except on its basal fifth, apex with a stout spine on its outer apical angle; base of second joint narrower than apex, lower surface with numerous spinules, especially on the distal two-thirds, apex with two stout spines, one on either side; third and fourth joints cyathiform, the former one-third longer than the latter; fourth with a deep median depression for almost half the length of the tarsus, forming the socket of the fifth; third joint with numerous spinules on its distal two-thirds and an apical row of moderately long spines, the outermost the longest; fourth joint sparsely covered with fairly long hairs, apex with four long, stout bristles, two on either side of the base of the fifth joint; the latter pear-shaped, a little more than twice the length of the fourth, with a few fairly long hairs on its distal half; claws short, almost straight, not toothed. Mid leg with the tibiae dilated, with a long, stout, external, apical spine; first tarsal joint not dilated, a fringe of spinules along its outer margin and a few scattered ones over its ventral surface; second joint with the spinules on the outer margin increasing in length and stoutness apically; third joint similar to that of fore leg and without spinules; fourth and fifth similar to those of fore leg; joints 2 to 5 distinctly hairy. Femora and tibiae of hind leg dilated, the inner apical angle of tibiae with a pronounced spine and distally spinulose; first tarsal joint not dilated, strongly spinulose on its whole length, distal lap slightly more than half the width of the apex of joint, but not reaching the dorsal incision of the second joint; dorsal edge of the second joint with a fairly deep indentation at its basal third; fifth joint slightly more slender than apical joint of the fore and mid legs. Claws of mid and hind legs as in the fore legs.

Length of wings, 2 mm. (*vix*), with the vein *Cu* with its bend placed about the apex of its middle third and very marked.

Attention has been directed to the foregoing species by Tonnoir giving certain emendations to the original description. I have therefore given the above redescription of the antennae, etc., since Tonnoir's remarks clearly cannot apply to the species

under discussion, being based on an error of identification. The figure of the antennae given by Tonnoir (p. 220, 1B) is quite unlike the correct rendering of a picture of the antennae of this species, in both the shape and the number of the segments, particularly concerning the first four and the apical segments. He also divides the apical segment, but this is not correct.

In view of the above this species cannot be retained in the genus *Austrosimulium*.

***Simulium faheyi***, sp. n. (Plate V, fig. 6).

*Head*: frons black, with scattered, short, pale, appressed pubescence; clypeus black, with similar pale pubescence. Antennae eleven-jointed; the first three segments cyathiform, pinkish-buff; first segment apparently shorter and narrower than the second, the latter with a distinct apical fringe of short black bristles; segments 4 to apex blackish, covered with pale tomentum; third segment longer than the fourth but of the same width; the fourth to eighth inclusive of the same length and width approximately; ninth narrower than eighth, penultimate narrower than the ninth; apical somewhat pear-shaped, narrower than the penultimate and about twice its length. Palpi black; third segment dilated, fairly long; fourth and fifth slender and together about the length of the third (owing to the much bent position of the palps it is impossible to give a fuller description). *Thorax*: scutum considerably humped, sooty black, densely covered with short, appressed, pale golden hairs; pleurae dull black, pteropleuron with an oblong patch of pale golden appressed hairs toward its dorsal margin. *Abdomen*: black, densely covered with short black appressed hairs, with scattered appressed pale golden ones on the last three segments. *Legs*: anterior and mid femora black, dilated, knees cream-buff; tibiae similar to those of hind legs; first tarsal black with black pubescence and a row of spinules on the inner margin, not dilated; remaining joints as in hind legs. Hind femora black, densely covered with black pubescence, strongly dilated; base of tibiae cream-buff densely covered with pale hairs on the basal half, dilated, more pronounced on the distal half, latter with dense black spinules on the ventral surface but little longer than the first tarsal joint (9:7); the latter not dilated, with a broad basal and apical dark ring, the apical ring the broader, remaining portion whitish, covered with short black pubescence, distal lap not quite half the width of the second joint, produced into a long thumb-like process apically and apparently as long as the second tarsal joint; remaining joints black; ungues slightly curved and with a small basal tooth. *Wings* hyaline, veins yellowish; the vein *Cu* with its bend commencing about the apex of its basal half and dipping somewhat sharply, then rising, near its apex, gently to the wing border. Halteres dark, with the knobs cream-buff.

LENGTH: 2 mm. (*circa*); of wing 2 mm.

NORTH QUEENSLAND: Berner Creek.

*Type* deposited in the Collection of the Institute.

The abdomen is bent upon itself, rendering exact measurement very difficult. The above brief description is based upon a single specimen taken with the net. When further material is available a full and detailed description will be published. The insect appears to be a well marked species on account of the markings of the hind tibiae and first tarsals. Sex doubtful.

The microphotograph of the antenna of *S. faheyi* lacks the first and second segments, as they did not come away from the head in the dissection.

I have much pleasure in dedicating this species to my friends Mr. and Mrs. E. G. Fahey, with whom it was my good fortune to spend a very profitable and pleasant fortnight during September 1926.

The microphotographs were taken by myself from specimens prepared with a 5 per cent. solution of KOH without heat. The plates used were Process Panchromatic,

the exposures being made through a Wratten C filter. The illuminant was a pointolite. The objective and ocular used were a Zeiss 16 mm. apochromat and a K.2 3x respectively.

*References.*

- RIDGWAY, R. Color Standards and Nomenclature, 1912.  
TAYLOR, F. H. Studies in Phlebotomic Diptera, No. 1.—The Australian Zoologist, i, pt. 6, 1918.  
TONNOIR, A. L. Australian Simuliidae.—Bull. Ent. Res. xv, pt. 3, 1925.

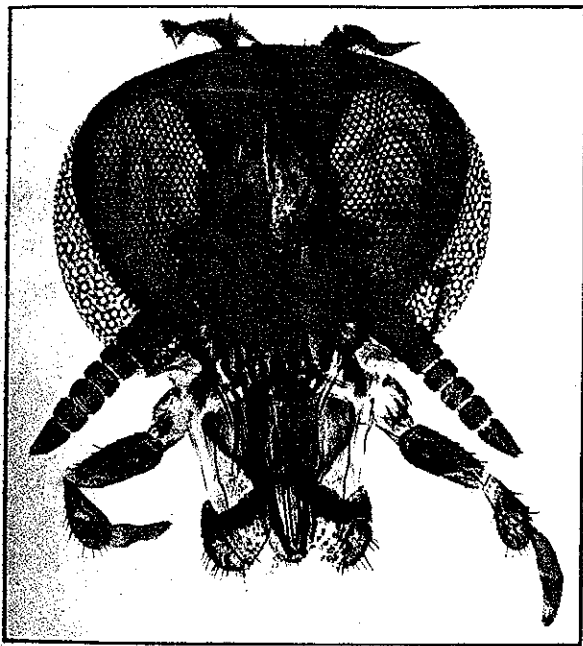


Fig. 1. *Simulium banerofti*, Taylor, head.

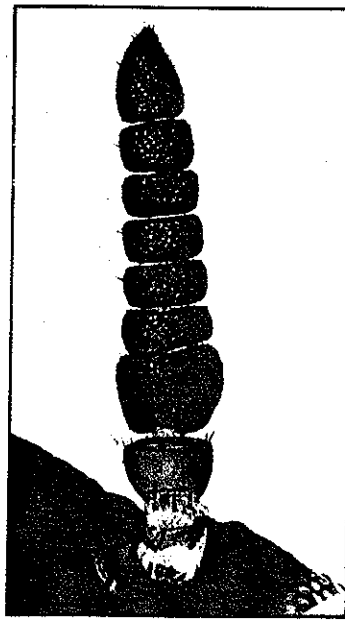


Fig. 2. *S. banerofti*, antenna.



Fig. 3. *S. banerofti*, middle leg.

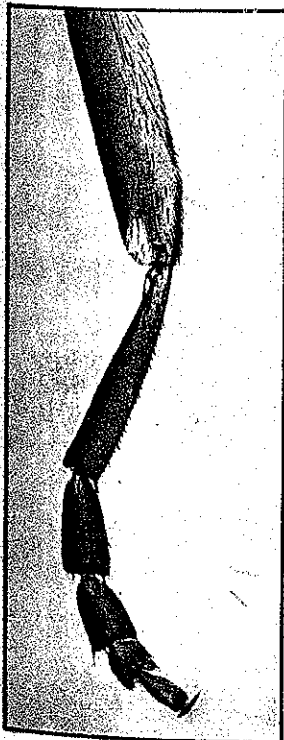


Fig. 4. *S. banerofti*, foreleg.

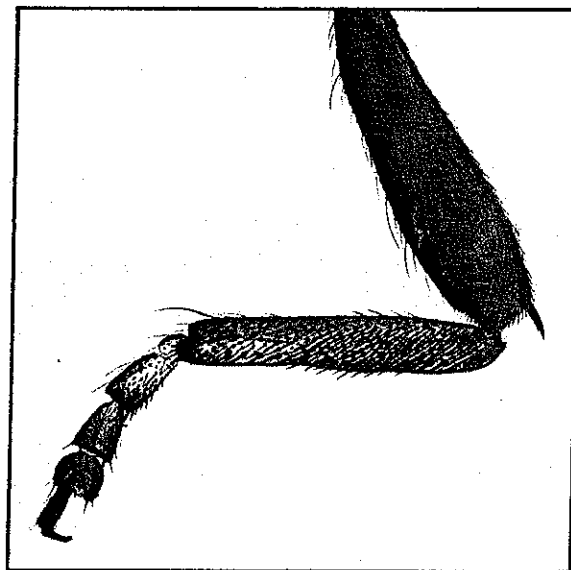


Fig. 5. *S. banerofti*, hind leg.

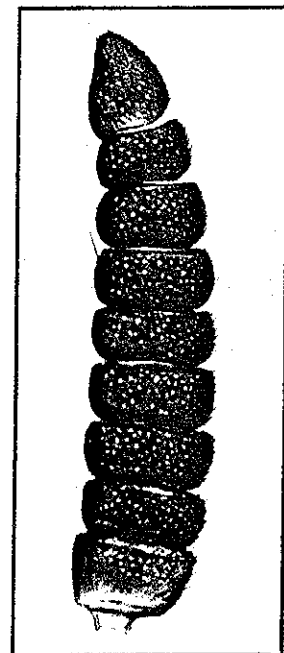


Fig. 6. *Simulium faheyi*, sp.n., antenna. (first two joints missing.)