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Part II.—New Species of *Aedes* (Subgenus *Finlaya*)

BY

ELIZABETH N. MARKS, M.Sc.

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# STUDIES OF QUEENSLAND MOSQUITOES.

## 2. NEW SPECIES OF *AËDES* (SUBGENUS *FINLAYA*).

By ELIZABETH N. MARKS, M.Sc., Graduate Research Assistant,  
Mosquito Control Committee.

(WITH 3 TEXT FIGURES.)

Two new species of the subgenus *Finlaya* are described in this paper. Each is quite distinctive, showing no very close relationship to the other species of the subgenus recorded from the Australasian region.

*Aedes candidoscutellum* is widely distributed in Eastern Australia and New Guinea and though known only from reared specimens, within the limits of distribution of its breeding places, is not uncommon and it is rather surprising that it was apparently not among the species collected by the late Dr. T. L. Bancroft, who bred out many rarer species. New Guinea specimens show several differences from mainland specimens, but these are not regarded as specific.

*Aedes wasselli* is known only from a single female, but is so abundantly distinct from other Australian species that its description is felt to be justified, efforts to obtain further specimens from the type locality having proved fruitless.

### **AËDES (FINLAYA) CANDIDOSCUTELLUM** n.sp.

(*candidoscutellum*—scutellum shining white).

*Types*: Holotype ♀, allotype ♂ (with associated larval and pupal skins), Binna Burra, Lamington National Park, Queensland, v. 1945, F. A. Perkins (reared from larvae taken from cavities in trees).

Paratypes: 5 ♂♂ and 9 ♀♀, same data as holotype; 1 ♀, 27.v.1944, and 5 ♂♂, 4 ♀♀, 2.vi.1944, same locality as holotype, F. A. Perkins and E. N. Marks. Of these 5 ♂♂ and 9 ♀♀ have associated larval and pupal skins. Morphotypes: 5 larvae, same data as paratypes.

Holotype ♀, allotype ♂, 6 male and 8 female paratypes, and 2 morphotype larvae in collection of University of Queensland; paratypes of each sex, the female with correlated larval and pupal skins, and a morphotype larva in Museum of Division of Economic Entomology, Council for Scientific and Industrial Research, Canberra, A.C.T., British Museum, and U.S. National Museum, Washington; male and female paratypes in Queensland Museum, and a female paratype in Macleay Museum, and in collection of School of Public Health and Tropical Medicine, Sydney, N.S.W.

*Distinctive Characters*: The scutellum entirely clothed with broad flat shining white scales, in association with the sparse scaling of mesonotum and pleura, the lack of well defined mesonotal pattern, and the banded tarsi with hind tarsal segment V entirely white, serve to distinguish this species. The white scaled scutellum gives it a superficial resemblance to *Aedes* (*Aëdimorphus*) *alboscuteatus* (Theo.) from which it is at once distinguished, *inter alia*, by its banded tarsi. Its closest ally in the subgenus *Finlaya* appears to be *A. quasirubithorax* (Theo.), specimens of which have been observed with indefinite mesonotal pattern and scutellum partially clothed with flat scales; the latter species, however, has mesonotum and pleura more densely scaled, including scales on posterior pronotum and paratergite, both of which are bare in *candidoscutellum*. Male genitalia: The long preapical setae on the harpago, and its short broad appendage without membranous lateral expansion are distinguishing features.

Larva: Clypeal spines slender; setae B and C 1-2 branched; lateral comb of 60-80 laterally and apically fringed scales; siphonal index 1.7; pecten of 18-23 large closely set spines, with 4 lateral teeth, arising from a ridge and extending over slightly more than half length of siphon.

Insufficient work has been done on pupae of Australian mosquitoes for specific characters to be recognised; the short broad trumpets and paddles with notched apex and breadth index 1.0 should help to identify *A. candidoscutellum*.

The above characters apply to specimens from both the Australian mainland and New Guinea. The latter, however, show several well marked features distinguishing them from Australian specimens, these being discussed below. The resemblances between the two forms are so close and the differences so few, that they are herein treated as conspecific, though possibly had a larger series of the New Guinea form been available, justification might have been found for regarding it as a geographical subspecies.

*Description of Adult:*

*Holotype* ♀

Wing length 4.4 mm.

*Head:* Integument reddish brown, clothed with sparse, narrow curved, pale golden scales, which also form a border to the eyes, and numerous black upright forked scales; flat creamy scales laterally, with a few flat dark scales; a pair of strong dark vertical setae and a row of 4 long medially directed ocular setae, with shorter ones laterally. Torus bright ochreous, medial aspect darker; flagellar segments of antenna black with sparse black verticillate hairs; basal half of first flagellar segment light brown. Clypeus light brown. Palpi black scaled,  $\frac{1}{3}$  length of proboscis. Proboscis slightly longer than fore femur, black scaled dorsally, but with extensive pale scaling ventrally on basal  $\frac{2}{3}$ ; labella dark brown.

*Thorax:* Mesonotum with reddish brown integument, very sparsely clothed with fine narrow curved black scales with indefinite lines of fine narrow curved golden scales longitudinally along the lines of the acrostichal and dorsocentral bristles, and the lateral margin, and horizontally in a line curving behind the scutal angle to join the submedial line. Mesonotal bristles strong, black; a double row of about 16 acrostichal; about 10 dorsocentral; a double row of about 10 prescutellar; a large patch above wing roots and other scattered bristles laterally and on fossae. Scutellum light brown; all lobes densely clothed with broad flat shining white scales; border bristles black, 6 long and 5 short on mid lobe, 6 long and 2-3 short on lateral lobes. Metapostnotum light brown.

Pleura light brown, bare of scales except for a few flat white scales on propleuron, and small patches of flat white scales on upper and lower sternopleuron and upper mesepimeron. Bristles brown; about 10 propleural, 5 posterior pronotal, 2-3 postspiracular, 2-3 upper sternopleural, and a row of about 14 along posterior margin of sternopleuron; 9 prealar, 12 upper, and no lower mesepimeral bristles.

*Legs:* Mainly black scaled with basally banded tarsi. Coxae pale, fore coxae with pale scales basally, dark apically, mid with a few dark scales, hind bare of scales. Trochanters with mixed dark and pale scales. Fore and mid legs with femora creamy scaled posteroventrally from base to apex, and with small shining white kneespots; tibiae with creamy streak ventrally from base to apex; tarsal segments I-III with basal white bands, covering  $\frac{1}{3}$  of I,  $\frac{1}{4}$  of II and III, IV with a few white scales at base, V dark scaled but with pale reflections. Hind femur with basal  $\frac{2}{3}$  mainly creamy scaled, with narrow dark

line dorsally which expands on apical  $\frac{1}{3}$  where creamy scales are ventral only, and with shining white kneespot; tibia with a few creamy scales at base and along posteroventral aspect; tarsal segments I-IV with white basal bands covering  $\frac{1}{6}$  of I,  $\frac{1}{4}$  of II,  $\frac{1}{3}$  of III, and  $\frac{1}{6}$  of IV, those on III and IV extending on to the apices of the preceding segments as small white dorsal patches, V all white. Claws equal, those of fore and mid legs toothed, hind simple.

*Wings*: Black scaled; outstanding scales all long and narrow. Cell  $R_2$   $1\frac{3}{4}$  times length of its stem; cell  $M_1$  equal in length to its stem, its base very slightly proximal to that of cell  $R_2$ ;  $r-m$   $1\frac{1}{2}$  times its length distal to base of  $M_{3+4}$ . Halteres pale; knob creamy scaled, with admixture of dark scales medially.

*Abdomen*: Integument light brown. Tergites purplish black scaled with long golden hairs. Tergite I with a few dark scales dorsally and some creamy ones medially; II-VII with apically rounded creamy basal patches, extending up to  $\frac{1}{3}$  length of segment medially, and more or less continuous laterally with large rounded basal lateral patches of shining white scales; VIII almost wholly retracted, dark scaled. Sternites creamy scaled, with narrow dark apical bands, VIII bare of scales, bright ochreous with darker patch at base, large and exerted. Cerci short, dark.

The following are the chief variations shown in a series of 25 females from various localities on the mainland of Australia: Wing length, 3.4-4.4 mm. Palpi  $\frac{1}{2}$ - $\frac{2}{3}$  length of proboscis, occasionally with a few scattered pale scales; pale scaling on proboscis may extend on to dorsal surface near base, or may be reduced, or absent. On the mesonotum, the integument of the anterior half may be darkened along the lines of the acrostichal and dorsocentral bristles; the golden lines may be broad, or may be indicated by only a few scattered golden scales, or reduced to a few scales in front of the scutellum; there may be a pair of small golden patches at the junction of the horizontal line from the scutal angle with the submedial line; a few fine golden scales may extend medially on to the prescutellar bare area. On the pleura, pale scales are sometimes absent from the propleuron, and while there are usually 3-4 postspiracular bristles, they may number as many as 9. On the legs, there may be pale scales on both mid and hind coxae; the pale streak on the fore tibia may be represented by scattered pale scales; fore tarsal segments I-II or I-III are basally banded; mid tarsal segments I-IV may be basally banded, or IV may be dark and the band on III reduced to a few white scales; the band on hind tarsal segment IV may be similarly reduced. On the wings, the proportions of the fork cells to their stems show considerable variation even among specimens from one locality; cell  $R_2$  may be equal to or up to twice the length of its stem; cell  $M_1$  from  $\frac{2}{3}$  to equal in length to its stem; the base of cell  $M_1$  is level with, or more often slightly proximal to that of cell  $R_2$ ;  $r-m$  is  $1$ - $1\frac{1}{2}$  times its length distal to base of  $M_{3+4}$ . The halteres vary from almost entirely pale to almost entirely dark scaled. On the abdomen tergites I-III may be dark scaled, IV-VII with narrow medial basal patches, or there may be basal creamy bands on III-VII either straight, or produced into large medial patches on VI and VII; VIII may be partly pale scaled. The dark bands on the sternites may cover half the segments, or be reduced to apical lateral patches.

The above variations in general show no relation to geographical distribution, except that specimens from North Queensland, which have a darker integument than southern forms, also tend to have less pale scaling.

Two females from New Guinea differ from mainland specimens in having a wide ocular border of broad flat shining white scales. The integument is dark and palpi, proboscis and mesonotum are entirely dark scaled; halteres are almost or entirely dark scaled, and abdominal tergites have lateral white patches but no pale scales medially.

*Male*: A series of 21 males from Queensland differ from the female as follows: Wing length, 2.9–3.8 mm. The flat creamy scales which form lateral patches on the head, in two of the male paratypes continue as a border to the eyes about halfway towards the vertex, where their place is taken by a border of narrow curved golden scales. Tori large, ochreous; flagellar segments of antennae with long dark dense verticillate hairs. Palpi equal in length to, or slightly shorter than proboscis, black scaled, with basal white bands on segments III–V, IV and V with long dark hairs; there may be scattered pale scales dorsally on segments I and II. Proboscis dark scaled, with an indefinite medial band of pale, or pale reflecting scales, scarcely indicated in some specimens, and occasionally with scattered pale scales ventrally on basal  $\frac{2}{3}$ . Claws of fore and mid legs unequal, anterior long, bidentate, posterior shorter, unidentate; hind claws equal, simple. Wing: Cell  $R_2$   $\frac{4}{5}$ – $1\frac{1}{4}$  times length of its stem; cell  $M_1$ ,  $\frac{1}{2}$ – $\frac{5}{8}$  its stem. Abdomen: Tergite II dark or with a medial basal creamy patch; III–V with fairly broad basal creamy bands covering  $\frac{1}{4}$ – $\frac{1}{3}$  of segment, narrow band on VI and a band or patch on VII; II–VII with lateral basal white patches which may show on the dorsal surface of VI and VII; segment VIII clothed with dense shining white scales dorsally, and with sparser white or creamy scales ventrally. In other characters, the variations are similar to those shown by the female.



FIG. 1.—♂ genitalia of *Aedes candidoscutellum* n.sp., x 125.

Two males from New Guinea have the proboscis entirely dark, head and mesonotal scaling as in New Guinea females; abdominal tergites I-III may be entirely dark dorsally and there are creamy basal patches or bands on III or IV-VII.

♂ *Genitalia*. (Fig. 1.)

Coxite cylindrical, 4-5 times as long as broad at base, clothed with black scales, usually with some pale scales basally. Basal lobe of coxite scarcely differentiated, bearing 8-11 long, stout, medially directed setae, arranged in two or more horizontal rows; some of these setae may be flattened and there are also some shorter setae on the basal lobe. Tergally, the coxite bears in addition to finer setae, numerous long setae over its whole length; sternally there are also numerous long setae including a widely spaced medially directed row of about a dozen. Style about  $\frac{2}{3}$  length of coxite, slender, slightly curved and tapering, finely pilose, with a short fine preapical seta; terminal appendage slender, slightly curved, less than  $\frac{1}{2}$  length of style. Harpago pilose with a pair of long setae preapically, the longer one being about  $\frac{2}{3}$  length of appendage, and usually with a smaller seta slightly proximal to these; appendage short and broad, about  $\frac{2}{3}$  length of harpago, slightly curved, widest medially and tapering to a point, rather strongly and evenly chitinised, without membranous expansion. Paraproct with 1 long and usually 1-2 shorter teeth at apex. Phallosome simple, slightly tapering on apical third, with rounded apex. Lobes of IXth tergite with 2-9 short setae; IXth sternite with 7-12 setae.

*Description of Larva*: (Fig. 2.)

Length 7.5-9.0 mm. Colour light brown; head and siphon yellowish brown.

*Head* about  $\frac{4}{5}$  as long as broad. Antenna more than  $\frac{1}{2}$  length of head, about 10 times as long as broad at base, slightly curved and tapering, sparsely clothed with fine spicules; tuft 1-4 branched, shortly plumose,  $\frac{1}{2}$  length of antenna, at  $\frac{1}{2}$  from base; terminal and subterminal setae close together, one long and one short in each pair. Clypeal spines fine, slightly curved. Setae A, B, and C shortly plumose; A 2-7 branched, arising behind base of antenna and about  $\frac{2}{3}$  its length; B and C usually single, sometimes bifid, slightly shorter than antenna, B arising level with A and halfway between it and midline, C close to, and directly behind B; d very small, simple, 3-6 branched, arising level with and medial to C; e 2-3 and f 2-5 branched, simple. Mentum triangular with 10-12 even lateral teeth, and slightly larger medial tooth.

*Thorax*: Base of metapleural setae with two short spines, the longer of which is variable in length, being longer in South Queensland specimens, shorter in North Queensland specimens.

*Abdomen*: Two pairs of long plumose lateral setae on segment I, the longer 2-3 branched, the shorter 1-2 branched; one pair, 1-3 branched on segments II-VI.

8th Segment: Lateral comb a triangular patch of 60-80 broad, apically rounded, and laterally and apically fringed scales. First pentad seta 2-4 branched, very sparsely plumose; second 1-2 branched, simple; third 3-6 branched, plumose; fourth single, simple; fifth 2-5 branched, sparsely plumose.

Siphon: Index 1.7-2.0. Pecten extending over slightly more than  $\frac{1}{2}$  length of siphon, consisting of 18-23 large closely set pointed spines, arising from a ridge which makes the siphon appear considerably broader if it is not seen in a perfectly lateral view. Pecten spines with 3-6 lateral teeth on the

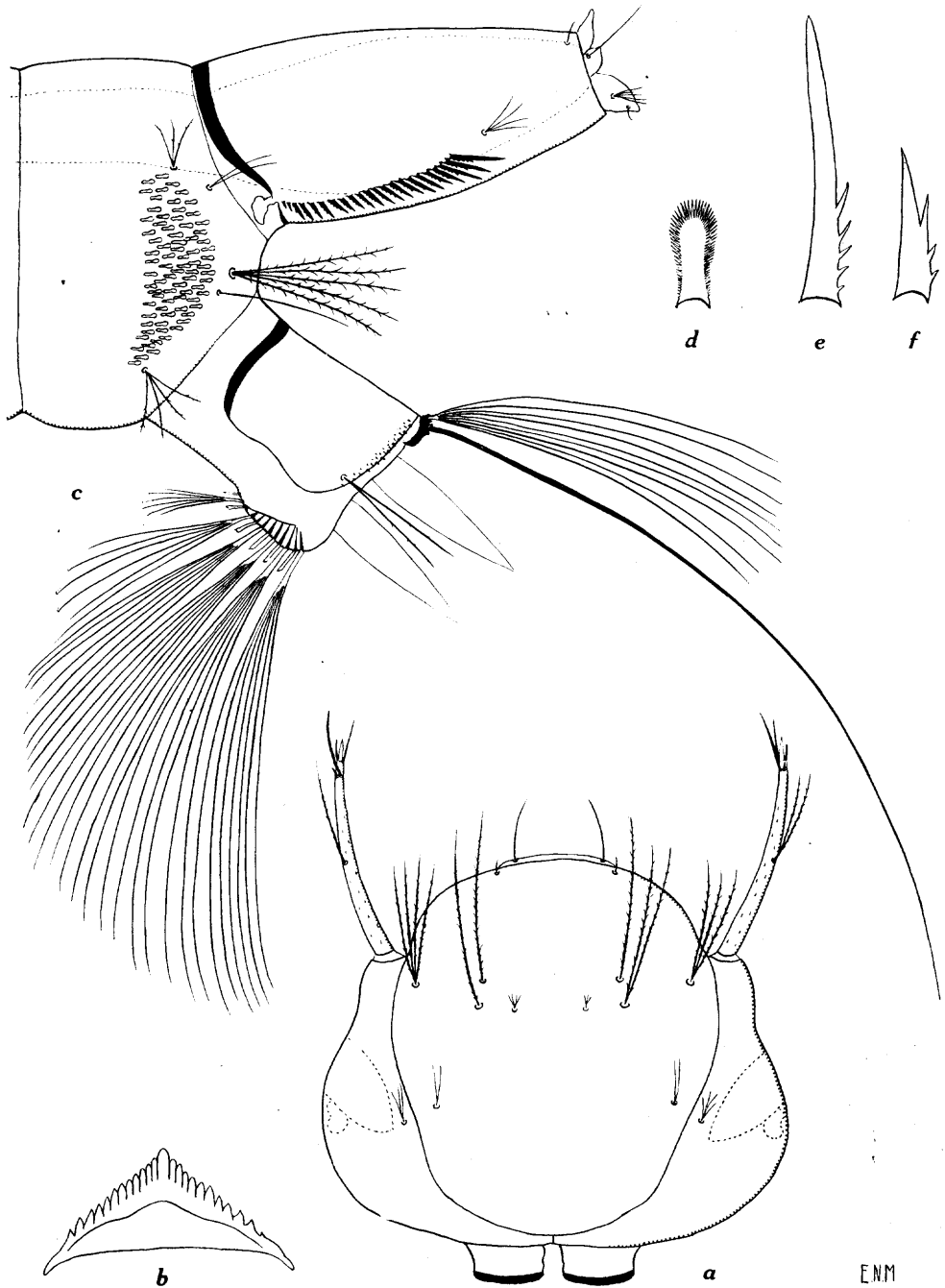


FIG. 2.—Larva of *Aedes candidoscutellum* n.sp. *a*, head; *b*, mentum; *c*, terminal segments; *d*, lateral comb tooth; *e* and *f*, pecten teeth from near apex and base, respectively. (*a* and *c*, x 56; *b*, x 145; *d-f*, x 290.)

basal half, of which the most distal may be longer. Pecten spines nearest apex of siphon longest, gradually diminishing in size, the most basal small and simple. Subventral tuft short, 3-5 branched, simple, arising a short distance beyond pecten. Acus present.

Anal segment: Saddle covering dorsal  $\frac{2}{3}$  of segment, as wide basally as apically; 2-3 rows of minute spines along apical border. Lateral seta 1-3 branched, sparsely plumose, almost as long as saddle. Caudal setae simple, upper 8-11 branched, twice length of saddle; lower long, single, twice length of upper. Ventral brush of 12 multiple tufts, each with 6-10 branches, arising from a grid; the basal one or two may be precratal. Gills pointed, tapering, slightly shorter than saddle.

Description based on over 40 pelts and whole larvae from various localities in Australia. A pelt correlated with adult ♀ from Hollandia, Dutch New Guinea, shows the following differences from mainland specimens: The spine at base of metapleural setae is even shorter than in North Queensland specimens; distal lateral tooth on pecten spine is longer and strongly developed; saddle much narrower at base than apex; tufts of ventral brush 11-13 branched; gills  $2\frac{1}{2}$  x saddle.

*Description of Pupa:* (Fig. 3.)

General coloration light brown, darker on upper surface of cephalothorax and basal abdominal tergites.

*Cephalothorax:* An indefinitely demarcated more darkly pigmented area extending dorsally from the anterior margin to the metapostnotum, and laterally across the base of the trumpet and the posterior margin of the wing cover. Trumpet darkly pigmented, short and broad, widening gradually from base; opening only slightly oblique, ratio of meatus to whole 1:1.2; apical notch shallow.

*Abdomen:* Tergites I-III or I-IV rather more darkly pigmented than remainder. Float setae dendritic, with about 15-20 branches. Some of the larger abdominal setae may be finely pilose, or frayed at the tip. Lateral seta of segments VII and VIII short, plumose, on VII 4-6 branched, on VIII 4-10 branched. Paddles broad (breadth index 1.0), with very finely denticulate margin and notched apex; buttress and midrib weakly developed; paddle seta short, 1-3 branched.

*Biology:* Larvae are found breeding in tree cavities in rain forest and, at least in South Queensland, appear to show a preference for those in which the water is clear and not highly coloured by organic material.

Specimens collected at Binna Burra on 2nd June, 1944, as 1st and 2nd instar larvae, and kept in the laboratory in a glass jar containing water and debris from their breeding place, had reached their 4th instar by 16th June; the first, a ♂, pupated on 19th July, emerging on 28th; the second, a ♀, pupated on 25th July; the next 2 specimens to pupate were ♂♂; the last specimen, a ♀, pupated on 15th September, emerging on 21st.

Of larvae collected at Mt. Mowbullan on 23rd September, 1944, the last specimen pupated about 2nd December, 1944.

Specimens collected at Mt. Glorious on 13th February, 1945, as 1st instar larvae, were in their 2nd and 3rd instars on 16th and some had reached their 4th instar by 19th February; the first pupated on 3rd March, the first five to emerge being ♂♂.

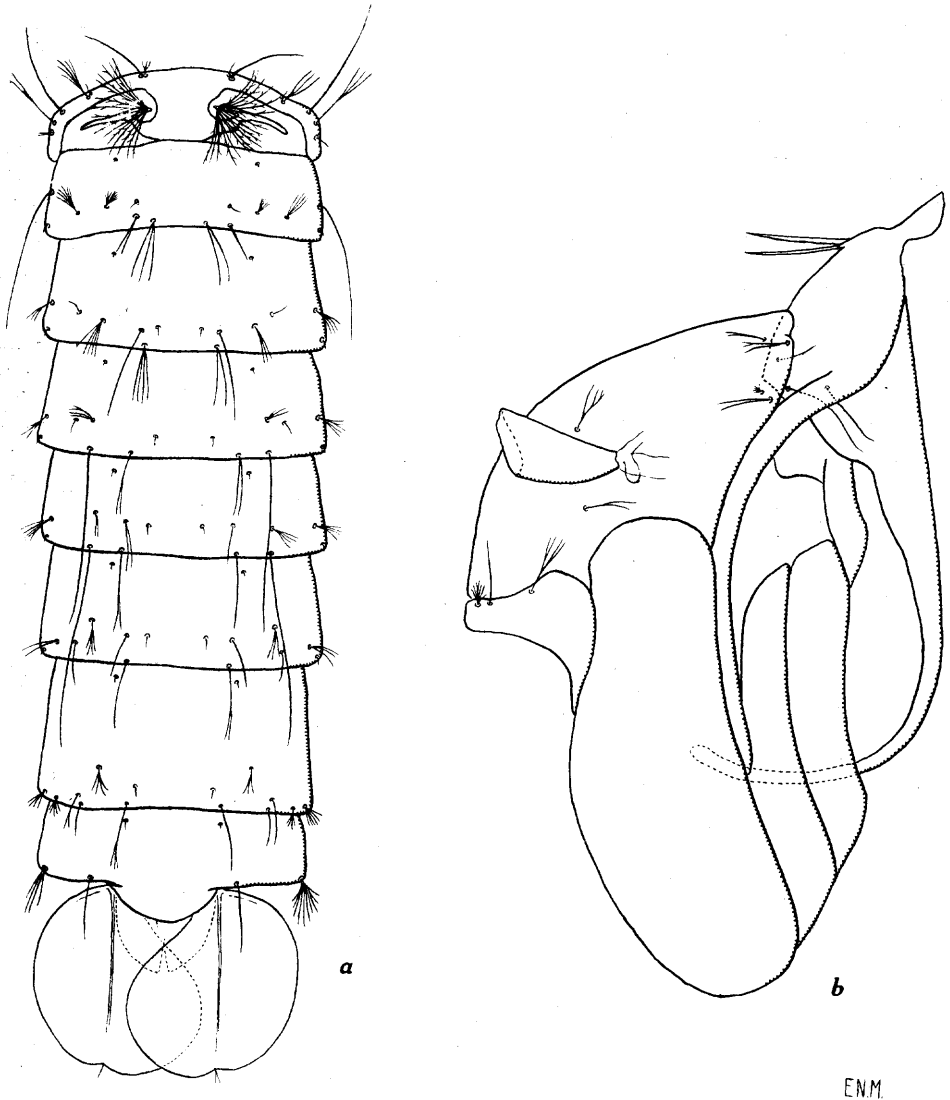


FIG. 3.—Pupal pelt of *Aedes candidoscutellum* n.sp., x 30. a, abdomen (dorsal view); b, cephalothorax.

The pupal period, in the laboratory in Brisbane, varies from 2-3 days (minimum observed approximately 51 hours) in summer (November-March) to 7-9 days in midwinter (June-July).

While the localities from which larvae have been collected in South Queensland are all in the vicinity of 1,500-3,500 feet, the breeding place in National Park, N.S.W., was at a low altitude. It is likely, as with other species in Queensland, that altitudes such as occur here influence distribution only insofar as they influence the occurrence of breeding places.

*Habits*.—Adults are known only from specimens reared in the laboratory, and there is no information on their habits in nature. There is nothing to suggest that this species has any relation to disease.

*Distribution*: The coastal areas of eastern Australia from Sydney northwards, and New Guinea. Specimens have been examined from the following localities:—NEW GUINEA: Hollandia, at 500 feet, 2 ♂♂, 1 ♀, larva (Capt. H. Hoogstraal, 19th Medical General Laboratory, U.S. Army, v.1945); Milne Bay, 1 ♀ (Lt. G. W. Bick, U.S.N., ix.1944). NORTH QUEENSLAND: Blue Mountains, Cape York Peninsula, 1 ♀ (J. L. Wassell, xi.1945); Mossman, 4 ♀♀, larvae (E. N. Marks, vi.1946); Kuranda, 1 ♂, 1 ♀ (E. N. Marks, vi.1946). SOUTH QUEENSLAND: Binna Burra, Lamington National Park, 12 ♂♂, 15 ♀♀, larvae (F. A. Perkins and E. N. Marks, v. and vi.1944; F. A. Perkins, v.1945); Beechmont, larva (J. L. Wassell, xi.1943); Mt. Glorious, 6 ♂♂, 3 ♀♀, larvae (J. L. Wassell, xii.1943, i.1944, ii.1945); Mt. Mowbullen, Bunya Mts., 2 ♂♂, 1 ♀, larvae (J. L. Wassell, ix.1944); Blackbutt, larvae (J. L. Wassell, x.1946). NEW SOUTH WALES: National Park, 1 ♀, larvae (E. N. Marks, iv.1944).

### **ÆDES (FINLAYA) WASELLI** n.sp.

(named after its collector, Lieut. J. L. Wassell).

*Type*: Holotype ♀, the only specimen known, taken along Mountain Creek, at the southern foot of Buderim Mt., South Queensland, 14.iii.1945, J. L. Wassell; deposited in the University of Queensland collection.

*Distinctive Characters*: Differs from all other species of *Finlaya* known from Australia in having hind tarsal segments I and II with distinct apical, as well as basal pale bands. The proboscis with basal  $\frac{2}{3}$  creamy scaled, the mesonotal pattern and the white patch on the hind femur, are among other distinguishing features. In the absence of males and larvae, the affinities of this species are uncertain.

#### *Description of Adult*:

*Holotype* ♀.

Wing length 3.4 mm.

*Head*: Integument light brown. A broad medial triangular area of fairly sparse narrow curved golden scales, separated by a band of narrow curved black scales from the ocular border which is a wide band of dense flat lanceolate shining white scales, extending in a narrow medial line between the eyes; the white border broadens laterally and terminates in a patch of flat black scales, contiguous with a large lateral area of flat creamy scales; numerous black upright forked scales on the vertex; a pair of strong black vertical setae and a row of 3 long medially directed ocular setae, with shorter ones laterally. Torus ochreous, medial aspect darker, and bearing fine dark setae; flagellar segments of antenna black with sparse black verticillate hairs; first flagellar segment with basal  $\frac{1}{3}$  ochreous and with some flat dark scales medially. Clypeus dark brown. Palpi  $\frac{1}{2}$  length of proboscis, black scaled, with white scales dorsally at apex. Proboscis slightly longer than fore femur, basal  $\frac{2}{3}$  creamy scaled, apical  $\frac{1}{3}$  black, with a few pale scales dorsally at apex; labella dark brown.

*Thorax*: Integument bright reddish brown. Mesonotum sparsely clothed with fine narrow curved black scales, and with a definite pattern composed of fine narrow curved golden scales and large lanceolate shining white scales arranged as follows:—On the anterior border, a small medial white patch from which a narrow medial golden line runs back terminating in a very small white patch just in front of the prescutellar bare area; a lateral white border

anteriorly, along the junction with the posterior pronotum; an isolated round white patch just lateral to the dorsocentral bristles, and just posterior to the level of the scutal angle; a white line commencing a short distance behind this and running back to the scutellum along the line of dorsocentral bristles; a short longitudinal white line above the wing root. Mesonotal bristles, strong, black (partly abraded). Scutellum with all lobes clothed with broad flat shining white scales; border bristles black, 4 long to mid lobe and 3 long to lateral lobes, in addition to shorter bristles. Metapostnotum reddish brown.

Pleura with patches of broad flat shining white scales on propleuron, anterior pronotum, subspiracular area; a small patch on upper sternopleuron and another on lower posterior border of sternopleuron; a patch on upper half of mesepimeron; and a large dense patch on paratergite; posterior pronotum bare of scales. Bristles black; 9 propleural; 2 very long strong bristles on upper portion of anterior pronotum, in addition to numerous others; 3-4 posterior pronotal; 1 long and 1-2 short fine postspiracular bristles; 2 upper sternopleural and a row of 5 along posterior margin of sternopleuron; about 8 prealar; 6-9 upper and no lower mesepimeral bristles.

*Legs*: Mainly black scaled with banded tarsi. Coxae pale ochreous, fore coxae with white scales basally, dark apically, mid and hind with white scales only. Trochanters pale scaled, with a few dark scales beneath. Fore and mid legs with femora black scaled dorsally, except at base which is creamy, creamy scaled posteroventrally and with small shining white kneespot; tibiae with creamy longitudinal streak posteroventrally, not reaching apex on mid tibia; tarsal segment I with a basal white band about  $\frac{1}{4}$  its length, and a narrower apical band; tarsal segment II basally banded and on mid leg with narrow apical band; tarsal segment III may have a few pale scales ventrally at base on fore leg, with narrow basal band on mid leg; IV and V dark scaled. Hind leg with femur black scaled, except for an indefinite basal ring of creamy scales, a large dorsal patch of shining white scales just beyond mid length, and a prominent white kneespot; tibia black; tarsal segments I-III with basal white bands  $\frac{1}{5}$  their length, I and II with narrower apical bands also; IV all black, V all white. Claws equal, those of fore and mid legs toothed, hind simple.

*Wings*: Black scaled; outstanding scales all long and narrow. Cell  $R_2$  3 times the length of its stem; cell  $M_1$  slightly longer than its stem, its base approximately level with that of cell  $R_2$ ;  $r-m$  twice its length distal to base of  $M_{3+4}$ . Halteres with pale stem; knob mainly black scaled, with some white scales.

*Abdomen*: Integument light brown. Tergites black scaled, with dark brown hairs, II-VII with small medial basal patches of golden scales, I with a lateral border of shining white scales, and II-VII with large basal lateral white patches, slightly expanded apically; VIII retracted. Sternites creamy scaled, with dark scales laterally and apically, the creamy scaling reduced to a basal patch on VI-VII; VIII large, bare, orange-brown, exerted. Cerci very short, dark.

*Biology and Habits*: Nothing is known of the life-history. The holotype was captured along a shallow, swampy creek, a maze of small waterways, running through rain forest and heavily overgrown with palms and other vegetation. The collection was made at the densest spot where there was practically no sunlight. No tree cavities were found in the vicinity.

*Distribution*: Known only from the type locality.