A NEW SUBSPECIES OF AËDES (STEGOMYIA) SCUTELLARIS WALKER (DIPTERA, CULICIDAE) FROM NORTHERN AUSTRALIA.

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(With Four Text-figures.)

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Introduction.

A considerable amount of work has been carried out in recent years on the *scutellaris* group by Farner and Bohart (1945), Stone and Farner (1945), and by Stone (1947). The last-named author has shown that *Aëdes variegatus* var. *hebrideus* Edwards is synonymous with *Aëdes scutellaris* Walker. Prior to 1944 no members of the *scutellaris* group had been recorded from Australia, but in December, 1944, and January, 1945, R. H. Wharton collected three females and one male at Batchelor in the Northern Territory of Australia. These were forwarded to Stone, who pointed out that they differed in the femoral markings from *A. scutellaris*, but the material was considered inadequate for description. In January, 1948, Mr. A. E. Wynn forwarded to the author a batch of eggs from Katherine, Northern Territory of Australia, and these, when developed, proved to be similar to the specimens collected by Wharton. They have been retained as a continuous laboratory culture for a year and several hundred specimens have been examined. It has been found that they show a constant variation in the marking of the mid femora from *A. scutellaris* Walker, but are identical as regards the male genitalia and in all other respects, including the eggs, larvae and pupae. In addition, males of this North Australian form, when crossed with females of *A. scutellaris* from New Guinea, gave fertile progeny to the F_3 generation, although the reciprocal cross was sterile. In view of these facts it was considered advisable to describe the new form as a subspecies of *Aëdes scutellaris* Walker.

Aëdes scutellaris scutellaris Walker.*

Synonymy.

Culex scutellaris Walker, 1859. Proc. Linn. Soc. Lond., Zoology, 3, pp. 77-131.
Culex zonatipes Walker, 1861. Proc. Linn. Soc. Lond., Zool. 5, p. 229.
Aëdes variegatus var. *hebrideus* Edwards, 1926. Bull. Ent. Res., 17, p. 102.
Aëdes scutellaris var. *hebrideus* Edwards, 1932. Gen. Insect., fasc. 194, p. 163.
Aëdes scutellaris hebrideus Edwards. Knight, Bohart and Bohart, 1944, Keys to the Mosquitoes of the Australasian Region, Nat. Res. Council, Washington, D.C., p. 55.
Aëdes hebrideus Edwards. Farner and Bohart, 1945, U.S. Naval Medical Bulletin, 44, p. 30.

Type Locality: Aroe Islands.

Distribution: Farner and Bohart (1945) and Stone and Farner (1945) give the distribution as eastern New Guinea (including the D'Entrecasteaux and Trobriand Islands), New Hebrides, Palau Islands, Ceram and the Philippine Islands. Additional records supplied to the author by D. J. Lee are as follows:

New Britain: Rabaul (Taylor), 1933.

New Guinea: Gona (O'Connor), 1943; Lae (Clinton), 1943; Lalapipi (Atherton), 1943; Finschaffen (Berril), 1944; Dobadura (Ratcliffe), 1943; Salamaua (Woodhill), 1944; Merauke (Roberts), 1943; Port Moresby (Wharton), 1947; Kanusia (Lee), 1947.

Morotai (Clarke), 1945.

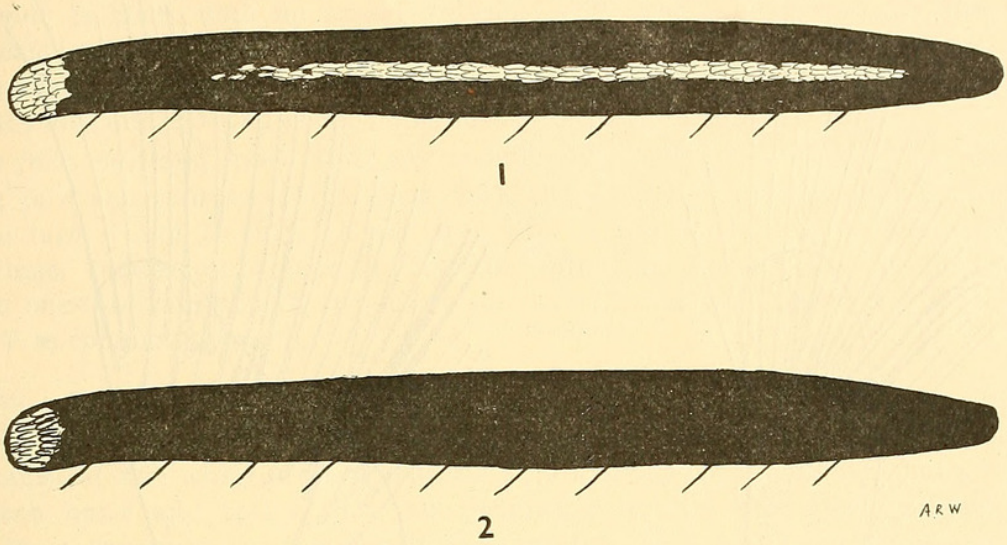
* This combination has previously been used by Knight, Bohart and Bohart (1944), and Farner and Bohart (1945) give it as a synonym of *Aëdes quasiscutellaris* F. and B.

AËDES SCUTELLARIS KATHERINENSIS, n. subsp.

Type Locality: Katherine, Northern Territory of Australia.

Types: Holotype female, allotype male, ten female and ten male paratypes and a series of mounted male genitalia deposited in Macleay Museum, University of Sydney.

Distinctive Characters: This subspecies can be distinguished by the presence of a broad distinct line of white scales on the anterior surface of the mid femur; this line is entirely lacking in *A. scutellaris scutellaris* (Text-figs. 1 and 2).



Text-figures 1 and 2.

1. Anterior surface of mid femur of *Aëdes scutellaris katherinensis*, n. subsp. × 50.
2. Anterior surface of mid femur of *Aëdes scutellaris scutellaris* Walker. × 50.

DESCRIPTION OF FEMALE.

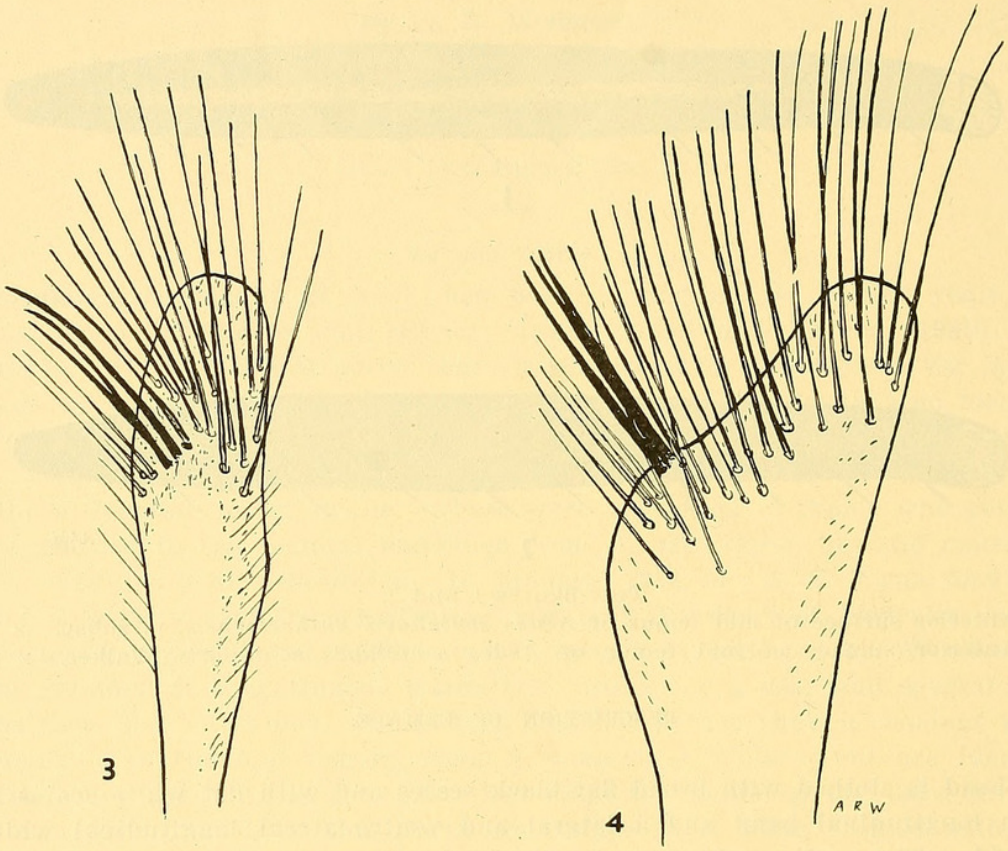
Head.

The head is clothed with broad flat black scales and with flat white scales forming a median longitudinal band and a lateral and ventro-lateral longitudinal white band on each side. The median white band includes the inter-ocular vertex and extends as a few white scales along the dorsal margins of the eyes; the ventro-lateral white bands also extend along the ventral margins of the eyes. The occipital region carries a small patch of black upright forked scales and a row of long black post-ocular bristles is also present on each side. The clypeus and antennae are black with a band of flat white scales round the anterior margins only of the pedicels. The palpi are clothed with black scales except for a conspicuous patch of white scales covering the dorsal aspect of the third segment. The proboscis is entirely black scaled.

Thorax.

The thorax is dark brown to black in colour, conspicuously marked with bands and patches of white scales. The *scutum* is covered with narrow dark brown scales, except for a small median bare area at the posterior margin and two small bare areas on the postero-lateral angles, and carries scattered dark bristles which are particularly abundant above the wing bases. A conspicuous white longitudinal stripe which narrows posteriorly extends from the anterior margin of the scutum to the bare patch on the posterior margin, and a band of broad flat white scales occurs on the postero-lateral margin above the wing base and extends to the bare area on each side, i.e., almost to the scutellum. In a few specimens out of some hundreds examined there is also an indistinct line consisting of a few yellowish scales on each side of the posterior bare area. The *scutellum* is dark with a broad band of flat white scales extending across its whole width, and each lobe carries four to six long dark bristles. The *metanotum* is bare and dark brown in colour. The anterior and posterior pronotum carry a band of broad white scales continuous with the white scales on the lateral region of the head and with the lateral white band on the scutum, so that a continuous white band

runs from the head over the wing bases to the scutellum. Below this and parallel to it is another continuous band of white scales extending from the propleuron to the posterior margin of the mesepimeron. In addition, there are two separate patches of white scales near the lower margins of the sternopleuron and mesepimeron. The ornamentation of the dorsal and lateral aspects of the thorax is identical with most other species of the *scutellaris* group and has been admirably illustrated by Farner and Bohart (1945).



Text-figures 3 and 4.
3. Basal lobe of coxite of *Aëdes scutellaris katherinensis*, n. subsp., dorsal aspect. × 650.
4. Basal lobe of same from the lateral aspect. × 650.

Pleural Chaetotaxy.

The anterior pronotum carries a tuft of ten to twelve strong dark bristles and the posterior pronotum has a single strong dark bristle near its posterior margin. The propleuron has a group of three to five bristles, there are no spiraculars, and the post-spiracular bristles are usually two in number, but may vary from one to three, including a small weak bristle. The pre-alar bristles vary from five to nine, the upper sterno-pleurals from one to three, and there is a row of lower sternopleurals varying from three to five. The upper mesepimerals occur as a tuft of weak pale bristles varying in number from two to eight, and lower mesepimerals are absent.

Halteres.

These are pale basally, with the apical knob covered with flat black scales.

Wings.

The veins are clothed with both broad and elongated dark scales, with particularly dense scaling on the costa, subcosta and R_1, these scales being mainly broad. At the extreme base of the costa is a small patch of white scales. The upper fork cell is slightly longer than the lower fork cell. The wing fringe is of the usual type and the alula bears a row of small flattened scales on its margin.

Legs.

The *coxa* of each leg bears a conspicuous patch of white scales anteriorly and also a row of strong bristles. The *fore femur* is black with an anterior apical patch of

white scales and a narrow line of somewhat scattered white scales on the anterior surface extending from the base to one-half to one-quarter the length of the femur. This line is very variable and may be absent or represented only by a few scattered scales. The posterior surface of the fore femur is pale scaled on the basal half. The *mid femur* is black with a white anterior apical patch and a broad distinct line of white scales on the anterior surface extending from the base almost to the apical white patch; this is a constant character in all specimens examined. The posterior surface of the mid femur is black with a few scattered pale scales on the basal half. The *hind femur* is black with an apical anterior white spot and practically the whole of the anterior surface is covered by a broad longitudinal band of white scales which tapers apically; the posterior surface also has a broad white longitudinal band which tapers apically and extends about half the length of the femur.

The *fore*, *mid* and *hind tibiae* are completely black.

The *fore* and *mid tarsi* are black with the exception of incomplete narrow basal rings on tarsi I and II only. *Hind tarsi* I to IV are black with complete wide white basal rings, occupying approximately the following proportions of the segments: tarsus I, one-third; tarsus II, two-fifths; tarsus III, one-half; tarsus IV, three-quarters. Tarsus V is completely white.

Abdomen.

The abdomen is clothed with flat black scales and has conspicuous transverse bands and patches of flat white scales. Tergite I is clothed with long fine hairs, sternite I lacks both hairs and scales, and the remaining tergites and sternites each carry a row of short fine hairs on their posterior margins. The white markings are arranged as follows: Tergite I has a lateral white patch on each side and tergites II to VII have transverse bands which commence at the antero-lateral corners and run backwards and upwards to cross the tergites transversely slightly closer to the anterior than to the posterior margins. These bands are complete on tergites IV to VII but may be interrupted dorsally to a greater or lesser extent on tergites II and III. Sternites II to VII have similar bands which commence at the antero-lateral corners and run backwards and downwards to cross the sternites slightly closer to the anterior than the posterior margins. These are complete on all sternites and may be expanded on sternites II to V only to form mid-ventral patches which may extend from the anterior to the posterior margins.

DESCRIPTION OF MALE.

The markings and chaetotaxy are similar to those of the female. The palps are approximately equal in length to the proboscis and are black scaled with the exception of a basal white patch dorsally on the second segment, a white ring covering the basal two-fifths of the third segment, and ventral basal white patches on the fourth and fifth segments. The genitalia are indistinguishable from those of *Aëdes scutellaris scutellaris*, the basal lobe of the coxite carrying a series of hairs at the apex with several longer hairs joined to form a spine. The degree of development of this spine varies in both sub-species and it is frequently very transparent and difficult to detect. The shape of the basal lobe also varies in accordance with the exact angle from which it is viewed and also with the degree of flattening in the individual preparation. Text-fig. 3 shows the basal lobe in the allotype male from the dorsal aspect and Text-fig. 4 shows the lateral aspect from another specimen.

EGGS, LARVAE AND PUPAE.

These are also indistinguishable from those of *Aëdes scutellaris scutellaris.*

Material Examined.

Several hundred specimens of males, females, eggs, larvae and pupae of laboratory cultures ex Katherine, three females and one male from Batchelor and two females from Kummunya Mission.

Distribution.

Batchelor (R. H. Wharton, 27/12/44, 5/1/45, 15/1/45) and Katherine (A. G. Wynn, 17/1/48), Northern Territory of Australia; Kummunya Mission, Port George IV (E. J. Davies, 1/2/44), Kimberley Division, Western Australia.

References.

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