

## NOTES ON AUSTRALIAN MOSQUITOES (DIPTERA, CULICIDAE). I.

SOME SPECIES OF THE SUBGENUS NEOCULEX.\*

By N. V. DOBROTWORSKY, Zoology Department, University of Melbourne.

(Four Text-figures.)

[Read 30th May, 1956.]

---

*Synopsis.*

The adults and larvae of *Culex fergusonii* Taylor are redescribed and descriptions of the pupa and eggs are given. A new species from Western Australia, *Culex latus*, is described. Adults, pupa, larva and eggs of *Culex douglasi*, n. sp., are described and an account is given of the biology and distribution of this species and of *Culex fergusonii* Taylor. Morphological notes on *Culex pseudomelanoconia* Theobald are given.

---

For an analysis of the relationships of the members of this subgenus adequate descriptions of all known species are necessary. The discovery of two new species provides an opportunity to present a redescription of *C. fergusonii* Taylor and some further data on *C. pseudomelanoconia* Theob.

While the four species dealt with in this paper are united by common features such as the presence of a transverse comb of rather long blunt spines on the paraproct, the smooth phallosome and the absence of lower mesepimeral bristles, they fall into two subgroups. *C. fergusonii* and *C. latus*, n. sp., have apical tergal bands, the same number of setae on the distal portion of the subapical lobe of the coxite, a patch of scales on the mesepimeron and, in the larval stage, a cuticle densely covered with minute spicules. All these characters link them to the Holarctic *C. territans* Walker and *C. apicalis* Adams. On the other hand, in *C. douglasi*, n. sp., and *C. pseudomelanoconia*, the tergites are either unbanded or have basal bands, and the patch of flat scales on the mesepimeron is reduced. These species are related to *C. chaetovenralis* Theob. and, more particularly, to the recently described *C. cheesmanae* Mattingly and Marks (1955).

## CULEX FERGUSONI Taylor.

*Culicada fergusonii* Taylor, PROC. LINN. SOC. N.S.W., 39:459, 1914.

Described by F. H. Taylor from one male and one female from Milson Island, Hawkesbury River, N.S.W. He did not describe the male terminalia.

*Distinctive Characters:* The goldish scaling of the scutum and the pale apical markings of the tergites are distinctive of this species.

*The Male. Head:* Vertex with pale narrow curved decumbent scales, and pale upright scales which become black laterally. Flat lateral scales restricted to a small area. Proboscis and palpi brown. Palpi exceeding length of proboscis (including labella) by the terminal segment and about a half of the penultimate; apical part of shaft and last two segments densely covered with long hairs. *Thorax:* Anterior pronotum with goldish bristles and a few narrow curved scales. Posterior pronotum with goldish narrow scales and 4-5 proepimeral bristles. Scutum with small goldish scales and a line of black scales along the acrostichal bristles; supra alar area covered with black scales. Scutellum with narrow pale scales and about five long strong bristles on each lateral lobe, and about seven on central one. Lower part of sternopleuron with row of white flat scales, one strong bristle and several weaker ones, all towards the posterior edge; another patch of scales and a row of bristles on postmedian area. Mesepimeron with patch of flat white scales near middle and patch of pale hairs on upper part. There are no prealar scales, postspiracular scales or lower mesepimeral bristles. *Wing:*

---

\* This work was supported in part by a grant from the Trustees of the Science and Industry Endowment Fund of Commonwealth Scientific and Industrial Research Organization.



Brown scaled. There are two clouds: a large one in the end of the upper basal cell, expanding towards the costa, and a small one in the base of the fork of the fifth vein. Upper fork cell less than twice as long as its stem; stems of upper and lower fork cells equal. Wing length: 4.0–5.0 mm. *Legs*: Brown, all femora and tibiae pale below. Front femur slightly shorter than proboscis. Hind femur and tibia each with distinct yellowish apical spot. Front and mid legs with toothed claws; hind legs with small equal, simple claws. *Abdomen*: Tergites black scaled; first with small median patch of pale scales; second to seventh with pale apical bands medially constricted on third to fifth, occasionally broken; eighth with yellowish scales and a few black ones. Venter black scaled basally, admixture of yellowish scales increasing distally. *Terminalia* (Text-fig. 1, *a*): Style stout, slightly curved, broadening slightly towards apex and narrowing abruptly before the tip; terminal appendage short. Coxite not swollen; subapical lobe well divided. Distal division with seven bristles, the first seta slightly flattened, the second, the longest, with hooked tip; the remainder hooked and barbed apically. Distal division accompanied by long seta. Proximal division with two long rods which have curved flaps apically. There is no leaf. Paraproct with an apical comb of 11–12 rather long blunt spines. Lateral plates of phallosome without teeth or tubercles, joined by a narrow bridge near the tip. Lobes of ninth tergite with 4–5 short setae.

*The Female*. Palps slightly less than one-quarter the length of the proboscis; third segment more than twice as long as the first two. Upper fork cell about three times as long as its stem. Stem of the lower fork cell about one and a quarter times the length of the stem of the upper one. Wing length: 3.3–4.0 mm. Tarsal claws of all legs small, simple. Apical bands on tergites, except sixth and seventh, widely broken. Venter paler than in males, usually with the last three sternites completely pale yellow. *Terminalia* (Text-fig. 1, *c*): Cerci broad and hairy; postgenital plate slightly concave distally. Insula with about ten setulae. Ninth tergite with 7–8 setae on either side. Pharynx (Text-fig. 1, *b*): Teeth short, thin and sharply pointed.

*Variation*: Some males have the abdominal bands broken on the fourth and fifth tergites. In some specimens the black scales on the venter are restricted to the first five sternites, with the sixth and seventh completely yellowish; in others black scales extend up to the seventh sternite.

In females the upright scales on the vertex are occasionally blackish. The sixth and seventh tergites may have an admixture of yellowish scales. Usually only the sixth and seventh sternites are completely yellowish, but in some specimens the black scales are greatly reduced and the venter appears pale scaled.

*Pupa*: Cephalothorax: Trumpet long slender with oblique opening. Seta 1 long with 2 branches; 2 and 3 with 3 branches; 4 long, single; 5 with 3 branches; 6 delicate, with 2 branches; 7 long, with 2–3 branches; 8 and 9 moderately long, with 3–4 branches. *Metanotum*: Seta 10 with 3 branches; 11 long, single; 12 long, with 3–4 branches. The abdominal setae are shown in Text-figure 1, *d*. Paddle broadly oval; tip of midrib with single minute seta.

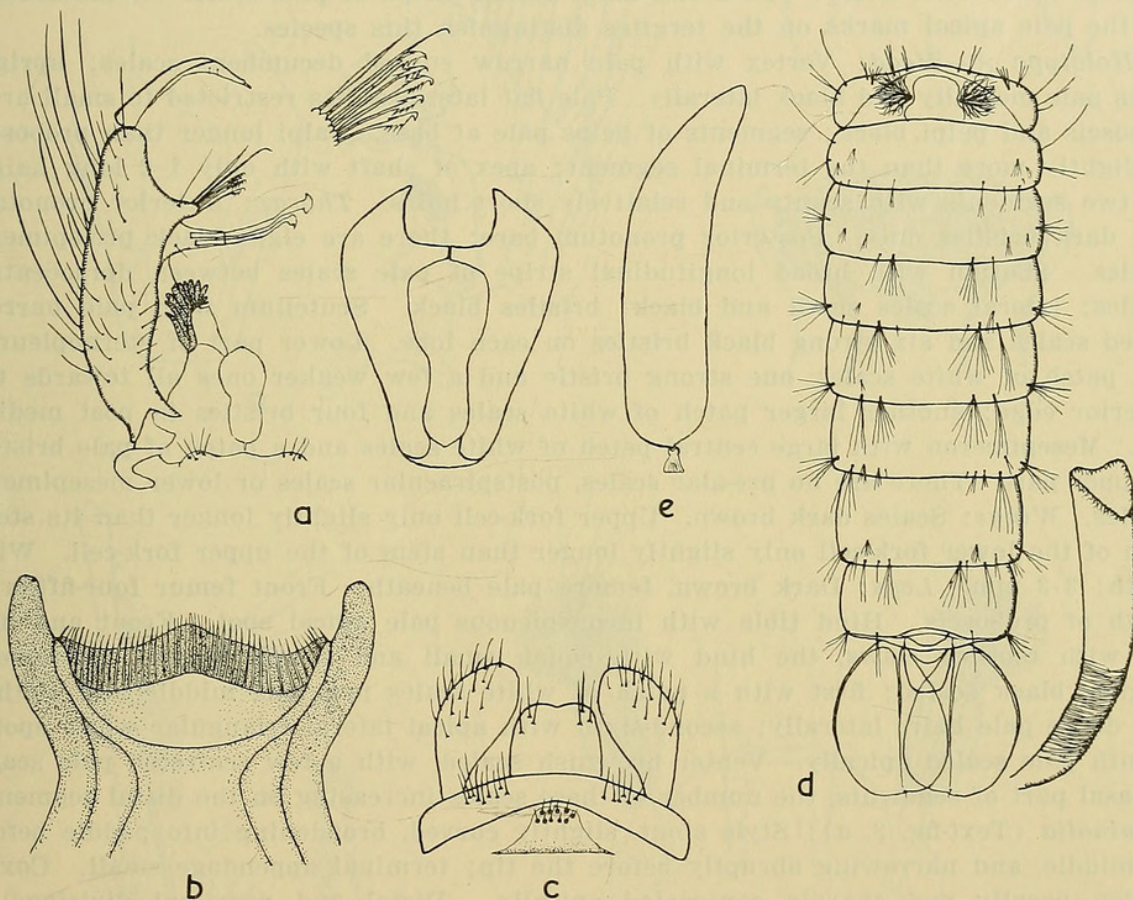
*Larva*: Head broad. Antenna long and curved, pale at middle, dark at base and beyond tuft. Subterminal setae strong and well removed from tip. Large antennal tuft with 30–35 branches. Head seta A with about 10 branches; B single or with 2 branches; C with 2 branches; *d* single; *e* with 3–4 branches; *f* minute, with 3–5 branches. Mentum with central tooth and 7–8 lateral teeth on each side. Larval skin densely covered with minute spicules. Prothoracic chaetotaxy: Seta 1 and 2 long, single; 3 single or with 2 branches, slightly more than half as long as 1; 4 with 2 branches and slightly longer than 3; 5 and 6 single, as long as 1; 7 as long as 4, with 3–4 branches; 8 as long as 7, with 2–3 branches. Pentad seta 1 with 5–6 plumose branches; 2 with 2 branches; 3 plumose, with 7–8 branches; 4 single; 5 with 3 strong branches. Comb of about 60 fringed teeth. Siphon long and slender with index of about 10. Pecten of 14–15 unidentate spines. There are 10–12 subventral siphonal setae which are single or have up to 5 branches, and 2 pairs of delicate single, or bifid dorsolateral ones. Saddle complete with bifid lateral hairs. Inner setae of dorsal brush



with 4-5 branches; outer one single and long. Ventral brush has 12 tufts and one or two precratal ones. Anal papillae narrow, pointed; ventral pair about half the length of the saddle; dorsal pair shorter.

*Eggs* (Text-fig. 1, e) are deposited in elongate rafts. Those laid by gravid females collected in nature, contain from 84 to 150 eggs. The eggs are dark brown, about 0.8 mm. long and with an index of about 4.8. Anteriorly the egg is almost cylindrical but the posterior third is bent and sharply tapered. At the anterior pole there is a funnel-like corolla. The exochorion is granulate.

*Biology*: This is a homodynamous species. Males, females (often gravid) as well as the earlier stages can be collected at any time during the winter months. It is not a man-biting mosquito. It is numerous in the hill forests of Victoria where it breeds in clean water pools and swamps. At lower altitudes, and in more exposed situations, it is



1.—*Culex fergusonii*, Taylor. a, Male terminalia; b, female pharynx; c, female terminalia; d, pupal abdomen and trumpet; e, egg.

confined to rocky valleys where the larvae breed in back-water pools shaded by trees or overhanging rocks. They are sometimes found in swamps overgrown with bulrushes. The distribution of *C. fergusonii* is almost identical with that of *Theobaldia inconspicua* Lee and both species usually share the same breeding places.

In the laboratory *C. fergusonii* deposited egg rafts on moist filter paper 2-5 inches above the water level. The rafts were not stuck to the paper for they floated away when the water level was raised. When the water level was kept low, the rafts, if on a vertical surface, dropped into the water as the larvae pushed off the egg caps. This was not possible when the rafts were placed on an inclined surface, and in such cases the newly hatched larvae crawled over the moist filter paper to the water. The egg cap is attached asymmetrically so that the egg spike is near its edge and the opening is oblique.

*Distribution*: *C. fergusonii* is distributed in Eastern Australia from South Australia to South Queensland (Marks). In Victoria it is recorded from: Kalimna, Franklin



River, Drouin, Jindivick, Woods Point, Healesville, Ringwood, Wattle Park, Springvale, Wattle Glen, Sherbrooke, Hurstbridge, Meredith, Lyonville, Violet Town, Otway, Grampians.

*CULEX LATUS*, n. sp.

*Types*: The holotype male from Kewdale, Western Australia, collected by F. N. Ratcliffe (15.10.53), allotype female collected by D. L. McIntosh in the same locality (10.11.52), paratype series of two males, one from the same locality, the second from Dardanch, W.A., collected by D. L. McIntosh (10.11.52) and four females from Donnybrook, W.A., collected by J. H. Calaby (27.1.53) are in the collection of the Division of Entomology, C.S.I.R.O., Canberra; one female from Drakes Brook Weir, W.A. (D. L. McIntosh), in British Museum (Natural History) and one male from Peel Estate, W.A. (D. L. McIntosh, 6.11.42) in School of Public Health and Tropical Medicine, Sydney.

*Distinctive Characters*: The broad longitudinal stripe of pale scales on the scutum and the pale apical marks on the tergites distinguish this species.

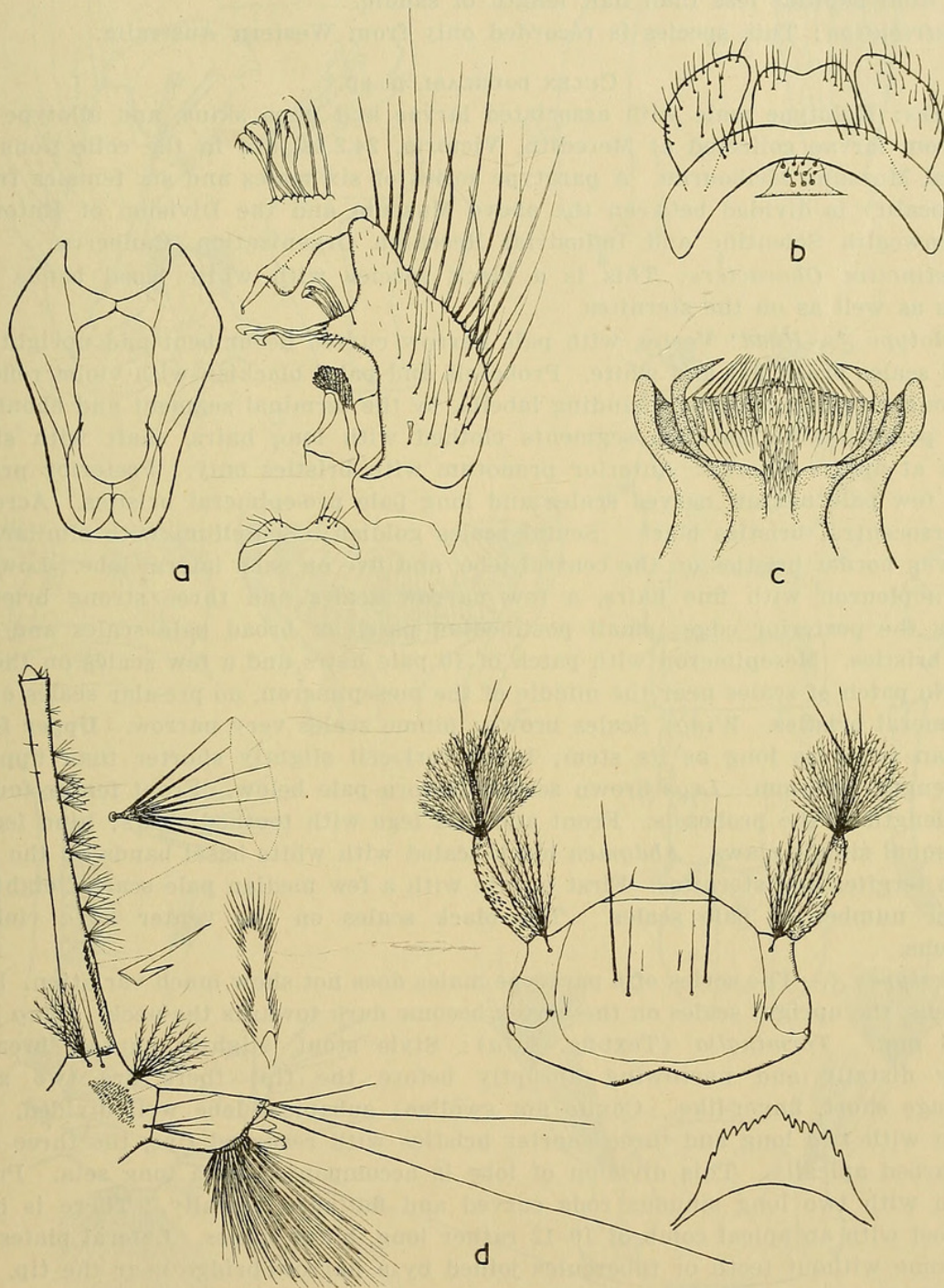
*Holotype* ♂.—*Head*: Vertex with pale narrow curved decumbent scales; upright scales pale medially and black laterally. Pale flat lateral scales restricted to small area. Proboscis and palpi black; segments of palps pale at base. Palpi longer than proboscis by slightly more than the terminal segment; apex of shaft with only 1–2 long hairs; last two segments with scanty and relatively short hairs. *Thorax*: Anterior pronotum with dark bristles only. Posterior pronotum bare; there are eight black pro-epimeral bristles. Scutum with broad longitudinal stripe of pale scales between dorsocentral bristles; lateral scales small and black; bristles black. Scutellum with pale narrow curved scales and six strong black bristles on each lobe. Lower part of sternopleuron with patch of white scales, one strong bristle and a few weaker ones all towards the posterior edge; another larger patch of white scales and four bristles in post median area. Mesepimeron with large central patch of white scales and a patch of pale bristles on upper part. There are no pre-alar scales, postspiracular scales or lower mesepimeral bristles. *Wings*: Scales dark brown. Upper fork-cell only slightly longer than its stem. Stem of the lower fork-cell only slightly longer than stem of the upper fork-cell. Wing length: 3.3 mm. *Legs*: Dark brown, femora pale beneath. Front femur four-fifths of length of proboscis. Hind tibia with inconspicuous pale apical spot. Front and mid legs with toothed claws, the hind with equal, small and simple claws. *Abdomen*: Tergites black scaled; first with a patch of white scales near the middle and clothed with dense pale hairs laterally; second-sixth with apical lateral triangular white spots; seventh pale scaled apically. Venter brownish scaled, with a few scattered pale scales on basal part of segments, the number of these scales increasing on the distal segments. *Terminalia* (Text-fig. 2, a): Style stout, slightly curved, broadening into paddle before the middle, and narrowing abruptly before the tip; terminal appendage small. Coxite swollen basally and sharply contracted apically. Distal and proximal divisions of subapical lobe of the coxite close together. Distal portion with seven bristles: the first and second unmodified, the remaining five with blade-like apical expansion with serrated edges. Distal division accompanied by long seta. Proximal division with two rods flattened and curved at tip; the shorter one narrowed before terminal expansion. There is no leaf. Paraproct with an apical comb of ten rather broad, blunt spines. Lateral plates of phallosome without teeth or tubercles, joined by a narrow bridge near the pointed tips. Lobes of ninth tergite prominent, with 5–6 setae.

*Allotype* ♀.—This differs from the holotype male as follows: Palps about 0.4 the length of the proboscis; third segment of palp twice as long as first two. Posterior pronotum with a few black curved scales. Upper fork-cell about three times as long as its stem. Stem of lower fork-cell almost equal in length to the upper one. Wing length: 4.2 mm. Tarsal claws of all legs small and simple. Second tergite with narrow apical band. The white triangular apical patches on the third-sixth tergites are larger and extend towards mid line. *Terminalia* (Text-fig. 2, b): Cerci broad. Postgenital plate distinctly bilobed. Insula with distinct circular patch of ten setulae. Ninth tergite well developed, with 4–7 setae on either side. Pharynx (Text-fig. 2, c): Side teeth thin and sharply pointed, central ones shorter and thicker with pointed tips.



*Paratypes*.—The paratype series of two males and four females does not show any significant variation.

*Larva* described from two pelts and one larva from Grangara, W.A. (7.9.55, D. L. McIntosh). Head broad. Antenna stout, clothed with spicules; dark at base and beyond the tuft. Subterminal setae strong and well removed from tip. Large antennal tuft of about 30 branches. Head seta A with 7–9 branches; B and C single; D small,



2.—*Culex latus*, n. sp. a, Male terminalia; b, female terminalia; c, female pharynx; d, head, terminal segments and mentum of larva.

single or with 2 branches; e with 3–4 branches; f small tuft with 9–10 branches. Mentum with central tooth and 6–7 lateral teeth on each side. Larval skin densely covered with minute spicules. Prothoracic chaetotaxy: seta 1 and 2 long, single, almost equal; 3 single or with 2 branches, about half as long as 1; 4 with 2 branches, longer than 3; 5 and 6 single, slightly shorter than 1 and 2; 7 with 3 branches; 8 with 2–3 branches, as long as 1. Pentad seta 1 long, with 6 plumose branches; 2 with 2 branches; 3 with



8-9 plumose branches; 4 single; 5 with 4-5 branches. Comb of about 60-67 fringed teeth. Siphon long, slender, narrowing towards the middle and expanding apically with index of about 10. Pecten of 15-18 usually unidentate spines. There are about 9-11 subventral siphonal setae with 1-8 branches and 2 pairs of single dorso-lateral setae. Saddle complete with 2-3 branched lateral setae. Inner seta of dorsal brush with 1 long and 2 shorter branches; outer one single and long. Ventral brush has 13-14 tufts. Anal papillae less than half length of saddle.

*Distribution*: This species is recorded only from Western Australia.

CULEX DOUGLASI, n. sp.\*

*Types*: Holotype male with associated larvae and pupa skins, and allotype female bred from larvae collected at Meredith, Victoria, 24.3.54, are in the collections of the National Museum, Melbourne. A paratype series of six males and six females from the same locality is divided between the above Museum and the Division of Entomology, Commonwealth Scientific and Industrial Research Organization, Canberra.

*Distinctive Characters*: This is a black species with white basal bands on the tergites as well as on the sternites.

*Holotype* ♂.—*Head*: Vertex with pale narrow curved decumbent and upright scales. Lateral scales broad flat and white. Proboscis and palpi blackish with violet reflections. Palpi longer than proboscis, including labella, by the terminal segment and about a half of the penultimate; last two segments clothed with long hairs, shaft with six long bristles at apex. *Thorax*: Anterior pronotum with bristles only. Posterior pronotum with a few pale narrow curved scales and long pale pro-epimeral bristles. Acrostichal and dorsocentral bristles black. Scutal scales goldish. Scutellum with similar scales, and seven border bristles on the central lobe, and five on each lateral lobe. Lower part of sternopleuron with fine hairs, a few narrow scales and three strong bristles all towards the posterior edge; small postmedian patch of broad pale scales and several strong bristles. Mesepimeron with patch of 10 pale hairs and a few scales on the upper part. No patch of scales near the middle of the mesepimeron, no pre-alar scales or lower mesepimeral bristles. *Wing*: Scales brown; plume scales very narrow. Upper fork-cell less than twice as long as its stem; lower fork-cell slightly shorter than upper one. Wing length: 3.0 mm. *Legs* brown scaled, femora pale below. Front femur four-fifths of the length of the proboscis. Front and mid legs with toothed claws; hind legs with small, equal simple claws. *Abdomen* black scaled with white basal bands on the second-seventh tergites and sternites. First tergite with a few median pale scales; eighth with a larger number of pale scales. The black scales on the venter have violet-pink reflections.

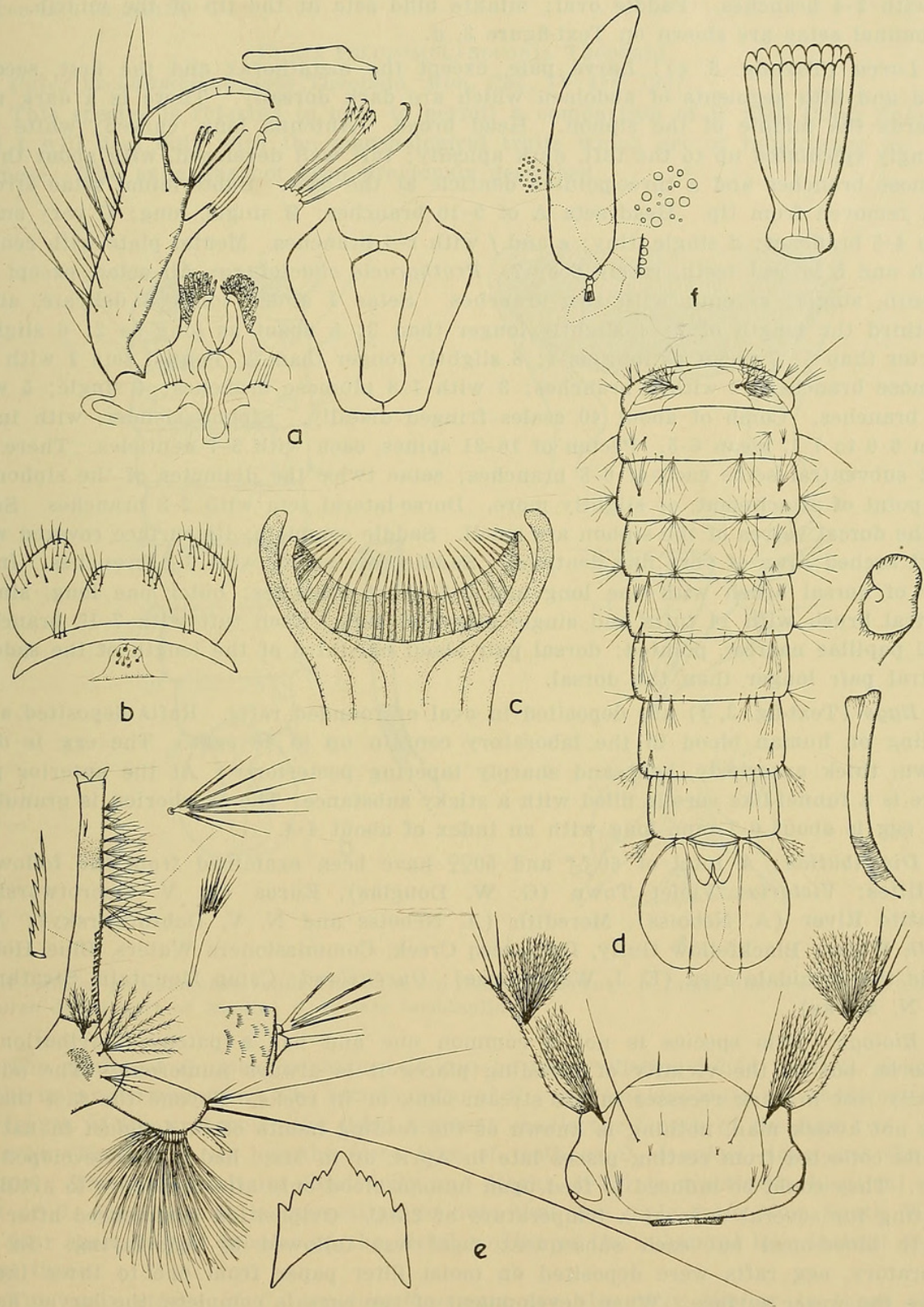
*Paratypes* ♂.—The series of 6 paratype males does not show much variation. In some specimens, the upright scales on the vertex become dark towards the neck. *Wing* length: 3.0-3.3 mm. *Terminalia* (Text-fig. 3, a): Style stout, slightly curved, broadening slightly distally and narrowing abruptly before the tip; there are two setulae; appendage short, finger-like. Coxite not swollen; subapical lobe well divided. Distal division with two long and three shorter bristles with recurved tips, the three shorter ones barbed apically. This division of lobe is accompanied by a long seta. Proximal division with two long sinuous rods curved and flattened apically. There is no leaf. Paraproct with an apical comb of 10-12 rather long, blunt spines. Lateral plates of the phallosome without teeth or tubercles joined by a narrow bridge near the tip. Lobes of the ninth tergite with 4-5 rather long setae.

*Allotype* ♀.—This differs from the holotype as follows: Palps about one-sixth the length of the proboscis; third segment longer than first two. Anterior pronotum with strong brown bristles, pale goldish hairs and, on dorsal side, pale narrow curved scales. Mid part of the mesepimeron with small patch of fine flat pale scales. Upper fork-cell about three times as long as its stem; stem of the lower fork-cell one and a quarter times as long as that of the upper. Wing length 4.0 mm. Tarsal claws of all legs are small and simple.

\* This species is named in honour of Mr. G. W. Douglas who discovered it at Violet Town, Victoria.



*Paratype* ♀.—The series of six paratype females does not show much variation. The patch of scales on the mid part of the mesepimeron may be absent; evidently they are easily rubbed off. Wing length 3.2–4.0 mm. Terminalia (Text-fig. 3, b): Cerci broad



3.—*Culex douglasi*, n. sp. a, Male terminalia; b, female terminalia; c, female pharynx; d, pupal abdomen and trumpet; e, head, terminal segments and mentum of larva; f, egg.

and hairy; postgenital plate blunt; insula with 6–10 setulae. Ninth tergite with 4 setae on either side. Pharynx (Text-fig. 3, c): Teeth long, thin and sharply pointed, central teeth very narrow.



*Pupa*: Cephalothorax: Seta 1 long, stout, usually single, sometimes with 2 branches; 2 short, with 3–5 branches; 3 with 3–4 branches; 4 with 2 branches; 5 with 3–4 branches; 6 short, with 2–4 branches; 7 long, with 2 branches; 8 long, with 4 branches; 9 with 2–3 branches. Metanotum: seta 10 with 2–3 branches, 11 with 2 branches, and 12 with 2–4 branches. Paddle oval; minute bifid seta at the tip of the midrib. The abdominal setae are shown on Text-figure 3, *d*.

*Larva* (Text-fig. 3, *e*): Larva pale, except the metathorax and the first, second, third and fifth segments of abdomen which are dark dorsally. There is a dark ring towards the middle of the siphon. Head broad. Antenna long, curved; white and strongly spiculated up to the tuft, dark apically; tuft well developed, with about thirty plumose branches and a three-pointed denticle at the base. Subterminal setae strong, well removed from tip. Head seta A of 9–10 branches; B single, long; C very small, with 4–5 branches; *d* single, tiny; *e* and *f* with 2–4 branches. Mental plate with central tooth and 5 lateral teeth, rarely 6 or 7. *Prothoracic chaetotaxy*: All setae, except the seventh, single; seventh with two branches. Setae 1 and 2 long; 3 delicate, about one-third the length of 2; 4 slightly longer than 3; 5 about as long as 2; 6 slightly shorter than 5; 7 about as long as 4; 8 slightly longer than 7. Pentad seta 1 with 3–5 plumose branches; 2 with 2 branches; 3 with 7–8 plumose branches; 4 single; 5 with 3–4 branches. Comb of about 40 scales fringed distally. Siphon slender, with index from 6.0 to 7.1, mean 6.5. Pecten of 16–21 spines, each with 5–7 denticles. There are 8–12 subventral setae each of 6–8 branches; setae twice the diameter of the siphon at the point of attachment, or slightly more. Dorso-lateral seta with 2–3 branches. Setae on the dorsal valves of the siphon are small. Saddle complete; its surface covered with short arched rows of very fine denticles. Saddle seta small, with 3–4 branches. Inner hair of dorsal brush with one long and 2–3 short branches; outer one long, single. Ventral brush with 14 tufts and single precratal tuft. Each tuft with 7–15 branches. Anal papillae narrow, pointed; dorsal pair about one-third of the length of the saddle; ventral pair longer than the dorsal.

*Eggs* (Text-fig. 3, *f*) are deposited in oval or rounded rafts. Rafts deposited after feeding on human blood in the laboratory contain up to 48 eggs. The egg is dark brown, thick anteriorly, bent and sharply tapering posteriorly. At the anterior pole there is a funnel-like corolla filled with a sticky substance. The exochorion is granulate. The egg is about 0.7 mm. long with an index of about 4.4.

*Distribution*: A total of 60♂♂ and 50♀♀ have been examined from the following localities: *Victoria*: Violet Town (G. W. Douglas), Euroa (N. V. Dobrotworsky), Delatite River (A. Neboiss), Meredith (A. Neboiss and N. V. Dobrotworsky); *New South Wales*: Blackfellow Gully, Dumaresq Creek, Commissioners Waters, Blue Hole—all in the Armidale area (E. J. Waterhouse); *Queensland*: Camp Mountain, Strathpine (E. N. Marks).

*Biology*: This species is not a common one and has a patchy distribution in Victoria, but in the vicinity of breeding places it is always numerous. The adults usually rest in dark recesses in the stream bank or in rocks. Beyond the fact that it does not attack man, nothing is known of the feeding habits of *C. douglasi* in nature. Adults collected from resting places late in April, or in May, had a well-developed fat body. They could be induced to feed upon human blood only after exposure to artificial lighting for several days at a temperature of 25°C. Oviposition commenced after the fourth blood-meal but each subsequent meal was followed by egg laying. In the laboratory, egg rafts were deposited on moist filter paper from one to three inches above the water surface. When development of the eggs is complete, the larvae hatch immediately the water level is raised up to the raft. Hatching can occur if the water level remains low. In this case the lifting of the egg cap causes the eggs to become detached from the corolla and the raft then drops into the water. If the eggs remain on the filter paper, the larvae cannot complete their emergence but die with the head stuck in the egg cap. Thus, in contrast to *C. fergusonii*, contact with water is necessary for emergence.

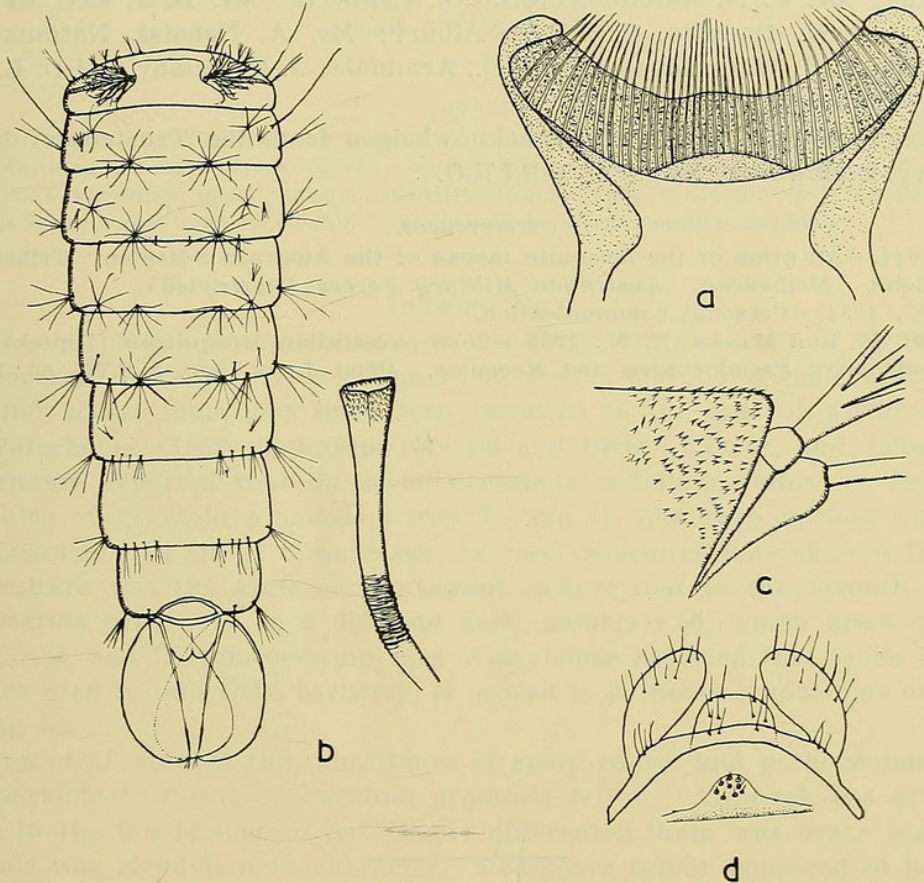


In Victoria the larvae breed in rocky valleys, in shallow, cool, clean back-water pools with a sandy bottom and shaded by rocks or trees; the larvae are most abundant under overhanging stones. In Queensland they breed together with *C. pseudomelanoconia* (E. N. Marks, 1954). In Victoria the larvae and pupae usually disappear from breeding places late in April.

*CULEX PSEUDOMELANOCONIA* Theobald.

*Culex pseudomelanoconia* Theobald, *Mon. Cul.*, IV:416, 1907.

This species is referred to here to permit a comparison of it with *Culex douglasi* and I will deal only with the morphological traits which are of importance for this purpose. The pupa has not been previously described.



4.—*Culex pseudomelanoconia* Theobald. a, female pharynx; b, pupal abdomen and trumpet; c, dorso distal part of saddle; d, female terminalia.

The adults of *C. pseudomelanoconia* can be easily distinguished from *C. douglasi* by the unbanded abdomen. The female palps of *C. pseudomelanoconia* are about one-fifth the length of the proboscis; the third segment equals the length of the first two. The pharynx (Text-fig. 4, a) has the same type of teeth as *C. douglasi*—long and sharply pointed. The male genitalia (Mattingly and Marks, 1955) is practically identical with that of *C. douglasi*. It is interesting to note that one male from New South Wales has four short barbed bristles on the distal portion of the subapical lobe instead of the usual three.

The early stages of *C. pseudomelanoconia* are also very similar to those of *C. douglasi*.

*Pupa*.—Cephalothorax: The trumpet is long and slender with a funnel-like opening. Seta 1 with 4–5 branches; 2, 4 and 7 with 2 branches; 3 with 3–4 branches; 5 with 4 branches; 6 small, with 3 branches; 8 with 3–4 branches; 9 single, or with two branches. Metanotum: seta 10 and 12 with 3 branches; 11 single. The abdominal setae and paddle are shown on Text-figure 4, b.



The larva of *C. pseudomelanoconia* can be distinguished from that of *C. douglasi* by a few morphological traits: The mentum usually has six lateral teeth, rarely seven. The pecten consists of 13–19 spines (mean 16); the distal ones have about 6 irregular denticles; the spines on the surface of the saddle are longer and irregularly arranged on the dorso-distal part (Text-fig. 4, c). The index of the siphon of Queensland specimens varies from 6.0 to 7.0, with mean 6.4; it is higher than given by Lee (1944).

*C. pseudomelanoconia* has been recorded from Queensland and New South Wales, but has not yet been found in Victoria.

#### Acknowledgements.

The author is grateful to Dr. F. H. Drummond for assistance in the preparation of the manuscript; and for the gift, or loan, of material, to Dr. E. N. Marks, University of Queensland; Mr. F. N. Ratcliffe, C.S.I.R.O., Canberra; Mr. D. J. Lee, University of Sydney; Mr. G. W. Douglas, C.S.I.R.O., Albury; Mr. A. Neboiss, National Museum, Melbourne; Mr. E. J. Waterhouse, C.S.I.R.O., Armidale; J. H. Calaby and D. L. McIntosh, C.S.I.R.O., Nedlands, W.A.

Financial assistance is gratefully acknowledged from the Trustees of the Science and Industry Endowment Fund of C.S.I.R.O.

#### References.

- LEE, D. J., 1944.—An atlas of the mosquito larvae of the Australian Region. Tribes Megarhini and Culicini. Melbourne. *Australian Military Forces* (Restricted).  
MARKS, E. N., 1954.—Personal communication.  
MATTINGLY, P. F., and MARKS, E. N., 1955.—Some Australian Mosquitoes (Diptera, Culicidae) of the subgenera *Pseudoskusea* and *Neoculex*. *PROC. LINN. SOC. N.S.W.*, 80:163-176.
-





Dobrotworsky, N V. 1956. "Notes on Australian mosquitoes (Diptera, Culicidae). I. Some species of the subgenus *Neoculex*." *Proceedings of the Linnean Society of New South Wales* 81, 105–114.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/108607>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/47276>

**Holding Institution**

MBLWHOI Library

**Sponsored by**

Boston Library Consortium Member Libraries

**Copyright & Reuse**

Copyright Status: In copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.