

✓ NOTES ON AUSTRALIAN DIPTERA. No. xiii.

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(Communicated by Dr. I. M. Mackerras.)

(Fifteen Text-figures.)

[Read 28th September, 1927.]

In this paper I present descriptions of a number of species sent to me by Mr. A. L. Tonnoir, mostly from Tasmania, the type specimens of which are to be deposited in the Cawthron Institute, New Zealand. The paratypes, which I am permitted to keep, will be sent by me for disposition in some suitable Australian museum. In the paper I also present some keys for the recognition of genera and species in the Acalyptratae, the types of the new species in most cases being from material sent to me by the late Dr. E. W. Ferguson, and these will be returned to Australia later.

Family Sapromyzidae.

Though there are I believe some genera of this family still to be discovered in Australia I am presenting now a generic synopsis which will I hope permit students of the group to locate material they may become possessed of, provided it belongs to an included genus. About half of the genera are confined to Australia and most of the species are.

Key to Genera.

- 1. Hind tibia with two strong curved black apical ventral spines, the longest one over twice as long as apical diameter of the tibia; costa without short stiff black spines, fine haired from base to apex of fourth vein; hairs on cheeks, thorax, femora, and tibiae, long and bristly; anterior orbital bristles incurved 1. *Amphicyphus* de Meijere.
- Hind tibia with, or without, one short, almost straight, apical ventral bristle, which is not longer than the apical diameter of the tibia; part of costal vein with short closely placed stiff black bristles 2
- 2. The short stiff black bristles on costal vein not extending to apex of third vein, gradually discontinued beyond apex of second 3
- The short stiff black bristles on costal vein extending to apex of third vein where they cease abruptly, giving the costa the appearance of being slightly thickened to that point 15
- 3. Second wing vein unusually close to costal vein, the cell (marginal) between these veins therefore not one-third as wide just beyond apex of first vein as the one (submarginal) behind second vein 4
- Second wing vein at the normal distance from costal vein, the cell between these veins just beyond apex of first vein usually as wide as the one behind second vein 5
- 4. Anterior orbital bristles incurved; basal segment of antennae quite evident in profile, at least as long as second, and with some fine hairs at apex below; inner cross-vein of wing at or slightly before middle of wing 2. *Steganopsis* de Meijere.
- Anterior orbital bristles curved backward; basal segment of antennae not exposed in profile; inner cross-vein at about one-third from apex of wing 3. *Depressa* Malloch.

fifths from apex of discal cell; ultimate section of fourth vein less than twice as long as penultimate section.

Length, 3 mm.

Type, male, and allotype, Adventure Bay, Tasmania, 7th Dec., 1922 (A. L. Tonnoir).

HOMONEURA (HOMONEURA) FERGUSONI, n. sp.

Male and female.—Testaceous yellow, slightly shining. Antennae and palpi yellow; arista fuscous. Thorax slightly dusted, usually with faint traces of two brownish vittae just mesiad of the dorsocentrals. Abdomen of male usually with a faint series of dark dorsocentral spots on apical half, that of female with the spots quite distinct and in addition a larger one on each side of the fifth tergite. Legs yellow. Wings hyaline, normally with seven dark spots, those over inner cross-vein and at least the anterior extremity of outer cross-vein, just before apex of second vein, and at apex of third vein, most distinct, those at apex of fourth vein, at base of antepenultimate section of same vein, and between apices of axillary and first veins, least noticeable, sometimes very faint. Halteres yellow.

Frons subquadrate, orbits faintly differentiated, all the bristles long, surface hairs microscopic and sparse; third antennal segment almost twice as long as wide, slightly angulate on upper apical extremity; arista with very short pubescence. Thorax with three pairs of postsutural dorsocentrals and six series of intradorsocentral setulae. Fore femur with an anteroventral comb; all tibiae with distinct preapical dorsal bristle; mid tibia with two subequal moderately long apical ventral bristles. Inner cross-vein about two-fifths from apex of discal cell; ultimate section of fourth vein a little longer than penultimate section.

Length, 4-5 mm.

Type, male, allotype and four paratypes, Geraldton, W.A., 5th Sept., 1926 (E. W. Ferguson).

Named in honour of the collector, to whom I am indebted for most of the material received from this region.

In my recently published key (These PROCEEDINGS, 1927, p. 12) to the species of this genus from Australia this species will run down to section 4, but is distinguished from *apicinebula* Malloch, the only species in the first alternative, by the fact that the dark spot on second vein is not at extreme apex, and the base of antepenultimate section of fourth vein is clouded; from the second alternative it is distinguished by the pubescent arista.

HOMONEURA (HOMONEURA) FLAVOFEMORATA, n. sp.

Male and female.—Fulvous yellow, thorax and abdomen glossy, frons except the orbits, sides of face, and cheeks, not shining. Ocellar region with a dark mark on inner margin of each ocellus; antennae yellow, third segment and arista, and the apices of palpi, black. Legs yellow, blackened from near bases of tibiae to apices of tarsi. Wings yellowish hyaline, both cross-veins slightly clouded. Halteres yellow.

Frons subquadrate, all bristles long, anterior orbitals a little farther from eye than posterior pair and about one-third from anterior margin of frons; third antennal segment about 1.5 as long as wide; arista microscopically pubescent; face slightly convex in profile; cheek fully as high as width of third antennal segment. Thorax with three pairs of strong postsutural dorsocentrals, the anterior pair close to suture, and eight or more irregular series of intra-

dorsocentral hairs; scutellum slightly flattened. Female with about eight short bristles on genital segment. Fore femur with a slight anteroventral comb; all tibiae with a distinct preapical dorsal bristle, mid pair with two apical ventral bristles. Inner cross-vein a little beyond apex of first vein and middle of discal cell; ultimate section of fourth vein not 1.5 as long as penultimate section.

Length, 4.4-5 mm.

Type, male, and allotype, Eaglehawk Neck, Tasmania, 15th Nov., 1922 (A. L. Tonnoir).

This species runs down to section 12 in my key to the species of this genus, but is distinguished from all the species included thereinafter by the colour of the legs, all the others having the tibiae, and usually also the tarsi, yellow.

17. Genus AUSTRALINA, Malloch

I have seen only the two original specimens of the genotype of this genus, *geniseta* Malloch, described from Darwin, N.T.

There are some species of this family still in my hands which I do not care to describe from single specimens in rather teneral condition.

Family Agromyzidae.

Genus CRYPTOCHAETUM Rondani.

This genus is of considerable economic importance in Australia and the south-western United States, feeding upon certain scale insects, in which the larvae are internal parasites. Two species were brought from Australia to California about 35 years ago, and are now established there as parasites of a scale insect infesting citrus trees. The genus occurs also in Europe and Asia.

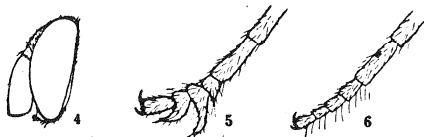
Two subgenera have been recognized by Bezzi, based upon the structure of the frons, presence or absence of hairs on the eyes to some extent, and some trivial wing characters. The known Australian species fall into the subgenus *Lestophonus*, all having the eyes hairy, and the frontal triangle wide at anterior margin. Below I give a synopsis of the characters by means of which the Australian species known to me may be recognized. I am accepting the specific names applied to the two old species, but whether these are correct or not I cannot be absolutely certain.

The genus is the only one in the Acalyptratae in which the antennal arista is lacking (Text-fig. 4). The species have a habitus very similar to those of *Leucopis* Meigen, which are so far as known predacious enemies of aphides and scale-insects, and with which I linked them in a paper on Agromyzidae published a number of years ago. The most recent work on the families of Acalyptratae by Hendel has, however, placed a great deal of emphasis upon the structure of the basal half of the costal vein of the wing and the degree of development and individuality of the auxiliary vein, and if we accept these characters as criteria for the segregation of families then *Cryptochaetum* can hardly be considered as Ochthiphiline. All the members of this latter group have the auxiliary vein complete, though sometimes closely approaching first vein near its apex, and the costal vein is not broken at the point where the auxiliary vein connects with it. In *Cryptochaetum* the auxiliary vein is almost obsolete, being visible only under a very high power lens, and the costa is slightly interrupted where the rudimentary auxiliary vein connects with it. There is no cross-vein between the discal cell and the anterior basal one in *Cryptochaetum*, while there is always such a cross-vein in the Ochthiphilinae.

All the species of the genus are bluish black in colour, and the frontal triangle, which is the same colour, is very large, occupying most of the frons, the latter lacks distinct lateral bristles and, like the dorsum of thorax, scutellum, mesopleura, and abdomen, is furnished with short hairs. Differences in venation, and the structure of the fore tarsi in the males, are the principal distinguishing characters.

Key to the Species.

1. Inner cross-vein of wing nearly one-third from apex of discal cell; ultimate section of fifth vein not over two-thirds as long as penultimate section; third antennal segment with a sharp apical upper angle; fore tarsus in male without exceptional structure or hairs; calyptrae fuscous *monophlebi* Skuse.
- Inner cross-vein of wing close to, or even proximad of middle of discal cell; ultimate section of fifth vein at least three-fourths as long as penultimate section; third antennal segment rounded at apex, or obtuse 2
2. Fore tarsus of male dilated (Text-fig. 5); calyptrae white; inner cross-vein a little beyond middle of discal cell; ultimate section of fifth vein about three-fourths as long as penultimate section *latimana*, n. sp.
- Fore tarsus of male not dilated, with some short fine erect hairs along the anterior side (Text-fig. 6); inner cross-vein sometimes a little proximad of middle of discal cell; ultimate section of fifth vein about as long as penultimate section *iceryae* Williston.



Text-fig. 4. *Cryptochaetum latimana*, head from side.

Text-fig. 5. *Cryptochaetum latimana*, fore tarsus of male.

Text-fig. 6. *Cryptochaetum iceryae*, fore tarsus of male.

✓ *CRYPTOCHAETUM LATIMANA*, n. sp. (Text-figs. 4 and 5.)

Male.—Glossy blue-black, frons on sides of the triangle, and the antennae, deep opaque black. Legs shining black, tarsi testaceous. Wings hyaline. Calyptrae white. Halteres black.

Frontal triangle gradually narrowed from vertex to anterior margin, at the latter point narrower than distance of its side from eye; third antennal segment not angulate but broadly rounded at apex. Scutellum margined as in other species. Abdomen rather wide, third and fourth visible tergites subequal in length. Fore tarsus as in Text-fig. 5.

Inner cross-vein almost exactly at middle of discal cell; penultimate section of fourth vein a little over one-fourth as long as ultimate, the latter diverging from third, and at its apex a little farther from third, measured on costa, than third is from second; ultimate section of fifth vein about three-fourths as long as penultimate.

Length, 1.5 mm.

Type, Wahroonga, Sydney, N.S.W., 24th Oct., 1926.

✓ *CRYPTOCHAETUM MONOPHLEBI* Skuse.

I have before me Australian specimens of this species, or at least specimens so labelled, and which agree with the characters cited for its distinction. Some

of the specimens were reared from *Monophlebus*. These specimens all have the third antennal segment with a very pronounced angular production on its upper apical angle which character appears to ally them very closely with *curtipenne* Knab, the type specimen of which I have compared with the specimens referred to. The type of Knab's species is in very poor condition and it is impossible to say whether or not it is the same species, though one of the Australian specimens of *monophlebi* bears this name label. The male has the fore tarsus normal

CRYPTOCHAETUM ICERYAE Williston. (Text-fig. 6.)

Readily distinguished from the other two species by the characters cited in the foregoing key. Fore tarsus of male as in Text-fig. 6. I have before me Australian and American specimens.

There are probably Australian species of this genus yet undiscovered.

Genus CERODONTA Rondani.

I have previously described two species of this genus from Australia and now present a third one. To facilitate the identification of these three species I am giving below a synopsis of their distinguishing characters.

Key to the Species.

1. Scutellum lemon yellow, with a deep black spot on each basal angle; thorax shining yellow, mesonotum with the following glossy black marks: a broad complete central vitta, a slightly narrower vitta each side of it, which does not extend to anterior margin, and a narrower one behind suture laterad of these; humeri with a black spot; intradorsocentral hairs in about six irregular series; third antennal segment as in *robusta*, shorter than usual and acute at apex *vittigera*, n. sp.
 2. Stout species; pleura largely lemon yellow; disc of mesonotum black, with slight grey dusting, the margins lemon yellow, the hind margin narrowly so; intradorsocentral hairs in at least four irregular series on almost the entire length of thorax; apices of abdominal tergites lemon yellow; third antennal segment shorter than usual and with a sharp apex; metanotum small .. *robusta* Malloch.
- Thorax black, with dense grey dust, and nowhere distinctly shining, mesonotum with two faint brownish vittae posteriorly on the lines of dorsocentrals; intradorsocentral hairs biseriate, sparse, and present only anteriorly; abdominal tergites black; third antennal segment normal, more elongate than in *robusta*, and with a sharp point at upper apical angle; metanotum prominent, extending to apex of scutellum *australis* Malloch.

CERODONTA VITTIGERA, n. sp.

Male.—Head orange-yellow, frontal orbits paler, ocellar region with a large black mark; arista black; third antennal segment with a very small part of apex black; inner mouth margin and occiput black. Thorax lemon yellow, dorsum with five glossy black vittae as described in the key; pleura largely black, the sclerites yellow on margins. Abdomen black, apices of tergites yellow. Wings hyaline. Halteres yellow.

Head as in *robusta*. Thorax with 1 + 3 pairs of dorsocentrals, about six series of long intradorsocentral hairs which are continued almost to scutellum, the intra-alar bristle hardly distinguishable from the hairs, and no differentiated prescutellar acrostichals; metanotum not well developed. Legs stout, the femora quite pronouncedly so. Wings normal, inner cross-vein at about one-third from apex of discal cell, outer cross-vein vestigial in both wings, ultimate section of