AUSTRALIAN *STRATIOMYIIDÆ*.

By G. H. Hardy.

Plate VIII.

(Read 8th June, 1920.)

Fam. STRATIOMYIIDÆ.

The species belonging to this family are easily recognised by a combination of two venational characters—one is a short discal cell emitting veins, some of which do not as a rule reach the wing border, and the lower branch of the cubital fork running to or above the apex of the wing is the other. The antennæ are of diverse forms, the third joint of which may consist of as many as eight segments clearly defined, or all or many of these segments may be partly or completely fused. The abdomen consisting of from five to seven visible segments is often depressed.

Key to the Subfamilies of the Stratiomyiidæ.

1. The abdomen with seven visible segments. BERIDINÆ.
   The abdomen with five or six visible segments. 2.

2. The wings with three posterior veins. 3.
   The wings with four posterior veins. 4.

3. Antennæ with a short, usually bulbous, third joint which bears a hair-like arista. PACHYGASTERINÆ.
   The antennæ elongate, ten-segmented, the tenth segment as long as the other nine together, ribbon-like, and more or less parallel sided. LOPHATELLINÆ.

4. The wings with the fourth posterior cell rising from the discal cell, or at least touching it. 5.
   The wings with the fourth posterior cell rising from the second basal cell and not touching the discal cell. 6.

5. The scutellum without spines and the last antennal segment elongate. HERMETIINÆ.
   The scutellum with spines and the last antennal segment short or moderately long. CLITELLARINÆ.

6. The antennæ with a thread-like arista. SARGINÆ.
   The antennæ without an arista, at most with a short blunt style. STRATIOMYIINÆ.

Subfam. Beridinæ.

Synonymy.—In the "*Catalogus Dipterorum*" Kertesz places *Xenomorpha* as a synonym of the genus *Chiromyza* and suggests that *Inopus* is also a synonym of the same. The position of the Australian species placed under the genus *Xenomorpha* is still uncertain, but they are allied to the genus *Chiromyza*, and the genus *Inopus* agrees better with the genus *Metoponia*, and indeed may be synonymous with it.

White, in 1916, placed *Xenomorpha* as a synonym of the genus *Metoponia*, but misstated that the wings of the latter have four posterior veins. White's mistake caused him to create the genus *Cryptoberis* for species with three posterior veins, but the genotype is a male of Macquart's female type species of the genus *Metoponia*. On this account, in the present paper, *Cryptoberis* is placed as a synonym of the genus *Metoponia*, and the genus *Xenomorpha* is used for convenience for all species of *Beridinæ* without scutellar spines and with four posterior veins present. The material to hand is not sufficient to form a better arrangement.

Key to the Genera of the Beridinæ.

1. The scutellum without spines. 2.
   The scutellum with spines. 3.

2. The wings with three posterior veins. *Metoponia.*
   The wings with four posterior veins. *Xenomorpha.*

3. The eyes bare. 4.
   The eyes hairy. *Actina.*

4. The antennæ elongate, three times as long as the head; the wings without markings. *Xanthoberis.*
   The antennæ moderately long; the wings marked with fuscous. *Neoexaireta.*

Genus Metoponia, Macquart.

Metoponia, Macquart, Dipt. Exot., suppl. 2, 1847, p. 28. *Id.*, Walker, List Dipt. B.M., v. suppl. 1, 1854, p. 112. *Id.*, Osten-Sacken, Berl. Ent. Zeit., xxvii., 1883, p. 297. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 46; and 1916, p. 260.

Cryptoberis, White, P.L.S. N.S.W., xli., 1916, p. 73.

Type.—*Metoponia rubriceps*, Macquart.

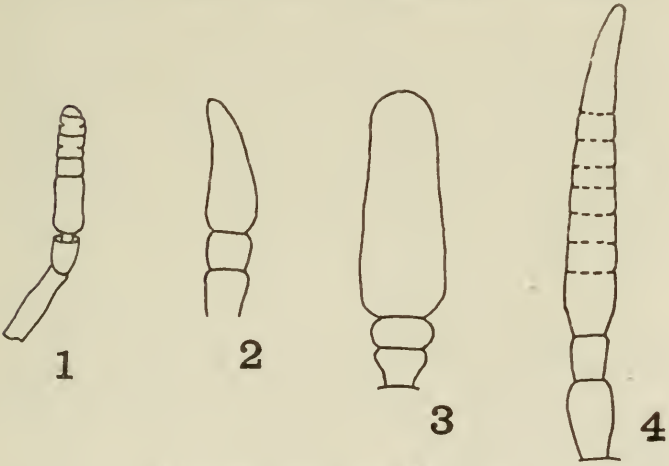
... ... New Holland.

Characters.—The species in this genus have a very receding face; the eyes contiguous in the male and widely separated in the female; the abdomen with seven visible

segments and rather elongated in the female; the scutellum without spines and the whole insect devoid of strong hairs or bristles. The wings have three posterior veins, a reduced discal cell and the anal cell closed before the wing margin.

Key to the Species of Metoponia.

1. The two basal joints of the antennæ equal; a yellow brown species. *prisca.*
   The first joint of the antennæ conspicuously longer than the second; a black, brown or reddish species and the female with a reddish head. *rubriceps.*



Metoponia rubriceps, Macquart.
Text fig. 1.

Metoponia rubriceps, Macquart, Dipt. Exot., suppl. 2, 1847, p. 28, pl. i. fig. 4; and suppl. 3, 1848, p. 15. *Id.*, Walker, List Dipt. B.M., v. suppl. 1, 1854, p. 113. *Id.*, Osten-Sacken, Berl. Ent. Zeit., xxvii., 1883, p. 297. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 46. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 75.

Chiromyza flavicaput, Walker, Ins. Saund. Dipt., i., 1852, p. 163.

Cryptoberis herbescens, White, P.L.S. N.S.W., xli., 1916, p. 74, Text fig. 1.

Synonymy.—Dr. E. W. Ferguson has a specimen named by White as *Cryptoberis herbescens*. It was taken about the same time of the year and in the same locality as the type, and it agrees in every respect with the male of *M.*

rubriceps, Macquart, described below, and does not agree with the antennal proportions given by White. A critical study of White's description compared with a number of undescribed *Beridinæ* has led the writer to conclude that the description given by White is misleading, and therefore the above specimen determined by White is considered to be correctly identified.

Inopus despectus, Walker (Ins. Saund. Dipt.), from unknown locality may also be intended for the male of *M. rubriceps*, Macquart, but the illustration with it does not quite conform to this insect.

Description.—Male. The head is black or blackish brown; the eyes are contiguous; the second joint of the antennæ is about one quarter the length of the first, and the third joint is as long as the first and is segmented. The thorax, scutellum, and abdomen are blackish brown, and a golden yellow pubescence, very conspicuous in fresh specimens, covers a large area of the thorax dorsally, and extends on to the scutellum and abdomen; ventrally the abdomen has yellow and much shorter pubescence; the male genitalia is exposed. The legs are yellowish brown and the wings are similarly coloured.

Length.—Males, 5-6 mm.; females, 6-10 mm.

Hab.—New South Wales: Sydney, March and April, 1919, 30 males and 13 females, and November, 1919, 24 males and three females. Victoria: Melbourne, November and December, 1 male and 2 females taken by Mr. C. E. Cole. Tasmania: This locality is recorded by Macquart, but specimens are not represented from there in recent collections.

Note.—Specimens have been taken in copula during the spring and the autumn, and this places its sex relationship beyond dispute.

Metoponia prisca, Walker.

Chiromyza prisca, Walker, Ins. Saund. Dipt. i., 1852, p. 162.

Status.—A blackish species with yellow pubescence is referred here with considerable doubt. Walker's description agrees with the species described below about as well as *Chiromyza flavicaput* of the same author agrees with the previous species. Until the type is examined it is advisable to append Walker's name to this, the only species from Tasmania, the type locality, that conforms to the description in any way.

Description.—Male. The eyes have scanty pubescence and are contiguous; the front consists of ocellar and

antennal triangles, the former is black and the latter is covered with yellowish tomentum and pubescence; the antennæ are short, consisting of two equal basal joints, and the third is as long as the two basal joints united; the face recedes and has yellow tomentum and lateral pubescence. The thorax and the base of the scutellum are black with the shoulder spots and apical margin of the scutellum yellowish, the latter markings extend on to the thorax; no other markings are perceptible; the pubescence is yellow and depressed. The abdomen is black-brown with yellow pubescence. The legs are yellowish, stained with black on the tibiæ and tarsi. The wings are light grey, a little darker along the anterior half.

Female. The head is black and the eyes are widely separated; the antennæ are similar to those of the male, but the third joint is a little longer than the basal joints united. The thorax is black, similar to the male, but with the markings more extended and showing tendencies to approach those of *Xenomorpha australis*, Macquart described below. The scutellum is yellow. The abdomen is black with the apex of most of the segments bordered conspicuously brown. The legs have the base of the segments yellowish, otherwise they are much stained with fuscous.

Length.—Male 5-6 mm.; female 10 mm.

Hab.—Tasmania: Cradle Mountain, 13 males and 10 females, January, 1917; Wynyard, 1 male, 2nd February, 1916; Mt. Wellington, 1 male, 9th January, 1919.

Note.—The resemblance of this species to *Xenomorpha australis*, Macquart, is remarkable; few points other than that of venation can be found to separate them.

Genus Xenomorpha, Macquart.

Xenomorpha, Macquart, Dipt. Exot. i. 1, 1838, p. 193; and i. 2, 1839, p. 190.

Metoponia, White (nec Macquart), P.L.S. N.S.W., xli., 1916, p. 74.

Type.—*Xenomorpha leptiformis*, Macquart; Brazil.

Synonymy.—White mistook the characters of the genus *Metoponia*, stating that it has four posterior veins, and thus he treated *Xenomorpha* as a synonym of it.

Characters.—Until the study of the species of the world is undertaken it seems advisable to keep *Xenomorpha* as a generic name for the Australian species of *Beridinæ* with four posterior veins and without scutellar spines.

Key to the Species of Xenomorpha.

1. A non-metallic species with the antennæ short, the third joint short. *australis.*
   A species with a metallic thorax and the antennæ with the two basal joints minute, the third joint long, in proportion, and swollen. *grandicornis, sp. nov.*

Xenomorpha australis, Macquart.

Text fig. 2.

Xenomorpha australis, Macquart, Dipt. Exot., suppl. 4, 1850, p. 54, pl. iii., fig. 7. *Id.*, Williston, Trans. Ent. Soc. Phil., xv., 1888, p. 244.

Metoponia australis, White, P.L.S. N.S.W., xli., 1916, p. 75.

? *Chiromyza vicina*, Bigot, Ann. Soc. Ent. France (5), ix., 1879, p. 200.

? *Metoponia vicina*, Kertesz, Cat. Dipt. iii., 1908, p. 145.

Synonymy.—Macquart's *X. australis*, described from the East Coast of Australia, and Bigot's *C. vicina*, queried from Australia, may belong to the same species. Until the types are examined it will be impossible to determine if this is the case, and indeed Bigot's species may belong to quite a different genus.

The species described below is probably correctly identified and is the only form obtained in numbers and in sufficiently good condition to warrant a description. There seem to be a number of specimens belonging to this genus, but most of them are represented by specimens which are inferior in condition, and may ultimately prove not to be distinct.

Description.—Male. Although black, a covering of yellowish depressed pubescence gives this insect the appearance of being greyish. The eyes have scanty yellowish pubescence; the front is linear and widens above the antennæ and at the ocelli into triangular areas; the pubescence on the ocellar triangle is black and on the antennal triangle yellow; the antennæ are yellow, stained more or less with black on the two basal joints, and the third joint is as long as the two basal joints together; the proboscis is yellow; the face is very receding and has sparse whitish pubescence at the sides, and is covered with light grey tomentum which extends on to the frontal triangle. The thorax above has two faint reddish brown stripes which widen anteriorly, merge into two large shoulder spots and converge towards the scutellum, near which they disappear, the pubescence of the dorsum is yellowish and that of the

venter whitish. The scutellum is black and has yellow pubescence. Other but indistinct markings are present on the thorax and scutellum, and they appear to be remains of lateral thoracic stripes which extend on to the scutellum. The abdomen has the first segment inconspicuously margined apically with reddish brown, and the genitalia is black but more or less tipped with reddish brown; the pubescence is more or less depressed, yellow, and with lighter and darker pubescence in places. The legs are brownish at the base and apex of the segments, and have yellowish pubescence. The wings are light grey and the halteres are yellow.

Female. Black with the pubescence mostly depressed and yellow. The eyes are widely separated and have scattered pubescence; the front has yellowish tomentum and mostly brownish pubescence; it has also a deep median furrow on each side of which, half-way between the ocelli and antennæ, there is a prominence with yellow pubescence. The antennæ are reddish and are only very slightly stained black on the basal segments which have black hair; the length of the third joint is equal to that of the two basal joints united. The proboscis is reddish and the receding face has yellow tomentum and hairs. The thorax has light shoulder spots from which run a pair of median stripes and a pair of lateral stripes; the median stripes become more or less fused towards the scutellum, but the darker interval separating them is still traceable; the lateral stripes meet the median and run on to the scutellum, which is otherwise brown with a black apical tip. The abdomen is similarly coloured to that of the male and most of the segments have an inconspicuous apical brown margin, and the apical segments are much attenuated. The legs have the basal half of the segments yellowish. The wings and halteres are as in the male.

Length.—Male, 10 mm.; female, 13-15 mm.

Hab.—Victoria: Gisborne, 5 males and 4 females, collected by G. Lyell.

Xenomorpha grandicornis, *sp. nov.*

Text fig. 3.

Description.—In general appearance this species is similar to *Actina incisuralis*, Macquart. The antennæ will distinguish it from any other *Beridina* known.

Male. The head is black and the eyes are widely separated and pubescent; the front is shining and has black pubescence and about half-way between the antennæ and the ocelli there is a transverse impression from which

run two parallel grooves to the ocelli and one median groove to the base of the antennæ. The antennæ have the first two joints short, small and equal, and the third joint is about four times as long as the two basal joints united, much swollen, cylindrical but slightly tapering apically, without segments, velvety black and bare of hairs. The face does not recede as in *N. australis*, and has black hairs. The thorax and scutellum are metallic blue and have black pubescence; on the shoulders and behind the wings there are yellowish markings. The abdomen is black with black pubescence, and the genitalia is reddish. The legs have the apex of the femora, and the base and apex of the tibiæ yellowish red; the first tarsal joints are more or less red. The wings are greyish.

Length.—Male 7 mm.

Hab.—Tasmania: Cradle Mountain (Pencil Pine Creek?), one male taken on the 17th January, 1917.

Genus Actina, Meigen.

Actina, Meigen, Klassif i., 1804, p. 116. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 49. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 77.

Type.—*Actina nitens*, Latrielle. ... ... Europe.

Characters.—The eyes are hairy and widely separated in both sexes; the scutellum has four spines; the abdomen consists of seven visible segments; the wings contain four posterior veins all issuing from the discal cell, and the anal cell is closed before the wing margin.

Key to the Species of Actina.

1. The two basal joints of the antennæ about equal. *victoriæ.*
   The first antennal joint about twice the length of the second. 2.
2. The scutellar spines always partly yellow at least; a species very variable in size. *incisuralis.*
   The scutellar spines always entirely metallic green; a very small species. *costata.*

The character used for *A. victoriæ*, Hill, in the above key is taken from the description of that species.

Actina incisuralis, Macquart.

Beris incisuralis, Macquart, Dipt. Exot., suppl. 2, 1847, p. 28; and suppl. 4, 1850, p. 42. *Id.*, Walker, List Dipt. B.M., v. suppl. 1, 1854, p. 12.

Beris filipalpis, Macquart, Dipt. Exot., suppl. 4, 1850, p. 41, Pl. iii., fig. 2, 1850.

Actina incisuralis, White, Proc. Roy. Soc. Tasm., 1914, p. 50. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 77.

?Beris fuscicentris, Macquart, Dipt. Exot., suppl. 4, 1850, p. 42. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 49. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 97.

?Beris nitidithorax, Macquart, Dipt. Exot., suppl. 4, 1850, p. 41, Pl. iii., fig. 3. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 49. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 97.

Synonymy.—It is possible that *Beris fuscicentris* and *B. nitidithorax*, both described by Macquart, may belong here; it will be noted that the reference to a figure given by Macquart under the former does not belong to that species but to *Stratiomyia nasuta*.

Hab.—Specimens have been examined from Queensland, New South Wales, South Australia, Western Australia, and Tasmania. The species has also been recorded from Victoria.

Actina costata, White.

Actina costata, White, Proc. Roy. Soc. Tasm., 1914, p. 51. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 77.

Hab.—This species is only known from Tasmania, and it can be taken in quantities on Mt. Wellington, about 2,000ft.

Actina victoria, Hill.

Actina victoria, Hill, P.L.S. N.S.W., xliv. (2), 1919, p. 450, figs. 1 a-c.

Status.—From the description this species appears more or less similar to *A. incisuralis*, White, but the basal joints of the antennæ are described as about equal in length.

Genus XANTHOBERIS, White.

Xanthoberis, White, P.L.S. N.S.W., xli., 1916, p. 75.

Type.—*Xanthoberis siliacea*, White.

... ... New South Wales.

Xanthoberis siliacea, White.

Xanthoberis siliacea, White, P.L.S. N.S.W., xli., 1916, p. 76, text fig. 2.

Genus Neoexaireta, Osten-Sacken.

Diphysa, Macquart, Dipt. Exot. i. 1, 1838, p. 172 (preoccupied). *Id.*, Walker, List Dipt. B.M., v. suppl. 1, p. 6.

Exaireta, Schiner, Verh. z.-b. Ges. Wien, xvii., 1867, p. 309 (preoccupied).

Neoexaireta, Osten-Sacken, Cat. Dipt. N. America, Edit. 2, 1878, p. 44. *Id.*, Enderlein, Zool. Anzeiger, xlii., 1913, p. 552, figs. 17-19. *Id.*, White, Proc. Roy. Soc. Tasm. 1914, p. 48. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 78.

Neoexaereta, Kertesz, Cat. Dipt., iii., 1908, p. 131.

Type.—*Xylophagus spiniger*, Wiedemann,
... ... Port Jackson.

Emendments.—Enderlein described this genus, after Macquart's figures, as having the radial vein (his r2-3) branching from the cubital (his r main stem) beyond the median cross vein, but Australian specimens have the radial vein branching interstatial with the median cross vein. Macquart's figures, and hence Enderlein's, show the scutellar spines to be conspicuously curved instead of straight or slightly curved and the antennæ differ considerably.

Characters.—The eyes are bare and separated in both sexes; the antennæ are moderately long, the third joint consisting of eight segments; the scutellum contains four spines; the abdomen consists of seven visible segments; the wings contain four posterior veins, the third of which does not reach the wing margin, and they all branch from the discoidal cell; also the wings are much marked with fuscous.

Neoexaireta spinigera, Wiedemann.

Text fig. 4.

Xylophagus spiniger, Wiedemann, Auss. Zweifl. ii., 1830, p. 618.

Diphysa spiniger, Macquart, Dipt. Exot. i. 1, 1830, p. 172. *Id.*, Walker, List. Dipt. B.M., iv., 1849, p. 1152.

Beris spinigera, Loew, Stett. Ent. Zeit., vii., 1846, p. 306.

Sargus spinigera, Kirby, Ann. Mag. Nat. Hist. (5) xiii., 1884, p. 457.

Neoexaireta spinigera, Froggatt, Australian Insects, 1907, p. 293. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 48. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 78. *Id.*, Hardy, Proc. Roy. Soc. Tasm., 1917, p. 63.

Beris albimaculata, Walker, List Dipt. B.M. i., 1848, p. 126.

Beris servillei, Macquart, Dipt. Exot. i. 1, 1838, p. 172, Pl. xxi., fig. 1; and suppl. 1, 1846, p. 47.

(For further references see Kertesz, Cat. Dipt. iii., 1908, p. 132.)

Hab.—A very common species which has been recorded from Queensland, New South Wales, Victoria, and Tasmania, and also from some of the Pacific Islands.

Subfam. Pachygasterinæ.

Characters.—The Australian species of this subfamily have short antennæ, the third joint of which is swollen, formed with a number of compact segments, and has a hair-like arista; the abdomen is formed with five visible segments, and the wings contain three posterior veins.

The four genera so far known to occur in Australia differ in the form of the scutellum which is normal and without spines in *Pachygaster*, is produced into a spine in *Lonchegaster*, has four spines in *Eraza*, and has many spines in *Wallacea*.

Genus Pachygaster, Meigen.

Pachygaster, Meigen, Ill. Mag. f. Ins., ii., 1803, p. 266.
Id., White, P.L.S. N.S.W., xli., 1916, p. 96.

(For synonymy see Kertesz, Cat. Dipt. iii., 1908, p. 9.)

Type.—*Nemotelus ater*, Panz. ... ... Europe.

Characters.—The antennæ are three jointed, and the third joint is bulbous and consists of several much compressed segments terminating in a long arista; the scutellum is without spines; the wings contain three posterior veins which issue from the discal cell.

Note.—White has a Tasmanian specimen of this genus in his collection, but he considered it to be a Lonchegaster with the spines broken or deformed; this specimen should now be in the British Museum, and probably belongs to the species described below. Later White recorded the genus from Victoria, but did not describe the species. Another species is represented by a specimen in the Macleay Museum from Mt. Kembla, New South Wales, but until further material is to hand it is not advisable to describe this or the many other new diptera in this old collection, most of which dates back fifty years and more.

The species described here is named after the late Arthur White.

Pachygaster whitei, sp. nov.

Pachygaster sp., Hardy, Proc. Roy. Soc. Tasm., 1917, p. 63.

? Pachygaster sp., White, P.L.S. N.S.W., xli., 1916, p. 97.

Description.—Female. Black; the antennæ are reddish; the femora and tibiæ are reddish, but are stained darker in parts; the tarsi are yellow.

The front is shining and a little punctate; two more or less parallel depressions contain the unevenly distributed punctures, and run from the ocellar tubercle towards the antennæ, ending at a deeper median depression situated a little before the antennæ. The eyes are bare. The thorax, scutellum, and abdomen are evenly and densely punctate dorsally, and the punctures are unevenly dense ventrally; all the punctures are small. The pubescence is silvery around the antennæ and mouth, elsewhere it is golden yellow; some very inconspicuous black pubescence can be seen on the front and elsewhere. The wings are hyaline and the veins are reddish and dusky yellowish. The halteres are yellow with black apices.

The male is similar to the female, but is more slender in build; the eyes are approximate, and the punctures on the body appear a little less uniformly and densely distributed; the legs are pale yellow, and the femora are stained with fuscous; the halteres are pale yellow.

Variation.—A female from Dunalley has the legs similar to those of the male.

Length.—Male, 4 mm.; female, $3\frac{1}{2}$-$4\frac{1}{2}$ mm.

Type.—The holotype ♀ was taken at Hobart on the 26th January, 1917, the allotype ♂ came from the same locality on the 29th December, 1917; both these specimens are in the Australian Museum. Two female paratypes are from Hobart on the 22nd January, 1916, and Dunalley 29th January, 1918, respectively. In all there are one male and three females taken in and around dwellings, three in the centre of Hobart and one in a farmhouse at Dunalley.

Hab.—Tasmania. The specimen recorded by White may belong to this species. The flight is similar to that of species belonging to the genus *Odontomyia*.

Genus Lonchegaster, White.

Lonchegaster, White, Proc. Roy. Soc. Tasm., 1914, p. 61.
Id., White, P.L.S. N.S.W., xli., 1916, p. 97.

Type.—*Lonchegaster armata*, White. ... ... Tasmania.

Characters.—The eyes are contiguous in the male and separate in the female; the scutellum is produced into a spine; and the wings contain three posterior veins. The genus differs from the *Platyniini* to which group it otherwise belongs according to Enderlein's keys (Zool. Anz., 1914), by the contiguous eyes of the male.

Lonchegaster armata, White.

Lonchegaster armata, White, Proc. Roy. Soc. Tasm., 1914, p. 62, fig. 7. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 97.

Note.—It appears that this insect has a superficial resemblance to *Parhygaster whitei*, from which it can be distinguished by the scutellum and the blue-black abdomen.

Hab.—Tasmania. A paratype is in the National Museum, Melbourne.

Genus Evaza, Walker.

Evaza, Walker, Proc. Lin. Soc. Lond., i., 1857, p. 109. *Id.*, Kertesz, Ann. Mus. Nat. Hung., iv., 1906, p. 277.

Type.—*Evaza bipars*, Walker. ... ... Borneo.

Evaza bipars, Walker.

Evaza bipars, Walker, Proc. Lin. Soc. Lond., i., 1857, p. 110, Pl. 6, fig. 2. *Id.*, Kertesz, Ann. Mus. Nat. Hung., iv., 1906, p. 284, Pl. 5, fig. 1.

Hab.—This species was described from Borneo, and reported since from New Guinea and New South Wales.

Genus Wallacea, Doleschal.

Wallacea, Doleschal, Nat. Tijdschr. Nederl. Ind. (4), iii. (xvii.), 1858, p. 82.

Type.—*Wallacea argentea*, Doleschal ... Ambonia.

Wallacea darwini, Hill,

Wallacea darwini, Hill, P.L.S. N.S.W., xliv., 1919, p. 460, figs. 7 a-c.

Subfam. Lophotellinæ.

Characters.—This subfamily contains species with three posterior veins issuing from the discal cell; the scutellum without spines; and the last segment of the antennæ ribbon-like.

Note.—A single Australian representative was described by Enderlein from a specimen with broken wings, and the assumption that there are only three posterior

veins present (i.e., the median is two branched in the terms used by Enderlein) requires confirmation.

The Australian Museum and the Macleay Museum have, between them, about thirty unidentified specimens, many of which are referable to this and the next subfamily, but unfortunately the specimens in the Australian Museum are not in a suitable condition to be studied with advantage, and those in the Macleay Museum do not seem to belong to the described forms. There is, however, sufficient material with diversity of characters to warrant a special warning against the assumption of venational characters made by Enderlein.

Genus Peratomastix, Enderlein.

Peratomastix, Enderlein, Zool. Anzeiger, xliii., 1914, p. 311, fig. 16.

Type.— *Peratomastix australis*, Enderlein.
... ... New South Wales.

Peratomastix australis, Enderlein.

Peratomastix australis, Enderlein, Zool. Anzeiger, xliii., 1914, p. 311.

Subfam. Hermetiinæ.

Characters.—This subfamily differs from the previous chiefly in the presence of a fourth posterior vein.

Note.—The material to hand is not in sufficient abundance or in sufficiently good condition to enable the species represented to be studied with advantage. Brauer's genus *Lagenosoma* is considered to be identical with Walker's genus *Massicyta*, and although this appears to be correct further information on the subject is desirable.

Genus Massicyta, Walker.

Massicyta, Walker, Proc. Lin Soc. Lond., i., 1857, p. 8, Pl. i., fig. 1. *Id.*, Enderlein, Zool. Anz., xliv., 1914, p. 8.

Lagenosoma, Brauer, Denkschr. Akad. Wien., xliv., 1882, p. 81.

Type of *Massicyta.*—*M. bicolor*, Walker ... Singapore.

Type of *Lagenosoma.*—*L. picta*, Brauer ... Cape York.

Massicyta picta, Brauer.

Lagenosoma picta, Brauer, Denkschr. Akad. Wien., xliv, 1882, p. 81.

Massicyta dispar, Brauer.

Lagenosoma dispar, Brauer, Denschr. Akad. Wien., xliv., 1882, p. 82.

Massicyta propinqua, Brauer.

Lagenosoma propinqua, Brauer, Denschr. Akad. Wien., xliv., 1882, p. 82.

Genus Hermetia, Latrielle.

Hermetia, Latrielle, Hist. Nat. d. Crust. et Ins., xiv., 1804, p. 338.

Type.—*Hermetia illucens*, Latrielle. ... ... America.

Hermetia pallidipes, Hill.

Hermetia pallidipes, Hill, P.L.S. N.S.W., xliv., 1919, p. 454, text figs. 3 a-b.

Emendments:—A letter received from Mr. Hill contains the following note.—"Re *Hermetia pallidipes*; I have re-examined the type with the following results.—The third joint of the antennæ has six annulations visible; what I have shown as an outstanding tuft of hairs may arise from a very short and very obscure annulation (the seventh), but this could only be ascertained by examination of a balsam preparation. The groove below the same joint covers segments 4, 5, and 6 in both sexes. The wing of the male is correctly drawn; in the female there is a space equal to about twice the width of the intermediate vein between it and its junction with the radial vein."

From this it becomes apparent that Mr. Hill's species is placed in its correct genus, and, therefore, must not be confused with several closely allied species in various collections which differ in the antennal groove and other particulars.

Four specimens in the Macleay Museum, from Cape York, also belong to the genus *Hermetia*, and may be identical with this species.

Subfam. Sargarinæ.

Note.—Enderlein renamed this subfamily *Geosargarina*, but the generic name was changed on an alleged preoccupation which was not sustained, and consequently the origial subfamily name must be restored.

Key to the Genera of the Sargarinæ.

1. Scutellum without spines, bright metallic species. *Sargus.*

Scutellum with spines, black species. *Acanthasargus.*

Genus Sargus, Fabricius.

Sargus, Fabricius, Suppl. Entomol. Syst., 1798, p. 549. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 94.

Type.—*Sargus cuprarius*, Fabricius ... ... Europe.

Sargus meridionalis, White.

Sargus meridionalis, White, P.L.S. N.S.W., xli.. 1916, p. 95.

Sargus gselli, Hill.

Sargus gselli, Hill, P.L.S. N.S.W., xliv., 1919, p. 459, fig. 6 a-c.

Genus Acanthasargus, White.

Acanthasargus, White, Proc. Roy. Soc. Tasm., 1914, p. 60. *Id.*, White, P.L.S. N.S.W., xli., p. 95.

Type.—*Acanthasargus pallustris*, White ... Tasmania.

Acanthasargus pallustris, White.

Acanthasargus pallustris, White, Proc. Roy Soc. Tasm., 1914, p. 60, fig. 6. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 96.

Acanthasargus gracilis, White.

Acanthasargus gracilis, White, P.L.S. N.S.W., xli., 1916, p. 98.

Subfam. Clitellarinæ.

Note.—Enderlein included the *Antissini* under this subfamily and created a new tribe *Abavini*.

Key to the Tribes of the Clitellarinæ.

1. The scutellum without spines. *Abavini.*
   The scutellum with spines. 2.
2. The scutellum with two spines. *Clitellariini.*
   The scutellum with four or more spines. *Antissini.*

Tribe Clitellariini.

Key to the Genera of the Clitellariini.

1. The thorax with a stout spine on each side; the antennæ with a long dense fringed style. *Negritomyia.*
   The thorax without such spines; the antennæ without a fringed style. 2.
2. The antennæ with an arista; the posterior legs with the first joint of the tarsi longer than the tibiæ. *Geranopus.*
   The antennæ without an arista. 3.

3. The antennæ very long and slender, about five times the length of the head. *Elissoma.*
The antennæ not slender, about twice the length of the head. *Ophiodesma.*

Genus Negritomyia, Bigot.

Nigritomyia, Bigot, Ann. Soc. Ent. France (5) vii., Bull. 1877, p. lxxiv.

Negritomyia, Bigot, Ann. Soc. Ent. France (5) ix., 1879, p. 190. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 82.

(For further references see Kertesz, Cat. Dipt. iii., 1908, p. 16.)

Type.—*Ephippium maculipennis*, Macquart. . Manilla.

Negritomyia albitarsis, Bigot.

Ephippium albitarsis, Bigot, Ann. Soc. Ent. France (5) ix., 1879, p. 207. *Id.*, Froggatt, P.L.S. N.S.W., xxi., 1896, p. 84, Pl. ix., figs. 12-13. *Id.*, Froggatt, Australian Insects, 1907, p. 293.

Negritomyia albitarsis, White, P.L.S. N.S.W., xli., 1916, p. 83. Text fig. 4. *Id.*, Hill, P.L.S. N.S.W., xliv., 1919, p. 452. Text fig. 2.

Hab.—This is a common species from the northern parts of Australia and from New Guinea. There are seven specimens in the Macleay Museum from Queensland.

Genus Geranopus, White.

Geranopus, White, P.L.S. N.S.W., xli., 1916, p. 84.

Type.—*G. purpuratus*, White. ... ... Victoria.

Geranopus purpuratus, White.

Geranopus purpuratus, White, P.L.S. N.S.W., xli., 1916, p. 85. Text figs. 5 and 6.

Genus Ellissoma, White.

Elissoma, White, P.L.S. N.S.W., xli., 1916, p. 86.

Type.—*Elissoma lauta*, White. ... ... Victoria.

Elissoma lauta, White.

Elissoma lauta, White, P.L.S. N.S.W., xli., 1916, p. 87.

Genus Ophiodesma, White.

Ophiodesma, White, P.L.S. N.S.W., xli., 1916, p. 88.

Type.—*Odontomyia flavipalpis*, Macquart. ... ... New Holland.

Ophiodesma flavipalpis, Macquart.

Pl. VIII., fig. 1.

Odontomyia flavipalpis, Macquart, Dipt. Exot., suppl. 4, 1850, p. 49.

Ophiodesma flavipalpis, White, P.L.S. N.S.W., xli., 1916, p. 89. Text fig. 7.

Hab.—Eleven specimens in the Macleay Museum are labelled from Queensland, New South Wales, and Western Australia; the species has already been recorded from Victoria, and therefore it is probable that it will be found throughout the whole of the mainland of Australia. Two specimens, one of each sex, were taken at Blackheath, New South Wales, during November, 1919.

Tribe Abavini.

Genus Anacanthella, Macquart.

Anacanthella, Macquart, Dipt. Exot., Suppl. 5, 1855, p. 38. *Id.*, Enderlein, Zool. Anzeiger, xliv., 1914, p. 23.

Id., White, P.L.S. N.S.W., xli., 1916, p. 80.

Type.—*Anacanthella splendens*, Macquart.... Adelaide.

Status.—This genus is placed in this position by Enderlein, who makes interesting though speculative remarks concerning it. No recent specimens of the species are known.

Anacanthella splendens, Macquart.

Anacanthella splendens, Macquart, Dipt. Exot., suppl. 5, 1855, p. 39, Pl. i., fig. 8. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 80.

Tribe Antissini.

Key to the Genera of the Antissini.

1. The scutellum with four or six normal spines; the male with the costa of the wings greatly inflated; the antennæ as long as the head. *Lecomyia.*
   The scutellum with six rudimentary spines; the costa of the wings normal. 2.
2. The antennæ much shorter than the head. *Antissa.*
   The antennæ twice as long as the head. *Antissella.*

Genus Lecomyia, White.

Lecogaster, White, Proc. Roy. Soc. Tasm., 1914, p. 53 (preoccupied). *Id.*, White, P.L.S. N.S.W., xli, 1916, p. 79.

Lecomyia, White, Proc. Roy. Soc. Tasm., 1916, p. 260.

Type.—*Lecogaster cærulea*, White ... ... Tasmania.

Note.—This genus is apparently well represented in Australia; there are four undescribed species as well as the two described represented in the Macleay Musum.

Key to the Species of the Genus Lecomyia.

1. The thorax blue; the scutellum normal, lying in the same plane as the thorax; the wings hyaline. *quinquecella.*

   The thorax black, the scutellum upraised, not lying in the same plane as the thorax; the wings with a black spot at the middle of the costal margin. *cyanea.*

Lecomyia quinquecella, Macquart.

Beris quinquecella, Macquart, Dipt. Exot., suppl. 1, 1846, p. 47, Pl. v., fig. 2. *Id.*, Walker, List Dipt. B.M., v. suppl. 1, 1854, p. 12. *Id.*, White, Proc. Roy Soc. Tasm., 1914, p. 49. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 97.

Lecogaster cærulea, White, Proc. Roy. Soc. Tasm., 1914, p. 54. Text fig. 5. *Id.*, P.L.S. N.S.W., xli., 1916, p. 79.

Synonymy.—White placed *Beris quinquecella*, Macquart, amongst his doubtful species, but Macquart's illustration was undoubtedly intended to represent this species, as the inflation of the costa, although shown small in the drawing, leaves no doubt concerning the generic position, and the locality given is Tasmania.

Emendments:—In Macquart's description and illustrations, the scutellum is described with four spines, and correctly illustrated with eight, and the five posterior cells described are erroneously drawn as four. Allowing for these corrections, Macquart's description and drawing conform to this species.

Lecomyia cyanea, White.

Lecogaster cyanea, White, P.L.S. N.S.W., xli., 1916, p. 79. Text fig. 3.

Genus Antissa, Walker.

Antissa, Walker, List Dipt. B.M., v. suppl. 1, 1854, p. 63. *Id.*, Brauer, Denkschr. Akad. Weiss. Wien., xliv., 1882, p. 71. *Id.*, Brauer, Offines schr., 1883, p. 7. *Id.*, Osten-Sacken, Berl. Ent. Zeit., xxvi., 1882, p. 373. *Id.*, Enderlein, Zool. Anzeiger, xliv., 1914, p. 11. *Id.*, White, P.L.S. N.S.W., 1916, p. 81.

Type.—*Antissa cuprea*, Walker ... Western Australia.

Antissa cuprea, Walker.

Clitellaria cuprea, Walker, List Dipt. B.M., iii., 1849, p. 524.

Antissa cuprea, Walker, List Dipt. B.M., v. suppl. 1, 1854, p. 63. *Id.*, Braur, Offines schr., 1883, p. 7. *Id.*, White, P.L.S. N.S.W., xli, 1916, p. 81.

Genus Antissella, Walker.

Antissella, White, Proc. Roy. Soc. Tasm., 1914, p 52. Text fig. 4. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 81.

Type.—*Beris parvidentata*, Macquart ... Tasmania.

Status.—White placed the genus *Antissella* near *Antissa*, but neither this nor *Anacanthella* has been recognised since they were described, and also the descriptions afford insufficient data to settle relationships. The three genera need further study.

Antissella parvidentata, Macquart.

Beris parvidentata, Macquart, Dipt. Exot., suppl. 4, 1894, p. 40, Pl. iii., fig. 1.

Antissella parvidentata, White, Proc., Roy. Soc. Tasm., 1914, p. 52. Text fig. 4. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 81.

Subfam. Stratiomyiinæ.

Notes.—The Australian species of this subfamily are placed in one genus, and from their descriptions are liable to be considerably confused. Before new material can be dealt with much further research is needed, especially with reference to the types. The present study is based upon numerous examples with the intention of finding the limits of species and specific variation, and thus laying the basis for further study on structural rather than colour characters.

Where no structural characters have been found to separate species undoubtedly distinct, colour characters have been taken into account rather for a guide than for final conclusions. No structural characters have been found to separate *O. carinifacies*, Macquart, *O. sydneyensis*, Schiner, and some forms of *O. decipiens*, Guerin, and yet they are apparently distinct species that are found not to merge into each other when long series are examined. *O. decipiens*, Guerin, will be found to comprise a large number of variations, and although many of these at first sight appear distinct, they cannot be separated when series of considerable length are examined.

The writer's convictions of the specific value of the various descriptions will be found embodied in the synonymy and the remarks made thereon. Until the types are examined, and the suggestions made in this work are confirmed or corrected, the identification of the majority of the species will be unsatisfactory.

Genus Odontomyia, Meigen.

Eulalia, Meigen, Nov. Class. 1800, p. 21 (name not permissible). *Id.*, Kertesz, Cat. Dipt., iii., 1908, p. 62 (which see for synonymy).

Odontomyia, Meigen. Ill. Mag. f. Ins., ii., 1803, p. 265. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 55. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 90. *Id.*, Hardy, Proc. Roy. Soc. Tasm., 1917, p. 61.

Type.—*Odontomyia ornata*, Meigen ... ... Europe.

Characters.—The species of this genus contain a much depressed five segmented abdomen and a scutellum with two spines (aberrant specimens in which these spines are absent or deformed are rare and do not exceed one in five hundred). The antennæ have the third joint longer than the two basal joints united, and it terminates in a short style. The wings contain four posterior veins rising from the discal cell.

Key to the Species of Odontomyia.

1. The scutellar spines below (not at the apical margin of) the scutellum and inconspicuous. The antennæ have the two basal joints united nearly as long as the third. *apertanea.*

   The scutellar spines conspicuous and situated at the apical margin of the scutellum. The antennæ with the two basal joints together much shorter than the third. 2.

2. The scutellar spines very strong and curved upwards so that they have their apices pointing almost perpendicular to the abdomen. *scutellata.*

   The scutellar spines normal, their axis lying in a plane about parallel to the abdomen. 3.

3. The scutellar spines long and straight and as wide apart as in Plate VIII., fig. 4. The abdominal sidespots are large, sometimes almost confluent, generally triangular. The face always black. *laterimaculata.*

   The scutellar spines short and closer together, never wider apart than as illustrated on Pl. VIII., fig. 6. If the abdomen has side-spots they are generally small, thin, and quadrangular elongate; if the side-spots are large they are generally confluent. 4.

4. The abdomen with side-spots. 5.
The abdomen with side margins yellow or green. *decipiens.*

5. The face black, generally narrowly margined yellow. *carinifacies.*
The face yellow. *sydneyensis.*

Note.—*O. hunteri*, Macleay, and *O stricta*, Erichson, are not included in the above key; they may be distinct species or varieties, or they may be identical with any of the other species, but no specimens are to hand that can in any way be associated with their respective descriptions. The two species described by Mr. Hill have their scutellar spines inadequately described, and therefore their position in relation to the above key cannot be ascertained at present.

Odontomyia scutellata, Macquart.

Pl. VIII., fig. 2 and 3.

Odontomyia scutellata, Macquart, Dipt. Exot., suppl. 1, 1846, p. 52, Pl. v., fig. 7. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 59. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 91.

Stratiomyia scutellata, Walker, List Dipt. B.M., v. suppl. 1, 1854, p. 55.

Status.—No doubt can exist about the correct identification of this species. White took it just prior to the time he left Tasmania, but one specimen, in bad preservation, was in the Tasmanian Museum collection; later several isolated specimens were taken, and more recently, when more was known about their habits, a long series was obtained.

Hab.—New South Wales, Victoria, and Tasmania.

Odontomyia laterimaculata, Macquart.

Pl. VIII., fig. 4.

Odontomyia laterimaculata, Macquart, Dipt. Exot., suppl. 4, 1850, p. 49. ? *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 58 (male only). ? *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 94 (male only).

Status.—White's identification of this species requires confirmation. White identified it as the larger of two similar species, both of which occur in Tasmania as well as on the mainland of Australia. The two species, *O. carinifacies*, Macquart, from Tasmania, and *O. laterimaculata*, Macquart, from Australia, are not to be separated by Macquart's descriptions; both are described from the male,

and the typical male of *O. carinifacies*, Macquart, as identified by White, is not represented in any recent collection from the type locality, and this suggests that White transposed the name, if indeed Macquart's species are really distinct. The key to the solution lies in the fact that White's *O. laterimaculata*, male, has the scutellar spines wider apart and longer than in those identified by White as *O. carinifacies*. An examination of the structure of Macquart's types will easily determine if White transposed the names.

The specimen identified by White as *O. laterimaculata*, female, is not the female of his male, as the species has been taken in copula on several occasions in Tasmania. On this account White's female is referred to *O. sydneyensis*, Schiner, as the description conforms to that species, nevertheless the form has not been seen by me from that State.

Hab.—Tasmania, Victoria and New South Wales.

Type.—The male specimen upon which White identified the species is in the Australian Museum.

Odontomyia carinifacies, Macquart.

Pl. VIII., fig. 5.

Odontomyia carinifacies, Macquart, Dipt. Exot. Suppl. 4, 1850, p. 51. ? *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 57. ? *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 94.

Status.—White identified this as the smaller of two similar species, but Macquart's description is not to be separated from *O. laterimaculata*, Macquart, under which species further remarks are supplied.

The typical male of the species identified by White is not known in recent collections, but a mountain form described below as a variety is much smaller and has the male with the colour pattern similar to that of the female.

The only male that can be associated with the typical form has a distinctive colour pattern, and is described, apparently for the first time, under the second variety name below.

Odontomyia carinifacies, var. minima, var. nov.

Pl. VIII., fig. 7.

Description.—A small mountain variety of *O. carinifacies* (as identified by White) occurs on Mt. Wellington, Hobart, Tasmania, at about the altitude of 2,000ft. The males are common and the females scarce, and on two occasions specimens have been taken in copula.

The abdomen is shorter and more compact than in the typical form, and is illustrated on Pl. VIII., fig. 7, which figure was drawn from the holotype var.

Length never exceeding 8 mm., and averaging 7½ mm.

Odontomyia carinifacies, var. grandimaculata, var. nov.

Pl. VIII., fig. 6.

Status.—A male of average size, but remarkably different in colour and spots on the abdomen, taken in abundance with the typical females, is here given a special form name. It is possible that this variety represents a distinct species, but without a female of the variety or a male of the typical form it is not advisable to separate them.

Description.—The abdomen and scutellum are illustrated on Pl. VIII., fig. 6; the abdomen is black with large reddish confluent or almost confluent side-spots which are generally confluent on the extreme lateral edges. In other respects the variety is similar to the typical form, but the legs may be black or reddish, or may contain both these colours.

Length.—8-10 mm.

Hab.—Tasmania: Bream Creek, February, 1918, 36 specimens; Garden Island Creek, December, 1916, 1 specimen; Lymington, December, 1916, 3 specimens.

South Australia: Two specimens in the Macleay Museum are labelled from this State and conform to the variety.

Note.—Four stray specimens were taken at Lymington and Garden Island Creek, and later specimens were met with in large quantities at Bream Creek, where large series of the male variety and of the female typical form were taken. A second visit was made to Bream Creek for the purpose of securing a pair in copula and thus definitely ascertaining the sex relationship, but unfortunately the weather turned cloudy and the object of the trip was not attained, but a second and longer series of the two forms was taken.

Odontomyia sydneyensis, Schiner.

Odontomyia sydneyensis, Schiner, Nov. Reise, Dipt., 1868, p. 60.

? Odontomyia laterimaculata, ♀ White, Proc. Roy. Soc. Tasm., 1914, p. 58. ? *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 94.

Synonymy.—*O. laterimaculata*, Macquart (as identified by White), has been taken in copula on several occasions

in Tasmania, and the female has invariably a black face and front, not fulvous, and is as large as the male. A smaller specimen with a yellow face and front is not represented in many collections, but conforms to the description of *O. sydneyensis*, Schiner, and White's female record of *O. laterimaculata* probably belongs here, but doubt must be placed upon its identity with *O. sydneyensis*, Schiner, as this species is not represented from Tasmania in any collection.

Status.—This species, described by Schiner, was entirely overlooked by White, and the remark under the description given by Schiner to the effect that it seems to be related to *O. laterimaculata*, Macquart, suggests that the *O. carinifacies* of White is the true *O. laterimaculata* of Macquart. Until the status of each of these various species is inquired into and established by examination of the type material the determination of the species of the *Odontomyia* in Australia will remain unsatisfactory.

Hab.—New South Wales, Sydney.

Odontomyia decipiens, Guerin.

Pl. VIII., fig. 8 and 9.

Oxycera decipiens, Guerin, Voy. Coq. zool. 2, ii., 1830, p. 291.

Hermione decipiens, Kertesz, Cat. Dipt. iii., 1908, p. 33.

Odontomyia regisgeorgii, Macquart, Dipt. Exot. i., 1, 1838, p. 186. *Id.*, White, P.L.S. N.S.W., xli., 1916, pp. 90 and 100.

Stratiomys regisgeorgii, Walker, List. Dipt. B.M., v. suppl. 1, 1854, p. 56.

Odontomyia carinata, Macquart, Dipt. Exot., suppl. 1, 1846, p. 52. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 59; and 1916, p. 260. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 90.

Stratiomys carinata, Walker, List. Dipt. B.M., v. suppl. 1, 1854, pp. 56 and 312.

Odontomyia stylata, Macquart, Dipt. Exot., suppl. 2, 1847, p. 39; and suppl. 4, 1850, p. 52. *Id.*, Froggatt, Australian Insects, 1907, p. 294. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 56. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 90.

Stratiomys stylata, Walker, List. Dipt. B.M., v. suppl. 1, 1854, p. 56.

Odontomyia ialemus, Walker, List Dipt. B.M., iii., 1849, p. 535. *Id.*, Bigot, Ann. Soc. Ent. France (5), ix., 1879, p. 186. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 90.

Stratiomys ialemus, Walker, List. Dipt. B.M., v. suppl. 1, 1854, pp. 54 and 312.

Odontomyia amyris, Walker, List. Dipt. B.M., iii., 1849, p. 535. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 56. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 91. *Id.*, Hardy, Proc. Roy. Soc. Tasm., 1917, p. 62.

Odontomyia subdentata, Macquart, Dipt. Exot., suppl. 4, 1850, p. 49. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 260. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 92. *Id.*, Hardy, Proc. Roy. Soc. Tasm., 1917, p. 62.

Odontomyia rufifacies, Macquart, Dipt. Exot., suppl. 4, 1850, p. 51. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, pp. 55, 56, and 74. *Id.*, White, P.L.S. N.S.W., 1916, p. 90.

Odontomyia marginella, Macquart, Dipt. Exot., suppl. 4, 1850, p. 52. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 57; and 1916, p. 260. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 93.

Odontomyia annulipes, Macquart, Dipt. Exot., suppl. 4, 1850, p. 52. *Id.*, White, P.L.S. N.S.W., xli., 1916, pp. 90 and 92.

Odontomyia picea, Walker, Ins. Saund. Dipt. i., 1850, p. 78. *Id.*, White, P.L.S. N.S.W., xli., 1916, pp. 90 and 100.

Stratiomys picea, Walker, List. Dipt. B.M., v. suppl. 1, 1854, p. 55.

Odontomyia kirchneri, Jaennicke, Abh. Senck. Nat. Ges., vi., 1867, p. 323.

Odontomyia pectoralis, Thomson, Eug. Resa, Dipt., 1869, p. 455.

Synonymy.—The above synonymy includes all descriptions that come within the probable variation of the common and widely dispersed species of *Odontomyia* previously known as *O. amyris*, Walker. When the types are examined together with a long series of new specimens,

this long list may be found to contain more than one species.

The scutellar spines of this species are identical with those of *O. carinifacies*, Macquart, and *O. sydneyensis*, Schiner, in the larger specimens, but smaller and distinctive spines are to be found in small specimens, and these range in size to normal spines, making it impossible to form specific differences on this character.

Traces of a tibial ring, often met with in other species, appear rare in *O. decipiens*, Guerin, and no value can be placed on this or the face colouration for identification purposes.

Guerin's description of *O. decipiens* is typical of the male described by White as *O. amyris*, Walker. There can be little doubt that it is correctly identified.

O. regisgeorgii, Macquart, is described from a mutilated specimen, and probably belongs here.

O. subdentata, Macquart, probably belongs here, and White's record for Tasmania certainly belongs here, but a specimen with the black carina described by Macquart is not known in any recent collection.

O. rufifacies, Macquart, undoubtedly belongs here.

O. marginella, Macquart, reads like that of *O. opertanea*, White, and differs chiefly in the underside of the abdomen and the legs. The black face makes it somewhat doubtful if the species is correctly placed here, but the "Thorax with light green reflections and yellow pile" and the "Scutellum with little spines" prevent it being identified with any of the other species known.

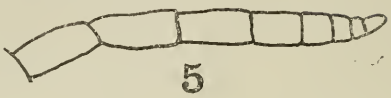
O. annulipes, Macquart, is distinctive in the two sexes, the male (like *O. marginella*, Macquart) reads similar to White's *O. opertanea*, and indeed may be identical with it, but the female is referable to the form described under the name *O. amyris*, Walker, by myself in 1917.

O. picea, Walker, apparently belongs here. White stated that the type in the British Museum is in too bad a condition for determination.

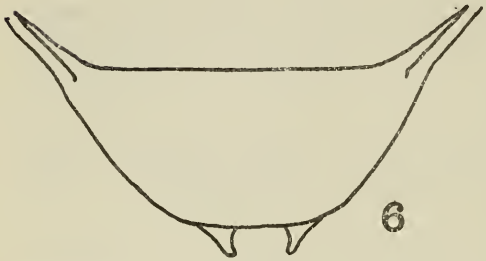
O. kerchneri, Jaennicke, and *O. pectoralis*, Thomson, were overlooked by White. Their descriptions conform to that of *O. decipiens*, Guerin.

Odontomyia opertanea, White.

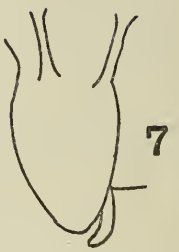
Text figs. 5, 6, and 7.



5



6



7

Odontomyia opertanea, White, P.L.S. N.S.W., xli., 1916, p. 93. *Id.*, Hardy, Proc. Roy. Soc. Tasm., 1917, p. 62.

Status.—I am indebted to Mr. C. E. Cole for the loan of a specimen of this species from Ringwood, Victoria, and this is identical with the Tasmanian specimens recorded in 1917.

Description.—The following description is taken from the Tasmanian specimens, and is supplementary to White's description :—

Female. The antennæ are longer than in the other Australian species; the two basal joints are equal, and together are almost as long as the third. The scutellar spines are small, inconspicuous, and placed under the scutellum instead of on the apical border.

It is a black species with slight tracings of golden tomentum on the head and the thorax, a small yellowish area round the oral opening, the legs and wing veins yellowish, the abdomen green ventrally, and dorsally bordered very narrowly green, which colour shows signs of turning yellow in places, in addition to which there is a pair of very small lateral spots confluent with the border on the 2nd, 3rd and 4th segments, and the apex of the halteres green.

Length.—7-8.5 mm.

Hab.—Tasmania: Cradle Mountain, two females, 17th January, 1917. Victoria: Ringwood, one female. New South Wales: Blue Mountains, one female in the Macleay

Museum. Western Australia: King George Sound, two females in the Macleay Museum.

Odontomyia pallida, Hill.

Odontomyia pallida, Hill, P.L.S. N.S.W., xliv., 1919, p. 456. Text figs. 4 a-b.

Status.—It is impossible without a proper description of the scutellar spines to ascertain if the relationship of this species is near *O. decipiens*, Guerin, which seems probable, as there is nothing in the description to separate it from that variable species.

Odontomyia obscura, Hill.

Odontomyia obscura, Hill, P.L.S. N.S.W., xliv., 1919, p. 457. Text fig. 5 a-b.

Status.—The illustration of this species conforms to *O. laterimaculata*, Macquart, and indeed the description reads remarkably similar to a variation of the same, but differs in some colour markings.

It is possible that this may be the long missing *O. hunteri*, Macleay, which probably came from somewhere on the northern coast of Australia, and also appears to conform to *O. laterimaculata*, Macquart.

Odontomyia hunteri, Macleay.

Stratiomys hunteri, Macleay, in King's Narr. Surv. Austr. ii., 1827, p. 467.

Odontomyia hunteri, White, P.L.S. N.S.W., xli., 1916, p. 92.

Status.—The type of this species apparently cannot be traced. A specimen corresponding to the description is not to be found in the Australian Museum nor the Macleay Museum, and it is advisable to hold over the identification until more material is available.

It could be *O. laterimaculata*, Macquart (as identified by White), which sometimes has only two basal pairs of spots present. White included the reference under his *O. amyris*, Walker, now *O. decipiens*, Guerin, stating that a rare form has two pairs of spots, but as no special colour is given for the face in the original description this would probably be black and not yellow.

The description of *O. obscura*, Hill, also conforms to the *O. laterimaculata* variety referred to above, and as Macleay's species probably came from somewhere on the northern coast of Australia it is possible that *O. obscura*, Hill, belongs here.

Odontomyia stricta, Erichson.

Odontomyia stricta, Erichson, Arch. f. Naturf., viii., i., 1842, p. 272. *Id.*, White, P.L.S. N.S.W., xli., 1916, pp. 90 and 100.

Stratiomys stricta, Walker, List. Dipt. B.M., v. suppl. 1, 1854, p. 55.

Status.—This description appears confused, and no specimen is known to agree with it. Possibly the description was taken from more than one species, which would account for the apparent mixture of characters.

Stratiomyia badius, Walker.

Stratiomys badius, Walker, List. Dipt. B.M., iii., 1849, p. 529; and iv., 1849, p. 1157. *Id.*, White, P.L.S. N.S.W., xli., 1916, p. 90 and 100.

Hab.—Walker first gave New Holland as the locality, and then changed it to New Hudson. This species is cancelled from the Australian list.

BIBLIOGRAPHY.

This list contains works dealing with Taxonomic Entomology only, and it is confined to works dealing with Australian Entomology and such other works that contain the original descriptions of genera.

Bigot, Paris.—Société Entomologique de France, series 5, Vol. vii., Bulletin, 1877; and Vol. ix., 1879.

Brauer, Vienna.—Kaiserliche Akademie der Wissenschaften. Denkschriften, xliv., 1882.

Offenes Schreiben als Antwort auf Herrn Baron Osten-Sacken's "Critical Review" meiner Arbeit über die Notacanthen. (Wien. 1883, Published by the author, 11 pages; a controversial pamphlet.)

Doleschal, Naturrkundig Tijdschrift voor Nederlandsch Indie, etc., series 4, Vol. iii. (= Vol. xvii.), 1858.

Enderlein, Zoologischer Anzeiger, xlii., 1913; and xliii., 1914; and xliv., 1914.

Erichson, Archiv fuer Naturgeschichte, viii., part 1, 1842.

Fabricius, Supplimentum Entomologia systematica, 1798.

Froggatt, Proceedings of the Linnean Society of New South Wales, xxi., 1896.

Australian Insects, 1907.

Guérin-Méneville, Voyage autre du Monde sur la Coquille pendant Zoologie, Vol. ii., 1826-30. (1831.)

Hardy, Papers and Proceedings of the Royal Society of Tasmania, 1917.

Hill, Proceedings of the Linnean Society of New South Wales, xliv., 1919.

Jaennicke, Frankfort on the Main.—Senckenbergische Naturforschende Geselischaft. Abhandlungen, vi., 1867.

Kertesz, Budapest.—Museum Nationalis Hungarici, Annales Historico-Nationales (Magyar Nemzeti Múzeum, Természetrajzi osztalyainak Folyoirata) iv., 1906.

Museum Nationale Hungaricum. Catalogus Dipterorum, hucusque descriptorum, iii., 1908.

Kirby, Annals and Magazine of Natural History, series 5, Vol. xiii., 1884.

Latrielle, Historie naturelle des Crustaces et des Insectes, etc. Vol. xiv., 1804 (forming part of Buffon.—Hist. Nat.—new edition—edited by C. S. Sonnini. 1799-1805.)

Loew, Stettin.—Entomologische Zeitung. Herausgegeben von dem.....Vereine vii., 1846.

Macquart, Diptères exotiques nouveaux ou peu connus. 2 tom. and suppl. 1-5. (Reprinted from the Mémoires Société Royale des Sciences de l'Agriculture et Arts, Lille.) 1838-1854.

Macleay, in King's Narrative of a survey of the intertropical and Western Coasts of Australia. Vol. ii., Appendix, Annulosa, 1827.

Meigen, Klassifikazion und Beschreibung der Europäischen zweiflügeligen Insekten. Tom. i., 1804.

Illiger's Magazine fuer Insektenkunde, ii., 1803.

Nouvelle classification des Mouches à deux ailes (Diptera) d'apres une plan tout nouveau, 1800.

Osten-Sacken, Berlin.—Entomologischer Verein. Berliner Entomologische Zeitschrift. Vol. xxvi., 1822, and xxvii., 1823.

Catalogue of the North American Diptera, second edition (Smithsonian Institute.—Smithsonian Miscellaneous collections. Vol. xvi., No. 2), 1878.

Schiner, Vienna. — Kaiserlich-Koenigliche Zoologisch-Botanische Gesellschaft. Verhandlungen, xvii., 1867.

Austria-Hungary.—Reise der Fregatte Novara, 1857-59. Zoologischer Theil. Bd. ii., Diptera, 1868.

Thomson, Sweden.—Kongliga Svenska Fregatten Eugenies Resa, etc., ii., Zool. part 12, Dipt., 1869.

Walker, List of the Dipterous Insects in the British Museum. Vol. 1, 1848; Vols. 3 and 4, 1849; and Vol. 5, suppl. 1, 1854.

Proceedings of the Linnean Society of London, Vol. 1, 1857.

Insecta Saundersiana. Vol. 1, Diptera, 1850-1856 (part of Saunders' Insecta Saundersiana, 1850-1859.)

White, Papers and Proceedings of the Royal Society of Tasmania, 1914 and 1916.

Proceedings of the Linnean Society of New South Wales, Vol. xli., 1916.

Wiedemann, Aussereuropäische zweiflugelige Insekten, ii., 1830.

Williston, Transactions of the Entomological Society of Philadelphia, Vol. xv., 1888.

EXPLANATION OF PLATE.

Fig. 1. Scutellum of *Ophiodesma flavipalpis*, Macquart.

Fig. 2. Scutellum of *Odontomyia scutellata*, Macquart, dorsal view.

Fig. 3. Scutellum of *Odontomyia scutellata*, Macquart, lateral view.

Fig. 4. Scutellum of *Odontomyia laterimaculata*, Macquart.

Fig. 5. Scutellum of *Odontomyia carinifacies*, Macquart, ♀ typical form.

Fig. 6. Scutellum of *Odontomyia carinifacies* var. *grandimaculata*, *var. nov.*

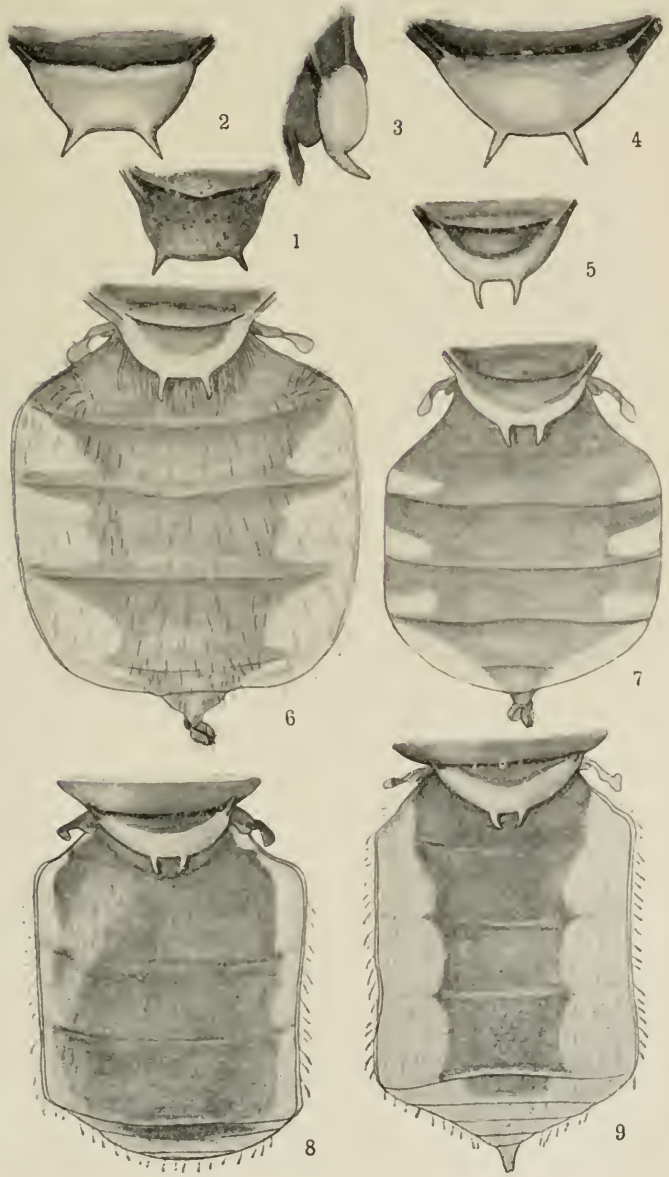
Fig. 6. Abdomen and scutellum of *Odontomyia carinifacies* var. *grandimaculata*, *var. nov.*

Fig. 7. Abdomen and scutellum of *Odontomyia carinifacies* var. *minima*, *var. nov.*

Fig. 8. Abdomen and scutellum of *Odontomyia decipiens*, Guerin, drawn from a small specimen.

Fig. 9. Abdomen and scutellum of *Odontomyia decipiens*, Guerin, drawn from a second small specimen.

Note.—All the above illustrations were drawn to the same scale.


2
3
4
1
5
6
7
8
9