

AUSTRALIAN BOMBYLIIDÆ AND CYRTIDÆ  
(DIPTERA).

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Plates XVI. and XVII.

(Read 11th July, 1921.)

This catalogue of the *Bombyliidæ* and *Cyrtidæ* of Australia contains a key to the genera, and the description of two new species belonging to genera in which no previous species have been described from Australia. Also, there are numerous synonyms suggested, and a number of species have been placed in the genera they more readily conform to than those in which they were originally placed.

BOMBYLIIDÆ.

This study of the *Bombyliidæ* is based upon several important collections. One of these, the Macleay Museum collection, contains a large number of species, many of which appear to be new, and it forms the basis for the study of the species described from Australia. The writer's own collection contains species conforming to most of those described from Tasmania by White, and also contains specimens from Western Australia and New South Wales. A small, but very valuable, collection formed by Dr. E. W. Ferguson, contains some specimens identified by White by comparison with Walker's types in the British Museum, and has been valuable in establishing the identity of some of the species. Other specimens, including those in the Australian Museum, the Queensland Museum, and the Agricultural Department of Queensland, have also been examined.

Much of the material in the above collections is inferior in condition, and as many of the species are closely related, making the differences between them difficult to determine from old specimens, it is advisable to wait till sufficient new material has accumulated before revising the species within the various genera.

The Australian species have been described under nearly one hundred and fifty names, of which less than one hundred are distinct, and of these fifty-two are recognised in the collections under revision.

A study of the Australian species shows conclusively that the generic characters utilised by various authors are often of less than specific value, and this is especially the case in the *Anthracinæ* and *Lomatiinæ*, and the taxonomy of the *Bombyliinæ* is complicated by the existence of species that contain graduating characters between some of the genera.

For all practical purposes the key given below will serve to separate the described species into groups of more or less generic value.

*Key to the Genera of the Australian Bombyliidæ.*

1. The bifurcation of the radial and cubital veins takes place at right angles and near the median cross vein. *ANTHRACINÆ.* 4.  
     The bifurcation of the radial and cubital veins takes place at an acute angle at a considerable distance from the median cross vein. 2.
2. The radial vein, curving upwards at its apex, often forms an open loop, and always runs into the costa at an obtuse or right angle. The antennæ short, with the basal joint very thick. The abdomen generally more or less long, parallel sided, and depressed. *LOMATIINÆ.* 8.  
     The radial vein normal, and running into the costa at an acute angle. 3.
3. The abdomen elongate, more or less compressed and cylindrical. *SYSTROPINÆ.* 11.  
     The abdomen short, conical or oval. *BOMBYLIINÆ.* 14.

*ANTHRACINÆ.*

4. The proboscis projecting beyond the epistoma. *Cytheræ.*  
     The proboscis not, or scarcely, projecting beyond the epistoma. 5.
5. The apex of the antennæ bearing a tuft of hairs. *Argyamæba.*  
     The apex of the antennæ at most with a style, never with a tuft of hairs. 6.
6. The third joint of the antennæ prolonged to a style-like process, at most with a minute differentiated style. *Anthrax.*  
     The antennal style long and distinct, separated from the prolonged third antennal joint by a distinct suture. 7.

7. Three submarginal cells present. *Exoprosopa*.  
 Four submarginal cells present. *Hyperalonia*.

## LOMATIINÆ.

8. The abdomen cylindrical or slightly compressed. *Docidomyia*.  
 The abdomen depressed. 9.  
 9. The radial vein curved upwards, and forming at most a very small loop. The abdomen narrow, parallel-sided. *Lomatia*.  
 The radial vein forming a loop at least as long as wide before running into the costa. 10.  
 10. The radial vein forming a loop about as long as wide. The abdomen always broad. *Oncodocera*.  
 The radial vein forming a loop at least twice as long as wide; if, however, the loop is small the abdomen is invariably long and narrow. *Comptosia*.

## SYSTROPINÆ.

11. The wings with only two veins issuing from the discal cell. *Systropus*.  
 The wings with three veins issuing from the discal cell. 12.  
 12. The abdomen with only six segments. *Antoniaustralia*.  
 The abdomen with more than six segments. 13.  
 13. The palpi short, scarcely one-third the length of the proboscis; the thorax considerably arched; the thorax and head with bristles; the legs with long spines. *Marmasoma*.  
 The palpi long, three-quarters the length of the proboscis; the thorax not conspicuously arched; the head and thorax without bristles; the legs with small inconspicuous spines. *Eclimus*.

## BOMBYLIINÆ.

14. The discal cell wanting. *Cyrtomorpha*.  
 The discal cell present. 15.  
 15. The wings with two veins issuing from the discal cell. *Geron*.  
 The wings with three veins issuing from the discal cell. 16.  
 16. The anal cell closed. 17.  
 The anal cell open. 18.

17. The third joint of the antennæ and the face with long hairs in both sexes. The cubital fork with an appendix. *Acreotrichus*.  
The third joint of the antennæ and the face bare in the female. The cubital fork without an appendix. *Phthiria*.
18. The first posterior cell open, at most closed at the wing border. 19.  
The first posterior cell closed considerably before the wing border. 20.
19. The first basal cell much longer than the second; i.e., the intermediate cross vein is situated towards or beyond the middle of the discal cell. *Dischistus*.  
The two basal cells of about equal length; i.e., the intermediate cross vein is situated near the base of the discal cell. *Sisyromyia*.
20. The two basal cells of about equal length. *Systæchus*.  
The first basal cell much longer than the second. *Bombylius*.

# ANTHRACINÆ.

Genus *Hyperalonia*, Rondani. (Pl. XVI., fig. 1.)

*Hyperalonia*, Rondani, Archiv. per la Zool. iii., 1863, p. 58.

*Hyperalonia satyrus*, Fabricius.

*Bibio satyrus*, Fabricius, Syst. Ent., 1775, p. 758; and Sp. Ins. ii., 1781, p. 415; and Mant. Ins., ii., 1787, p. 329.

*Musca satyrus*, Gmel. Syst. Nat. v., 1792, p. 2,831.

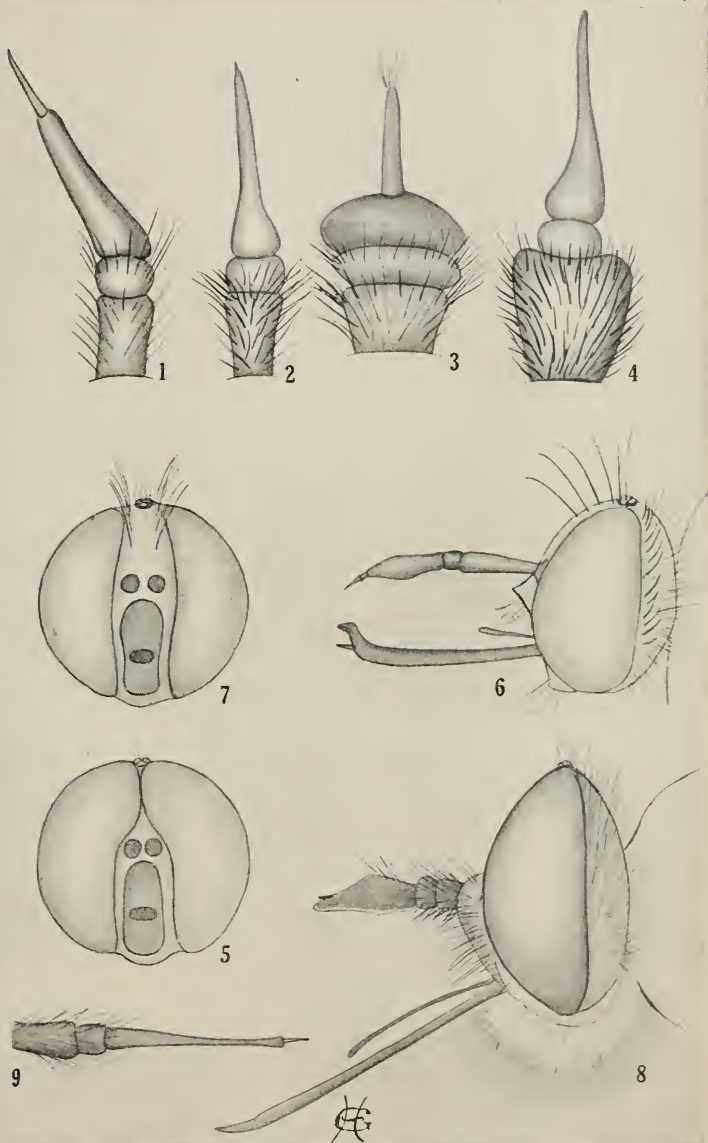
*Anthrax satyrus*, Fabricius, Ent. Syst. iv., 1794, p. 259; and Syst. Ant., 1805, p. 123. *Id.*, Wiedemann, Dipt. Exot., 1821, p. 151; and Auss. zweifl. Ins., i., 1828, p. 322. *Id.*, Walker, List Dipt. B.M., ii., 1849, p. 243; and Ins. Saund. Dipt., 1852, p. 166.

*Exoprosopa satyrus*, v. d. Wulp, Tijd. v. Ent. (2), iii. (xi.), 1868, p. 106, Pl. iii., fig. 10. *Id.*, Osten-Sacken, Cat. Dipt. N. Amer., ed. 2, 1878, p. 87, note. *Id.*, v. d. Wulp, Cat. Dipt. S. Asia, 1896, p. 69.

*Anthrax funestra*, Walker, List Dipt., B.M., ii., 1849, p. 242.

*Exoprosopa funestra*, Walker, Ins. Saund., Dipt. i., 1852, p. 165.

*Exoprosopa insignis*, Macquart, Dipt. Exot., suppl. 5, 1855, p. 73, Pl. iii., fig. 7. *Id.*, Bergroth, Stett. Ent. Zeit., lv., 1894, p. 72.



Australian Bombyliidæ.



*Synonymy*.—This species was described from Novæ Hollandiæ in 1775 from a specimen collected by Banks, and in 1778 Fabricius gives China as a locality; both these localities were repeated in 1794. Walker, in 1849, gives Georgia as the locality (perhaps King George's Sound was originally intended), and Osten Sacken in 1878 states that the species is not American.

In 1868 van der Wulp described and figured a specimen from Aru Island under the name, and this determination is accepted here as correct.

The identity of Fabricius' species has been fixed by description and figure on the authority of van der Wulp. Species in various collections conforming to van der Wulp's description are named by myself *Hyperalonia satyrus*, Fabricius. The same species has been named by Major E. E. Austen as *Hyperalonia funesta*, Walker, and is represented by a specimen so determined in the Queensland Museum; on this account Walker's name is placed here as a synonym. The description of *Exoprosopa insignis*, Macquart, also conforms to this species.

*Hab.*—There are twenty-four specimens in the Macleay Museum with labels bearing the following localities:—Northern Territory: Port Darwin. Queensland: Cape York, Rockhampton, Port Denison, Port Curtis, Endeavour River, and Lizard Island. New South Wales: Piper's Flats and Newcastle. South Australia. There are further specimens in other collections.

In the Agricultural Department of Queensland there is a specimen, bearing a label by Mr. Edmund Jarvis, and it conveys the information that the species is a hyperparasite on the scolid wasp *Dielis* sp. (now known as *Campsomerus radula*), which is a parasite on sugar-cane grubs.

Under the name *Hyperalonia funesta*, Walker, Mr. Jarvis also informs me that this species is a parasite of an Asilid, which is predaceous in the larval form upon the banana root weevil, *Calandra sordida*.

*Hyperalonia sinuatifascia*, Macquart.

*Exoprosopa sinuatifascia*, Macquart, Dipt. Exot., suppl. 5, 1855, p. 72, Pl. iii., fig. 6.

*Exoprosopa macraspis*, Thomson, Eugenes Resa, Dipt., 1868, p. 479.

*Hyperalonia argenticincta*, Bigot, Ann. Soc. Ent. France (7), xli., 1892, p. 343.

*Synonymy*.—Specimens identified as belonging to Macquart's species were compared with the descriptions of Thomson and Bigot and found to agree.

*Hab*.—The three descriptions record the species from New South Wales, and two specimens, undoubtedly belonging here, were collected at Sydney during January, 1919, and at Blackheath, Blue Mountains, during November, 1919, respectively. In the Macleay Museum one specimen is labelled "South Australia."

*Hyperalonia bombylifomis*, Macleay.

*Anthrax bombylifomis*, Macleay, in King's narrative Surv. S. Austr., ii., 1830, p. 468. *Id.*, Wiedemann, Auss. zweifl. Ins. ii., 1830, p. 648. *Id.*, Walker, List Dipt., B.M., ii., 1849, p. 241. *Id.*, Kirby, Ann. Mag. Nat. Hist. (5), xiii., 1884, p. 458.

*Ligyra bombylifomis*, Newman, Entom. i., 1841, p. 220. *Id.*, Walker, Ins. Saund. Dipt., 1852, p. 166.

*Exoprosopa punctipennis*, Macquart, Dipt. Exot., suppl. 4, 1849, p. 106, Pl. x., fig. 4.

*Exoprosopa albiventris*, Thomson, Eugenie Resa, Dipt., 1869, p. 480.

*Synonymy*.—The type of *Anthrax bombylifomis*, Macleay, is probably not traceable, and the description is confined to about four lines. It is described as having several discoidal spots on the wing, and from this character the known species to which it could be referred are limited to two species of *Lomatiinæ*, neither of which can in any way be associated with other described characters, and to a few species of *Anthracinæ*.

A comparison of the description with some specimens independently identified as *Exoprosopa punctipennis*, Macquart, shows that Macleay's description conforms satisfactorily to that species.

*Hab*.—This species, apparently, has a wide range. Twenty-one specimens in the Macleay Museum are labelled as follows:—One from King's Sound, North-West Australia; from Queensland there are six labelled Port Denison, five Cape York, and one Percy Island; eight are from New South Wales, two of which are labelled Piper's Flats. There are also specimens in the Australian Museum and in other collections.

*Hyperalonia cingulata*, v. d. Wulp.

*Exoprosopa cingulata*, v. d. Wulp, Notes Leyden Mus., vii., 1885, p. 62.

*Hab.*—The species was described from Adelaide. In the Macleay Museum there is one specimen from South Australia, one from Port Denison, and one from Darling River.

Genus *Exoprosopa*, Macquart.

*Exoprosopa*, Macquart, Dipt. Exot., ii. (1), 1840, p. 35. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 205.

*Note.*—Four names are placed under this genus, and two of these belong to recognised species. The other two names apparently belong to distinct species which are not represented in the collections examined.

*Exoprosopa laterimbata*, Bigot.

*Exoprosopa laterimbata*, Bigot, Ann. Ent. Soc. France (7), lxi., 1892, p. 346.

*Note.*—The third segment of the abdomen has a white lateral fascia, which reaches almost to the median line. The species was described from a specimen with incomplete antennæ and denuded abdomen.

*Hab.*—Five specimens in the Macleay Museum are identified as belonging to Bigot's species, and are labelled from:—Western Australia; Queensland, including Port Denison and Rockhampton; and New South Wales.

*Exoprosopa stellifer*, Walker.

*Anthrax stellifer*, Walker, List Dipt. B.M., ii., 1849, p. 244.

*Litorhynchus stellifer*, Walker, Ins. Saund. Dipt., 1852, p. 166.

*Variations.*—Two specimens of a series agree with Walker's description too well to be mistaken, but the remainder have the hyaline area of the wings varying from a narrow strip to a triangular area which reaches from the hind border to a point slightly beyond half the length and nearly across the discal cell. The basal half of the abdomen is sometimes brown with a black median stripe, and the white abdominal fascia may form a band almost reaching across the abdomen or may be obsolete.

*Hab.*—Western Australia. In the Queensland Museum there is a specimen labelled "Cunderdin." South Australia: there are eight specimens in the Macleay Museum from this State.



*Exoprosopa adalaidica*, Macquart.

*Exoprosopa adalaidica*, Macquart, Dipt. Exot., suppl. 5, 1855, p. 70, Pl. iii., fig. 4.

*Note*.—Several specimens are attributed to this species in various collections, but they do not come from the type locality, nor do they agree sufficiently closely with the description.

*Hab.*—Adelaide.

*Exoprosopa obliquifasciata*, Macquart.

*Exoprosopa obliquifasciata*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 107, Pl. x., fig. 5. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 205.

*Hab.*—This species was described from Tasmania, but no recent specimen of the genus is known from the locality. Many of the species of Diptera recorded from Tasmania by Macquart are now found to be from the Northern portions of Australia, and perhaps this is another instance of incorrect locality.

Genus *Anthrax*, Scopoli. (Pl. XVI., fig. 2.)

*Anthrax*, Scopoli, Ent. Carl., 1763, p. 358. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 206.

*Note*.—Nine species described under the generic name *Anthrax* appear to belong to that genus in its restricted sense. The majority of these forms have been identified from their descriptions in the various collections examined.

*Anthrax alterna*, Walker.

*Anthrax alterna*, Walker, List Dipt. B.M., ii., 1849, p. 261.

*Anthrax alternans*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 110. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 208.

*Synonymy*.—It appears that Walker's species from Australia is the same as White's identification of *A. alternans*, Macquart, from Tasmania.

*Anthrax argentipennis*, White.

*Anthrax argentipennis*, White, Proc. Roy. Soc. Tasm., 1916, p. 212.

*Anthrax commista*, Macquart.

*Anthrax commista*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 109, Pl. x., fig. 10.

*Anthrax consimilis*, Thomson, Eugenie Resa, Dipt., 1868, p. 481.

*Synonymy*.—The above synonymy appears to be correct according to the descriptions, which agree with some specimens in the Macleay Museum.

*Anthrax fuscicostata*, Macquart.

*Anthrax fuscicostata*, Macquart, Dipt. Exot., suppl. 1, 1846, p. 111. *Id.*, Schiner, Novara Reise, 1868, p. 126.

*Anthrax marginata*, Walker, Ins. Saund. Dipt., 1850, p. 178. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 210.

*Anthrax albirufa*, Walker, Trans. Ent. Soc. Lond., iv., 1857, p. 143.

*Synonymy*.—White gives Macquart's name as a synonym of *A. marginata*, Walker, although Macquart described the species four years earlier than Walker. *A. albirufa*, Walker, appears from the description to be the same species.

*Anthrax minor*, Macquart.

*Anthrax minor*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 111.

*Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 208.

*Anthrax vitrea*, Walker, Ins. Saund. Dipt., 1850, p. 181.

*Synonymy*.—The above synonymy is given on the authority of White, who makes no remarks concerning it. Macquart's species is from Tasmania, and Walker's from Western Australia.

*Anthrax nigricosta*, Macquart.

*Anthrax nigricosta*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 111. *Id.*, Froggatt, Austr. Ins., 1907, p. 296.

*Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 209.

*Anthrax pellucida*, Walker, Ins. Saund. Dipt., 1854, p. 182.

*Synonymy*.—White overlooked Walker's description, which conforms to *A. nigricosta*, Macquart, and also was described from Tasmania.

*Hab.*—White records the species from New South Wales, South Australia, Victoria, and Tasmania. On Cradle Mountain, Tasmania, this species occurred in vast quantities, and was the only species of the genus taken there during January, 1917.

*Anthrax resurgens*, Walker.

*Anthrax resurgens*, Walker, List Dipt. B.M., ii., 1849, p. 259.

*Anthrax simplex*, Macquart.

*Anthrax simplex*, Macquart, Dipt. Exot., suppl. 2, 1847, p. 52, Pl. ii., fig. 4. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 212.

*Note.*—Two specimens in Dr. Ferguson's collection were identified by White as this species. They are numbered 233 and 234, and were collected in Sydney by Gibbons.

*Anthrax velox*, White.

*Anthrax velox*, White, Proc. Roy. Soc. Tasm., 1916, p. 211.

*Note.*—White compares this species with *A. albirufa*, Walker, which is here placed under *A. fuscicostata*, Macquart. He also compares it with *A. marginata*, Walker, also placed here under the same.

The species is not recognised in the collections under revision.

Genus *Argyramæba*, Schiner.

*Argyramæba*, Schiner, Wien. Entom. Monatschr., iv., 1860, p. 51. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 213.

*Note.*—Four described species are placed here, and three of them have been recognised and labelled in the various collections.

*Argyramæba concisa*, Macquart.

*Anthrax concisa*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 111, Pl. x., fig. 11. *Id.*, Schiner, Reise Novara, Dipt., 1868, p. 125.

*Hab.*—New South Wales. One specimen in the Macleay Museum.

*Argyramæba incompta*, Walker.

*Anthrax incompta*, Walker, List. Dipt. B.M., 1849, ii., p. 253.

*Hab.*—The species was originally described from Western Australia. In the Macleay Museum there are twenty-five specimens from South Australia, two from New South Wales, and four from Cape York, Queensland, all of which are referable to this species.

*Argyramæba maculata*, Macquart. (Pl. XVI., fig. 3.)

*Anthrax maculata*, Macquart, Dipt. Exot., suppl. 1, 1846, p. 112, Pl. ix., fig. 12.

*Argyramæba maculata*, White, Proc. Roy. Soc. Tasm., 1916, p. 213.

*Anthrax australis*, Walker, Ins. Saund. Dipt., 1850, p. 193.

*Anthrax diana*, Walker, List Dipt. B.M., 1849, p. 252.

*Synonymy*.—*Anthrax diana*, Walker, was described from a specimen without a locality and without a head. A series of specimens in the Queensland Museum, from which one was sent to and identified by Major E. E. Austen as *A. diana*, Walker, is identical with *Argyramæba maculata*, Macquart. Walker's description agrees with this species, and therefore the above information is accepted.

*Hab*.—Australia and Tasmania.

*Argyramæba semimacula*, Walker.

*Anthrax semimacula*, Walker, List Dipt. B.M., ii., 1849, p. 254.

*Note*.—This species is undoubtedly placed here in its right genus, but it has not been recognised in the collections under revision.

Genus *Cytherea*, Fabricius.

*Cytherea*, Fabricius, Ent. Syst., iv., 1794, p. 413.

*Note*.—There is one species belonging to this genus described from Australia. There are also three undescribed species, one in the Australian Museum, one in the Macleay Museum, and the third in Dr. Ferguson's collection.

*Cytherea lipposa*, Bigot.

*Glossista lipposa*, Bigot, Ann. Ent. Soc. France (7), lxi., 1892, p. 353.

*Note*.—This species, described from a mutilated specimen from Sydney, has not been recognised in the collections under revision.

*Species of uncertain generic position.*

Four of Macquart's species have not been recognised and their generic positions are uncertain.

*Exoprosopa bicellata*, Macquart, Dipt. Exot., suppl. 2, 1847, p. 51, Pl. ii., fig. 2. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 206. (Tasmania.)

*Anthrax flaveola*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 109. (Eastern Australia.)

*Anthrax incisa*, Macquart, Dipt. Exot., suppl. 2, 1847, p. 52, Pl. ii., fig. 3. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 207. (Tasmania.) This species is said to

have the abdomen with the apex silvery, and on this account the probable position would be under the genus *Argyromæba*, many species of which have this character.

*Anthrax obscura*, Macquart, Dipt. Exot., suppl. 1, 1846, p. 112. (Australia.)

*Anthrax angularis*, Thomson, Eugenie Resa, Dipt., 1868, p. 482. (New South Wales.)

### LOMATIINÆ.

Genus *Lomatia*, Meigen. (Pl. XVII., fig. 10.)

*Lomatia*, Meigen, System. Beschreib., iii., 1822.

*Lomatia sobicula*, Walker.

*Anthrax sobicula*, Walker, Trans. Ent. Soc. Lond., iv., 1857, p. 144.

*Lomatia australis*, Schiner, Novara Reise, Dipt., 1868, p. 129.

*Synonymy*.—Two specimens in Dr. Ferguson's collection, numbered 119 and 241, were identified by White as *Anthrax sobicula*, Walker, and were evidently compared with the type. Schiner's description appears to conform to the same species, which is represented by specimens from Sydney in most collections.

*Lomatia* (?) *subsenex*, Walker.

*Anthrax subsenex*, Walker, Trans. Ent. Soc. Lond., iv., 1857, p. 144.

*Status*.—Judging from the comparison of descriptions between Walker's two species, it appears certain that they refer to the same genus, and, therefore, if *Anthrax sobicula* is referred to the genus *Lomatia*, it is probable that *Anthrax subsenex* belongs to the same group.

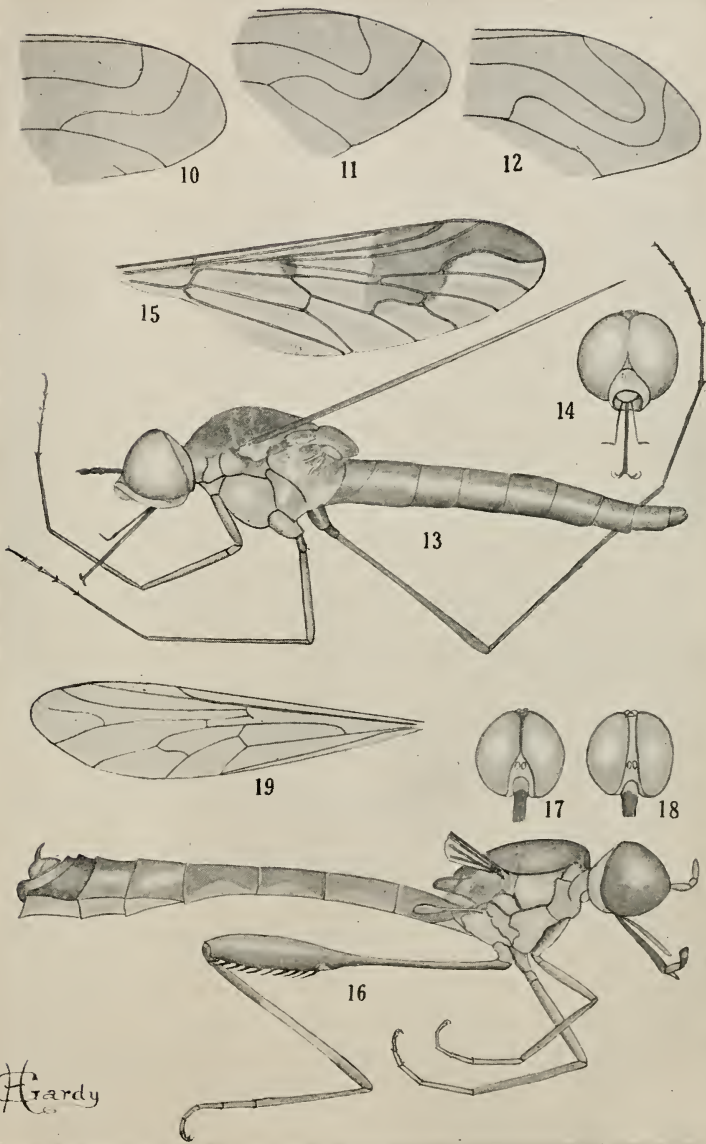
Genus *Oncodocera*, Osten-Sacken. (Pl. XVII., fig. 11.)

*Ogcodocera*, Macquart, Dipt. Exot., ii. (1), 1840, p. 83.

*Oncodocera*, Osten-Sacken, Bull. U.S. Stat. Geol. Surv. of Territories (Heyden), iii., 1877, p. 247.

*Description*.—Six species of *Lomatiinæ* do not seem to conform to the characters of any genus better than those of *Oncodocera*, as illustrated by Williston in *North American Diptera*, 3rd edition, 1908, fig. 82. The following characters, taken from specimens of the group so far known, will help to isolate them from their nearest allies:—





Australian Bombyliidæ.

Eyes contiguous in the male, separate in the female. Thorax a little broader than the head, broader posteriorly than anteriorly. Abdomen broader than the thorax. The abdomen of *Lomatia* is slender, rather elongate and parallel sided; that of *Oncodocera* is broad and not much longer than wide; the species of *Comptosia* have their abdomen generally like that of *Lomatia*, but vary to something approaching but not quite like that of *Oncodocera*. The latter case only occurs in a few large species, which can be readily separated by the difference in the loop of the radial vein.

*Oncodocera ampla*, Walker. (Pl. XVII., fig. 11.)

*Anthrax ampla*, Walker, Ins. Saund. Dipt., 1850, pp. 167 and 185.

*Description*.—In the male the wing contains two recurrent veinlets situated on the vein between the discal and third posterior cells, one running into each of these cells; this character is not represented in the female nor in the other species placed under this genus.

*Hab*.—Described from Western Australia; there are two males and two females from this State in the Australian Museum. In the Macleay Museum there are two males and two females from South Australia.

*Oncodocera anthracina*, Thomson.

*Comptosia anthracina*, Thomson, Eugenes Resa, 1868, p. 485.

*Lygira rubrifera*, Bigot, Ann. Soc. Ent. France (6), i., 1881, p. 23.

*Synonymy*.—The above synonymy appears to be correct. The species must not be confused with various species of the genus *Comptosia*, which have a general similar appearance; the curvature of the radial vein will readily distinguish them.

*Hab*.—In the Macleay Museum there are seven specimens from South Australia and one from Piper's Flats, New South Wales. In Dr. Ferguson's collection there is one specimen from Victoria labelled "Mallee."

*Oncodocera murina*, Newman.

*Neuria murina*, Newman, Entom., i., 1841, p. 221.

*Oncodocera patula*, Walker.

*Anthrax patula*, Walker, List Dipt. B.M., ii., 1849, p. 273.

*Id.*, Walker, Ins. Saund. Dipt., 1852, p. 168.

*Oncodocera plana*, Walker.

*Anthrax plana*, Walker, List Dipt. B.M., ii., 1849, p. 272.

*Id.*, Walker, Ins. Saund. Dipt., 1852, p. 168.

*Oncodocera tendens*, Walker.

*Anthrax tendens*, Walker, List Dipt. B.M., ii., 1849, p. 271.

*Id.*, Walker, Ins. Saund. Dipt., 1852, p. 168.

*Hab.*—Six specimens from Perth, Western Australia, were collected during or about December, 1911.

Genus *Comptosia*, Macquart. (Pl. XVI., fig. 4; Pl. XVII., fig. 12.)

*Comptosia*, Macquart, Dipt. Exot., ii. (1), 1840, p. 80. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 201.

*Neuria*, Newman, Entom., i., 1840, p. 220.

*Ligyra*, Newman, Entom., i., 1840, p. 220. *Id.*, Becker, Ann. Mus. Zool. St. Petersb., xvii., 1912, p. 466, fig.

*Alyosia*, Rondani, Arch. per la Zool., iii., 1863, p. 54. *Id.*, Becker, Ann. Mus. Zool. St. Petersb., xvii., 1912, p. 465.

*Synonymy.*—The type of genus *Comptosia* is *C. fascipennis*, Macquart, which is queried from Monte Video; and is supposed to have a white uniformly wide subapical band, three posterior cells, and an appendix. In Dr. Ferguson's collection, a specimen of *C. lateralis*, Newman, was identified by White as *C. fascipennis*, Macquart, and in accordance with the somewhat doubtful type locality this specimen must remain on record under the type specific name until the point of doubt concerning the locality can be settled.

The type of the genus *Neuria* is *N. lateralis*, Newman, from Sydney.

Newman placed *Anthrax bombyliiformis*, Macleay, and *Anthrax silvanus*, Fabricius, under the genus *Ligyra*, and the former he gives as the representative. Macleay's species is placed here under the genus *Hyperalonia*, and Fabricius's species is apparently a large form of the species well known under the name *C. corculum*; Rondani gives the Chilean species, *L. lugubris*, Rondani, as the type species of *Ligyra*, and in this is followed by Becker.

The genus *Alyosia*, Rondani, is represented by the Tasmanian species *C. maculipennis*, Macquart, for the type.

For the purpose of this paper these genera cannot be accepted, and, indeed, considerable further study will be

necessary before an adequate conclusion can be reached concerning the value of characters usually adopted for generic division in the subfamily.

*Comptosia ocellata*, Newman.

*Neuria ocellata*, Newman, Entom., i., 1841, p. 221. *Id.*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Anthrax ocellata*, Walker, List Dipt. B.M., ii., 1849, p. 268.

*Comptosia maculipennis*, Macquart, Dipt. Exot., suppl. 1, 1846, p. 116. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 201.

*Anthrax inclusa*, Walker, List Dipt. B.M., ii., 1849, p. 268.

*Anthrax cognata*, Walker, Ins. Saund. Dipt., 1852, p. 177.

*Synonymy*.—The above synonymy is given on the authority of White.

*Hab.*—*Anthrax cognata* was described from Western Australia, the others from Tasmania. One specimen from Piper's Flats, New South Wales, and two from Cape York, Queensland, are in the Macleay Museum. Other specimens represented in various collections are from Tasmania.

*Comptosia sylvana*, Fabricius.

*Bibio sylvanus*, Fabricius, Syst. Ent., 1775, p. 758; and Sp. Ins., ii., 1781, p. 415; and Mant. Ins., ii., 1781, p. 329.

*Musca sylvanus*, Gmelin, Syst. Nat., v., 1792, p. 2,832.

*Anthrax sylvanus*, Fabricius, Ent. Syst. iv., 1794, p. 261; and Syst. Antl., 1805, p. 125. *Id.*, Wiedemann, Dipt. Exot., 1821, p. 151; and Auss. zweifl. Ins., i., 1838, p. 321. ?*Id.*, Walker, List Dipt. B.M., ii., 1849, p. 241; and Ins. Saund. Dipt., i., 1852, p. 166.

*Neuria atherix*, Newman, Entom., i., 1841, p. 222. *Id.*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Neuria corculum*, Newman, Entom., i., 1841, p. 221. *Id.*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Atherix corculum*, Walker, List Dipt. B.M., ii., 1849, p. 269.

*Comptosia corculum*, White, Proc. Roy. Soc. Tasm., 1916, p. 203. *Id.*, Hardy, Proc. Roy. Soc. Tasm., 1917, p. 66.

*Neuria maculosa*, Newman, Entom., i., 1841, p. 221.

*Neuria partita*, Newman, Entom., i., 1841, p. 221. *Id.*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Comptosia geometrica*, Macquart, Dipt. Exot., suppl. 2, 1847, p. 53. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 202.

*Neuria geometrica*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Alyosia geometrica*, Rondani, Archiv. per la Zool. iii., 1863, p. 54.

*Comptosia tricellata*, Macquart, Dipt. Exot., suppl. 2, 1847, p. 53, Pl. ii., fig. 6.

*Neuria tricellata*, Schiner, Reise Novara, 1868, p. 131.

*Neuria obscura*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Anthrax obscura*, Walker, Ins. Saund. Dipt., 1852, p. 176.

*Comptosia calophthalma*, Thomson, Eugenie Resa, 1868, p. 485.

*Neuria hemiteles*, Schiner, Reise Novara, 1868, p. 132.

*Comptosia fulvipes*, Bigot, Ann. Ent. Soc. France (7), lxi., 1892, p. 359.

*Synonymy*.—*Bibio sylvanus*, Fabricius, is described as a fuscous species with the scutellum and sides of the two first abdominal segments ferruginous; the wings have a sub-ferruginous anterior border and several fuscous spots; the legs are piceous.

This description could apply to a species of the genus *Hyperalonia*, and evidently Walker's reference refers to such, or to a species until recently generally known as *Comptosia corculum*, some large specimens of which conform to this description far better than any known species of the genus *Hyperalonia*.

The type in the Banksian Collection was evidently collected at Botany Bay. The species here identified as *C. sylvanus*, Fabricius, is the commonest and most conspicuous Bombylid in that neighbourhood, and this fact, added to the comparatively good description, makes a plausible argument concerning the identity of Fabricius's species; on the other hand, specimens with the described ferruginous abdominal spots are rarely met with in this species.

Under the name *Comptosia sylvanus*, Fabricius, there are a number of specimens identified in various collections, and many of these have form names corresponding to special forms described, and are as follows:—

Form *corculum*, Newman, from Western Australia, is small, and has three submarginal cells.



Form *tricellata*, Macquart, is rather large, and comes from Mt. Wellington, Tasmania; it corresponds to the *C. corculum* of White and Hardy, and not to the original of that name by Newman. This form also has three submarginal cells.

Form *geometrica*, Macquart, from Tasmania, invariably has two submarginal cells, and occurs in low localities, never on the mountains.

Form *hermeteles*, Schiner, from Sydney, has three submarginal cells, but differs from all the others by the absence of the usual fuscous spots in the hyaline area of the wing.

The usual form of *C. sylvanus* in collections has three or two submarginal cells, and occurs on the eastern side of Australia. It was referred to by Schiner as *N. tricellata*, which must not be confused with Macquart's name; *C. calophthalma*, Thomson, is the same.

There is insufficient material in collections to judge the values of *Neuria atherix*, *N. maculosa*, and *N. partita*, of Newman, or of *A. obscura*, Walker, and *C. fulvipes*, Bigot, but all these, from their descriptions, appear to be the same as the species here called *C. sylvanus*, Fabricius.

Much more material and information are required for the study of this species, but it seems certain that all the forms belong to one species, which varies somewhat under different conditions.

*Comptosia plena*, Walker.

*Atherix plena*, Walker, List. Dipt. B.M., ii., 1849, p. 270.

*Neuria plena*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Note.*—This very distinctive species, from Perth, Western Australia, resembles the previous only in having fuscous spots on the wing, and differs by the whole wings being more or less uniformly suffused greyish and slightly darker along the anterior border. A further but apparently undescribed species from New South Wales agrees in these characters, and must not be confused with the Western Australian form.

*Comptosia fasciata*, Fabricius.

*Anthrax fasciata*, Fabricius, Syst. Antl., 1805, p. 118. *Id.*, Wiedemann, Dipt. Exot., 1821, p. 150; and Auss. zweifl. Ins., i., 1828, p. 321. *Id.*, Walker, List Dipt. B.M., ii., 1849, p. 267.

*Neuria fasciata*, Walker, Ins. Saund. Dipt., 1852, p. 167. *Id.*, Schiner, Reise Novara, 1868, p. 129.

*Comptosia fasciata*, Hutton, New Zealand Dipt., 1881, p. 24.  
*Neuria nigricens*, Newman, Entom., i., 1841, p. 221.

*Synonymy*.—*Anthrax fasciatus*, Fabricius, is described from the Pacific Islands. Walker refers *N. nigricens*, Newman, to the same name, and gives New Holland for locality. Schiner uses the name for specimens from New Zealand.

*N. nigricens*, Newman, is from near Sydney, and undoubtedly is the same as specimens identified here as *C. fasciata*, Fabricius.

*Note*.—The species is similar to *C. lateralis*, Newman, *C. albofasciata*, Thomson, and *C. apicalis*, Macquart. It differs from the last of these by the white spot of the wing being subapical instead of apical, and from the other two by the abdomen being not red laterally.

*Comptosia lateralis*, Newman

*Neuria lateralis*, Newman, Entom., i., 1841, p. 220. *Id.*, Walker, Ins. Saund. Dipt., 1852, p. 167. *Id.*, Schiner, Reise Novara, 1868, p. 131.

*Anthrax insignis*, Walker, List Dipt. B.M., ii., 1849, p. 266.

*Synonymy*.—Walker evidently changed the name of this species to *Anthrax insignis*, as *Anthrax lateralis* was pre-occupied by Say in 1823; the species, however, belongs to the genus *Comptosia*, and in any case it cannot belong to the genus *Anthrax*.

White identified a specimen in Dr. Ferguson's collection as *C. fascipennis*, Macquart, which species is queried from Monte Video.

*Note*.—This species differs from the previous by the abdomen being bordered laterally with large separated, almost confluent reddish spots, and from the next species, *C. albofasciata*, Thomson, by the smaller size.

*Comptosia albofasciata*, Thomson.

*Comptosia albofasciata*, Thomson, Eugenes Resa, 1868, p. 484. *Id.*, Froggatt, Austr. Ins., 1907, p. 296, Pl. xxviii., fig. 5.

*Note*.—It is possible that this species is only a large form of *C. lateralis*, Newman.

*Comptosia ducens*, Walker.

*Anthrax ducens*, Walker, Ins. Saund. Dipt., 1850, p. 176.

*Neuria ducens*, Walker, *ibidem*, p. 167.

*Neuria grandis*, Schiner, Reise Novara, Dipt., 1868, p. 130.

*Synonymy*.—*A. ducens*, Walker, and *N. grandis*, Schiner, evidently belong to the same species, which varies remarkably in size. It differs from *C. albofasciata*, Thomson, and *C. lateralis*, Newman, by the absence of the white fascia on the wings.

*Comptosia aurifrons*, Macquart.

*Comptosia aurifrons*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 113, Pl. x., fig. 16.

*Note*.—This is a very common species, which is easily recognised by the golden pubescence on the front. It is represented in most collections.

*Hab*.—New South Wales and Victoria.

*Comptosia dorsalis*, Walker.

*Anthrax dorsalis*, Walker, List Dipt. B.M., ii., 1849, p. 269.

*Neuria dorsalis*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Comptosia quadripennis*, Walker.

*Anthrax quadripennis*, Walker, List Dipt. B.M., ii., 1849, p. 268.

*Neuria quadripennis*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Id.*, Froggatt, Austr. Ins., 1907, p. 297.

*Note*.—This species is similar to *C. apicalis*, Macquart, but has three instead of two submarginal cells.

*Comptosia apicalis*, Macquart.

*Comptosia apicalis*, Macquart, Dipt. Exot., suppl. 3, 1846, p. 35, Pl. iii., fig. 13.

*Alyosia apicalis*, Rondani, Arch. per la Zool., iii., 1863, p. 54.

*Neuria apicalis*, Schiner, Reise Novara, 1868, p. 132.

*Note*.—This species has the white fascia of the wings entirely covering the tip.

*Comptosia sobria*, Walker.

*Anthrax sobria*, Walker, List Dipt. B.M., ii., 1849, p. 269.

*Neuria sobria*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Note*.—In Dr. Ferguson's collection there are three specimens numbered respectively 62, 257, and 258, all from Sydney, which were identified by White as Walker's species. In general appearance they resemble *C. ducens*, Walker, but differ structurally by having an appendix in the form of a

recurrent vein on the upper branch of the cubital fork, and also the intermediate cross vein is situated rather close to the apex of the discal cell.

There are five further specimens in the Macleay Museum from New South Wales, and one of these is labelled "Wheeny Creek, Jan. 8; Skuse."

Genus *Docidomyia*, White.

*Docidomyia*, White, Proc. Roy. Soc. Tasm., 1916, p. 203.

*Docidomyia pueralis*, White.

*Docidomyia pueralis*, White, Proc. Roy. Soc. Tasm., 1916, p. 204.

*Hab.*—Tasmania and New South Wales. This species is common on the sand-dunes of La Perouse, Botany Bay; specimens from this locality are, however, smaller than those examined from Tasmania.

*Species Undetermined.*

*Comptosia moretonii*, Dipt. Exot., suppl. 5, 1854, p. 77, Pl. iii., fig. 15.

*Anthrax præargentata*, Macleay, in King's Narr. Surv. Austr., ii., 1832, p. 468. *Id.*, Wiedemann, Auss. Zweifl. Ins., ii., 1830, p. 648. *Id.*, Walker, List Dipt. B.M., 1849, p. 268.

*Neuria præargentata*, Newman, Entom., i., 1841, p. 221.

*Id.*, Walker, Ins. Saund. Dipt., 1852, p. 167.

(This species is possibly a true *Comptosia*, but no specimens in the collection under revision agree with the description.)

*Anthrax basilis*, Walker, List Dipt. B.M., ii., 1849, p. 267.

*Neuria basilis*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Anthrax decedens*, Walker, List Dipt. B.M., ii., 1849, p. 271.

*Neuria decedens*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Anthrax stria*, Walker, List Dipt. B.M., ii., 1849, p. 267.

*Neuria stria*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Anthrax extensa*, Walker, Ent. Mag., ii., 1835, p. 473. *Id.*, Walker, List Dipt. B.M. ii., 1849, p. 269.

*Neuria extensa*, Newman, Entom., i., 1841, p. 221. *Id.*, Walker, Ins. Saund. Dipt., 1852, p. 167.

*Anthrax serpentiger*, Walker, List Dipt. B.M., ii., 1849, p. 270.

*Comptosia bicolor*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 114, Pl. x., fig. 17.

*Neuria bicolor*, Schiner, Reise Novara, 1868, p. 131. (New Zealand.)

*Neuria rufoscutellata*, Jænnicke, Abhand. der Senkenb. naturf. G. vi., 1867, p. 345, Pl. xliii., fig. 9  
(= ? *Comptosia ducens*, Walker.)

### SYSTROPINÆ.

*Note*.—Four genera are placed in this subfamily, and each is represented by one species. The genus *Systropus* belongs here, and the other three genera are provisionally placed here, and have been placed and suggested in subfamilies as follows:—Genus *Antoniaustralia* in the subfamily *Tomoyzinæ*, *Marmasoma* in the *Toxophorinæ*, and *Eclimus* in the *Cylleniinæ*. Becker included the *Toxophorinæ* under the *Cylleniinæ*, and the two Australian species known are too closely related for them to be separated into different subfamilies.

Genus *Systropus*, Wiedemann.

*Systropus*, Wiedemann, Nov. Dipt. Gen., 1820, p. 18.

*Status*.—Under the subfamily *Systropinæ* Becker gives two genera which are characterised as follows:—*Systropus*, with contiguous eyes in both sexes and the abdomen club-form. *Dolichomyia*, with the eyes not contiguous in both sexes and the abdomen not club-form.

In the species described below the eyes are not contiguous in both sexes, and the abdomen is club-form in the male.

*Systropus clavifemoratus*, sp. nov. (Pl. XVII., figs. 16, 17, 18, and 19.)

*Description*.—A black and grey species with brownish yellow anterior and intermediate legs; the posterior legs are mostly black with partly yellow tibiæ, and the femora are swollen apically, and each has two rows of about ten ventral spines on the swollen part.

*Male*.—The head is dark grey with black eyes and vertex. The antennæ are black and short, about half the length of the head, and they contain a cylindrical first joint with short black hairs; the second joint is about half the length of the first; the third joint is compressed, apically pointed, and about as long as the first. The proboscis is black, about as long as the head, and the palpi are black, long, erect, and reach about as far as the upturned portion of the proboscis. The eyes are approximate near the black ocellar triangle and contiguous near the greyish antennal triangle. The face



between the antennæ and the oral margin is very small, and extends as a thin strip to the cheeks. The occiput is slightly concave above and very convex below; it contains a row of minute marginal bristles and sparse white pubescence.

The thorax is black dorsally and greyish laterally with a black lateral ridge, and is covered with sparse short whitish hairs. Ventrally the thorax is greyish with black on the sutures between the sclerites, and contains some very sparse whitish hairs, the most perceptible of which consist of two rows of minute whitish bristly hairs on the mesonotum, one of which is under the lateral ridge and the other on that portion adjacent to the roots of the wings.

The compressed abdomen is black, with tracings of greyish lateral markings and a grey venter; the abdomen widens apically, as is usual in the genus, and terminates in a rather complex genitalia.

All the legs have their coxæ greyish, and the remainder of the anterior and intermediate legs are brownish yellow, and are stained with fuscous at the base and on the tarsi; the pulvilli are yellow. The hind femora are black with the apical third swollen, and they contain a ventral yellowish brown mark at the base of the swollen part, and beyond this each has two parallel rows of about ten ventral spines. The hind tibiæ are yellow with the base and apex broadly black; the tarsi are black with the pulvilli yellowish.

The wings are hyaline, and the halteres obscure brownish.

Female.—The female is similar to the male, but differs by the eyes being separated and the front greyish, and also the abdomen is not perceptibly clubbed.

*Length*.—Male and female, 8 mm.

*Hab*.—New South Wales, Blue Mountains, Blackheath; two males and one female were taken on flowering shrubs on the 25th November, 1919.

*Type*.—The male holotype and the female allotype are in the Australian Museum.

Genus *Antoniaustralia*, Becker.

*Antoniaustralia*, Becker, Ann. Mus. Zool., St. Petersburg, xvii., 1912, p. 459.

*Antoniaustralia hermanni*, Becker.

*Antoniaustralia hermanni*, Becker, Ann. Mus. Zool., St. Petersburg, xvii., 1912, p. 459, fig.

*Note*.—This species is not represented in the collections under revision.

Genus *Marmasoma*, White.

*Marmasoma*, White, Proc. Roy. Soc. Tasm., 1916, p. 188.

*Marmasoma sumptuosa*, White. (Pl. XVI., figs. 5, 6, and 7.)

*Marmasoma sumptuosa*, White, Proc. Roy. Soc. Tasm., 1916, p. 190.

*Description*.—Female. Similar to the male, eyes widely separated; the front is similar to the rest of the head in colour and vestiture, and contains about twelve black bristles; the abdomen is more conspicuously clothed with scales, and the apex contains a protruding lamella above.

*Hab*.—Tasmania, Brown's Cave Valley, off the Bagdad Valley. One male and one female allotype, taken on the 25th October, 1914.

*Type*.—The female allotype is in the Australian Museum.

Genus *Eclimus*, Loew.

*Eclimus*, Loew, Stett. Ent. Zeit., v., 1844, p. 154.

*Note*.—The Australian species placed in this genus is represented by a single specimen which has the antennæ apparently mutilated; it is possible that this character is the result of an abortion due to an agency acting during the pupal, or less likely the emerging from the pupal, stage. The insect was captured in this condition by the writer, and the extremely short third joint of the antennæ was noted at the time whilst the insect was still alive. Probably the normal form of the antennæ is similar to that of other species placed under the genus *Eclimus*.

*Eclimus longipalpis*, sp. nov. (Pl. XVII., figs. 13, 14, and 15.)

*Description*.—The male is a black insect with short black pile; the thorax and scutellum have a little depressed yellow pile, and the whole insect ventrally is greyish. The wings are hyaline with a small fuscous spot at the base of the cubital vein, and a large black area beyond the apical half of the wing reaching from the costa to the discal cell.

*Male*.—The head is black with a greyish tomentum covering the face reaching to the cheeks, and is traceable on the antennæ. The antennæ consist of a rather long first joint, the second joint is a quarter the length of the first, and the third joint is scarcely longer than the second, and the apex is truncate, receding from the dorsal to the ventral surface, and the edge appears to be crowned with minute spines; the character of the third joint is unlike that of a Bombylid, and may be due to an abortion as explained under the genus. The black proboscis is about twice

the length of the head, and the palpi, also black, reach to three-quarters the length of the proboscis. The eyes are contiguous near the ocellar triangle and slightly separated near the antennæ. In the oral aperture there is a pronouncedly rounded tubercle which contains a moustache of hairs which are white and predominantly black in colour. The face protrudes beyond the eyes, is free from hairs except on the cheeks, which contain a beard of long white hairs which merge into the long black hairs situated on the convex occiput and on the vertex.

The thorax dorsally contains a black vestiture of a velvety appearance and some black hairs; also there are some short depressed yellow hairs mostly confined to the median line. Ventrally some long white hairs are present, and are more abundant on the mesopleura. The scutellum is black and margined greyish, which colour extends to the humeral callus; depressed yellow pubescence is uniformly distributed and the lateral hairs are whitish.

The abdomen, containing nine segments, is velvety black, and the incisions mostly have white pile. From the third segment the depressed black pile becomes bristle-like, and on the last three segments these bristles are longer and more erect. Ventrally the abdomen is grey as far as the seventh segment and has long whitish hairs.

The legs are very long and black, sparsely covered with white tomentum; there are very long white hairs on the coxæ and femora, and very short black spines on the other segments.

The wings are hyaline, and have a large fuscous blotch, which is bounded by the costal vein, the upper cubital fork, the base of the second submarginal cell, half the length of the first posterior cell, the base of the second and third posterior cells, and from thence by a more or less direct line to the costa. There is a small spot at the base of the cubital vein. The halteres are obscure yellowish brown.

*Length*.—7 mm.

*Hab*.—New South Wales, Botany Bay, La Perouse. One male taken on a flowering shrub on the 8th December, 1918.

*Type*.—The unique male holotype is in the Australian Museum.

#### BOMBYLIINÆ.

Genus *Cyrtomorpha*, White.

*Cyrtomorpha*, White, Proc. Roy. Soc. Tasm., 1916, p. 185.

*Cyrtomorpha paganica*, White.

*Cyrtomorpha paganica*, White, Proc. Roy. Soc. Tasm., 1916, p. 186, fig. 30.

*Hab.*—Tasmania, Bellerive, near Hobart. Three specimens were collected on a coastal sand-dune on the 25th January, 1918; they were hovering over and settling on bare spaces amongst foliage, but owing to their small size they were extremely difficult to see even when settled on the bare patches.

*Note.*—White described the species from a single specimen which he considered to be a male; one of the three specimens examined has the male genitalia slightly exerted, and this determines the sex; the eyes are uniformly separated in all three specimens, and therefore probably all three specimens are males.

Genus *Geron*, Meigen.

*Geron*, Meigen, System. Beschreib., ii., 1920, p. 223. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 186.

*Geron australis*, Macquart.

*Geron australis*, Macquart, Dipt. Exot., ii. (1), 1840, p. 118, Pl. xiii., fig. 2.

*Geron dispar*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 122, Pl. xi., fig. 13. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 187.

*Geron cothurnatus*, Bigot, Ann. Soc. Ent. France (7), xli., 1892, p. 374.

*Geron hilaris*, White, Proc. Roy. Soc. Tasm., 1916, p. 188, text fig. 31.

*Synonymy.*—*Geron australis* is described from Port Jackson, and specimens from the locality and from New South Wales generally show a wide range of variation in size and characters, and there are no satisfactory characters whereby they can be divided into more than one species. Tasmanian specimens of *Geron dispar*, Macquart, are of a larger average size, but again show the same range of size, and cannot be divided from those of New South Wales. Specimens agreeing with the description of *Geron hilaris*, White, are represented in the collection under revision from New South Wales, but not from Tasmania, the type locality; nevertheless, there can be little doubt but that *G. hilaris*, White, does not represent a distinct species. *Geron cothurnatus*, Bigot, was placed as a synonym of *G. dispar*, Macquart, by White, and this is undoubtedly the correct position.

*Hab.*—New South Wales, Victoria, and Tasmania. This is one of the commonest species of the *Bombyliidæ*, is represented in most collections, and the dates range from November to April.

Genus *Acreotrichus*, Macquart.

*Acreotrichus*, Macquart, Dipt. Exot., suppl. 4, 1849, p. 121.

*Id.*, Becker, Ann. Mus., St. Petersb., xvii., 1912, p. 488.

*Acreotrichus gibbicornis*, Macquart.

*Acreotrichus gibbicornis*, Macquart, Dipt. Exot., suppl. 4, 1849, p. 121, Pl. xi., fig. 11. *Id.*, Schiner, Reise Novara, 1868, p. 138. *Id.*, Froggatt, Austr. Ins., 1907, p. 297. *Id.*, Becker, Ann. Mus. Zool. St. Petersb., xvii., 1912, p. 488.

*Acreotrichus fusicornis*, Macquart, Dipt. Exot., suppl. 4, 1849, p. 122, Pl. xi., fig. 12. *Id.*, Froggatt, Austr. Ins., 1907, p. 207.

*Acreotrichus inappendiculatus*, Bigot, Ann. Soc. Ent. France (7), lxi., 1892, p. 366.

*Synonymy.*—*A. fusicornis*, Macquart, is the female of *A. gibbicornis*, Macquart; specimens have been taken in copula on many occasions, and thus the sex relationship has been established. Specimens in the Macleay Museum were labelled with their sexes denoted, and the label conveying the synonymy was probably written by Skuse or Masters.

The description of *A. inappendiculatus*, Bigot, was probably taken from a female—not a male as stated in the description—of this species.

*Hab.*—New South Wales; Sydney. This is the first species of Bombylid to appear in the spring, and it continues on the wing through the summer; it occurs everywhere where wild flowers are abundant, and at times twenty or thirty specimens can be taken with one sweep of the net, and indeed sometimes they are so abundant that they continuously divert one's attention from other insects.

Genus *Phthiria*, Meigen.

*Phthiria*, Meigen, Ill. Mag. Ins., ii., 1803, p. 268.

*Phthiria hilaris*, Walker. (Pl. XVI., fig. 8.)

*Phthiria hilaris*, Walker, Ins. Saund. Dipt., 1856, p. 194.

*Phthiria lineifera*, Walker, Trans. Ent. Soc. Lond., iv., 1857, p. 146.



*Phthiria pallipes*, Bigot, Ann. Soc. Ent. France (7), xli., 1892, p. 367.

*Synonymy*.—Apparently all the descriptions were taken from one variable species.

*Description*.—Female. A yellow and black species of very variable colour pattern; the eyes are widely separated.

Male.—This sex has not hitherto been described; it is of small size, and obscure black in colour with yellow markings restricted to the apex of the abdominal segments.

The head is black, the eyes are contiguous, the ocellar triangle is very small, and contains a little black pubescence; the antennal triangle and the face seen laterally stand prominently forward in front of the eyes. The antennæ are about as long as the head; the first joint is nearly twice the length of the second; the third joint is twice the length of the basal joints united and contains a minute subapical dorsal arista. The face, front, and antennæ as far as the middle of the third segment are covered with long black pubescence. The black pubescence on the cheeks extends into the black and yellow pubescence on the upper half of the occiput.

The thorax and scutellum are covered with a velvety black vestiture, and with long pubescence reflecting a whitish or reddish colour according to the angle at which it is viewed.

Dorsally the abdomen contains a velvety black vestiture, and the apices of the segments are margined yellow laterally; ventrally the abdomen is mostly yellow, but the bases of the last three segments and a pair of spots at the base of the two prior segments are black. The whole abdomen is covered with a similar pubescence to that of the thorax.

The legs are black; a pubescence similar to that on the thorax extends to the coxæ and femora, and merges into the fuscous pubescence on the tibiæ and tarsi.

The wings are hyaline, but there is a deep yellow tinge in the mediastinal cell.

*Length*.—Male, 5 mm.

*Hab*.—New South Wales; the allotype male, described above, was taken at Blackheath on the 25th November, 1919; there are three paratype males and six females from the same locality taken between the 16th and 25th November, 1919. Further specimens are represented in various collections under revision.

Victoria; Timboon, one female in the collection of Dr. Ferguson was collected by H. W. Davey.

*Type*.—The allotype male is in the Australian Museum.

*Note*.—The head characters read similar to those of *Acreotrichus gibbicornis*, Macquart, which differs, however, by the pubescence of the face being exceptionally long, and the third joint of the antennæ containing some long hairs on the apical half and little, if any, on the basal half. *Acreotrichus inappendiculatus*, Bigot, described from a specimen said to be a male cannot belong here, as the description conforms almost entirely to that of a female *A. gibbicornis*.

There are several apparently distinct species in the genera *Acreotrichus* and *Phthiria* in the collections under revision, and they show that their respective genera cannot be separated by the usual characters adopted. Those characters given by Bigot and Becker in their respective keys do not hold good for Australian species. The appendix of the upper branch of the cubital fork can be used as a somewhat imperfect guide, as it is rarely absent in *Acreotrichus* and never present on *Phthiria*. The females can be readily distinguished by the presence or absence, respectively, in these genera, of long thick pubescence on the front and face.

#### Genus *Dischistus*, Loew.

*Dischistus*, Loew, Neue Beitr., iii., 1855, p. 45. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 192 (in key).

*Note*.—It appears that the characters of *Sparnopolius limbatus*, Bigot, belong to those given to the genus *Dischistus* in the key, and on this account Bigot's species is placed under this genus.

Schiner states that a new genus will be required for *Dischistus crassilabris*, Macquart.

There are several undescribed species in various collections that come within the characters strictly attributed to the genus *Dischistus*, but until the positions of those already described can be ascertained it is inadvisable to add new descriptions that ultimately may cause further hindrance without benefiting the taxonomy of the group.

#### *Dischistus crassilabris*, Macquart.

*Bombylius crassilabris*, Macquart, Dipt. Exot., suppl. 5, 1854, p. 77, Pl. iv., fig. 1.

*Dischistus crassilabris*, Schiner, Novara Reise, 1868, p. 138.

*Note*.—This species is represented in various collections.

? *Dischistus limbatus*, Bigot.

*Sparnopolius limbatus*, Bigot, Ann. Soc. Ent. France (7), lxi., 1892, p. 369.

*Note*.—This species has not been recognised in the various collections under revision.

Genus *Systæchus*, Loew.

*Systæchus*, Loew, Neue Beitr., iii., 1855, p. 45. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 196.

*Choristus*, Walker, Ins. Saund. Dipt., 1852, p. 197.

*Note*.—There are fourteen names belonging to species that undoubtedly conform to the characters of the genus *Systæchus*, and of these only one has hitherto been placed in synonymy.

In the collections under revision three species are recognised as distinct, and conform in their characters to described species. A number of undoubtedly distinct species do not conform to the descriptions.

*Systæchus platyurus*, Walker. (Pl. XVI., fig. 9.)

*Bombylius platyurus*, Walker, List Dipt. B.M., ii., 1849, p. 286.

*Bombylius crassus*, Walker, *ibidem*, p. 287.

*Systæchus crassus*, White, Proc. Roy. Soc. Tasm., 1916, p. 196, text fig. 34.

*Bombylius notatipennis*, Macquart, Dipt. Exot., suppl. 5, 1854, p. 78, Pl. iv., fig. 2.

*Bombylius punctipennis*, Thomson, Eug. Resa, Dipt., 1868, p. 487.

*Synonymy*.—There appear to be three distinctive forms of this species; one, *B. platyurus*, Walker, from Western Australia, was placed by White as a synonym of the East Australian form, *B. crassus*, Walker. The Tasmanian form was described by White as *S. crassus*. The names given by Macquart and Thomson evidently belong to the same species.

*Systæchus vetustus*, Walker.

*Bombylius vetustus*, Walker, List Dipt., B.M., ii., 1849, p. 286.

*Bombylius sericans*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 116, Pl. xi., fig. 3.

*Bombylius penicillatus*, Macquart, *ibidem*, p. 118, Pl. xi., fig. 7.

*Systæchus pausarius*, Jænnicke, Abhand. der Senck nat. G., vi., 1867, p. 348.

*Systæchus callynthrophorus*, Schiner, Reise Novara, 1868, p. 137.

*Bombylius spinipes*, Thomson, Eug. Resa, Dipt., 1868, p. 488.

*Synonymy*.—The above synonymy appears to be correct. The species is very common and very variable in size. In Dr. Ferguson's collection a female is labelled by White as *S. vetustus*, Walker, and a second female with fuscous spots traceable on the wings and with the front slightly wider is named *S. pencillatus*, Macquart. Macquart's description does not appear to agree with White's determination, as these characters are not mentioned; the length of the proboscis is too variable to be used for identification purposes, and therefore it seems advisable to consider Macquart's two names as belonging to probable variations of the same species.

*Systæchus distinctus*, Walker.

*Bombylius distinctus*, Walker, Ins. Saund. Dipt., 1850, p. 201.

*Note*.—Three males and one female from Sydney, in the Macleay Museum, probably belong here; the female has an exceptionally wide head, and both sexes are uniformly light brown in colour.

*Systæchus albiceps*, Macquart.

*Bombylius albiceps*, Macquart, Dipt. Exot., suppl. 3, 1848, p. 36.

*Systæchus bifrons*, Walker.

*Choristus bifrons*, Walker, Ins. Saund. Dipt., 1850, p. 198, Pl. v., fig. 5.

*Systæchus leucopygus*, v. d. Wulp.

*Systæchus leucopygus*, v. d. Wulp, Notes Leyden Mus., vii., 1883, p. 86.

Genus *Sisyromyia*, White.

*Sisyromyia*, White, Proc. Roy. Soc. Tasm., 1916, p. 197.

*Note*.—Under this genus seventeen descriptions are placed. Two of these White placed to synonymy, and five further synonyms are suggested here. Three species are definitely recognised in the collections under revision as belonging to described species, a fourth species is temporarily retained under a fourth name, and six descriptions by Walker have not been recognised.

*Sisyromyia auratus*, Walker.

*Bombylius auratus*, Walker, List Dipt. B.M., ii., 1849, p. 289.

*Sisyromyia aurata*, White, Proc. Roy. Soc. Tasm., 1916, p. 198.

*Bombylius crassirostris*, Macquart, Dipt. Exot., suppl. 4., 1850, p. 117, Pl. xi., fig. 5.

*Bombylius albavitta*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 117, Pl. xi., fig. 4.

*Bombylius loewii*, Jænnicke, Abh. der Senck nat. G., vi., 1867, p. 345.

*Bombylius pycnorhynchus*, Thomson, Eug. Resa, Dipt., 1868, p. 486.

*Bombylius lobalis*, Thomson, *ibid.*, p. 487.

*Bombylius scutellaris*, Thomson, *ibid.*, p. 488.

*Synonymy*.—A very variable group of Bombylids, including a variety with sulphur-coloured hair, and another with deep red hair, appears to form a species to which the above descriptions agree; it is possible, however, that some of these descriptions will ultimately be found to belong to *Sisyromyia decoratus*, Walker, or an allied species.

*Sisyromyia decoratus*, Walker.

*Bombylius decoratus*, Walker, List Dipt., B.M., ii., 1849, p. 291.

*Note*.—This species was described from Western Australia, but a specimen identified by White is in Dr. Ferguson's collection, and was taken in New South Wales. The specimen does not agree very well with Walker's description, but nevertheless it is retained in this position until it can be compared with the Western Australian form. The anterior border of the wing is fuscous, and is sharply defined from the hyaline area of the wing, whilst in *S. auratus*, Walker, the darker area on the anterior border of the wing is suffused.

*Sisyromyia brevirostris*, Macquart.

*Bombylius brevirostris*, Macquart, Dipt. Exot., suppl 4, 1850, p. 119, Pl. xi., fig. 9. *Id.* (?), Walker, Ins. Saund. Dipt., 1850, p. 202.

*Sisyromyia brevirostris*, White, Proc. Roy. Soc. Tasm., 1916, p. 199.

*Systæchus eulabiatu*s, Bigot, Ann. Soc. Ent. France (7), lxi., 1892, p. 366.

*Synonymy*.—The above synonymy is given on the authority of White.



*Sisyromyia pinguis*, Walker.*Bombylius pinguis*, Walker, List Dipt. B.M., ii., 1849, p. 290.*Hab.*—Western Australia; King George's Sound; one female in the Macleay Museum conforms to the description.*Sisyromyia altus*, Walker.*Bombylius altus*, Walker, List Dipt. B.M., ii., 1849, p. 288.*Sisyromyia antecedens*, Walker.*Bombylius antecedens*, Walker, *ibidem*, p. 293.*Sisyromyia immutatus*, Walker.*Bombylius immutatus*, Walker, *ibidem*, p. 292.*Sisyromyia primogenitus*, Walker.*Bombylius primogenitus*, Walker, *ibidem*, p. 292.*Sisyromyia rutilus*, Walker.*Bombylius rutilus*, Walker, *ibidem*, p. 289.*Sisyromyia tetratrichus*, Walker.*Bombylius tetratrichus*, Walker, *ibidem*, p. 291.Genus *Bombylius*, Linnæus.*Bombylius*, Linnæus, Syst. Nat. Edit., x., 1758, p. 606. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 192.*Note.*—There are fourteen descriptions that apparently belong to the genus *Bombylius* in its restricted sense; of these seven are recognisable in the collections under revision, three probably belong to synonyms, and five have not been recognised.*Bombylius fuscus*, Macquart.*Bombylius fuscus*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 119. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 193.*Note.*—Under this species White suggests that Walker's *B. matutinus* is a synonym, but no species of the genus *Bombylius* is definitely known to occur both in Australia and Tasmania, although some species from these localities are very closely allied, and therefore the suggested synonymy is not accepted here. *B. fuscus* is a dull uniformly coloured species.

*Bombylius tenuicornis*, Macquart.

*Bombylius tenuicornis*, Macquart, Dipt. Exct., suppl. 1, 1846, p. 116. *Id.*, White, Proc. Roy. Soc. Tasm., 1916, p. 192.

*Bombylius matutinus*, Walker, List Dipt. B.M., ii., 1849, p. 281.

*Bombylius australianus*, Bigot, Ann. Ent. Soc. France (7), lxi., 1892, p. 364.

*Synonymy*.—For the species allied to *B. fuscus*, Macquart, the name *B. tenuicornis*, Macquart, is utilised. Macquart's localities are Australia and Tasmania, but the second locality was evidently taken from a species he described from Tasmania as *B. fuscus*, four years later. *B. matutinus*, Walker, and probably *B. australianus*, Bigot, also belong here.

*Note*.—This species is of a uniform colour containing dense black and rather bright reddish pubescence; the descriptions by the various authors were taken from denuded specimens. The general appearance of the species is like that of *B. fuscus*, but brighter in tone.

*Bombylius viduus*, Walker.

*Bombylius viduus*, Walker, Ins. Saund. Dipt., 1850, p. 199.

*Bombylius palliolatus*, White, Proc. Roy. Soc. Tasm., 1916, p. 194.

*Synonymy*.—White overlooked the description of *B. viduus*, Walker, which agrees with *B. palliolatus*, White, and is also from Tasmania.

*Bombylius aureolatus*, Walker.

*Bombylius aureolatus*, Walker, Trans. Ent. Soc. Lond., iv., 1857, p. 145.

*Note*.—This beautiful species is rather common round Sydney; it has three longitudinal silvery stripes on the abdomen and a pair of similar lateral stripes on the thorax.

*Bombylius hilaris*, Walker.

*Bombylius hilaris*, Walker, List Dipt. B.M., ii., 1849, p. 274.

*Note*.—This beautiful Western Australian species has a colour pattern which is well described by Walker.

*Bombylius rubriventris*, Bigot.

*Bombylius rubriventris*, Bigot, Ann. Ent. Soc. France (7), lxi., 1892, p. 365.

*Note*.—This species was described from Sydney, but two specimens from King George's Sound agree rather well with Bigot's description and belong to or near this species. There are six specimens in the Macleay Museum which belong to or near here, and these are labelled from Cape York, Queensland; another specimen is from South Australia. These specimens range from 10 mm. long, and have a yellowish pubescence on a reddish ground colour and a black stripe on the abdomen. The thorax is black on the specimens in the Macleay Museum.

*Bombylius pictipennis*, Macquart.

*Bombylius pictipennis*, Macquart, Dipt. Exot., suppl. 4, 1850, p. 118.

*Hab*.—New South Wales; Sydney, August, 1915, and Newcastle.

*Note*.—This species is represented by two male specimens, numbered 234 and 235, in Dr. Ferguson's collection, and they were named by White as *B. hilaris*, Walker, but they differ from Walker's species in the wing markings. Three further specimens are in the Macleay Museum.

*Bombylius chrysendetus*, White.

*Bombylius chrysendetus*, White, Proc. Roy. Soc. Tasm., 1916, p. 195.

*Note*.—This species is not represented in the collections under revision.

*Bombylius nanus*, Walker.

*Bombylius nanus*, Walker, List Dipt. B.M., ii., 1849, p. 278.

*Note*.—This species is not represented in the collections under revision. White compared his *B. chrysendetus* with it.

*Bombylius albicinctus*, Macquart.

*Bombylius albicinctus*, Macquart, Dipt. Exot., suppl. 2, 1847, p. 54.

*Note*.—This species, described from Tasmania, is not represented in the collections under revision.

*Bombylius consobrinus*, Macquart.

*Bombylius consobrinus*, Macquart, Dipt. Exot., suppl. 2, 1847, p. 54.

*Note*.—The description of this species is very inferior and short. It may be a small specimen of *B. tenuicornis*, Macquart, and moreover it is significant to note that the localities given by Macquart in both cases are "Australia and Tasmania." It is probable that two species were mixed under one name, as a species of the genus is not definitely known from both localities.

*Species of uncertain generic position.*

*Bombylius australis*, Guérin, Voy. Coq. (2), ii., 1830, p. 294, Pl. xx., fig. 4.

*Species erroneously recorded as Australian.*

*Exoprosopa collaris*, Wiedemann. Kertész (Cat. Dipt., v., 1909) gives "India or Australia" as localities for this species, but the latter locality was evidently intended for Africa. The species is placed as a synonym of *E. lar*, Fabricius, by Brunetti in the Fauna Brit. Ind., Dipt.-Brachycera, i., 1920.

*Anthrax semiatra* (Hoffmann), Macquart, Dipt. Exot., suppl. 4, 1850, p. 113. Hoffmann's species is referable to *Anthrax morio*, Linnæus, which is known from Europe and North America; Macquart recorded it from Australia.

## CYRTIDÆ.

*Characters*.—The family contains a group of abnormal flies of diverse shapes. The head is composed almost entirely of eyes, and is situated well down on the thorax. The antennæ are minute or very large, and may be placed close to the mouth or as far up as near the summit of the head, and the eyes may be contiguous on either side or on both sides of the antennæ. The thorax and abdomen are usually inflated, the squama large, covering the halteres, and the wing venation may be rudimentary or complex.

*Note*.—The family contains at least seven described Australian species, which have been given twenty-four specific names. There are six genera recognised, and one of these, *Epicerina*, may be identical with the genus *Panops*. The species are generally rare, usually variable in colour, and the sexes so far ascertained are dimorphic.

In the present paper new species are not described, but an attempt is made to complete the synonymy of those already known, and to collect together a complete catalogue of references. The species have been well illustrated by various authors, and therefore figures are not given with this catalogue.

*Key to the Genera of the family Cyrtidæ.*

1. The antennæ very small and inconspicuous, and with a terminal style. 2.  
The antennæ large and conspicuous and without a terminal style; eyes bare. 4.
2. The costa of the wing curved forward and angulate; the eyes pubescent. *Pterodontia.* 3.  
The costa of the wing normal. 3.
3. The venation more or less complete; the eyes pubescent. *Nothra.*  
The venation obscure and vestigial; the eyes bare. *Oncodes.*
4. The abdomen elongate and with the basal half strongly constricted. *Leucopsina.*  
The abdomen oval, or if elongate then constricted between each segment. 5.
5. The proboscis short. *Epicerina.*  
The proboscis long. *Panops.*

Genus *Pterodontia*, Gray.

*Pterodontia*, Gray, in Griff. Animal Kingd., xv., 1882, part 34, p. 779, Pl. cxxviii., fig. 3. *Id.*, White, Proc. Roy. Soc. Tasm., 1914, p. 68.

*Characters*.—The eyes are densely pubescent; the antennæ are very small and have a terminal style; the abdomen is bladder-form, *i.e.*, inflated, in appearance. The costa is curved forward and angulate at about four-fifths the length of the wing; the venation is complete, and the veins are comparatively few in number.

*Type*.—*P. flavipes*, Gray . . . . . America.

*Pterodontia mellii*, Erichson.

*Pterodontia flavipes*, Macquart (*nec* Grey), Dipt. Exot., i. (2), 1838, p. 175; and ii. (1), 1840, Pl. i., fig. 2; and ii. (3), 1843, Pl. xxxiv., fig. 3 (preoccupied).

*Pterodontia mellii*, Erichson, Entomog., i., 1840, p. 163. *Id.*, Walker, List Dipt. B.M., vi., suppl. 2, 1854, p. 348. *Id.*, Westwood, Trans. Ent. Soc. Lond., 1876, p. 513. *Id.*, Froggatt, Austr. Ins., 1897, p. 297.



*Pterodontia macquarti*, Westwood, Trans. Ent. Soc. Lond., 1848, p. 97. *Id.*, Walker, List Dipt. B.M., vi., suppl. 2, p. 348. *Id.*, Westwood, Trans. Ent. Soc. Lond., 1876, p. 513.

*Synonymy*.—It seems certain that only one species of this genus has been described from Australia, and probably the species described by White as *P. variegata* is identical, but as specimens are not available for comparison the Tasmanian species is retained as distinct.

The name *P. macquarti*, Westwood, was created to take the place of the preoccupied *P. flavipes*, Macquart, but *P. mellii*, Erichson, takes priority.

*Pterodontia variegata*, Walker.

*Pterodontia variegata*, White, Proc. Roy. Soc. Tasm., 1914, p. 68, text fig. 10.

*Status*.—The holotype of this species is unique, and is in the collection of Mr. F. M. Littler. When a series of specimens is available for comparison this species will undoubtedly be found to be identical with *P. mellii*, Erichson.

Genus *Nothra*, Westwood.

*Nothra*, Westwood, Trans. Ent. Soc. Lond., 1876, p. 514.

*Characters*.—The eyes contain long conspicuous pubescence; the antennæ are situated near the mouth, are very small, and have a terminal style; the abdomen is bladder-form. The wings are normal in shape, and the veins are comparatively few in number and complete; the venation is similar to that of the genus *Pterodontia*.

Type.—*N. bicolor*, Westwood . . . . Australia.

*Nothra bicolor*, Westwood.

*Nothra bicolor*, Westwood, Trans. Ent. Soc. Lond., 1876, p. 515, Pl. vi., fig. 4.

*Hab*.—There are two specimens from South Australia in the Australian Museum.

Genus *Oncodes*, Latrielle.

*Ogcodes*, Latrielle, Precis caract. gen. d'Ins., 1796, p. 154.

*Henops*, Meigen, Ill. Mag. f. Ins., ii., 1803, p. 266.

*Acrodes*, Froggatt, Austr. Ins., 1897, p. 298.

*Oncodes*, White, Proc. Roy. Soc. Tasm., 1914, p. 69.

*Characters*.—The eyes are bare; the antennæ are situated near the mouth, which is vestigial, and are very small,

inconspicuous, and terminate in a style. The venation is very incomplete and rudimentary.

Type.—*O. gibbosus*, Linnæus . . . . . Europe.

*Oncodes basilis*, Walker.

*Henops basilis*, Walker, Ins. Saund. Dipt., 1852, p. 203.

*Oncodes basilis*, Hardy, Proc. Roy. Soc. Tasm., 1917, p. 60.

*Ogcodes darwinii*, Westwood, Trans. Ent. Soc. Lond., 1867, p. 516.

*Ogcodes fortunni*, Westwood, *ibidem*.

*Ogcodes ignava*, Westwood, *ibidem*.

*Ogcodes tasmanica*, Westwood, *ibidem*.

*Acrodes fumatus*, Froggatt, Austr. Ins., 1897, p. 298.

*Ogcodes doddi*, Wandolleck, Trans. Ent. Soc. Lond., 1906, p. 131, figs.

*Oncodes flavescens*, White, Proc. Roy. Soc. Tasm., 1914, p. 70, text fig. 11. *Id.*, Hardy, Proc. Roy. Soc. Tasm., 1916, p. 267.

*Oncodes nigrinervis*, White, *ibidem*, 1914, p. 71.

*Oncodes ater*, White, *ibidem*, 1914, p. 72.

*Oncodes pygmæus*, White, *ibidem*, 1914, p. 72.

*Synonymy*.—The above synonymy has already been published (see Hardy, 1917), with the exception of *Acrodes fumatus*, Froggatt. Mr. Froggatt informs me that *Acrodes* is a misprint for *Oncodes*; *Oncodes fumatus* was used by Erichson for a European species, and it is unlikely that the Australian species is identical with it. Mr. Froggatt's description conforms to that of a male, and specimens in the Agricultural Department under his name are females.

Genus *Leucopsina*, Westwood.

*Leucopsina*, Westwood, Trans. Ent. Soc. Lond., 1876, p. 510.

*Characters*.—The eyes are bare; the antennæ are long, three jointed and without a terminal style, they are situated high up on the head, but are separated from the ocelli by the contiguous eyes. The face is linear, and the proboscis long. The wings are normal in shape, and have a rather complex and complete venation. The abdomen is elongate and club-form.

Type.—*L. odyneroides*, Westwood . . . . Australia.

*Leucopsina odyneroides*, Westwood.

*Leucopsina odyneroides*, Westwood, Trans. Ent. Soc. Lond., 1876, p. 510, Pl. v., fig. 3.

Genus *Epicerina*, Macquart.

*Epicerina*, Macquart, Dipt. Exct., suppl. 4, 1849, p. 97.

*Characters*.—The eyes are bare; the antennæ are long and without a style, they are situated near the ocelli; the proboscis is short; the abdomen is bladder-form. The wings have a rather complex venation similar to that of the genus *Panops*, Lamarck.

Type.—*E. nigricornis*, Macquart . . . Tasmania.

*Status*.—The genus *Epicerina* differs from the genus *Panops* by the proboscis being short, and in other respects the generic characters agree. The genus is unknown in recent collections, but it is certain that it will not maintain its position as a separate genus when more is known concerning it.

*Epicerina nigricornis*, Macquart.

*Epicerina nigricornis*, Macquart, Dipt. Exot., suppl. 4, 1849, p. 98, Pl. ix., fig. 8. *Id.*, Hardy, Proc. Roy. Soc. Tasm., 1917, p. 61.

Genus *Panops*, Lamarck.

*Panops*, Lamarck, Ann. Mus. d'Hist. Nat., iii., 1804, p. 266, Pl. xxii., fig. 3.

*Mesophysa*, Macquart, Dipt. Exot., i. (2), 1838, p. 166.

*Characters*.—The eyes are bare; the antennæ are situated close to the ocelli, are long and without a terminal style; the proboscis is very long. The wings have the venation rather complex and complete. The abdomen in one species is bladder-form, in the other elongate and constricted between the segments.

Type.—*P. baudini*, Lamarck . . . . . Australia.

*Panops baudini*, Lamarck.

*Panops baudini*, Lamarck, Ann. Mus. d'Hist. Nat., iii., 1804, p. 226, Pl. xxii., fig. 3. *Id.*, Lamarck, Hist. Nat. sans Vert., iii., 1806, p. 316. *Id.*, Latrielle, Ency. Meth., viii., 1811, p. 710. *Id.*, Latrielle, Dict. d'Hist. Nat., xxiv., p. 467. *Id.*, Wiedemann, Auss. Zweifl. Ins., ii., 1803, p. 19. *Id.*, Macquart, Hist. Nat. Dipt., i., 1834, p. 356. *Id.*, Erichson, Entomogr., i., 1840, p. 141. *Id.*, Walker, List. Dipt. B.M., vi., suppl. 2, 1854, p. 333.

*Mesophysa marginatus*, Macquart, Dipt. Exot., i. (2), 1838, p. 168.

*Mesophysa australasiæ*, Thomson, Eug. Resa, Dipt., 1868, p. 475.

*Panops lamarckianus*, Westwood, Trans. Ent. Soc. Lond., 1876, p. 508, Pl. v., fig. 1.

*Synonymy*.—According to the descriptions *Panops baudini*, Lamarck, and *Mesophysa marginatis*, Macquart, were described from male specimens, and *Mesophysa australasiæ*, Thomson, and *Panops lamarckianus*, Westwood, were described from female specimens; all belonging to the same species.

*Hab*.—New South Wales, Sydney. A pair of specimens in the Macleay Museum bear a label conveying the information that they were taken on Sydney Swamp, and that they are the two sexes of the same species, which is identified as *Panops baudini*, Lamarck. The identification appears to be correct. There are two further specimens in the Macleay Museum, and two in the Australian Museum.

*Panops flavipes*, Latrielle.

*Panops flavipes*, Latrielle, Ency. Meth., viii., 1811, p. 710.

*Id.*, Lamarck, Hist. Nat. sans Vert., iii., 1816, p. 412.

*Id.*, Wiedemann, Auss. Zweifl. Ins., ii., 1830, pp. 20 and 649. *Id.*, Erichson, Entom., i., 1840, p. 141.

*Id.*, Walker, List Dipt. B.M., vi., suppl. 2, 1854, p. 333. *Id.*, Froggatt, Austr. Ins., 1897, p. 297.

*Mesophysa scapularis*, Macquart, Dipt. Exot., i. (2), 1838, p. 167.

*Hab*.—New South Wales and Victoria.

*Note*.—The specimens examined are invariably males, which suggests that only the distinctive males have been recognised, and the females may be normal to the genus in shape, and either confused with *Panops baudini*, Lamarck, or may have been placed under another genus such as *Epicerina nigricornis*, Macquart.

LIST OF WORKS.

This list only contains taxonomic works; it includes works containing the original generic descriptions and all those dealing with genera and species described from Australia.

Becker. St. Petersburg.—Academie imperiale des Sciences. Musee Zoologique. Annals xvii., 1912.

- Bergroth. Stettiner Entomologische Zeitung, lv., 1894.
- Bigot. Paris.—Societe Entomologique de France. Annales; series 6, i., 1881; and series 7. xli., 1892.
- Erichson. Entomographien. 1840.
- Fabricius. Systema Entomologiæ, 1775.  
Species insectorum, ii., 1781.  
Mantissa Insectorum, ii., 1787.  
Entomologia systematica. 1792-4.  
Systema Antliorum, 1805.
- Froggatt. Australian Insects, 1907.
- Gray. In Griffith's Animal Kingdom, xv., 1832.
- Gmelin. Linnæus.—Systema naturæ; edit. x., 1790.
- Hardy. Royal Society of Tasmania; Papers and Proceedings for the years 1916 and 1917.
- Hutton. Catalogues of New Zealand Diptera, Orthoptera, Hymenoptera. 1881.
- Jænnicke. Frankfort on the Main.—Senckenbergische Naturforschende Gesellschaft. Abhandlungen, vi., 1867.
- Kertész. Catalogus Dipterorum, v., 1909.
- Kirby. Annals and Magazine of Natural History, series 5. xiii., 1884.
- Lamarck. Historie naturelle des Animaux sans vertebres. 1815-22.  
Paris.—Museum d'Histoire Naturelle; Annals, iii., 1804.
- Latrielle. Precis des caracteres Generiques des Insectes. 1796.  
Encyclopedie Methodique, viii., 1811.  
Nouveau Dictionnaire d'Histoire Naturelle. 1803-5.
- Linnæus. Systema Naturæ. Edit. x., 1758.
- Loew. Stettiner Entomologische Zeitung, v., 1844.  
Neue Beitrage zur Kenntniss der Dipteren, iii., 1855.
- Macleay. In King's Narrative of a survey of the inter-tropical and western coasts of Australia, 1827.
- Macquart. Diptere exotique nouveau ou peu connus. (Republished from the Memoires Societe Royale Sciences de l'Agriculture et Arts, Lille, 1838-54), 1838-54.  
Histoire Naturelle des Insectes.—Dipteres, i., 1834.  
(Forming one of Roret's "Collection des Suites a Buffon.")



Meigen. In Illiger's Magazine fuer Insectenkunde, ii., 1803.

Newman. The Entomologist, i., 1841.

Osten-Sacken. Bulletin of the United States Geological Survey (Heyden), iii., 1877.

Smithsonian Institute.—Smithsonian miscellaneous collections, xvi. (Catalogue of the Described Diptera of North America, Edit. ii.), 1878.

Rondani. Archivio per la Zoologia l'anatomia e la fisiologia, iii., 1863.

Schiner. Wiener Entomologische Monatschrift, iv., 1860.

Austria-Hungary. — Reise der Oesterreichischen Fregatte Novara um die Erde, etc. Zoologischer Theil, ii., Diptera. 1868.

Scopoli. Entomologia Carniolica. 1763.

Thomson. Sweden.—Kongliga Svenska Fregatten Eugenies Resa omkring jorden. Diptera, 1869.

v. d. Wulp. Hague.—Nederlandsche Entomologische Vereeniging. Tijdschrift voor Entomologie (2), iii. (xi.), 1868.

Notes from the Leyden Museum, viii., 1885.

Catalogue of the described Diptera from South Asia, 1896.

Wandollock. Entomological Society of London; Transactions for the year 1906.

Walker. The Entomological Magazine, ii., 1835.

British Museum (Natural History), Zoology (Diptera). List of the Dipterous insects in the Museum, ii., 1849; and vi., supplement 2, 1854.

Insecta Saundersiana, i., Diptera. (Part of Saunders' Insecta Saundersiana, 1850-1859). 1850-56.

The Entomological Society of London; Transactions; new series, iv., 1857.

Westwood. The Entomological Society of London; Transactions, v., 1848; and for the year 1876.

White. Royal Society of Tasmania; Papers and proceedings for the years 1914 and 1916.

Wiedemann. Nova Dipterorum genera. 1820.

Diptera Exotica. 1821.

Aussereuropaische zweifflugelige Insekten, 1828-30.

## ILLUSTRATIONS.

## PLATE XVI.

- Fig. 1. Genus *Hyperalonia*; the antennæ showing a large and well-defined apical style.
- Fig. 2. Genus *Anthrax*; the antennæ of a form with a small apical style.
- Fig. 3. *Argyramæba maculata*, Macquart; the antennæ showing the typical pencil of hairs at the apex which is to be seen in all species of the genus.
- Fig. 4. Genus *Comptosia*; the antennæ.
- Fig. 5. *Marmasoma sumptuosa*, White; the head of the male seen from the front.
- Fig. 6. *Marmasoma sumptuosa*, White; the head of the female seen laterally.
- Fig. 7. *Marmasoma sumptuosa*, White; the head of the female seen from the front.
- Fig. 8. *Phthiria hilaris*, Walker; the head of the male seen laterally.
- Fig. 9. *Systæchus platyurus*, Walker; the antennæ drawn from a Tasmanian specimen.

## PLATE XVII.

- Fig. 10. *Lomatia sobricula*, Walker; a portion of the wing showing the contortion of the radial vein.
- Fig. 11. *Oncodocera ampla*, Walker; a portion of the wing showing the contortion of the radial vein.
- Fig. 12. *Comptosia sylvana*, Fabricius; a portion of the wing showing the contortion of the radial vein.
- Fig. 13. *Eclimus longipalpis*, *sp. nov.*
- Fig. 14. *Eclimus longipalpis*; the head seen from the front.
- Fig. 15. *Eclimus longipalpis*; the wing.
- Fig. 16. *Systropus clavifemoratus*, *sp. nov.*
- Fig. 17. *Systropus clavifemoratus*; the head of the male.
- Fig. 18. *Systropus clavifemoratus*; the head of the female.
- Fig. 19. *Systropus clavifemoratus*; the wing.