

AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

Hardy, G. H., 1922. Descriptions of some Australian flies belonging to the Diptera Brachycera. *Records of the Australian Museum* 13(5): 193–197, plate xxxvi. [15 March 1922].

doi:10.3853/j.0067-1975.13.1922.871

ISSN 0067-1975

Published by the Australian Museum, Sydney

nature culture **discover**

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DESCRIPTIONS OF SOME AUSTRALIAN FLIES BELONGING
TO THE *DIPTERA BRACHYCERA*.

BY

G. H. HARDY.

(Plate xxxvi. and Figure 1.)

This paper contains the descriptions of a new genus and some new species of flies from Queensland, the material representing a portion of various recent collections from that State which I have been able to examine. I have also figured the allotype specimen of *Pelecorrhynchus fulvus* Ricardo, and added a reference under the same genus which was omitted in a previous paper. To Mr. D. J. Farrell I am indebted for assistance in the preparation of Plate xxxvi., figures 1, 2.

STRATIOMYIIDÆ.

Genus *PACHYGASTER* Meigen.

Status.—The two species placed here probably belong to the genus *Eupachygaster*, which was proposed by Kertész,¹ as they are to be distinguished by the following characters:—

The scutellum is about half as long as broad, and has a semicircular outer margin on which are situated many minute spines; in the male, however, the scutellum is triangular in shape, rounded at the apex, and slightly inclined. In the female the facets of the eyes are of uniform size, and in the male they are much smaller below than above, but there is no sharp contrast between the two sizes.

I am unable to satisfy myself that *Eupachygaster* Kertész and *Neopachygaster* Austen are generically distinct from *Pachygaster* Meigen, and without seeing both sexes one cannot place a new species very satisfactorily. In the present case the characters certainly come nearest to those given by Kertész for the genus *Eupachygaster*.

Dr. E. W. Ferguson has a female which he captured on a window of his residence at Roseville, near Sydney, and it is identical with *P. whitei* Hardy. A male and a female of a second species were taken by him in the same place, but the male has the scutellum inclined to a considerable extent, and both sexes differ from *P. whitei* in various other respects.

In the meanwhile, until more material is available, it seems advisable to retain the genus *Pachygaster* in the wide sense adopted by most authors.

Key to the Australian species of the genus *Pachygaster*.

1. Female with the thorax and abdomen evenly and densely punctate; scutellum with forty or more minute spines *whitei* Hardy.
Thorax of the female with considerably less and smaller punctures than those on the abdomen, which is densely punctate; scutellum with about thirty minute spines..... *nitens* sp. nov.

¹ Kertész—Congr. Int. Ent., ii., 1911, p. 31.

PACHYGASTER WHITEI Hardy.

Pachygaster whitei Hardy, Proc. Roy. Soc. Tasm., 1920, p. 44.

Description.—♀. Black. Head shining; eyes widely separated, facets of uniform size; antennæ yellowish red. There is some silvery pubescence around the base of the antennæ, on the face, also traces behind the eyes.

Thorax, scutellum, and abdomen uniformly and densely punctate over the whole upper surface. The scutellum lies horizontally and is semicircular in shape; on its outer border are forty or more minute (microscopic) spines. Legs yellow or yellowish red, but stained darker in parts. Wings hyaline and veins more or less stained black from the base to less than half the length of the wing; the remaining portions of the venation are yellowish. Cubital vein forked.

♂. The male is rather like the female but more slender in shape. It differs chiefly by the contiguous eyes, the facets of which are variable in size, the larger being on the upper side. Also the scutellum is triangular in shape with a rounded apex, and it is slightly inclined; the minute spines are less discernible than those on the female.

Length.— $3\frac{1}{2}$ - $4\frac{1}{2}$ mm.

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

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

PACHYGASTER NITENS *sp. nov.*

Description.—♀. Black. Head shining, eyes widely separated, facets of uniform size; antennæ yellowish. There is some silver pubescence around the base of the antennæ, on the face, and behind the eyes.

Thorax shining; it contains widely separated and small punctures over the whole upper surface. The scutellum lies horizontally and has punctures similar to those on the thorax; it is semicircular in shape, and on its rounded outer border there are about thirty minute (microscopic) spines. Abdomen densely punctate. Legs black, tarsi yellow. Wings hyaline; the veins black from the base to less than half the length of the wing; the remaining portions of the venation are yellow. Cubital vein forked.

♂. Male unknown.

Length.—Female, 4 mm.

Hab.—Queensland. The National Park, March 1921. Four females were captured in a tent during the hottest part of the day.

Type.—The holotype is in the Australian Museum.

Genus DOCHMIOCERA *gen. nov.*

This genus is proposed for a species of Stratiomyiid belonging to the sub-family *Pachygasterinæ*. The oblique segments of the antennæ, from which the generic name is derived (oblique-horn) and the longer thorax will at once distinguish it from the genus *Pachygaster*, which it resembles in other respects.

Characters.—The antennæ contain ten segments, of which the first is clearly distinct; the second joint is askew and somewhat amalgamated with the third; the third to sixth segments form a third and complex joint, all the segments of which are askew, so that the apex (the base of the arista) is situated on what is apparently the side. The arista is composed of the seventh to tenth segments, the two basal ones very short, the next much longer, and the apical one very long. The scutellum is without spines. The wings have the cubital vein forked and contain four postical veins.

Type of the genus.—*D. aurilineata* sp. nov., Queensland.

DOCHMIOCERA AURILINEATA, sp. nov.

Plate xxxvi., figs. 1 and 2.)

Description.—♀. Black, with antennæ, venation, halteres, most of the legs and some tomentum, yellow.

Head broader than the thorax and black; behind the head a slightly elevated flange borders the upper margin of the eyes. Ocellar tubercle brown or black, and on each side is a shining black callus. These calli, bordering the inner margin of the eyes, extend nearly the full length of the front, and approach each other towards the antennal tubercle. The area enclosed by the calli is covered with a golden yellow tomentum. Antennal tubercle slightly prominent. Antennæ composed of ten segments and of the form described under the generic characters. Face brown, or brown and black, very short, and contains a little golden tomentum. The cheeks consist of very small strips behind the eyes and are either entirely covered with a silvery tomentum or are brown.

The thorax is rather long and black, and contains five stripes of golden yellow tomentum which alternate with four stripes of reddish tomentum; there are some slight traces of golden yellow tomentum ventrally. The scutellum is also rather long, and contains golden yellow tomentum on the sides.

The abdomen is considerably broader than the thorax, short, and black in colour; it contains conspicuous traces of golden yellow tomentum.

The legs have black or yellow coxæ; trochanters, two-thirds of femora, and base of tibiæ, are bright brownish yellow; on the posterior femora, in the holotype, there is a little black between these colours. The tibiæ are mostly black or black and brown, with a yellow central area which, however, is almost obsolete on the anterior legs. The anterior tarsi black; the intermediate or posterior tarsi yellow or white.

Wings hyaline with yellow veins. Mediastinal vein very faint and inconspicuous. Radial vein branches considerably before the intermediate cross vein. Cubital vein forked. The first and second postical veins are complete and rise independently from the distal cell; the third is absent; the fourth branches from the distal cell and is complete. The fifth meets the anal considerably before the wing margin. Anal vein sinuous.

♂. The male is not known.

Length.—5 mm.

Hab.—Queensland; the holotype from the National Park was taken at the end of February, 1921. The paratype is from Kuranda, and was taken by Mr. F. P. Dodd.

Types.—The holotype is in the Australian Museum and the paratype in Dr. E. W. Ferguson's collection.

Note.—Where alternative colour characters are given in the above description the first denotes that of the holotype and the second that of the paratype.

TABANIDÆ.

PELECORHYNCHUS FULVUS *Ricardo*.

(Plate xxxvi., fig. 3.)

P. fulvus Ricardo, Ann. Mag. Nat. Hist. (8), v., 1910, p. 406. *Id.* Taylor, Proc. Lin. Soc. N. S. Wales, xlv., 1919, p. 41. *Id.* Hardy, Rec. Austr. Mus., xiii., 1920, p. 38. *Id.* Ferguson, Proc. Roy. Soc. Vict., xxxiii., 1921, p. 2.

Type.—The allotype male, described by Dr. E. W. Ferguson, was presented to the Australian Museum. This opportunity is taken to publish a figure of the specimen; the head is drawn in the position corresponding to that of the specimen, and the shape of the proboscis is shown.

PELECORHYNCHUS PERSONATUS *Walker*.

Pelecorhynchus personatus Ricardo, Ann. Mag. Nat. Hist. (7), v., 1900, p. 102.

Amendment.—The above reference was omitted from my paper "Notes on the genus *Pelecorhynchus*,"² where it should have been inserted after the reference to *Dasybasis personatus* Walker.

ASILIDÆ.

ASILUS ILLINGWORTHII *sp. nov.*

(Fig. 1.)

Description.—This species has the general appearance of *A. feruginei-ventris* Macquart, but in colour it has a slightly more reddish tinge.

♂. Head black, with traces of yellowish tomentum on the front and near the base of the antennæ; the tomentum occurs on the tubercle and covers the under side and rear of the head. Palpi black with black hairs. Moustache pale yellow, with one or two black hairs above. A few pale yellow hairs on the sides of the front and behind the head. Post-ocular bristles yellow. Antennæ reddish yellow, the third joint stained black on the paratype male; first joint longer than the second; the third scarcely as long as the two basal joints together; apical arista about as long as the third joint. Proboscis black with a few black hairs. Thorax black,

² See Records of the Australian Museum, vol. xiii., No. 1, 1920, p. 33.

but with a reddish tinge in places; it contains black bristles, a few yellow hairs, and a little yellow tomentum. On each side of the median line there are three presutural bristles, three superalar, two postalar and four intermediate. There are two bristles on the scutellum.

Abdomen black, with the apical margins of the segments, the sides, and the whole of the venter, reddish yellow. On the dorsal surface some of the hairs are black, but the majority appear to be yellowish, and there are two or three long lateral hairs on some of the basal segments.

Male genitalia are black, with a pair of very simple upper forceps, which are a little separated, and which bend downwards at the apex. The lamella does not project dorsally, but can be seen from the dorsal side and from the rear; it is situated in the usual place, and lies horizontally. The lower forceps contain a small apical projection at the lower border.

Legs yellow, but the intermediate coxæ and all the tarsi are stained with black. The anterior femora are without bristles. The intermediate femora have on the anterior side two widely separated bristles representing the upper row and three representing the lower; on the posterior side there is a bristle placed about three-quarters of its length, and also one subapical. The posterior femora have on the anterior side an upper row of three widely separated bristles and a lower row of four; an extra subapical bristle may also be present. The ventral row is represented by a few bristles, which vary in position on the different specimens. The posterior side of the femora contains a pair of subapical bristles, and another bristle is placed almost dorsally at about seven-eighths its length. The tibiæ and tarsi also contain bristles. Most of the bristles are black.

♀. The female is similar to the male; the ovipositor is normal.

Length.—Male 19 mm., female 18 mm.

Hab.—Queensland: Cairns, January 1921, 2 males and 3 females collected by Dr. J. F. Illingworth in the sugar-cane fields; Claudie River.

Types.—By the courtesy of Dr. Illingworth the holotype and allotype have been presented to the Australian Museum. Three paratypes are in Dr. Illingworth's collection and two in the National Museum, Melbourne.

Note.—It is reported that this species in the larval stage is predaceous upon sugar-cane grubs.

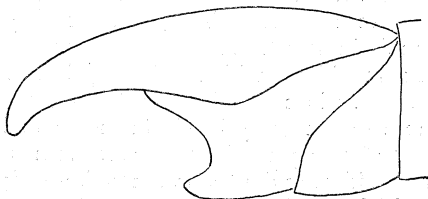
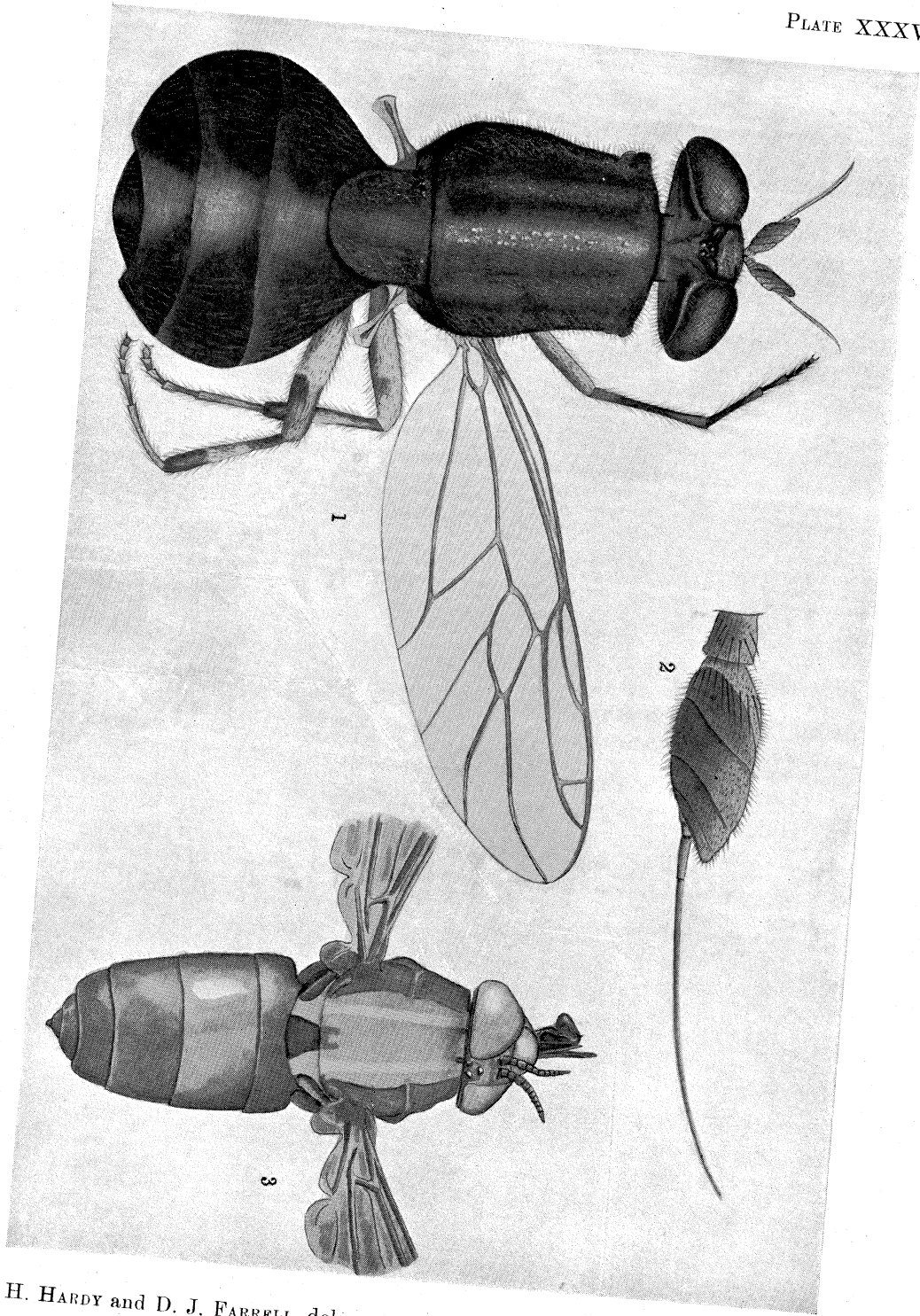


Fig. 1. *Asilus illingworthi*, sp. nov. The male genitalia seen laterally

EXPLANATION OF PLATE XXXVI.

- Fig. 1. *Dochmiocera aurilineata* n. gen. and sp. Dorsal view.
,, 2. " " " " Antennæ.
,, 3. *Pelecorhynchus fulvus* Ricardo. The allotype male.



G. H. HARDY and D. J. FARRELL, del.