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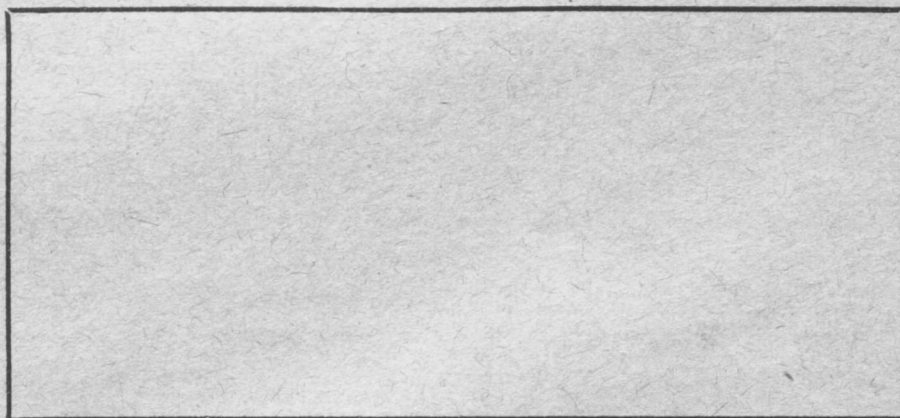
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NEW OR LITTLE-KNOWN SPECIES
OF TASIOCERA SKUSE
(Tipulidae).

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The genus *Tasiocera* was proposed by Skuse (*Proc. Linn. Soc. New South Wales* (2) 4 : 815, 816 ; 1889) for the reception of two Australian species, *T. tenuicornis* Skuse and *T. gracilicornis* Skuse. Of these species, *tenuicornis* was selected as genotype by Alexander (*Mem. Queensland Mus.*, 7 : 1 ; 1920). In recent years more than a score of new species have been discovered in Australia and New Zealand, all conforming with the genotype in the excessively elongate antennae of the male, the peculiar venation, and the general structure of the hypopygium. The chief characters available for the separation of these often very similar and closely allied forms are to be found in the details of structure of the male hypopygium, especially the shape of the basistyle, the shape and place of insertion of the dististyle, and the very remarkable modifications of the phallosome. M. Edwards in 1926 discovered a new species of *Tasiocera* in the Chilean subregion, agreeing with the Australasian species in all essentials except that the antennae are short in the male. A discussion of the known Australian species of this genus will be found in a paper by the writer (*Ann. Mag. Nat. Hist.*, (9) 18 : 169-176 ; 1926).

In the present paper, I wish to describe four new species of *Tasiocera* from Australia, three being from the elevated Dorrigo Plateau in northeastern New South Wales, the other from Western Australia. In addition, I wish to describe in some detail the male hypopygia of the two species of the genus described by Skuse. The identity of the genotype, *tenuicornis*, has long remained in doubt and it was not until I was able to study the hypopygium of the holotype that its characters became apparent. I am very peculiarly indebted to Dr. Ian Mackerras, of the University of Sydney, for his kindness in making microscopic mounts of the abdomens of the types of the two species of *Tasiocera* described by Skuse and sending these to me for study. The descriptions of the antennae, body and wings of these two species, as given by Skuse, are adequate but the essential and very necessary characters of the hypopygia would have remained unknown

except for the kind interest of Dr. Mackerras and the Trustees of the Macleay Collection. I am very greatly indebted to Dr. Mackerras for many favors in the past, to the late Dr. Eustace W. Ferguson, for helpful notes on the Skuse types of *Tasiocera*, and to the collectors of the new species discussed herewith, Messrs. John Clark and William Heron.

The accompanying figure of the venation of *Tasiocera* will serve to show the essential features, i. e., the complete break between the prearcular cells and *R*, the petiolate cell *R*₃, the subequal nature of *R*₂₊₃ and *R*₂, which lie in almost transverse alignment, the position of *m-cu* close to the fork of *M*, and other features shown by the figure. The venation of the radial field has here been interpreted in accordance with the modifications proposed by myself in recent papers (see *Proc. Linn. Soc. New South Wales*, 52 : 42-72, 92 figs. 1927 ; *Rec. Indian Mus.*, 29 : 168-172, pl. 13, 1927 ; *Can. Ent.*, 59 : 67-68, figs. 1-2, 1927).

1. *Tasiocera gracilicornis* Skuse.

1889. *Tasiocera gracilicornis* Skuse ; *Proc. Linn. Soc. New South Wales* (2) 4 : 817-818, pl. 24, fig. 55 (♂ hypopygium), fig. 56.

The holotype, a male from Middle Harbor, Sydney, was studied in July 1927. Male hypopygium (Plate, fig. 1) with the supposed eighth tergite (see *Tasiocera caudifera* Alexander, *Ann. Mag. Nat. Hist.*, (9) 18 : 170, fig. 3 ; 1926) produced into a tail-like structure as in *caudifera* but here shorter and stouter, nearly straight, blunt at apex. Basistyle (*b*) short and stout, with conspicuous setae. Dististyle (*d*) terminal in position, unusually short and stout, widened outwardly, the outer apical angle produced into an acute dusky spine, the inner apical angle produced into a smaller, broader-based spinous point ; apex of style between these two points produced into a fleshy portion that is provided with setae. The flattened pale plate of the phallosome (*p*) is very broad, its caudal margin conspicuously emarginate, forming two broad lobes.

2. *Tasiocera dorrigensis* sp. n.

General coloration testaceous brown ; antennae (♂) about one-half longer than the body, the first flagellar segment very long ; vein 2nd *A* relatively short, ending a short distance beyond the arcular region ; male hypopygium with the dististyle terminal in position, relatively short, expanded outwardly.

Male. — Length about 3 mm. ; wing, 3.3 mm. ; antenna 4.5 mm. Rostrum and palpi dark brown. Antennae (♂) about one half

longer than the entire body ; first flagellar segment very long, cylindrical ; second flagellar segment elongate-fusiform ; remaining flagellar segments flask shaped, each with a slender apical pedicel, the enlarged portion becoming shorter, the apical pedicel correspondingly longer, on the outer segments ; scapal segments light brown, the flagellum brownish black. Head yellowish brown.

Mesonotum testaceous brown, scarcely variegated. Pleura testaceous. Halteres dark brown, the base of the stem narrowly pale. Legs with the coxae and trochanters testaceous ; remainder of legs brown, the tarsi darker, the coloration produced by dark setae which are easily removed. Wings with a brownish tinge, the veins constituting the cord bordered with slightly darker brown ; veins pale brown, the macrotrichiae long and conspicuous, dark brown. Venation : *Sc* of moderate length, ending shortly before the fork of *Rs* ; R_{2+3+4} in alignment with *Rs*, a little shorter than the basal section of *Rs* ; *m-cu* just beyond the fork of *M* ; vein *2nd A* relatively short, ending about opposite one-third the distance between arculus and the level of the origin of *Rs*.

Abdomen dark brown, the hypopygium paler. Male hypopygium (Plate, fig. 2) with the basistyle (*b*) unusually short and stout. Dististyle (*a*) terminal in position, a short flattened blade that bears laterally a broad-based flattened spine, the short stem of the style narrower than the blade ; outer margin of the blade with a high crest of elevated setiferous tubercles, producing a serrulate appearance ; more basally there is a lower, flattened lobe that is provided with sparse setulae. Phallosome (*p*) apparently asymmetrical, heavily blackened. A very pale flattened plate is divided into two obtuse lobes by a profound linear incision.

Hab. New South Wales.

Holotype, ♂, Brooklana, E. Dorrigo, altitude 2000 feet, January 15, 1927 (*Wm. Heron*) ; in author's collection.

3. *Tasiocera bipennata* sp. n.

Vein *2nd A* relatively short, ending about opposite one-third the distance between arculus and origin of *Rs* ; male hypopygium with the dististyle short and stout, terminal in position, bifid near apex, the lateral arm a flattened glabrous spine ; phallosome appearing as a flattened median plate, the surface, and especially the lateral margins, with blackened spines that are longer at apex and here produced into tail-like structures.

Male. — Length, 3-3.5 mm. ; wing, 3.4-3.6 mm.

Female. — Length about 3.6-3.8 mm. ; wing, 4.2-4.3 mm.

Rostrum and palpi dark brown. Antennae brownish black, in the male with the basal flagellar segment elongate-cylindrical, the nodulose appearance beginning about the third flagellar segment, becoming more marked outwardly.

General coloration of the thoracic notum dark brown, the pleura yellowish testaceous. Halteres dark brown. Legs brownish black, the coxae and trochanters yellowish testaceous. Wings as in the genus. Venation (Text-figure 1): Vein 2nd A relatively short, extending to shortly beyond one-third of the distance separating the arculus from the origin of *Rs*.

Abdomen dark brown, the sternites obscure yellow. Male hypopygium (Plate, fig. 3) with the basistyle (*b*) relatively short and stout. Dististyle (*d*) terminal in position, relatively short and stout, bifid

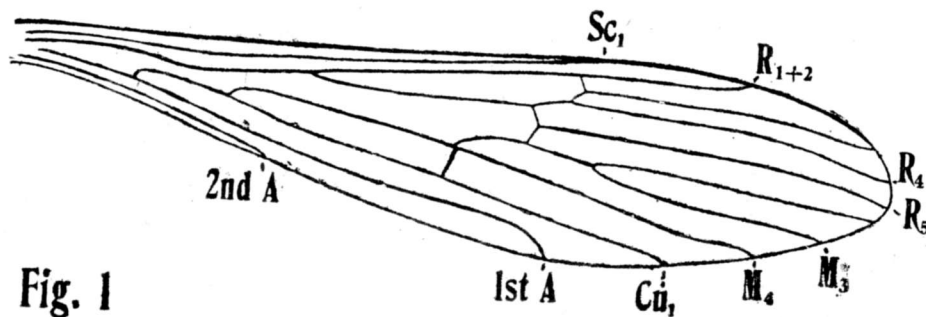


Fig. 1. — Venation of *Tasiocera bipennata* sp. n. Symbols: A = Anal veins; Cu = Cubitus; M = Media; R = Radius; Sc = Subcosta.

near apex, the lateral arm glabrous, obtuse or acutely pointed at apex in different specimens, as figured, the apical arm setiferous; face of the style with a low, dark, pectinate comb. Phallosome (*p*) appearing as a flattened median plate, the lateral margins with abundant blackened spines that become more lengthened and appressed apically, extending caudad on either side into tail-like structures.

Hab. New South Wales.

Holotype, ♂, Brooklana, E. Dorrigo, altitude 2000 feet, October, 19, 1927 (*Wm. Heron*). *Allotopotype*, ♀, November 6, 1927. *Paratopotypes*, 3 ♂ ♀, with the allotype; in author's collection.

4. *Tasiocera tenuicornis* Skuse.

1889. *Tasiocera tenuicornis* Skuse; *Proc. Linn Soc. New South Wales*, (2) 4: 816-817, pl. 21, fig. 13 (wing).

The holotype, a male, was studied in July 1927. Male hypopygium (Plate, fig. 4) with the basistyles (*b*) long and slender, the apex produced into a long stout fleshy lobe, the whole style with scattered

elongate setae; mesal face of style just caudad of the dististyle produced into a short acute spine that is not heavily chitinized. Dististyle (*d*) subterminal in position, relatively broad, flattened, of nearly equal width throughout its length, terminating in a dusky spinous tooth and additional microscopic paler points; on the outer margin near base a conspicuous flange or wing-like projection. What appears to represent the ninth tergite (not shown in figure) is a fleshy plate, each lateral angle densely provided with subappressed black setae, this structure nearly as in other members of the genus. Phallosome with a chitinized plate that terminates in two acute spinous teeth, separated from one another by a broad U-shaped notch. Another conspicuous structure of the phallosome appears as a semicircular pale blade, the lateral angles blackened.

5. **Tasiocera occidentalis** sp. n.

General coloration brownish testaceous; wings with R_{2+3+4} elongate, approximately four times the basal section of R_5 ; male hypopygium with the dististyle subterminal in position, slender, with an appressed spine near midlength of the outer margin; phallosome with each ventral lateral angle produced caudad into a long acute incurved spine.

Male. — Length about 2.8 mm.; wing about 3.8 mm.

Rostrum and palpi brown. Antennae (σ) approximately twice the length of the entire body; scapal segments brownish testaceous; flagellar segments dark brown, with very long, outspreading setae. Head dark gray, the median area darker.

Mesonotum brownish testaceous, the praescutum a little darker; pseudosutural foveae elongate, shiny black, conspicuous. Pleura pale testaceous. Halteres elongate, infuscated. Legs with the coxae and trochanters testaceous; remainder of legs dark brown. Wings with a grayish tinge, the veins darker; macrotrichiae long and conspicuous, dark brown. Venation: R_{2+3+4} elongate, approximately four times the basal deflection of R_5 ; vein *2nd A* not apparent in the unique, imperfectly preserved type.

Abdomen dark brown, the hypopygium a little paler. Male hypopygium (Plate, fig. 5) with the basistyle (*b*) very long and slender, beyond the point of insertion of the dististyle produced into a stout, gently arcuated lobe, the apex with a group of six or seven powerful spinous setae; outer face of basistyle with smaller setae. Dististyle (*d*) subterminal, slender, the outer margin near midlength with an appressed spine; apex of style denticulate, the margin back from the

tip with microscopic pale tubercles, each set with a small pale spine. Phallosome (*p*) complicated in structure, each ventrolateral angle produced caudad into a long, acute, gently incurved spine, the two spines taken together appearing somewhat lyriform.

Hab. West Australia.

Holotype, ♂, Perth (*J. Clark*); in National Museum, Melbourne.

6. *Tasiocera primaveris* sp. n.

Vein *2nd A* virtually confluent with the anal angle of the wing, ending opposite the arculus; male hypopygium with the dististyle subterminal in position, slender; phallosome narrowed apically and here provided with microscopic appressed spinules.

Male. — Length about 2.8 mm.; wing about 3.5 mm.

Rostrum, palpi and antennae dark brown; flagellar segments of about the basal half of the organ nearly cylindrical, only the outer segments becoming nodulose. Head dark brown.

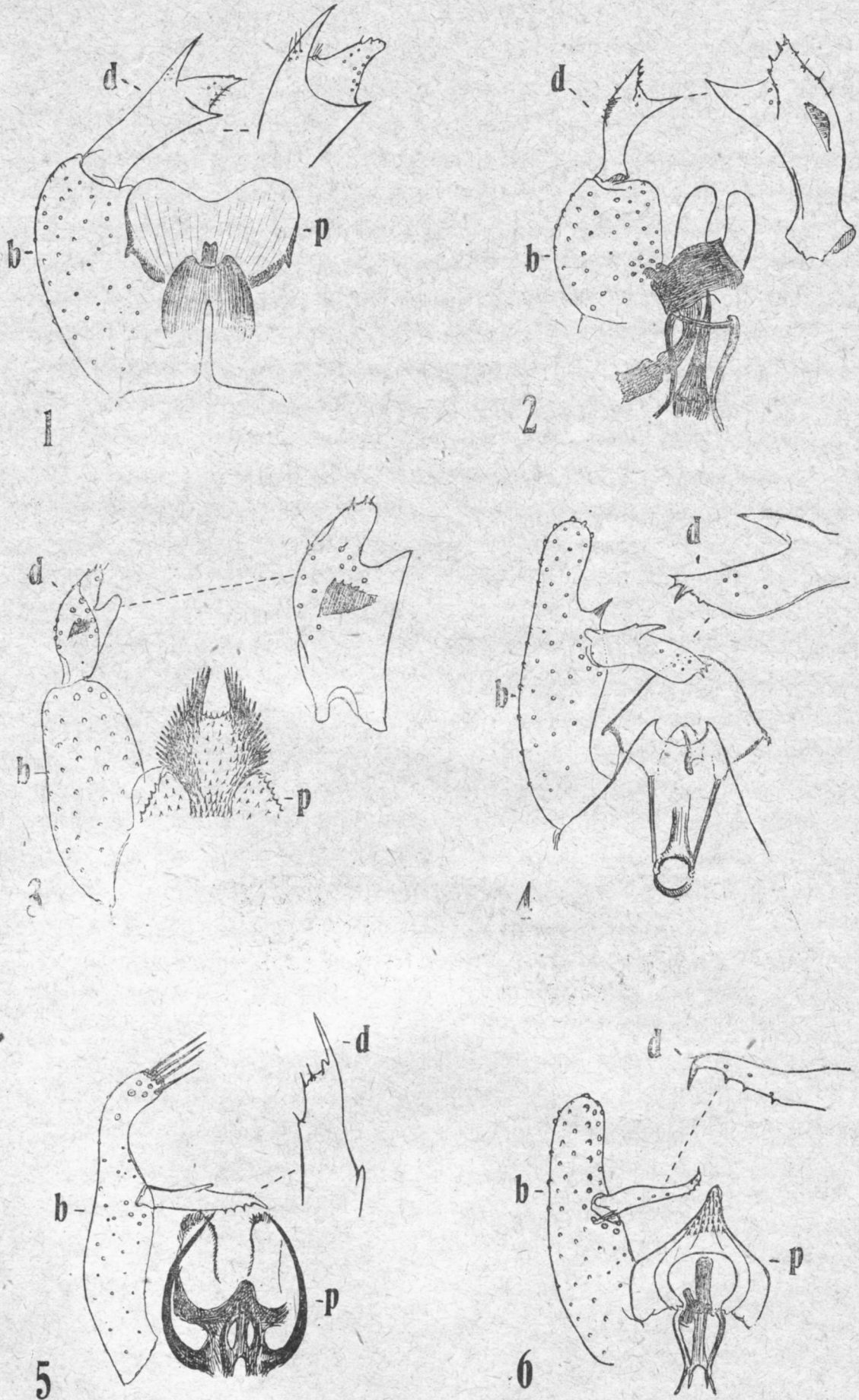
General coloration of the thorax dark brown, the humeral region of the praescutum and the pleura more testaceous brown. Halteres and legs dark brown. Wings relatively narrow. Venation: Vein *2nd A* running so close to the anal margin as to be virtually confluent with it, the cell thus reduced to a mere strip, the vein ending opposite the arculus.

Abdomen dark brown, the hypopygium somewhat brighter. Male hypopygium (Plate, fig. 6) much as in *angustistylus* in the slender subterminal dististyle but the phallosome very different. Outer lobe of the basistyle (*b*) stout, the setae of the mesal face very large and powerful, of the outer face smaller, of the base of the style very small. Dististyle (*d*) subterminal in position, relatively stout at base, beyond the basal third gradually narrowed, the tip with a short, powerful flattened bristle, the cephalic or mesal margin of the style with about three microscopic spinulae. Phallosome (*p*) broad, narrowed at apex and here set with microscopic appressed spinulae.

Hab. New South Wales.

Holotype, ♂, Brooklana, E. Dorrigo, altitude 2000 feet, along a stream, November 6, 1927 (*Wm. Heron*); in author's collection.

Tasiocera primaveris is somewhat similar to *T. angustistylus* Alexander (*Ann. Mag. Nat. Hist.*, (9) 18 : 175-176, fig. 5,6 ; 1926), differing especially in the structure of the phallosome.



Explanation of the Plate. Symbols : *b* = basistyle ; *d* = dististyle ; *p* = phallosome. — Male Hypopygia. — Fig. 1. *Tasiocera gracilicornis* Skuse ; holotype ; 2, *T. dorrigensis* sp. n. ; holotype ; 3, *T. bipennata* sp. n. ; paratype 4, *T. tenuicornis* Skuse ; holotype ; 5, *T. occidentalis* sp. n. ; holotype ; 6. *T. primavera* sp. n. ; holotype.

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