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New species of *Nanexila* Winterton & Irwin and *Taenogera* Kröber from Australia (Diptera: Therevidae)

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Abstract

Two new species are described in each of the closely related genera *Nanexila* Winterton & Irwin and *Taenogera* Kröber. *Nanexila atricauda* **sp. nov.** and *Nanexila jimrodmani* **sp. nov**. are described. The phylogenetic placement and diagnostic characteristics of these new species and other species recently transferred to *Nanexila* are discussed. *Taenogera luteola* **sp. nov.** and *Taenogera brunnea* **sp. nov.** are distinctive species described from female specimens collected in Queensland. *Taenogera* is diagnosed in light of these new species and a revised key to species presented.

Key words: Stiletto fly, Asiloidea

Introduction

The *Taenogera* genus-group (Diptera: Therevidae) comprise at least 13 described genera distributed throughout Australasia and parts of South America. This group of genera is recognisable from other therevids by an open wing cell m_3, femoral vestiture sparse and of only a single type, inner gonocoxal process present and female reproductive system with three spermathecae joining directly to the spermathecal sac duct (Winterton *et al.* 1999a–c, Winterton *et al.* 2001). Evidence from previous analyses indicate that the *Taenogera* genus-group are paraphyletic (Winterton *et al.* 1999b, 2001, Yang *et al.* 1999) and inclusion of these genera in the subfamily Agapophytinae is supported by at least the last aforementioned character as a synapomorphy shared by both members of Agapophytinae and the *Taenogera* genus-group (Winterton 2006).

Nanexila Winterton & Irwin contains 23 species divided into three species groups (*N. manni* (Hardy), *N. palassa* Winterton & Irwin and *N. atricostalis* Winterton & Irwin species-groups) (Winterton *et al.* 1999a). Winterton *et al.* (1999a) originally included 20 species in the genus, with three more species being subsequently transferred to *Nanexila* by Winterton *et al.* (1999b) and Metz *et al.* (2003). The genus is endemic to Australia, and is particularly species rich in the southern part of the continent (Winterton *et al.* (1999a). Diagnostic characters for *Nanexila* include velutum patches on the fore and hind femora absent, wing cell m_3 open, antennae usually shorter than head, frons flat, subapical setae on hind femur present, and three spermathecae joined to the spermathecal duct. Two new species of *Nanexila*, *N. atricauda* **sp. nov.** and *N. jimrodmani* **sp. nov.**, are described and figured herein from Australia. Notes are given on taxonomic and diagnostic characteristics of therevid species recently transferred to *Nanexila* from other genera.

Kröber (1912a) erected *Taenogera* as a monotypic genus for *Taenogera longa* Kröber, into which Mann (1928) transferred *Anabarhynchus nitidus* Macquart, *Ectinorhynchus superbus* Schiner and *Xylophagus latistria* Walker, although *T. longa* Kröber was found to be a junior synonym of *A. nitidus*. In their catalogue of Australasian and Oceanian Therevidae, Irwin & Lyneborg (1989) transferred *T. superbus* and *T. latistria* to

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Ectinorhynchus Macquart and moved *Anabarhynchus longus* Schiner to *Taenogera*. Two new species of *Taenogera*, *T. luteola* **sp. nov.** and *T. brunnea* **sp. nov.**, are described herein from female specimens collected in Queensland. *Taenogera* is diagnosed based on the addition of these two species and a revised key to species is presented.

Materials and methods

Terminology for wing venation follows McAlpine *et al.* (1981) and Irwin & Lyneborg (1981) and genitalic morphology as modified by Winterton *et al.* (1999a, b) and Winterton (2006). As discussed in Winterton (2006), this paper also follows Hauser & Irwin (2003) in the use of the term pubescence *sensu* Nichols (1989) instead of pruinescence to describe microtrichia covering the adult body.

Genitalia were macerated in 10% KOH at room temperature for one day to remove soft tissue, then rinsed in distilled water and dilute glacial acetic acid, and dissected in 80% ethanol. Female reproductive organs were stained with a saturated solution of Chlorazol Black in 40% ethanol. Genitalia preparations were placed in glycerine in a genitalia vial mounted on the pin beneath the specimen.

Types are deposited in the Queensland Museum (QMBA) and Queensland Department of Primary Industries & Fisheries (QDPI) insect collections in Brisbane, and the Australian National Insect Collection (ANIC) in Canberra, Australia. Numbers quoted with individual specimens as MEI ###### or ANIC29 ###### are unique identifiers in the therevid database MANDALA and are attached to each specimen as a yellow or white label (Kampmeier *et al.* 2004).

Taxonomy

Nanexila atricauda sp. nov.

Holotype female, AUSTRALIA: QUEENSLAND: BS1 Longlands Gap, 6.iii-4.iv.1995, 17.28S 149.29E, 1150 m, P. Zborowski, FI [flight interception] trap, JCU (East) (ANIC29 021588) (Type#: T.144009) (QMBA). Condition: excellent.

Diagnosis. Body bright orange, abdominal segments 7–8 and terminalia black; wing hyaline, tinted with orange; occiput with reflective gold pubescence medially, silver pubescence laterally.

Description. Female: Body length: 12.5 mm.

Head. Round in profile; eyes widely separated at narrowest point by width of ocellar tubercle; frons densely covered with matte black pubescence dorsally, velvet silver pubescence (velutum) on lower frons and face; lateral portion of occiput and gena covered with velutum pubescence, medially with gold velutum; multiple, poorly defined rows of orange postocular setae; slender, pale setae on gena; palp small and slender, palp and labellum pale orange-yellow with slender, white setae; antenna brown pubescent, longer than head; flagellum elongate and tapered, longer than combined length of scape and pedicel, style terminal, two segmented; dark setae on scape, pedicel and base of flagellum, longer on ventral and dorsal surfaces.

Thorax. Bright orange, largely glabrous with orange macrosetae; scutum and scutellum with sparse yellow pubescence and faint dorsocentral stripe, admixed with sparsely distributed, short, dark setae; pleuron overlain with sparse, yellow pubescence, slightly denser white pubescence on anepimeron, katepimeron, and meron, orange setae on proepisternum and katatergite; legs orange, coxae with sparse, orange pubescence, admixed with few, short, orange setae on anterior surfaces, stronger macrosetae dark orange and few in number; tibia and tarsi slightly darkened distally; haltere orange, knob pale distally; wing very faint orange infuscate, venation orange; scutal chaetotaxy (pairs): np, 3; sa, 2; pa, 1; dc, 2; sc, 1.

Abdomen. Bright orange except for black segments 7–8 and terminalia; short dark setae on all segments with longer pale setae laterally, tergite 1 with elongate pale orange setae along posterior margin; all setae of regular length, not reduced in length or concentrated medially.

Female genitalia. Genitalia not dissected.

Etymology. The specific epithet is derived from the Latin: *atro*, black and *cauda*, tail; referring to the distinct black tip of the abdomen.

Comments. *Nanexila atricauda* **sp. nov.** is closely related to *N. gracilis* (Mann). Both species are relatively large and slender compared to other species of *Nanexila,* and both are distinctively coloured bright orange. The male is unknown for this northern species, but it is easily differentiated from other *Nanexila* species by the attractively patterned head and black tip to the abdomen.

***Nanexila jimrodmani* sp. nov.**
(Figures 1–2)

Holotype male, AUSTRALIA: NEW SOUTH WALES: Kosciuszko N.P., 1.7 km ENE Thredbo, over narrow stream in flowering wide grassy creek bed, Malaise, 3-11.i.2002, C.L. Lambkin, N.T. Starick, 1380 m, 36°30’07”S, 148°19’02”E (ANIC29 004010) (ANIC). Condition: excellent.

Paratypes, AUSTRALIA: NEW SOUTH WALES: male, female, same data as holotype (ANIC29 004013) (QDPI), (004070) (ANIC); female, Kosciuszko N.P., 1.8 km NE Thredbo, over narrow stream in flowering grassland, Malaise, 11–13.i.2002, C.L. Lambkin, N.T. Starick, 1480 m, 36°29’49”S, 148°18’51”E (ANIC29 004077) (ANIC).

Diagnosis. Frons with enlarged setae; multiple rows of postocular setae dorsally in male; occiput and scutum covered with greenish pubescence, scutum with brown medial stripe; wing dark infuscate anteriorly; male abdomen overlain with silver velutum; spermathecal sac three lobed, paired arrangement of spermathecae with lobes of spermathecal sac.

Description. Male: Body length: 10.0 mm.

Head. Frons narrower than ocellar tubercle at narrowest point, densely covered with greenish-brown pubescence, sparsely admixed with elongate, black setae; narrow dark medial stripe extending from between bases of antennae dorsally to mid point of frons; face grey pubescent; ocellar tubercle small, raised, overlain with greenish-brown pubescence admixed with small, dark setae; occiput concave, overlain with greenish pubescence; single row of dark post-ocular setae dorsally, a few setae present behind the first indicating the possibility of a second row; gena overlain with silver pubescence admixed with slender, pale setae; mouthparts orange, palps slender; antenna shorter than head, orange pubescent, admixed with black setae on scape and pedicel, flagellum abruptly tapered, only slightly longer than combined length of scape and pedicel, style terminal, dark coloured.

Thorax. Dark, overlain with dense pubescence, macrosetae black; scutum pubescence greenish-brown with distinct brown, median stripe, sparsely admixed with dark setae; scutellum overlain with greenish pubescence admixed with long setae; pleuron overlain with sparse grey pubescence, admixed with pale, elongate setae on proepisternum, anepisternum, katepisternum and katatergite; coxae dark on anterior surfaces and orange on posterior surfaces, overlain with grey pubescence, admixed with elongate, black macrosetae and pale, slender setae on anterior surfaces on fore and mid coxae and laterally on hind coxa; legs yellow, sparsely covered with short, dark setae admixed with pale, slightly longer setae; wing largely hyaline, dark infuscate along anterior margin, venation dark; haltere yellow; scutal chaetotaxy (pairs): np, 4; sa, 2; pa, 1; dc, 4–5; sc, 1.

Abdomen. Segments 1–7 dark yellow-orange, dark brown dorso-medially, admixed with dark, elongate setae on all segments, setae longer and paler on anterior tergites; setae of uniform size and distribution on

tergite 2; tergites 1–7 overlain with dense silver velutum; terminalia dark yellow to brown.

Male genitalia. Epandrium narrowed posteriorly, covered with dark setae (Fig. 1A); cercus rounded; tergite 8 broad, not emarginate medially, setae concentrated laterally (Fig. 1B); sternite 8 quadrangular (Fig. 1E); hypandrium triangular; gonocoxite rounded, without medial atrium (Figs 1C–D), numerous large, dark setae located posteroventrally; ventral lobe elongate, narrowed apically; gonocoxal apodeme very short; gonocoxal process present, rounded, deep in profile, equal to 1/2 length of inner gonocoxal process; inner gonocoxal process spatulate apically; gonostylus with relatively few, pale setae; distiphallus curved ventrally, dorsal apodeme of parameral sheath 'T'-shaped, well sclerotised (Figs 1F–G); ventral apodeme of parameral sheath relatively short, forked; lateral ejaculatory apodeme band-like; ejaculatory apodeme relatively large basally, laterally spatulate at anterior end.

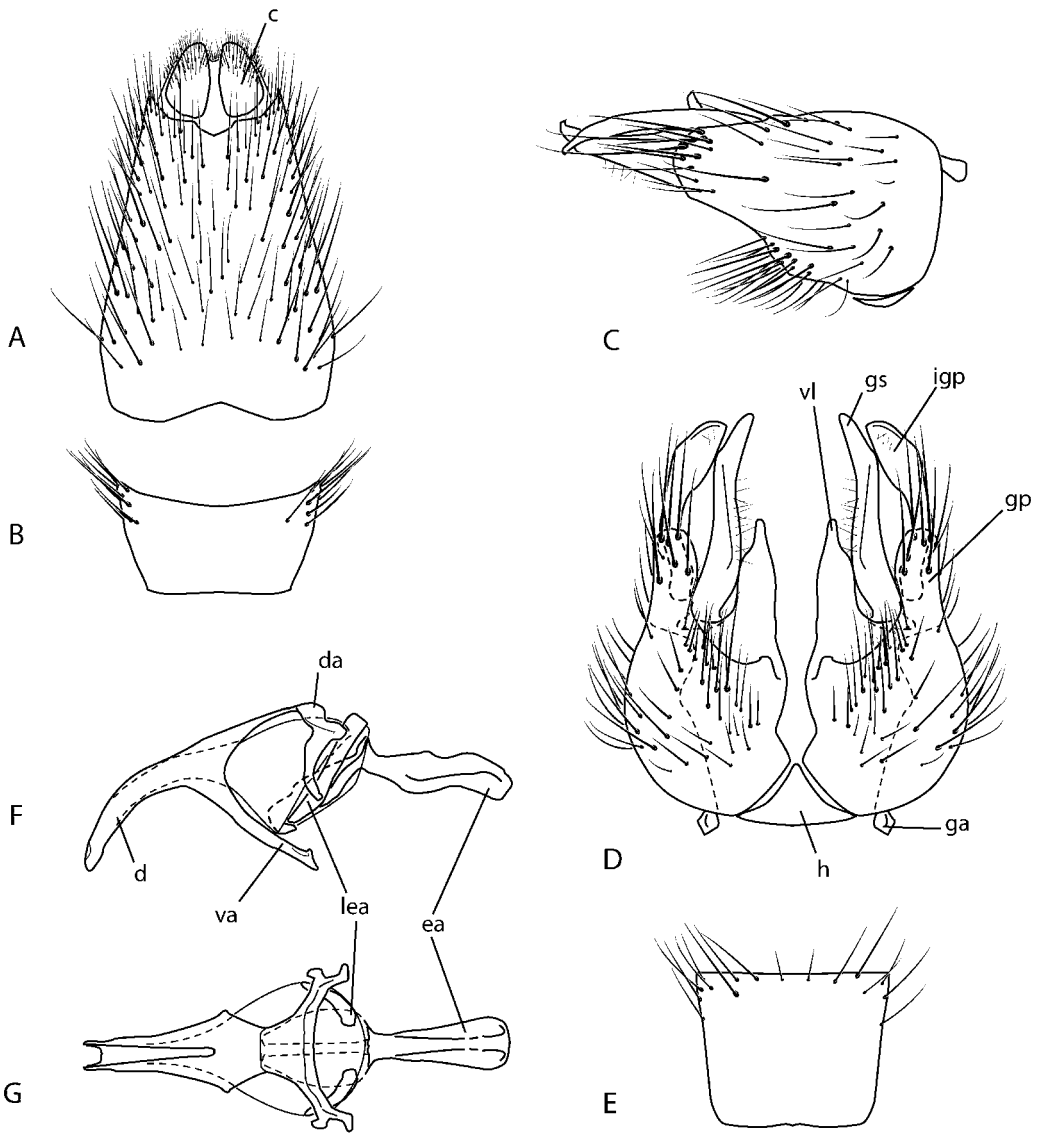

FIGURE 1. *Nanexila jimrodmani* **sp. nov.**, male genitalia: A, epandrium, dorsal view; B, tergite 8, dorsal view; C, gonocoxites lateral view; D, same, ventral view; E, sternite 8, ventral view; F, aedeagus, lateral view; G, same, dorsal view. Abbreviations: *c*, cercus; *d*, distiphallus; *da*, dorsal apodeme of parameral sheath; *ea*, ejaculatory apodeme; *ga*, gonocoxal apodeme; *gp*, gonocoxal process; *gs*, gonostylus; *h*, hypandrium; *igp*, inner gonocoxal process; *lea*, lateral ejaculatory apodeme; *va*, ventral apodeme of parameral sheath; *vl*, ventral lobe. Scale line= 0.5 mm.

Female: Body length: 10.5 mm.

Similar to male except: Frons much wider than ocellar tubercle; multiple rows of postocular setae; setae on scutum and abdomen shorter; abdominal tergites mostly orange with dark medial area relatively small, velutum absent.

Female genitalia (Fig. 2). Tergite 8 anterior process broad; furca well sclerotised, ring-like; accessory glands elongate, ducts joined before entering bursa copulatrix; common spermathecal sac duct relatively long; three spherical spermathecae, spermathecal sac three lobed, each lobe elongate with irregular dilations; spermathecal ducts joining separately and basally to each lobe of sac rather than to common spermathecal sac duct.

Etymology. This species is named in honour of James E. Rodman, Program Director of the Systematic Biology and Biodiversity Inventories Cluster in the Division of Environmental Biology of the National Science Foundation (USA).

Comments. This species is closely related to *N. atricostalis* and *Nanexila aureilineata* Winterton & Irwin. It can be differentiated by the female abdomen not having velutum patches (although present in male) and distinctive scutal colouration. The unusual shape and paired arrangement of the spermathecae and spermathecal sac lobes in this species is typical of that found in other members of the *N. atricostalis* species group. The infuscate anterior margin of the wing and the scutal colouration easily differentiate it from other *Nanexila* species.

Notes on species recently placed in Nanexila

Nanexila gracilis (Mann, 1928: 167): Mann (1928) described this species based on two females specimens in *Taenogera* as part of a "heterogeneous collection of species", underpinning the *ad-hoc* definition of this genus at the time. Undertaking a cladistic analysis of 44 morphological characters, Winterton *et al.* (1999b) justified the transfer of *N. gracilis* from *Taenogera* to *Nanexila*. This species is placed within the *N. palassa* species group despite the absence of modified tergite 2 setae. *Nanexila gracilis* is a distinctive species differentiated from other *Nanexila* by a bright orange coloured body, and grey pubescent occiput and median stripe on the scutum. It is the largest species in the genus, with a body size of 12–13 mm.

Nanexila lutea (White, 1915: 49): Originally described by White (1915) in the genus *Psilocephala* Zetterstedt, it was recently transferred to *Nanexila* by Metz *et al.* (2003). The male of this species is unknown and it is the only species of *Nanexila* known from Tasmania. A member of the *N. manni* species-group, *N. lutea* can be diagnosed from other *Nanexila* species based on the following female characteristics: hind femur with two anteroventral setae; abdomen lacking modified tergite 2 setae, abdomen yellow-brown with tergites dark brown medially, wing hyaline, scutum and occiput overlain with grey pubescence with a narrow, brown medial stripe.

Nanexila rufa (Kröber 1912b: 253): This species was described by Kröber (1912b) based on a single female specimen from Sydney, New South Wales. This type specimen has apparently been destroyed and a neotype was designated by Metz *et al.* (2003). *Nanexila rufa* is placed in the '*palassa*' species group, exhibiting the distinctive abdominal tergite markings and darkened setal bases on the scutum. The bow-shaped wing infuscation may serve as diagnostic for this species until a male specimen is available.

The addition of new species described here and recent new combinations by Winterton *et al.* (1999b) and Metz *et al.* (2003) has increased the total number of species of *Nanexila* to 25. With only the female known, it is impossible to adequately differentiate *N. rufa* using the key in Winterton *et al.* (1999a) from other closely related *Nanexila* species with similar colouration and markings such as *N. palassa* Winterton & Irwin, *N. spilotis* Winterton & Irwin and *N. ruficornis* (Macquart). To identify *N. atricauda* sp. nov., *N. gracilis*, *N. jimrodmani* sp. nov. and *N. lutea*, the following couplets or modifications should be inserted into the key published in Winterton *et al.* (1999a) to differentiate these species from other *Nanexila* species.

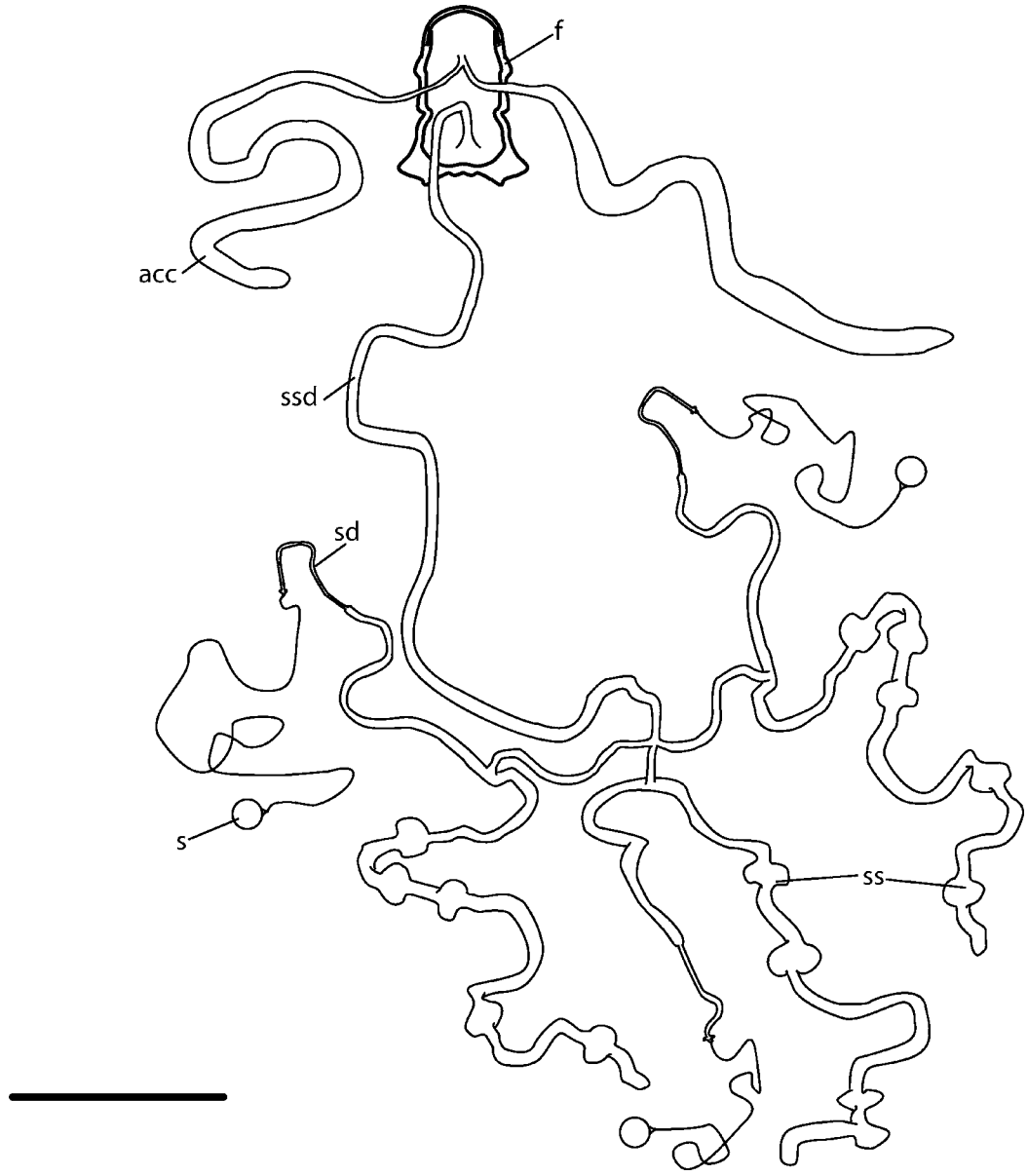

FIGURE 2. *Nanexila jimrodmani* **sp. nov.**, female spermathecal sac complex with external terminalia removed. Abbreviations: *acc*, accessory gland; *f*, furca; *s*, spermatheca; *sd*, spermathecal duct; *ss*, spermathecal sac; *ssd*, spermathecal sac duct. Scale line= 0.5 mm.

To identify *N. gracilis* and *N. atricauda* sp. nov.

1a. Large, slender body (total length: *ca.* 10–13 mm); bright orange colouration ..... 1b.
- Size small to large (total length: *ca.* 4–9 mm; rarely larger), slender to more robust; body colouration variable, never bright orange .....1c.

1b. Scutum and scutellum with board, grey, pubescent stripe; female abdomen uniform orange colour .... *gracilis* (Mann).
- Scutum and scutellum without grey pubescent strip; female abdomen orange with segments 7–8 and terminalia black..... *atricauda* **sp. nov.**

1c. Epandrium without enlarged setae (e.g. Winterton *et al.* 1999a: fig. 30); female abdominal tergite 2 without patch of modified setae..... 2.
- Epandrium with enlarged setae laterally or posterolaterally (e.g. Winterton *et al.* 1999a: figs 101, 119,

147); female abdominal tergite 2 usually with patch of modified setae posteromedially (Winterton *et al.* 1999a: fig. 17c, d).....*palassa* species-group 3.

To identify *N. jimrodmani* sp. nov.

15. Occiput grey pubescent; scutum silver-green pubescent; scutum with three notopleural setae and one supra-alar seta; abdominal tergites with at most only faint silver velutum, patterned as in Winterton *et al.* (1999a: fig. 28); spermathecal sacs of female approximately the same size as spermathecae..... ..... *atricostalis* Winterton & Irwin.
- Occiput gold pubescent; scutum with gold pubescent stripe, brown laterally; scutum with four notopleural setae and two supra-alar setae; female abdominal tergites 2–5 with silver velutum laterally, patterned as in Winterton *et al.* (1999a: fig: 29); spermathecal sacs of female much larger than spermathecae; male unknown .....*aureilineata* Winterton & Irwin.
- Occiput grey pubescent; scutum silver-green pubescent with brown stripe; scutum with four notopleural setae and two supra-alar setae; male abdomen overlain with dense velutum; female abdomen dark yellow with elongate, brown patch medially on all tergites; spermathecal sacs of female elongate with bulbous sections (Figure 2) .....*jimrodmani* **sp. nov.**

To identify *N. lutea*

18. Abdominal tergites 2–4 pale laterally; frons of female wrinkled with tentorial pits darkened (Winterton *et al.* 1999a: fig. 3); male with a set of "comb" like setae on ventral edge of gonostylus (Winterton *et al.* 1999a: fig. 44) (South Australia)..... *carminata* Winterton & Irwin.
- Abdominal tergites 2–6 pale laterally; frons of female only slightly wrinkled, tentorial pits pale or only slightly darkened; male unknown (Tasmania).....*lutea* (White).
- Abdominal tergites wholly dark; frons of female only slightly wrinkled, tentorial pits pale or only slightly darkened; male gonostylus without "comb" like setae ventrally (Winterton *et al.* 1999a: figs 60, 69).... 19

Taenogera Kröber

Taenogera Kröber, 1912a: 150 (description); Mann 1928: 163; Irwin and Lyneborg 1989: 358 (catalogue); Winterton *et al.* 1999b: 280 (redescription).

Type species: *Taenogera longa* Kröber (=*Anabarhynchus nitidus* Macquart).

Diagnosis. Male frons width almost equal to female, fine pale setae present dorsally; multiple rows of postocular setae in male and female, occiput with silver, white or gold pubescence; abdomen often with triangular patches of silver velutum laterally on tergites 2–4; wing cell m_3 open; fore and hind femora without elongate velutum patches; wing largely hyaline or smoky infuscate, sometimes darkened along anterior margin; distiphallus broad, parallel sided, dorsal apodeme of parameral sheath broadly 'T'-shaped; velutum patches absent on gonocoxites.

Taenogera luteola sp. nov.

Holotype female, AUSTRALIA: QUEENSLAND: Malanda, 25.viii.1966, D. Smith (MEI 27819) (Type#: T.144007) (QMBA). Condition: good.

Diagnosis. Wing with distinct infuscation along anterior margin; pleuron with only sparse pubescence;

scutum largely glabrous with gold velutum pubescence similar to *T. longa* and *T. notatithorax*; abdomen patterned with yellow and brown banding.

Description. Female: Body length: 13.5 mm.

Head. Frons glossy black-brown, slightly rugose, much wider than ocellar tubercle at narrowest point, gold, elongate setae sparsely distributed laterally on frons; face and area around antennal bases overlain with dense, gold velutinous pubescence; ocellar tubercle raised, glabrous except for sparse, elongate setae; occiput convex, overlain with broad band of dense, velutinous, silver pubescence along postocular ridge extending ventrally onto gena, multiple rows of orange postocular setae; gena with more slender, dark setae; mouthparts orange-brown, covered with numerous dark setae; antenna slightly shorter than head, orange-grey pubescent; scape and pedicel with orange setae; flagellum tapered, longer than combined length of scape and pedicel.

Thorax. Scutum glossy black with patches of gold, velutinous pubescence similar to *T. longa* and *T. notatithorax* (see Winterton *et al.* 1999b, fig. 35) but differing to these species by the absence of small, medial dorsocentral patches and having a single quadrangular shaped patch between dorsocentral setae posteriorly on scutum; scutellum yellow-brown with faint gold pubescence along anterior margin; scutum and scutellum with sparse, slender covering of pale setae; pleuron and coxae dark brown, faintly overlain with silver-grey pubescence, denser gold velutinous pubescence on postpronotum, proepisternum and katatergite, admixed with pale setae on postpronotum, proepisternum, katatergite dorsal portion of anepisternum and coxae; legs yellow, femora dark brown except for apices, covered with short, pale setae; tibia with orange macrosetae, fore tibia and tarsi brown; wing mostly hyaline, covered with minute orange microtrichia on most of wing area except intervenal area, basal medial cell and basal portions of discal and anal cells, distinct smoky infuscation of anterior margin of wing and area between cubital and posterior cubital veins; haltere yellow; scutal macrosetae orange, scutal chaetotaxy (pairs): np, 4; sa, 2; pa, 1; dc, 2; sc, 2 (outer setae smaller).

Abdomen. Elongate, patterned with yellow, brown and black, covered with sparse, pale setae; tergite 1 brown anteriorly, yellow along posterior margin; tergites 2–3 yellow with brown band anteriorly (broader laterally) and two triangular markings along posterior margin, two triangular shaped, gold, velutum patches midway along tergite; sternites 2–3

yellow; segments 4–6 mostly brown with yellow posterior margin (margin broader on segment 6); segments 7–8 and terminalia yellow.

Female Genitalia. Not dissected.

Male. Unknown.

Etymology. The specific epithet is derived from the Latin: *luteolus*, dim., yellowish; referring to the yellow body colour.

Comments. *Taenogera luteola* **sp. nov.** is known only from a single female specimen collected in Northern Queensland. It is closely related to *T. notatithorax* and *T. longa* based on the distinctive body colouration and vestiture.

***Taenogera brunnea* sp. nov.**

Holotype female, AUSTRALIA: QUEENSLAND: Gurgeena Plateau, 25°27’S 151°22’E, 22.viii–10.x.1998, G.B. Monteith, open forest, F.I.T. [flight interception trap] (ANIC29 021586) (Type#: T.144008) (QMBA). Condition: good; left wing broken and mid legs missing.

Paratype, AUSTRALIA: QUEENSLAND: female, Nipping Gully, 25°40’S 151°26’E, 21.viii–9.x.1998, G.B. Monteith, rainforest, F.I.T. [flight interception trap], 200 m (ANIC29 021587) (QMBA).

Diagnosis. Frons with greyish patch of pubescence; anterior margin of wing infuscate; pleuron overlain with dense, grey pubescence; scutum with diffuse dorsocentral stripe of greyish pubescence; abdomen mostly brownish.

Description. Female: Body length: 10.0 mm.

Head. Frons slightly concave, wider than ocellar tubercle at narrowest point, glossy black with central patch of grey pubescence admixed with elongate, pale setae; face overlain with dense, silver pubescence; ocellar tubercle slightly raised, glossy black with short, pale setae; occiput convex, dark, overlain with dense, grey pubescence, sparse medially; multiple rows of pale, postocular setae; gena overlain with silver pubescence admixed with short, dark setae; mouthparts light brown, covered with dark and pale setae; antenna slightly shorter than head length, yellow-orange pubescent, orange setae on scape and pedicel; flagellum tapered, approximately equal to combined length of scape and pedicel.

Thorax. Scutum brown, darker medially, overlain with sparse, greyish pubescence, admixed with short, pale setae, pubescence denser medially as a stripe anteriorly; scutellum yellow, overlain with yellow pubescence; pleuron and coxae brown, overlain with dense, greyish pubescence; admixed with pale setae on proepisternum, katatergite and coxae; legs brownish-yellow with brown macrosetae, covered with sparse, short, black setae on femora; wing mostly hyaline, covered with minute orange microtrichia on most of wing area except intervenal area, basal medial cell and basal portions of discal and anal cells, distinct smoky infuscation of anterior margin wing, in area between cubital and posterior cubital veins and along cross-vein between basal medial and discal cells, venation dark; haltere brownish; scutal macrosetae orange, scutal chaetotaxy (pairs): np, 3–4; sa, 2; pa, 1; dc, 1; sc, 1.

Abdomen. Elongate, brown on most segments, sparsely covered with short, erect, pale setae, denser on posterior segments; tergite 2 with dark band anteriorly.

Female Genitalia. Not dissected.

Male. Unknown.

Etymology. The specific epithet is derived from Medieval Latin: *brunneus*, brown; referring to the brownish body colour.

Comments. *Taenogera brunnea* **sp. nov.** is known from two female specimens collected in central Queensland and shares a similar wing pattern to *T. luteola* **sp. nov.** The brownish body colouration is distinctive for this species.

Revised key to species of *Taenogera*

1. Wing distinctly smoky infuscate along anterior margin; additional infuscate stripe along area between cubital and posterior cubital veins; abdomen mostly light coloured, yellow with brown or black markings, terminal segments yellow or brown 2
- Wing largely hyaline or smoky infuscate throughout, sometimes concentrated in radial sectors, never concentrated along anterior margin of wing; abdomen dark, either completely black or with some segments orange-red 3
2. Occiput glabrous medially with broad band of silver pubescence marginally; female frons without medial patch of pubescence; abdomen yellow with brown and black markings, segments 4–5 dark (female only) ..... *luteola* **sp. nov.**
- Occiput almost uniformly overlain with sparse grey pubescence; female frons with patch of pubescence medially; abdomen mostly brown without distinct markings, segments 4–5 not dark (female only)..... ..... *brunnea* **sp. nov.**
3. Scutum without gold velutum patches; anepisternum with fine pruinescence; scutellum dark, with 3–4 pairs of bristles; abdomen completely dark brown-black; femora black-brown ..... *nitida* (Macquart).
- Scutum with gold velutum patches; anepisternum glabrous; scutellum mostly pale, with single pair of bristles; abdominal segments 2–3 orange or red, the rest black; femora pale 4
4. Coxae yellow; upper section of katepisternum with patch of gold velutum; abdominal segments 2–3

bright orange..... *notatithorax* Mann.

- Coxae black with silver velutum; katepisternum entirely glabrous; abdominal segments 2–3 dark red..... ..... *longa* (Schiner).

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