Australian Ceratitinae (Diptera : Tephritidae)

Surakrai Permkam[A] *and David L. Hancock*[B]

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Invertebr. Taxon., 1994, **8**, 1325–41

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Abstract

Eleven species of Ceratitinae are recorded from Australia. *Acidoxantha quinaria*, sp. nov., *Ceratitella amyemae*, sp. nov., and *C. recondita*, sp. nov., are described. *Carpophthorella nigrifascia* (Walker) (= *C. setifrons* Malloch, syn. nov.) and *Paraceratitella compta* Hardy are newly recorded, both from Queensland.

Introduction

Prior to the study of Australian Ceratitinae by Hardy (1967) only two species, *Ceratitella loranthi* (Froggatt) and the introduced *Ceratitis capitata* (Wiedemann), were known from this country. Hardy (1967) added four new species, described in two genera, *Ceratitella* Malloch and *Paraceratitella* Hardy. Subsequently, Fitt (1981) studied the biology of *Paraceratitella eurycephala* Hardy.

We record below two further genera for Australia, *Acidoxantha* Hendel and *Carpophthorella* Hendel, plus three further species in *Ceratitella* and *Paraceratitella*.

The subfamily Ceratitinae has often been included within the Trypetinae. We follow the classification of Hancock (1986), who regarded it as distinct and closely related to the Dacinae.

Abbreviations

The following abbreviations have been used for specimen depositories:

AM	Australian Museum, Sydney
ANIC	Australian National Insect Collection, Canberra
BMNH	The Natural History Museum, London
BPBM	B.P. Bishop Museum, Honolulu
NMV	Museum of Victoria, Melbourne
NSWA	New South Wales Department of Agriculture, Rydalmere
QDPI	Queensland Department of Primary Industries, Brisbane
QM	Queensland Museum, Brisbane
UQIC	University of Queensland Insect Collection, Brisbane

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Key to Australian Genera of Ceratitinae

1. Wing with 2 longitudinal brown or yellow-brown bands; head with 6–10 pairs of frontal bristles ..... *Carpophthorella*
   Wing with transverse yellow or brown bands; head with 2 pairs of frontal bristles 2
2. Thorax and abdomen fulvous, at most with small black spots; wing with a medial, transverse Y-shaped yellow band ..... *Acidoxantha*
   Thorax and abdomen largely blackish brown, usually with silvery grey pubescent areas; wing without a Y-shaped medial band 3
3. Scutellum flat, yellow, at most with posterior black spots; wing base brown without dark streaks and spots ..... *Paraceratitella*
   Scutellum inflated, black, at most with a narrow anterior yellow band or spots; wing base with numerous dark streaks and spots 4
4. Scutellum with a yellow anterior band; wing bands brown and yellow ..... *Ceratitis*
   Scutellum black or with small anterolateral spots; wing bands entirely brown ..... *Ceratitella*

Genus *Acidoxantha* Hendel

Acidoxantha Hendel, 1914: 83.

Type species: *A. punctiventris* Hendel, by original designation.

This genus is usually placed in the Trypetini (e.g. Hardy 1987) but the sinuous extension to cell CuP on the wing, the presence of only 2 spermathecae and the long, needle-like aculeus are all characters typical of the Ceratitinae (Hancock 1986). Species of *Acidoxantha* breed in the buds of large flowers such as *Bombax, Bauhinia, Hibiscus* and *Tiliceus* (Hardy 1987). The genus occurs in the Indo-Australian region and Madagascar. In life, adults are green in colour.

Acidoxantha quinaria, sp. nov.
(Fig. 1)

Material Examined

Holotype. ♀, Thompson Springs, Kununurra, Western Australia, [15°47'S, 128°44'E], 16.ii.1976, P. J. Michael, ex malvaceous flower (QM, T12205).

Paratype. ♀, same data as holotype (UQIC).

Diagnosis

This species runs to *A. totoflava* Hardy in Hardy's (1987) key. It differs in the absence of dark spots behind the prescutellar bristles and in the shiny black abdominal spots, having an anteromedial spot on tergum IV and a pair each of posterolateral spots on terga V and VI, rather than pairs of both anteromedial and posterolateral spots on terga IV and V.

Description

Female

Length of body (excluding ovipositor) 4·5 mm; of wing 4·4 mm.

Head approximately $1\frac{1}{2}\times$ higher than long. Face vertical in lateral view. Antennae situated near middle of head; 2nd segment with 1 basal bristle; 3rd segment $2\frac{1}{2}\times$ longer than wide, $\frac{3}{5}$ length of face, broadly rounded at apex. Arista bare with microscopic pubescence near tip. Frons sloping; bristles pale red-brown: 2 pairs frontals, 2 pairs orbitals. Ocellar bristles rudimentary, seta-like. Postocellar and vertical bristles well developed. Occipital bristles fine. Genal bristle well developed.

Thorax. Scutum predominantly fulvous with light grey pollinosity and a black, almost dumbell-shaped spot posterolaterally, just below and behind intra-alar bristles. Scutellum yellow, flat, bare. Postnotum with a pair of lateral brown spots. Bristles pale red-brown: 4 scapulars, the inner pair weaker than the outer; 1 pair humerals, 1 pair anterior notopleurals, 1 pair notopleurals, 1 pair presuturals, 1 pair supra-alars, 1 pair intra-alars, 1 pair posterior alars, 1 pair dorsocentrals, placed well behind supra-alars, 1 pair prescutellars, 4 scutellars. Pleura fulvous, with the following bristles: 2 mesopleural, 1 pteropleural, 1 sternopleural.

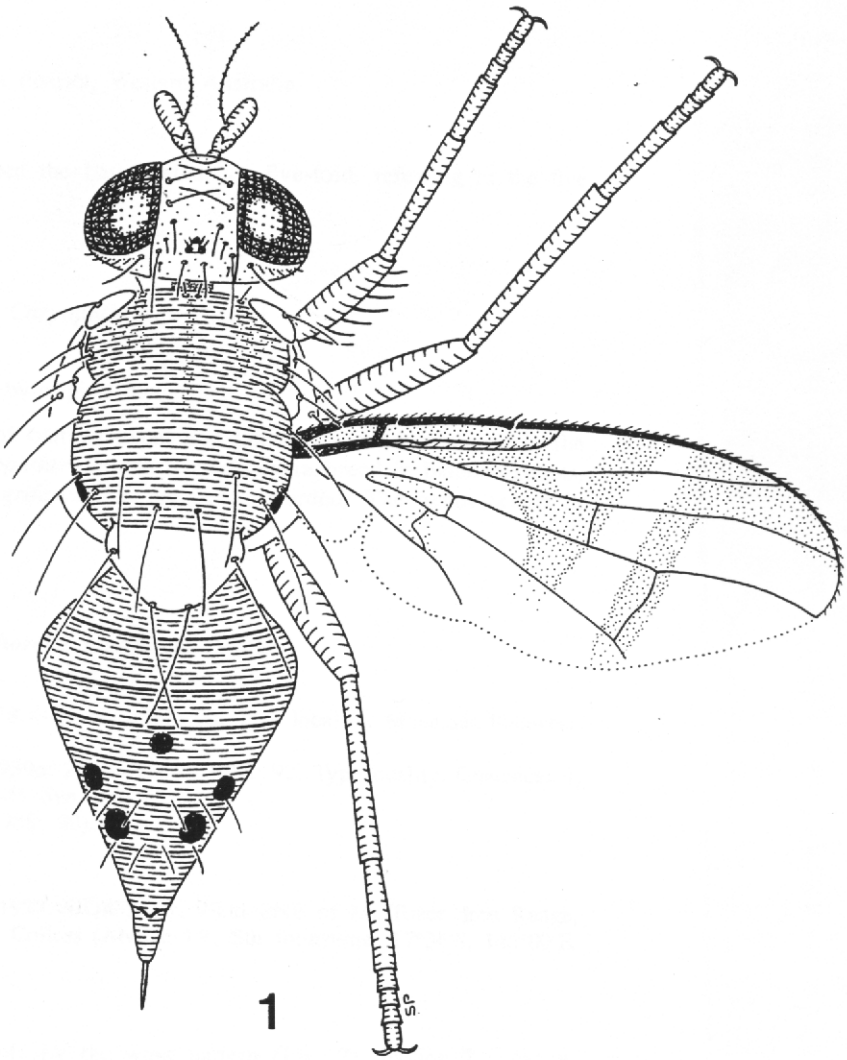


Fig. 1. *Acidoxantha quinaria*, sp. nov., female.

Legs fulvous; fore femora with a row of moderately strong brownish yellow posteroventral bristles and numerous erect, bristle-like dorsal setae; middle tibiae with a strong brownish yellow apical spine and 5 prominent posterodorsal bristles on basal $\frac{3}{4}$; hind femur with 4–5 preapical dorsal bristles and 2 thin, hair-like ventral bristles on basal $\frac{1}{3}$; hind tibiae with a row of brown anterodorsal bristles and 4–6 posterodorsal bristles.

Wing predominantly hyaline with a transverse, yellow Y-shaped medial band and a transverse band through dm-cu crossvein, extending along costal margin to apex of vein R_{4+5}. One well-developed black costal spine at apex of vein Sc. Vein R_1 comparatively

short, setose; vein R_{2+3} undulate; vein R_{4+5} gently convex on apical section and bare throughout; r-m crossvein situated at basal $\frac{3}{5}$ discal cell. Cell CuP extension well developed.

Abdomen fulvous except for 5 shining black spots as follows: basomedial spot on tergum IV; a pair of posterolateral spots on each of terga V and VI. All terga covered with fine, erect setae and with black bristles on dorsolateral and posterior margins. Oviscape fulvous, conical, as long as tergum VI. Aculeus needle-like, apically pointed.

Host Plant

The type specimens were bred from a malvaceous flower.

Distribution

Known only from the Kununurra district, Western Australia.

Etymology

The specific name is derived from the Latin *quinarius*, five-fold, referring to the five abdominal spots.

Genus *Carpophthorella* Hendel

Carpophthorella Hendel, 1914: 80.

Type species *C. magnifica* Hendel, by original designation.

This genus belongs to a group of bamboo-shoot and grass-stem feeders placed in the tribe Gastrozonini. Species in *Carpophthorella* and related genera breed in bamboo shoots, but a host for the widespread *C. nigrifascia* has not been recorded. The genus occurs in the Indo-Australian region.

Carpophthorella nigrifascia (Walker)
(Fig. 2)

Trypeta nigrifascia Walker, 1860: 158. — Hardy, 1988: 90. Type locality: Makassar, Sulawesi. Holotype ♂ in BMNH.

Carpophthorella setifrons Malloch, 1939*a*: 263. — Hardy, 1988: 92. Type locality: Guadalcanal, Solomon Is. Holotype ♀ in BMNH. *Syn. nov.*

For further synonymy see Hardy (1988: 90).

Material Examined

Queensland: 1♂, Dunk I., 27.viii.1927 (UQIC); 1♂, 9 km ENE of Mt Tozer, Iron Range, 12°43′S, 143°17′E, 5–10.vi.1986, D.H. Colless (ANIC); 1♀, Sth Johnstone, 17°36′S, 146°00′E, 2.ix.1971, B. Franzmann (QDPI).

Diagnosis

This species is readily recognisable by the wing pattern (Fig. 2), having 2 separate, longitudinal dark brown (female) or yellowish brown (male) bands. The fine thoracic setulae are pale in males, dark in females. Figures of the male and female genitalia were provided by Hardy (1988), who adequately redescribed the species.

Host Plants

None recorded.

Distribution

Within Australia, known from north-east Queensland. Elsewhere it is recorded from East Malaysia, Indonesia, Papua New Guinea and the Solomon Islands.

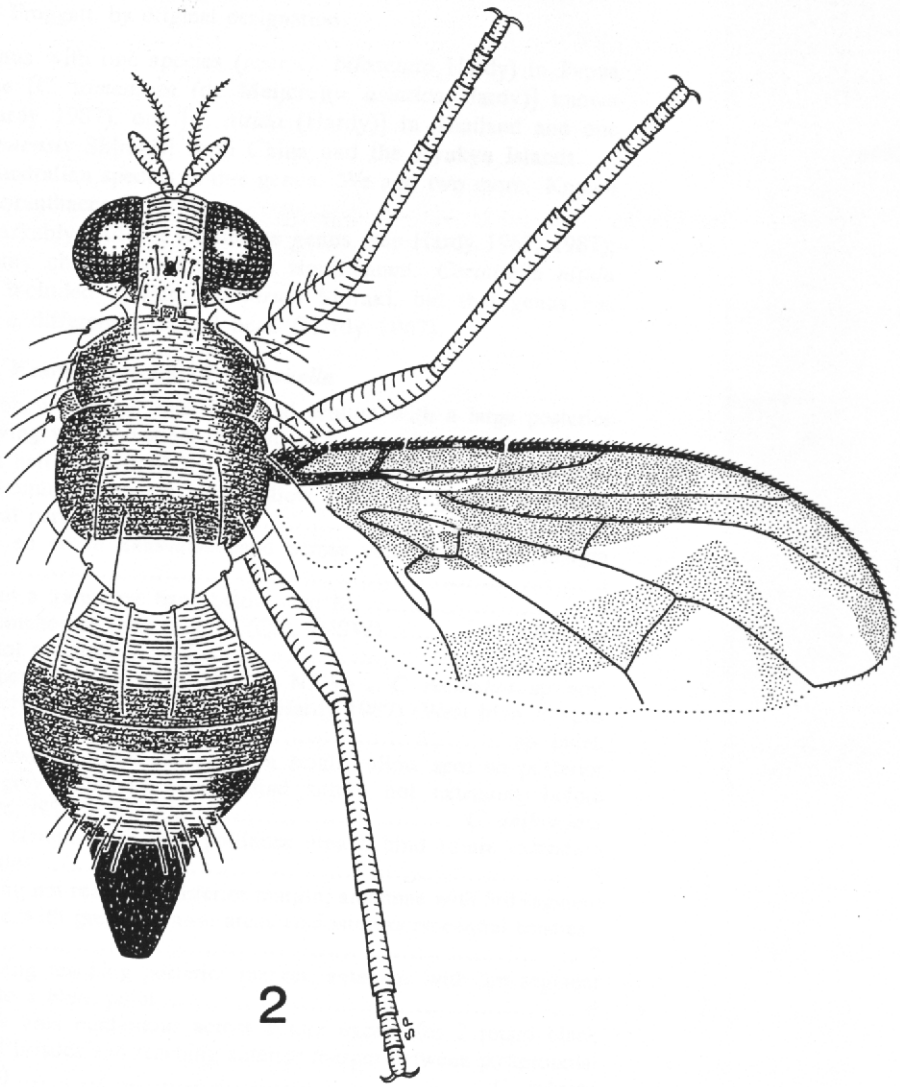


Fig. 2. *Carpophthorella nigrifascia* (Walker), female.

Comments

There is much variation in the number of frontal bristles and extent of black thoracic markings. The known Australian specimens have 6–9 pairs of frontal bristles and reduced black thoracic markings, the latter similar to a female from Sogeri, Papua New Guinea (in UQIC), and the Solomon Island specimens referred to *C. setifrons* Malloch.

Hardy (1988) noted the only difference between *C. setifrons* and *C. nigrifascia* to be the presence of 10, rather than 6–8 pairs of frontal bristles. The presence of 9 pairs of bristles in one Australian specimen supports Hardy's (1988) suggestion that the two are synonymous. The black thoracic areas tend to be more extensive in females than in males but variation is evident.

Genus *Ceratitella* Malloch

Ceratitella Malloch, 1939*b*: 452.

Type species: *Ceratitis loranthi* Froggatt, by original designation.

This is an Indo-Australian genus with one species (near *C. bifasciata* Hardy) in Papua New Guinea and Irian Jaya, one [*C. tomentosa* (de Meijere)(= *asiatica* Hardy)] known from Pakistan and Indonesia (Hardy 1987), one [*C. nitida* (Hardy)] in Thailand and one [*C. sobrina* (Zia) (= *amamioshimaensis* Shiraki)] from China and the Ryukyu Islands.

Hardy (1967) recorded three Australian species in this genus. We add two more. Known hosts are species of mistletoe (Loranthaceae).

The male genitalia appear remarkably uniform within the genus (see Hardy 1967, 1987); we have been unable to detect any characters of specific significance. *Ceratitella nitida* and *C. sobrina* were previously included in *Paratrirhithrum* Shiraki, but that genus has only one pair of *fr.* bristles and a differently shaped head (Hardy 1967).

Key to Known Species of *Ceratitella*

1. Scutellum with a basal yellow spot on each side and scutum with a large posterior medial yellow patch; wing with a distinct remnant of a secondary transverse band in apical part (southern half of Australia) ..... *C. loranthi*
   Scutellum all black and scutum without a large yellow patch; wing with secondary transverse band in apical part entire or lacking 2
2. Apical part of wing with an entire transverse band across vein M to wing margin (*bifasciata* complex) 3
   Apical part of wing without a transverse band below vein M. 5
3. Aculeus broad, distinctly notched at apex (Fig. 6) (Qld, ?NSW) ..... *C. bifasciata*
   Aculeus tapered at apex, not notched 4
4. Aculeus slender, evenly tapered to apex (Fig. 7) (Qld, NSW) .. *C. recondita*, sp. nov.
   Aculeus broad, sharply tapered at apex (cf. fig. 6*g* in Hardy 1987) (West Irian, ?Papua New Guinea) ..... sp. indet.
5. Postpronotal lobes dark brown to black except for a small yellow spot on posterior margin; scutum with grey pollinose area behind suture not extending before dorsocentral bristles (Qld, NSW) ..... *C. unifasciata*
   Postpronotal lobes yellow; scutum with grey pollinose area behind suture extending before dorsocentral bristles 6
6. Basal transverse band of wing not reaching posterior margin; antennae with 3rd segment apically rounded; scutum with grey pollinose areas enclosing dorsocentral bristles 7
   Basal transverse band of wing reaching posterior margin; antennae with 3rd segment dorsoapically produced to a blunt point 8
7. Scutum with grey pollinose area continuous across suture except for 2 round black spots before dorsocentral bristles and reaching anterior margin between postpronotal lobes (China, Ryukyu Is) ..... *C. sobrina*
   Scutum with grey pollinose area interrupted by a black band behind suture and not reaching anterior margin (Indonesia, Pakistan) ..... *C. tomentosa*
8. Scutum with grey pollinose area continuous across suture except for 3 shining black spots, enclosing dorsocentral bristles; costal band broadly meeting vein M at apex (Thailand) ..... *C. nitida*
   Scutum with grey pollinose area interrupted by a black band behind suture, not enclosing dorsocentral bristles; costal band narrowly meeting vein M at apex (Qld, NT) ..... *C. amyemae*, sp. nov.

Ceratitella amyemae, sp. nov.
(Figs 3, 5)

Material Examined

Holotype. ♂, 20 km S Ti-tree, NT [22°08'S, 133°16'E], 2.iv.1982, A. Nelson, ex *Amyema maidenii*, emerged 29.iv.1962 (QM, T12206).

Paratypes. **Northern Territory**: 2♀, same data as holotype (QM, ANIC); 2♂, Ti-tree, 31.iii.1982, A. Nelson, ex *Amyema maidenii*, emerged 29.iv.1982 (AM, ANIC); 2♂, Ti-tree, 31.iii.1982, S. Collins, ex *Amyema maidenii*, emerged 18.iv.1992 (QDPI); 1♂, 160 km N of Alice Springs, 5.iv.1982, ex *Amyema maidenii* (UQIC). **Queensland**: 1♂, Bunya Mts Natl Pk, Qld, 16.x.1983, E.L. Schlinger and M.E. Irwin, malaise (NMV).

Diagnosis

This species closely resembles *C. tomentosa* from south-east Asia. It differs in the slightly pointed third antennal segment, less extensive grey pollinose areas on the scutum that do not enclose the dorsocentral bristles and the basal transverse band on the wing reaching the hind margin. From other Australian species it differs in the following combination of characters: yellow postpronotal lobes, scutellum and scutum without yellow areas, grey pollinose area of scutum extending before dorsocentral bristles and no subapical transverse band across vein M on the wing.

Description

Male

Length of body 4·0 mm; of wing 4·0 mm.

Head about $1\frac{1}{3}\times$ higher than long. Face broad, white on lower $\frac{2}{3}$, brown on upper $\frac{1}{3}$. Antennae rufous, shorter than face, situated near middle of head; 3rd segment slightly pointed dorsoapically. Arista with microscopic pubescence. Frons fulvous, with lower half whitish; bristles black: 2 pairs frontals, 2 pairs orbitals. Ocellar bristles well developed. Postocellar and vertical bristles well developed. Occipital bristles fine. Genal bristle well developed.

Thorax. Scutum polished black with a transverse white pollinose band just before suture and a large pollinose area posteromedially, extending before, but not enclosing, the dorsocentral bristles. Postpronotal lobes yellow. Scutellum black, swollen, with fine sparse pale setae. Postnotum blackish brown, laterally white pollinose. Bristles black: 4 scapulars, the inner pair weaker than the outer; 1 pair humerals, 1 pair anterior notopleurals, 1 pair notopleurals, 1 pair presuturals, 1 pair supra-alars, 1 pair intra-alars, 1 pair posterior alars, 1 pair dorsocentrals, placed on line of supra-alars, 1 pair prescutellars, 4 scutellars. Pleura blackish brown except for a broad quadrate yellow band from postpronotal lobe to wing base, with the following bristles: 1 mesopleural, 1 pteropleural, 1 sternopleural.

Legs with femora dark brown, tibiae and tarsi fulvous; middle tibiae with an apical black spine.

Wing hyaline with brown markings as follows: basally, with numerous streaks and spots from outer costal cell to cell CuP; 3 bands radiating from stigma, along costa to vein M, through r-m crossvein to apex of vein CuA, and transversely to reach wing margin below vein A_1. Veins R_1 and R_{2+3} setose; r-m crossvein beyond middle of discal cell; a small patch of grey setae in costal band above r-m crossvein; cell CuP extension well developed.

Abdomen polished black, with white pollinose posterior bands on terga II and IV, sometimes also on medial portion of tergum III.

Female

As for male. Oviscape blackish brown, black apically, almost as long as terga III to V combined; tergum VI not visible from above. Aculeus elongate (Fig. 5), evenly tapered apically. Two spermathecae.

Host Plant

Reared from the fruit of *Amyema maidenii.*

Distribution

Southern Northern Territory and south-east Queensland.

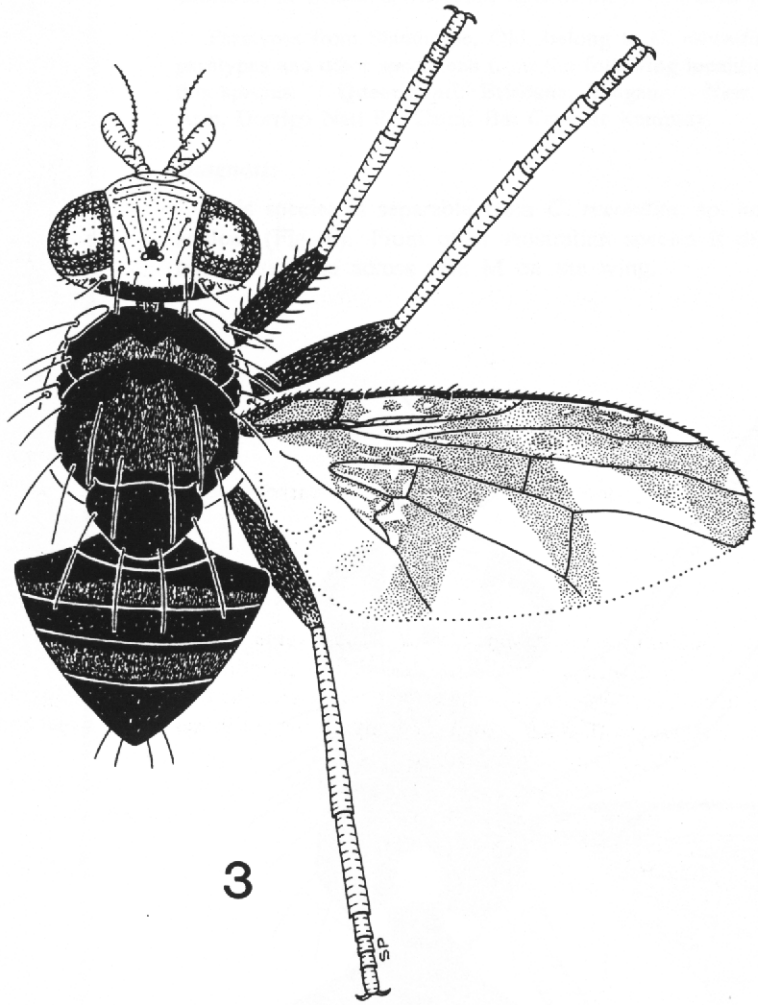


Fig. 3. *Ceratitella amyemae*, sp. nov., male.

Comments

This species was recorded as *Ceratitella* sp. by Smith *et al.* (1988). It appears to be restricted to dry open country. The related *C. tomentosa* has been bred from the fruit of *Loranthus longiflorus* in Pakistan (Hardy 1967).

Etymology

This species is named after its host plant, *Amyema*.

Ceratitella bifasciata Hardy
(Fig. 6)

Ceratitella bifasciata Hardy, 1967: 133. — Hardy, 1987: 265 (partim.). Type locality: Ravensbourne Natl Pk, S Qld. Holotype ♀ in QM.

Material Examined

Queensland: holotype, allotype and 7 paratypes from Ravensbourne Natl Pk, [24°92'S, 145°33'E], 30.xii.1952, A.W.S. May, ex seed of *Amylotheca dictyophleba* (QM, UQIC); 1♀, Mt Glorious, nr Brisbane, 7.v.1953, A.W.S. May, ex *Cissus* (QDPI).

Paratypes from Stanthorpe, Qld, belong to *C. recondita*, sp. nov. In the absence of females, paratypes and other specimens from the following localities cannot be confirmed as belonging to this species. **Queensland**: Brisbane, Yangan. **New South Wales**: Upper Allyn R., North Arm, Dorrigo Natl Pk, Carrai Bat Cave nr Kempsey.

Diagnosis

This species is separable from *C. recondita*, sp. nov., only by the shape of the female aculeus (Fig. 6). From other Australian species it differs in the presence of a subapical transverse band across vein M on the wing.

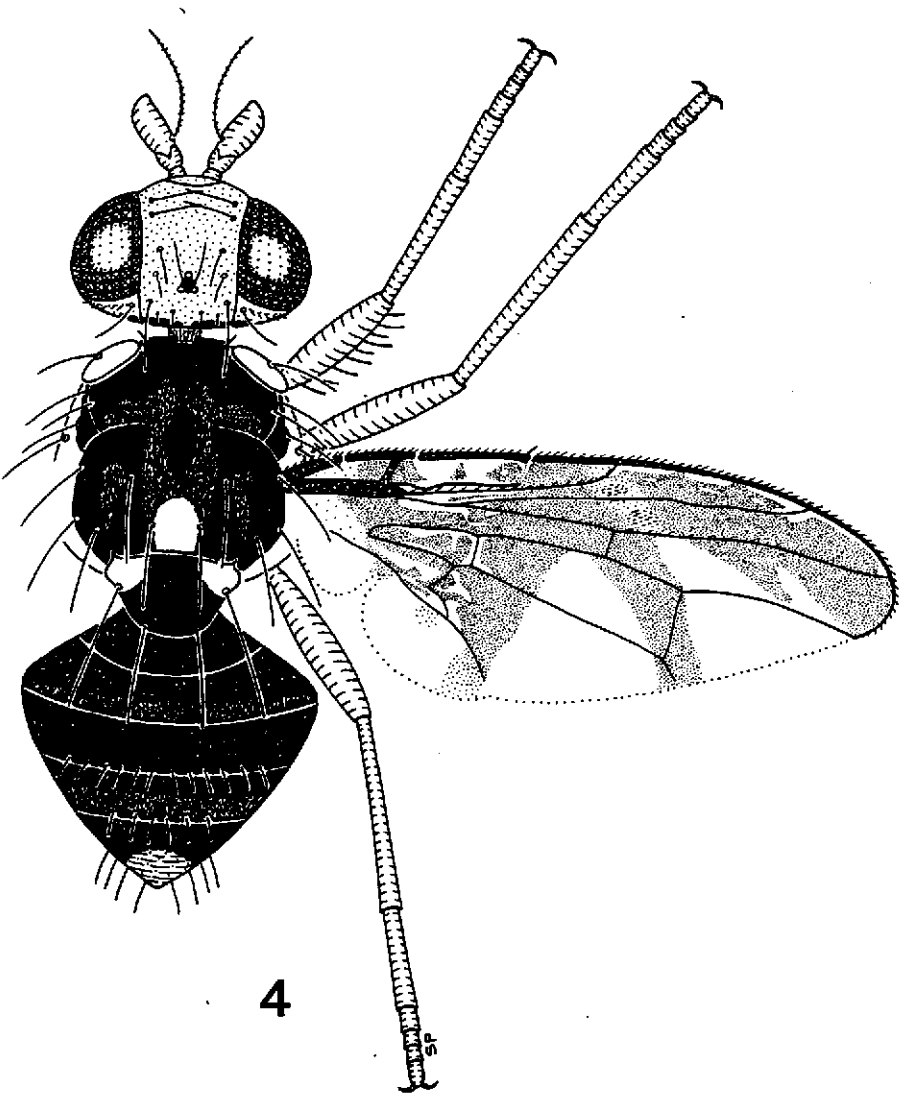


Fig. 4. *Ceratitella loranthi* (Froggatt), male.

Host Plant

This species breeds in the seeds of *Amylotheca dictyophleba* (Loranthaceae), a closed forest species; the record from *Cissus* (Vitaceae) requires confirmation.

Distribution

South-east Queensland. Records from New South Wales (see above) require confirmation.

Ceratitella loranthi (Froggatt)
(Fig. 4)

Ceratitis loranthi Froggatt, 1910: 863. Type locality: Perth, W.A. 4 syntypes in ANIC.
Ceratitella loranthi (Froggatt), Malloch, 1939*b*: 452.—Hardy, 1967: 135.

Material Examined

22 specimens from the following localities—**Western Australia**: Balladonia, Perenjori, Pingrup, Mt Fletcher. **Northern Territory**: Alice Springs. **South Australia**: Colona HS, Adelaide, Lake Windabout on Port Augusta—Kalgoorlie Railway. **Victoria**: Nunawading. **Australian Capital Territory**: Tidbinbilla, Black Mt. **New South Wales**: Sydney, Woodenbong. Tidbinbilla specimens were bred ex fruit of *Amyema pendulum*. (In AM, ANIC, NMV, NSWA, UQIC.)

Diagnosis

This species is easily recognised by the yellow areas on the scutum and scutellum and by the remnants of the subapical transverse band on the wing.

Host Plants

Amyema pendulum (Froggatt 1910) and *Amyema miquelii* (Hardy 1967) have been reported as hosts.

Distribution

Southern parts of Australia, as far north as Alice Springs and north-east New South Wales.

Ceratitella recondita, sp. nov.
(Figs 7, 9)

Material Examined

Holotype. ♀, Stanthorpe [Qld, 28°37'S, 151°52'E], Perkins (QM, T12216). Additionally labelled as a paratype of *C. bifasciata* Hardy.

Paratypes. **Queensland**: 1 ♀, same data as holotype (UQIC); 2 ♂, same data as holotype but 18 or 24.x.1924 (UQIC); all also labelled as paratypes of *C. bifasciata* Hardy; 3♀, Stanthorpe, Mar. Apr. 1950, A.W.S. May (UQIC); 3♂, 1♀, Toowoomba [27°35'S, 151°54'E], 2.x.1961, A.W.S. May (QDPI, QM); 1♀, Paluma, 2925 ft, 16.i.1970, mv lamp, G.A. Holloway (AM); 1♀, 5 mi W Paluma, 15.i.1970, mv lamp, G.A. Holloway (AM). **New South Wales**: 1♀, 10 km NE of Bulahdelah, 3.xii.1986, D.J. Scambler (AM); 1♀, Wilson R. reserve, via Bellangry, 28.xi.1966, D.K. McAlpine (AM).

Additional material. 12 specimens, labelled 'S 553' or without data, all presumably from Stanthorpe, collected by A. W. S. May (UQIC).

Diagnosis

This species is indistinguishable from *C. bifasciata* except by the shape of the female aculeus (Fig. 7). From other Australian species of *Ceratitella* it differs in the presence of a transverse subapical band across vein M to wing margin.

Description

Female

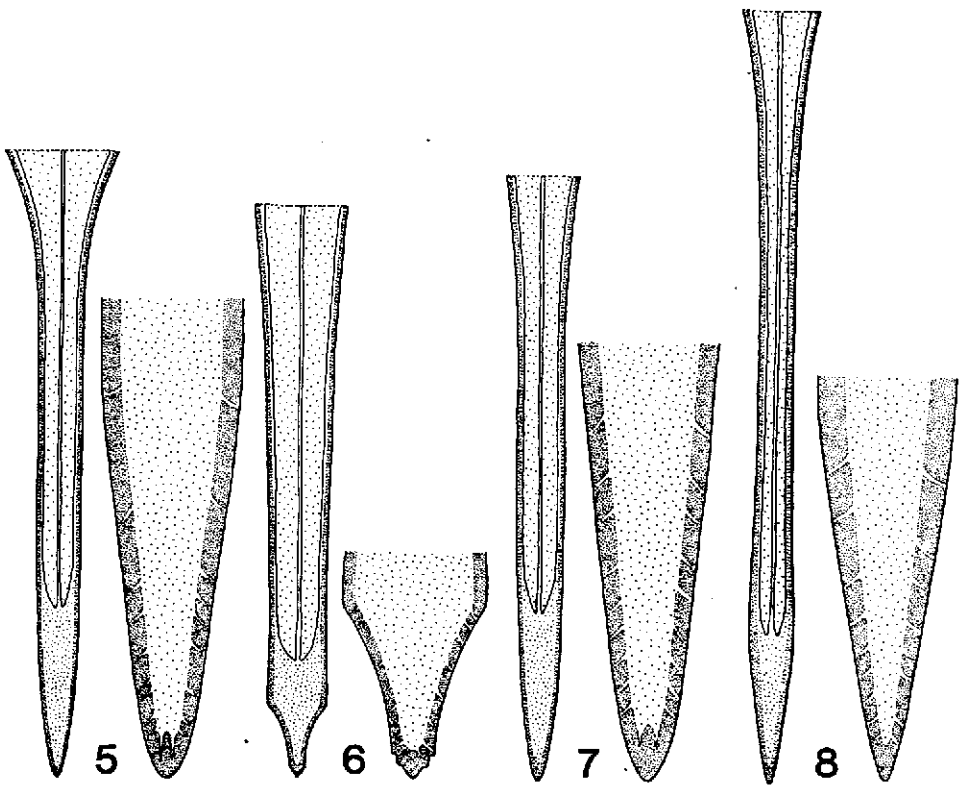
Length of body (excluding ovipositor) 4·1 mm; of wing 4·2 mm.

Head about $1\frac{1}{3}\times$ higher than long. Face broad, white on lower $\frac{2}{3}$, brown on upper $\frac{1}{3}$. Antennae rufous, shorter than face, situated near middle of head; 3rd segment apically rounded. Arista with microscopic pubescence, more distinct on apical half. Frons rufous, with lower half yellowish; with a dark brown longitudinal streak around orbital bristles; bristles black: 2 pairs frontals, 2 pairs orbitals. Ocellar bristles well developed. Postocellar and vertical bristles well developed. Occipital bristles fine. Genal bristle well developed.

Thorax. Scutum polished black with a transverse white pollinose band just before suture and a large pollinose area posteromedially, not extending before the dorsocentral bristles. Postpronotal lobes yellow. Scutellum black, swollen, with fine sparse pale setae. Postnotum blackish brown, overlaid with white pollinosity. Bristles black, as for *C. amyema*. Pleura blackish brown except for a broad, quadrate yellow band from postpronotal lobes to wing base, with the following bristles: 1 mesopleural, 1 pteropleural, 1 sternopleural.

Legs with femora brown to dark brown, tibiae and tarsi fulvous; middle tibiae with an apical black spine.

Wing hyaline with brown markings as follows: basally, with numerous streaks and spots from outer costal cell to cell CuP; 3 bands radiating from stigma, as for *C. amyema*; a subapical transverse band from costal band across vein M to wing margin. Veins R_1 and R_{2+3} setose; r-m crossvein beyond middle of discal cell; a small patch of grey setae in costal band above r-m crossvein; cell CuP extension well developed.



Figs 5–8. Aculeus of *Ceratitella* spp.: *5*, *C. amyemae*, sp. nov.; *6*, *C. bifasciata* Hardy; *7*, *C. recondita*, sp. nov.; *8*, *C. unifasciata* Hardy.

Abdomen polished black, with white pollinose posterior bands on terga II and IV; greyish brown pollen often present on posteromedian portion of tergum IV, anteromedian portion of tergum IV and narrow anterior margin of tergum V; tergum VI not visible from above. Oviscape dark brown, about as long as terga IV and V combined. Aculeus elongate (Fig. 7), evenly tapered apically. Two spermathecae.

Male

As for female except genital characters, which are typical of the genus (Hardy 1987).

Host Plants

None recorded.

Distribution

Eastern Australia, from Paluma in north Queensland to central New South Wales.

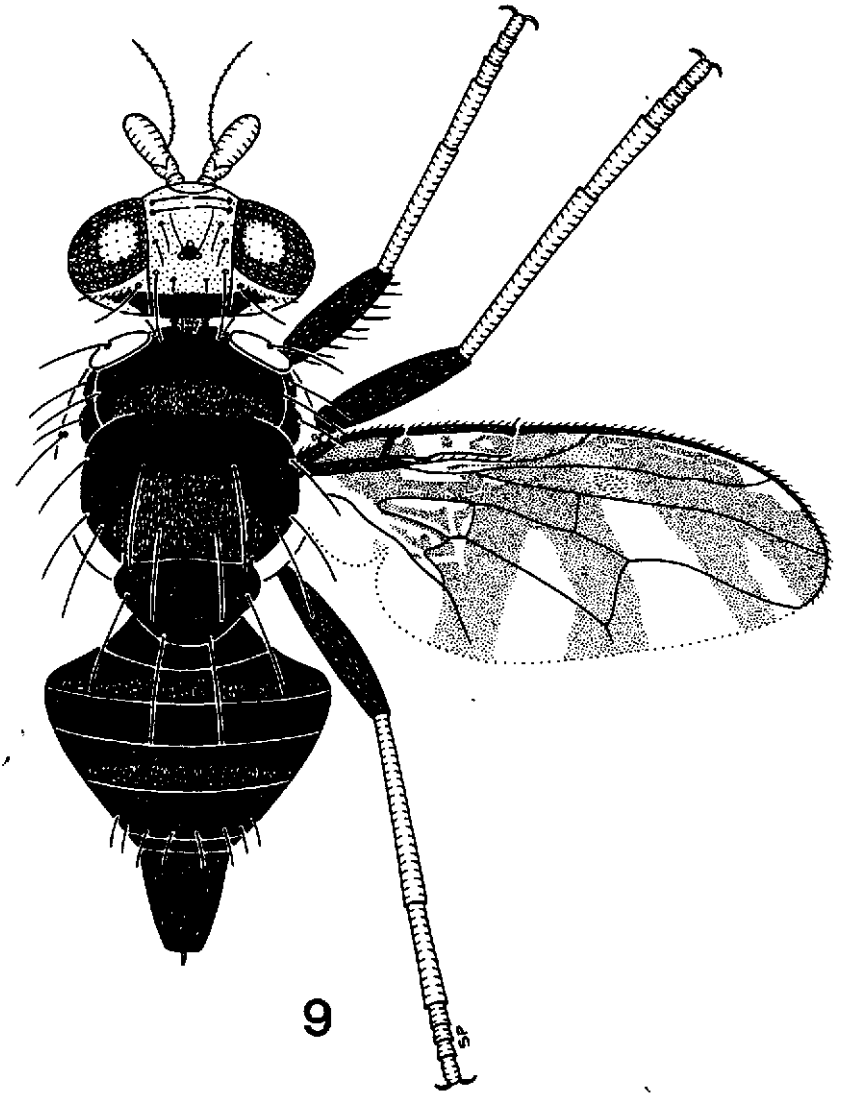


Fig. 9. *Ceratitella recondita*, sp. nov., female.

Comments

The type series was collected mostly in traps and no host is known. As noted by Hardy (1987), the species previously known as *C. bifasciata* appears to be a complex of at least three species, probably with different host plants, separable by the shape of the female ovipositor.

Etymology

The specific name is derived from the Latin *reconditus*, concealed or hidden, referring to its similarity and previous confusion with *C. bifasciata*.

Ceratitella unifasciata Hardy
(Fig. 8)

Ceratitella unifasciata Hardy, 1967: 137. Type locality: Eungella Natl Pk, via Mackay, Qld. Holotype ♂ in QM.

Material Examined

Queensland: holotype ♂ from Eungella Natl. Pk (QM); allotype ♀ from Millstream Falls, Ravenshoe (UQIC); paratype ♀ from Cairns (AM); 1♀, Paluma Dam, 18°56′S, 146°09′E, 30–31.vii.1964, G. Monteith (UQIC); 3 specimens, Brisbane, 6.ii.1941 and 26.v.1964 (AM). **New South Wales**: 1 specimen, Minnamurra Falls, 34°38′S, 150°51′E, 20.i.1973 (AM).

Diagnosis

This species is easily recognised by the brown to black postpronotal lobes and lack of the subapical transverse band across vein M on the wing. The aculeus (Fig. 8) is elongate, evenly tapered apically.

Host Plants

None recorded.

Distribution

Eastern Australia, from the Atherton Tableland in north Queensland to central New South Wales.

Genus *Ceratitis* MacLeay

Ceratitis MacLeay, 1829: 482.

Type species: *C. citriperda* MacLeay [= *C. capitata* (Wiedemann)], by monotypy.

This is an Afrotropical genus with one species, *C. capitata*, introduced to many other parts of the world, including Australia. The species breed in fleshy fruits.

Ceratitis capitata (Wiedemann)

Tephritis capitata Wiedemann, 1824: 55. Type locality: 'Ostindien' [East India or East Indies: probably an error].

C. capitata, the Mediterranean fruit fly, is an important economic pest accidentally introduced into Australia, possibly from Europe. It was first recorded at Guildford, Western Australia, in 1896 and at Sydney, New South Wales, in 1898 (Froggatt 1909). By 1909 it had spread to south-east Queensland and Victoria. It is now established only in Western Australia with occasional outbreaks in the Northern Territory and South Australia. The latest records we have seen for both Queensland and New South Wales are February 1931. The species failed to become established in Tasmania. Its elimination from the eastern States may be due to competition from *Bactrocera tryoni* (Froggatt), combined with control programmes in affected orchards.

Diagnosis

Easily recognised by its broad wings with yellow and brown bands and by the spatulate lower orbital pair of bristles in males. The scutellum has a narrow, wavy yellow band near the base. Males are attracted to trimedlure.

Host Plants

This species breeds in a large number of fleshy fruits, including many of economic importance.

Distribution

Western Australia. Endemic to the Afrotropical Region; also established in Europe, Central and South America and Hawaii.

Genus *Paraceratitella* Hardy

Paraceratitella Hardy, 1967: 138.

Type species: *P. oblonga* Hardy, by original designation.

This genus occurs in Australia and Papua New Guinea, with one species, *P. connexa* Hardy, in the Solomon Islands. Hardy (1967) described two Australian species; a further record is reported here. Known hosts are the developing buds of *Capparis* spp. (Capparidaceae).

Key to Known Species of *Paraceratitella*

1. Pleura almost entirely ivory-white; scutellum with a pair of black posteroventral markings, visible from above (Qld; Papua New Guinea) ..... *P. compta*
   Pleura with upper part ivory-white, remainder brown; scutellum with black posteroventral markings not visible from above 2
2. Scutum covered with short, pale setae over median portion; cell Sc short, about twice as long as wide (Qld) ..... *P. oblonga*
   Scutum with a pair of longitudinal silvery-white pollinose bands connected to similar markings above suture; cell Sc long, about 3–4× as long as wide 3
3. Scutum with pollinose markings above suture connected, forming a transverse band; ocellar bristles well developed; third antennal segment apically rounded; femora brown (Solomon Islands) ..... *P. connexa*
   Scutum with pollinose markings above suture not connected in middle; ocellar bristles rudimentary; third antennal segment dorsoapically pointed; femora yellow (northern half of Australia) ..... *P. eurycephala*

Paraceratitella compta Hardy
(Fig. 10)

Paraceratitella compta Hardy, 1987: 342. Type locality: Konedobu, Papua New Guinea. Holotype ♂ in BPBM.

Material Examined

Queensland: 5♂, 3♀, Sue (Warraber) I., Torres Strait, 10°23′S, 145°49′E, 2–9.xii.1977, E.D. Edwards (ANIC); 1♂, Stephen I., Torres Strait, 9°30′S, 143°33′E, 25–27.xi.1986, K. Houston and K. Sadler, at light (QDPI); 1♀, Lizard I., NNE of Cooktown, 14°40′S, 145°28′E, 16.xi.1974 (AM).

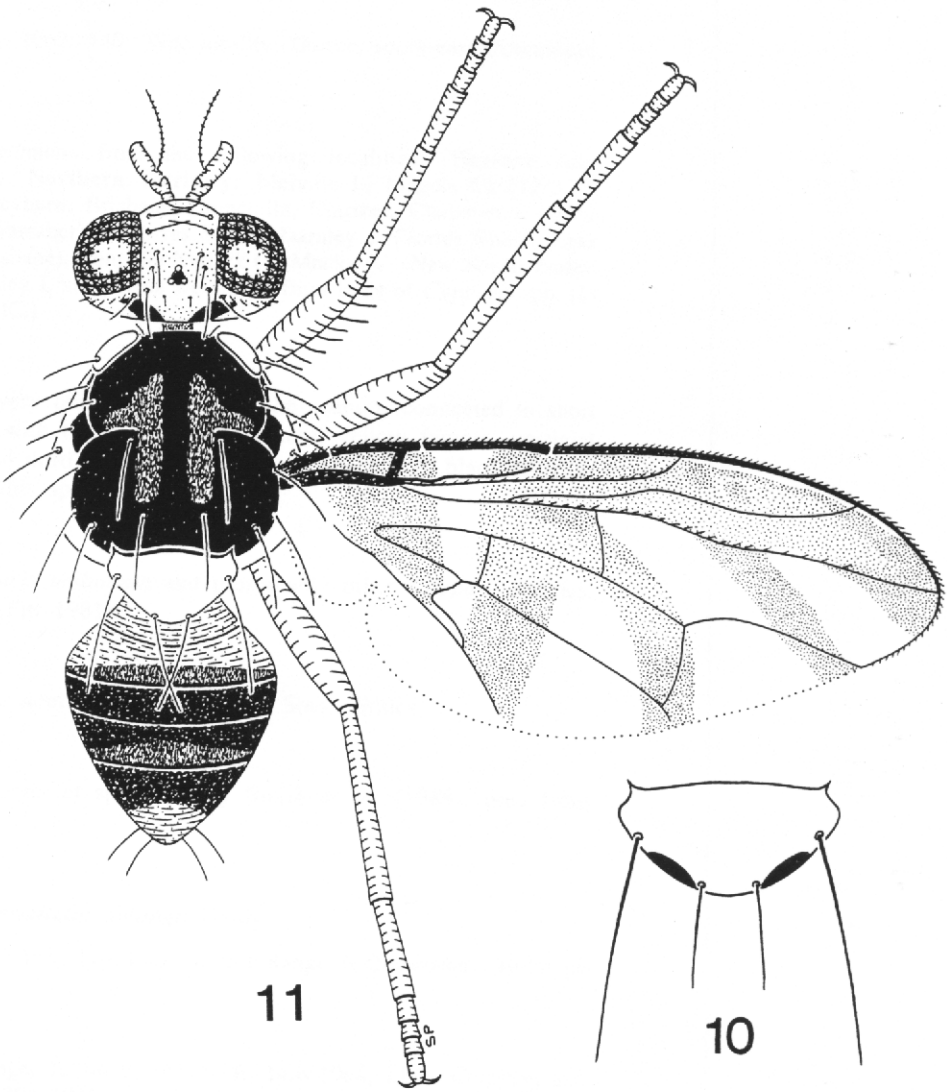


Fig. 10. *Paraceratitella compta* Hardy, scutellum. **Fig. 11.** *Paraceratitella eurycephala* Hardy, male.

Diagnosis

This species is similar in scutal and wing markings to *P. eurycephala* but may be distinguished by the white pleura and black-spotted scutellum (Fig. 10).

Host Plants

None recorded.

Distribution

Papua New Guinea, islands of Torres Strait and north-east Queensland.

Paraceratitella eurycephala Hardy
(Fig. 11)

Paraceratitella eurycephala Hardy, 1967: 140. Type locality: Gatton, south-east Queensland. Holotype ♀ in QM.

Material Examined

Holotype, allotype and 87 specimens from the following localities. **Western Australia**: Minilya [23°51'S, 113°58'E]. **Northern Territory**: Melville I., Magela Ck [12°36'S, 132°53'E]. **Queensland**: Gatton, Leyburn, Brisbane, Chinchilla, Chusbel, Chapman I. (Great Barrier Reef), Middle Ridge, Sue (Warraber) I. (Torres Strait), Darnley I. (Torres Strait), Lake Broadwater via Dalby, Sherwood (Brisbane), Eungella Natl Pk (nr Mackay). **New South Wales**: Coonamble. The Sherwood and Darnley I. specimens were bred from buds of *Capparis* spp. (In AM, ANIC, NSWA, QDPI, QM, UQIC.)

Diagnosis

The presence of longitudinal silvery pollinose bands on the scutum, connected to short bands above the suture, combined with the partly brown pleura, yellow femora, vestigial ocellar bristles, dorsoapically pointed third antennal segment and absence of black scutellar spots seen from above distinguish this species.

Host Plants

Larvae utilise the buds of *Capparis umbonata* and presumably other *Capparis* species, feeding on the developing anthers (Fitt 1981).

Distribution

Northern half of Australia, as far south as northern New South Wales.

Comments

This species was recorded as 'Gen. et sp. nov.' by Smith *et al.* (1988), bred from *Capparis* sp.

Paraceratitella oblonga Hardy

Paraceratitella oblonga Hardy, 1967: 143. Type locality: Iron Range, N Queensland. Holotype ♀ in ANIC.

Material Examined

Queensland: holotype ♀, Iron Range, 12° 46' S, 143° 16' E, 14.iv.1964, I.F.B. Common and M.S. Upton (ANIC); 1♀, Iron Range, 30.v.1975 (AM).

Diagnosis

The short cell Sc on the wing and medial patch of pale setae on the scutum, combined with the partly brown pleura, well-developed ocellar setae, apically rounded third antennal segment and absence of black scutellar spots distinguish this species.

Host Plants

None recorded.

Distribution

Known only from Iron Range, Cape York Peninsula, Queensland.

Acknowledgments

We thank the curators of the various museums and collections for the loan of material, and Susan Phillips for preparing the illustrations. This work was partly undertaken at the University of Queensland whilst Surakrai Permkam held a postgraduate scholarship.

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Manuscript received 21 October 1993; accepted 27 May 1994