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Australian Trypetinae (Diptera: Tephritidae)

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Abstract

The Australian species of Trypetinae are revised, with 77 species (31 new) placed in 35 genera (9 new) and 6 tribes. New taxa and taxonomic changes are proposed as follows.

New genera: *Acanthonevroides, Aridonevra, Austronevra, Austrorioxa, Lumirioxa, Micronevrina, Taeniorioxa, Epinettyra, Hemiristina.*

New species: *Acanthonevroides mayi, A. variegatus, Austronevra bimaculata, Aridonevra cunnamullae, Clusiosoma macalpinei, Copiolepis colpopteris, Micronevrina apicalis, M. breviseta, M. gloriosa, M. hyalina, M. mediivitta, M. montana, M. setosa, Taeniorioxa quinaria, Termitorioxa exleyae, T. inconnexa, T. laurae, Elleipsa distincta, Euphranta athertonia, E. leichhardtiae, E. marina, E. meringae, E. mulgravea, E. numeralis, E. ternaria, Hardyadrama alyta, Diplochorda australis, Ornithoschema queenslandense, Epinettyra setosa, Hemiristina pleomeles, Vidalia dualis.*

New synonyms: *Kertesziola* Hering (of *Termitorioxa* Hendel), *Staurocneros* Hering (of *Coelotrypes* Bezzi), *Dirioxa confusa* Hardy [of *D. pornia* (Walker)], *Neothemara trigonifera* Hering [of *N. formosipennis* (Walker)], *Adrama spinata* Enderlein and *A. centralis* Malloch (of *A. selecta* Walker), *Staurocneros imitator* Hardy [of *Coelotrypes circumscriptus* (Hering)].

New combinations: *Acanthonevroides bicolor* (Macquart), *A. jarvisi* (Tryon), *A. nigriventris* (Malloch), *Austronevra australina* (Hendel), *Austrorioxa acidiomorpha* (Hendel), *Lumirioxa araucariae (Tryon), Termitorioxa bicalcarata* (Hering), *T. testacea* (Hendel), *Coelotrypes circumscriptus* (Hering), *Hardyadrama magister* (Lee), *H. presignis* (Hardy), *Philophylla australina* (Hardy).

Removed from synonymy: *Acanthonevroides nigriventris* (Malloch) [with *A. jarvisi* (Tryon)], *Clusiosoma semifuscum* Malloch [with *C. minutum* (de Meijere)].

Introduction

The first trypetines described from Australia were *Trypeta pornia* Walker (1849) and *Urophora bicolor* Macquart (1855), but it was not until 1934 and 1951 respectively that the identities of these species were properly resolved (Perkins 1934, Hardy 1951). Froggatt (1899, 1909) described *Trypeta musae* (a synonym of *T. pornia*), allegedly from bananas imported from the New Hebrides (Vanuatu), and suggested that it had been introduced into eastern Australia. This is now known to be incorrect. Bezzi (1919) described *Rioxa termitoxena* from termite galleries in tree trunks, still regarded as one of the most unusual host associations in the Tephritidae. Malloch (1926) added *Clusiosoma semifusca*, and Tryon (1927) reviewed the known species, adding *Rioxa araucariae* and *R. jarvisi*. The latter species has been misinterpreted subsequently since Tryon's (1927) figure is not conspecific with his description. Hendel (1928) described *Rioxa testacea, Acanthoneura australina, A. acidiomorpha, Callistomyia horni* and *Euphranta minor*. Perkins (1934) established the synonymy of *Rioxa pornia* (Walker) and *R. musae* (Froggatt). Malloch (1939*c*, 1939*d*), as part of his studies of New Guinea diptera, described *Adrama biseta, Clusiosoma puncticeps* and *Acanthoneura nigriventris* from Australia and reviewed the species described by Hendel and earlier authors. Hering (1944) described *Diarrhegmoides bicalcaratus*, and Brimblecombe (1945) noted the unusual larval habitat of *Rioxa araucariae*, beneath the bark of hoop pine. Hardy (1951, 1954) further reviewed the Australian species and added *Euphranta linocierae, Hendelina australina* and *Rioxa confusa*. McAlpine (1965) reported an undescribed species of *Euphranta* Loew from *Avicennia* mangroves, and McAlpine and Schneider (1978) added *Phytalmia mouldsi*, the last Australian trypetine described to date. Moulds (1977) and Dodson (1989) studied the biology of *P. mouldsi*, whilst larval host records for several species were reported by Allwood and Angeles (1979), Smith *et al.* (1988) and Dodson and Daniels (1988). Hardy and Foote (1989) catalogued the known fauna.

The present study records 77 species of Trypetinae from Australia, including 31 new species. Eleven genera and 48 species appear to be endemic or nearly endemic [*Dirioxa pornia* (Walker) has spread to the South Pacific], one genus (*Termitorioxa* Hendel) appears to have Australian origins but also occurs in New Guinea, Moluccas and Timor, whilst 23 genera and 29 species have Papuan or Oriental origins. As expected, this latter group occurs primarily in north Queensland and the Northern Territory in Australia.

With the exception of *Dirioxa pornia*, the host ranges of Trypetinae species are very restricted; in many cases they appear to be monophagous. They are of little or no economic importance, although *D. pornia* is occasionally regarded as a minor pest. However, this species appears to attack only damaged or decaying fruit (Froggatt 1909; unpublished observations). *Adrama selecta* Walker has been recorded once from the seeds of tea. Apart from those in fruit of various families, larvae of many Australian trypetines, particularly Acanthonevrini and Phytalmiini, appear to develop beneath the bark of trees or newly fallen logs. One species of Euphrantini develops in the buds of *Ipomoea* (Convolvulaceae).

The tribal classification used here follows Hancock (1986), except that the Phytalmiini appear to be more closely allied to the Acanthonevrini than to the Adramini (Hancock and Drew 1994*b*). Indeed, the relationships between these two tribes are such that eventually they may be combined. The Adramini and Euphrantini also are closely allied to one another and eventually they too may be combined. The development of the metathoracic postcoxal bridge may have more to do with the elongation of the abdomen than actual phylogenetic relationships.

Materials

Specimens were examined from several institutions. These and other type depositories are abbreviated as follows:

AM	Australian Museum, Sydney
ANIC	Australian National Insect Collection, Canberra
BARS	Berrimah Agricultural Research Station, Darwin
BMNH	The Natural History Museum, London
BPBM	B. P. Bishop Museum, Honolulu
DEI	Deutsches Entomologisches Institut, Eberswalde-Finow
HCO	Hope Entomological Collections, Oxford
MSU	Michigan State University, Lansing
NHMV	Naturhistorisches Museum, Wien
NMV	Museum of Victoria, Melbourne
NSWA	New South Wales Department of Agriculture, Rydalmere
PIZW	Polska Akademìa Nauk Instytut Zoologìczny, Warsaw
QDPI	Queensland Department of Primary Industries, Brisbane
QM	Queensland Museum, Brisbane
RNHL	Rijksmuseum van Natuurlijke Historie, Leiden
TMB	Természettodumány Museum, Budapest
UQIC	University of Queensland Insect Collection, Brisbane
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC
WADA	Western Australia Department of Agriculture, Perth
ZMHB	Zoologisches Museum, Humboldt Universität, Berlin
ZMUA	Zoologisch Museum, University of Amsterdam
ZMUC	Zoologisk Museum, University of Copenhagen

The following species is excluded from the present study as it is almost certainly mislabelled: *Themarohystrix flaviceps* Malloch (1♂, Springbrook, Qld, 16.v.1958, J. Martin, in UQIC).

Tephritis lugubris Macquart, often considered a trypetine (e.g. Bezzi 1919), belongs in the Tephritinae (Hardy and Foote 1989).

Terminology

Conflicting terminologies exist in the literature for bristle, thoracic and wing characters. We have largely followed McAlpine (1981). Bristle abbreviations and other terms are listed below. To enable comparison with earlier works, we include previously used terminologies in parentheses. Throughout the text, cell sc refers to that part of it that abuts the costa, not the elongate basal portion below vein Sc. Cell m

lies below the apical portion of vein M.

anepimeron (pteropleuron)
anepisternum (mesopleuron)

bristles:

acr.	acrostichal (prescutellar)
anepm.	anepimeral (pteropleural)
anepst.	anepisternal (mesopleural)
dc.	dorsocentral
fr.	frontal (inferior orbital)
gn.	genal
ia.	intra-alar (inner posterior supra-alar)
ipa.	intrapostalar
kepst.	katepisternal (sternopleural)
npl.	notopleural
oc.	ocellar
or.	orbital (superior orbital)
pavt.	paravertical (postvertical)
poc.	postocellar
pocl.	postocular (occipital)
pprn.	postpronotal (humeral)
prepm.	proepimeral (propleural)
prst.	presutural
p.sa.	posterior supra-alar (outer *p.sa.*)
sa.	supra-alar (anterior *sa.*)
sc.	scutellar
scp.	scapular
vt.	vertical

katepisternum (sternopleuron)
laterotergite (pleurotergite)
notopleuron (notopleural callus)
postpronotal lobe (humeral callus)
proepimeron (propleuron)
scutum (mesonotum)

wing cells:

cell bc	basal costal (1st costal)
cell bm	basal medial (2nd basal)
cell br	basal radial (1st basal)
cell c	costal (2nd costal)
cell cua_1	anterior cubital (3rd posterior)
cell cup	posterior cubital (anal)
cell dm	discal medial (discal)
cell m	medial (2nd posterior)
cell r_1	radial 1 (marginal)
cell r_{2+3}	radial 2+3 (submarginal)
cell r_{4+5}	radial 4+5 (1st posterior)
cell sc	subcostal (stigma)

Systematics

Of the four subfamilies of Tephritidae recorded from Australia, the Trypetinae retains many plesiomorphic characters and appears to be the most primitive. In particular, females retain three spermathecae (rarely two or four in some non-Australian genera); in all other Australian subfamilies (Dacinae, Ceratitinae and Tephritinae), only two spermathecae are present. The Trypetinae may be identified by the following combination of characters.

Wing cell bm about same width as cell cup, narrowed distinctly towards base; cell cup with apical extension normally broad and acute, narrowing sharply towards apex, if narrow or broadened medially then with 6–12 *sc.* bristles and/or 3 pairs of *fr.* bristles, if absent then chaetotaxy greatly reduced or abdomen with black bullae; *scp.* bristles present, if vestigial then

overall chaetotaxy greatly reduced; wing pattern often brown with or without hyaline spots and indentations, seldom banded; posterior area of anepisternum separated from rest of anepisternum by a distinct vertical suture, not covered by a fine tomentum; laterotergite often with long, fine hairs; abdomen often elongate; aculeus often serrate or with preapical setae, not needle-like.

Key to Tribes of Australian Trypetinae

1. Laterotergite covered with fine, long pale hairs 2
   Laterotergite bare or with short pubescence 3
2. Metathoracic postcoxal bridge complete, broadly sclerotised; 2 *sc.* bristles, if 4 then *fr.* bristles weak and *pprn.*, *prst.*, *dc.*, *acr.*, *kepst.* and *anepm.* bristles all absent, and arista short-plumose; abdomen elongate, often *Ichneumon*-like ..... Adramini
   Metathoracic postcoxal area membranous medially; 4 *sc.* bristles; *anepm.* bristles present, if remainder of above series absent then *fr.* bristles well developed and arista with no more than microscopic pubescence; abdomen often narrow but not *Ichneumon*-like ..... Euphrantini
3. Arista plumose; normally 6 *sc.* bristles, sometimes 2, 4 or 8–12, if 4 then *ipa.* bristles present, *anepm.* bristles absent or section of costa on cell sc longer than that on cell c; aculeus usually with distinct preapical setae, rarely bifid 4
   Arista micro-pubescent or bare; 4 *sc.* bristles; *ipa.*bristles absent, *anepm.* bristles present and section of costa on cell sc not longer than that on cell c; aculeus apically pointed or serrate, without preapical setae 5
4. Metathoracic postcoxal bridge complete, broadly sclerotised; cell cup acute but without an apical lobe; wing base narrowed; abdomen with basal segments narrowed, wasp-like; 2 *sc.* bristles; *dc.* and *acr.* bristles absent ..... Phytalmiini
   Metathoracic postcoxal area membranous medially; cell cup with an apical lobe; wing base normal; abdomen not wasp-like; 4, 6 or 8–12 *sc.* bristles; *dc.* and *acr.* bristles not both absent ..... Acanthonevrini
5. Cell cup acute but without an apical lobe; preabdomenwith a pair of shiny black bullae on last tergite ..... Rivelliomimini
   Cell cup with an apical lobe; preabdomen without shiny black bullae on last tergite ..... Trypetini

Tribe **ACANTHONEVRINI** Hering

Nineteen genera and 41 species are known from Australia, representing more than half the trypetine fauna. Many species occur in drier habitats, even in central Australia, and larvae of most probably develop beneath the bark of trees or newly fallen logs. Where known, *Austronevra*, gen. nov., and *Dacopsis* Hering use logs of *Dysoxylum* (Meliaceae), *Lumirioxa*, gen. nov., occurs beneath the bark of *Araucaria* (Araucariaceae) and *Termitorioxa* in the galleries of termites beneath tree bark. A few genera develop in fruit, e.g. *Clusiosoma* Malloch, *Clusiosomina* Malloch and *Rabaulia* Malloch in *Ficus* (Moraceae) and *Dirioxa* Hendel in a wide range of fruit species from several families.

Hancock (1986) considered *Xarnuta* Walker to be a genus of Trypetini but the presence of microscopic setae at the apex of the female aculeus and *ipa.* bristles suggest that it is better kept in the Acanthonevrini. Intra-postalar bristles occur in all but four Australian genera (*Austronevra*, *Austrorioxa*, gen. nov., *Copiolepis* Enderlein and *Dacopsis*); interestingly at least two of these genera have the same host as *Phytalmia* Gerstaecker (Phytalmiini), which also lacks *ipa.* bristles.

The name Terastiomyiini Enderlein (1936, as subfamily) has nomenclatural priority over Acanthonevrini (Hering 1941*a*) but the relationships of *Terastiomyia* Bigot are uncertain (Hardy 1986*a*; Hancock 1991) and until resolved we prefer to maintain the widely used name Acanthonevrini for the tribe. *Terastiomyia* shows some relationships with Phytalmiini, providing further evidence that these two tribes may not be separable. Phytalmiini Bigot (1892) is the senior of the three tribal names.

Key to Genera of Australian Acanthonevrini

1. 8–12 *sc.* bristles; 3 pairs of *fr.* bristles ..... *Xarnuta*
   4–6 *sc.* bristles; 1–2 pairs of *fr.* bristles, rarely 3 2
2. Wing mostly brown, without distinct hyaline indentations or spots; 6 *sc.* bristles 3
   Wing with distinct hyaline indentations and spots, if not then 4 *sc.* bristles 7
3. *Anepm.* bristles present; anepisternum with a prominent black bristle near lower medial margin; vein CuA_1 bare ..... *Paedohexacinia*
   Anepm. bristles absent; anepisternum without a prominent black bristle near lower medial margin; vein CuA_1 setose 4
4. Face convex, with a black transverse band in middle ..... *Rabaulia*
   Face vertical or concave, without a black transverse band in middle 5
5. Face yellow with a pair of brown lateral spots ..... *Clusiosomina*
   Face without a pair of brown lateral spots. 6
6. Face concave in profile, the oral margin protruding; male fore femur swollen, densely bristled ventrally or with a spinose protuberance below near base ..... *Clusiosoma*
   Face vertical in profile; male fore femur not swollen or densely bristled ventrally ..... *Trypanocentra*
7. Wing brown with indistinct white spots in cell dm; cell sc much longer than cell c; 4 *sc.* bristles; male abdomen with long, plume-like terminal processes ..... *Copiolepis*
   Wing mostly hyaline or with distinct hyaline bands or spots and indentations; cell sc rarely longer than cell c; 4 or 6 *sc.* bristles; male abdomen not as above 8
8. Wing mostly hyaline with a brown costal band and (in males) a brown central patch; cell sc longer than cell c in both sexes; *kepst.* and *ipa.* bristles absent ..... *Dacopsis*
   Wing not as above; *kepst.* bristles present; *ipa.* bristles often present 9
9. Wing with 5 more or less longitudinal hyaline bands, not arising from costa ..... *Taeniorioxa*
   Wing with 1–4 hyaline indentations from costa in cell r_1, not as above 10
10. Wing with 2–4 hyaline indentations from costa in distal part of cell r_1 (beyond end of vein R_1), the costa pale within the spots 11
    Wing with 1 hyaline indentation from costa in distal part of cell r_1; if with an additional hyaline apical patch then costa dark 12
11. Wing with 3–4 hyaline indentations from costa in cell r_1; Vein CuA_1 with a few long setae at base, above cell cup; 2 pairs of *fr.* bristles; *ipa.* bristles present ..... *Pseudacanthoneura*
    Wing with 2 hyaline indentations from costa in cell r_1; Vein CuA_1 bare, without setae above cell cup; 1 pair of *fr.* bristles; *ipa.* bristles absent ..... *Austronevra*
12. Wing with 3 hyaline indentations from margin in cell m; mid tibia with 1 long and 1 short apical spine; 6 *sc.* bristles; arista long-plumose; scutellum setose ..... *Neothemara*
    Not with the above combination of characters; at most a single hyaline indentation from margin in cell m 13
13. Mid tibia with 2 long, subequal, apical spines; scutellum with fine black setulae, at least on sides .. 14
    Mid tibia with 1 long apical spine; scutellum bare or with only a few pale lateral setulae 16
14. Scutellum swollen, black or black at sides, yellow medially; wing markings blackish brown 15
    Scutellum not swollen, yellow with at most a pair of brown anterior patches; wing markings brown and yellow-brown ..... *Termitorioxa*
15. Scutellum black; wing veins R_{4+5}, M and dm-cu sinuous, cell dm greatly expanded distally ..... *Aridonevra*
    Scutellum black and yellow; wing veins not sinuous and cell dm not expanded distally ..... *Acanthonevroides*
16. 4 *sc.* bristles; *anepm.* bristle vestigial or absent; aculeus apically serrate and bifid, the subapical setae minute ..... *Micronevrina*
    6 *sc.* bristles; *anepm.* bristle present; aculeus apically blunt, the subapical setae well developed 17
17. *Ipa.* bristles absent; veins R_{2+3} and R_{4+5} strongly curved near apex; cell sc much longer than cell c in males; a longitudinal hyaline band basad of r-m crossvein ..... *Austrorioxa*
    Ipa. bristles present; veins R_{2+3} and R_{4+5} not both strongly curved; cell sc not longer than cell c in males; a round hyaline spot basad of r-m crossvein 18
18. Thorax and scutellum fulvous; abdomen fulvous anteriorly, black posteriorly; cell r_{4+5} without a hyaline subapical band from margin ..... *Dirioxa*
    Thorax and scutellum with a black medial stripe; abdomen banded; cell r_{4+5} with a hyaline subapical band from margin ..... *Lumirioxa*

Genus *Acanthonevroides*, gen. nov.

Type species: *Urophora bicolor* Macquart.

Diagnosis

Head with *oc.*, 1 pair *fr.* and 2 pairs *or.* bristles, the upper weaker than the lower, and a row of fine black *pocl.* Arista pubescent or short-plumose. Thorax fulvous to red-brown, with darker markings on scutum and the following bristles: 4 *scp.*, *pprn.*, 2 *npl.*, *sa.*, *p.sa.*, *ia.*, *ipa.*, *dc.* placed close to line of *acr.*, *acr.*, 4–6 *sc.*, several *anepst.*, *anepm.*, *kepst.*; *prst.* present or absent. Scutellum swollen, covered with dark setae, black with a yellow medial band. Mid tibia with 2 long black apical spines. Wing pattern blackish brown with hyaline spots and indentations, including 1 triangular indentation in cell r_1 at end of cell sc, 2 spots in cell r_{4+5}, 1 on either side of r-m crossvein, a spot or spots at apex of cell dm and large triangular indentations from margin in cells m and cua_1. Veins R_1 and R_{4+5} setose. Cell cup with apical lobe narrow, elongate. Surstylus short and stout; anal lobe pointed posteriorly. Aculeus broad, blunt apically, with lateral bristles, 2 short and 2 long pairs of preapical setae. Three smooth, oval spermathecae.

Comments

This genus belongs in a group with *Termitorioxa, Aridonevra*, gen. nov. and *Taeniorioxa*, gen. nov., characterised by the presence of two long mid-tibial apical spines and a setose scutellum. *Acanthonevroides* differs in the swollen, black and yellow scutellum, normal wing venation and the darker wing markings. One included species, *A. variegatus*, sp. nov., is unusual in having a slightly bilobed scutellum with only four *sc.*, but other characters suggest that it belongs here.

Biological information is scanty, but the larvae probably develop beneath the bark of trees. Five species are included.

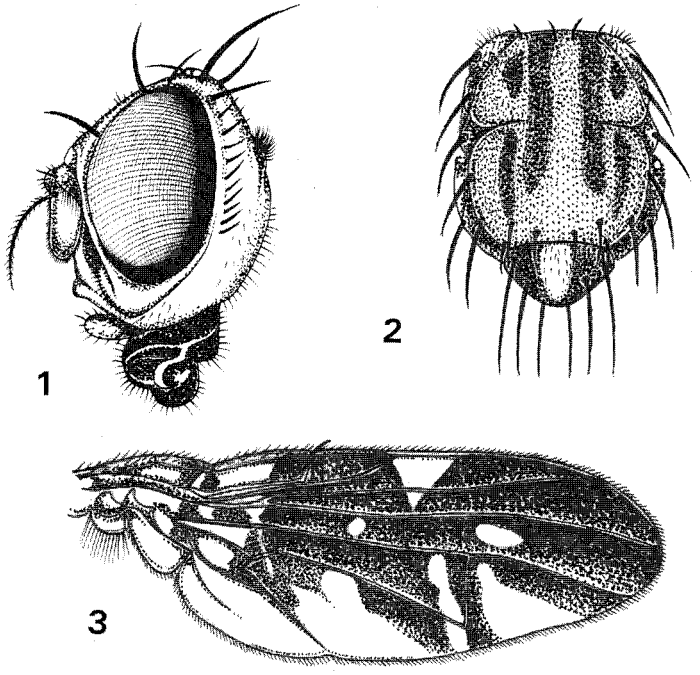
Key to Species of *Acanthonevroides*

1. Scutellum apically bilobed; 4 *sc.* bristles; hyaline spot at apex of cell dm not extending to wing margin . . . . . *A. variegatus*
   Scutellum apically rounded; 6 *sc.* bristles; hyaline spot at apex of cell dm extending to wing margin . . 2
2. *Prst.* bristles absent; wing with hyaline spots in cells br and r_{4+5} beyond r-m crossvein elongate-oval in shape, much narrower than width of cell 3
   Prst. bristles present; wing with hyaline spots in cells br and r_{4+5} beyond r-m crossvein broadly rounded, crossing all or almost all of cell 4
3. *Prepm.* bristles brown; abdomen marked with yellow; scutum with 4 longitudinal black vittae; cell dm with a hyaline apical band . . . . . *A. bicolor*
   Prepm. bristles yellow; abdomen entirely black; scutum rufous, rarely with black vittae; cell dm with 2 hyaline apical spots, rarely joined into a band . . . . . *A. nigriventris*
4. Cell c with an incomplete brown band from humeral vein along costa; hyaline indentation in cell m connected to spot in cell r_{4+5} . . . . . *A. jarvisi*
   Cell c with a brown spot near humeral vein, not forming a costal band; hyaline indentation in cell m not connected to spot in cell r_{4+5} . . . . . *A. mayi*

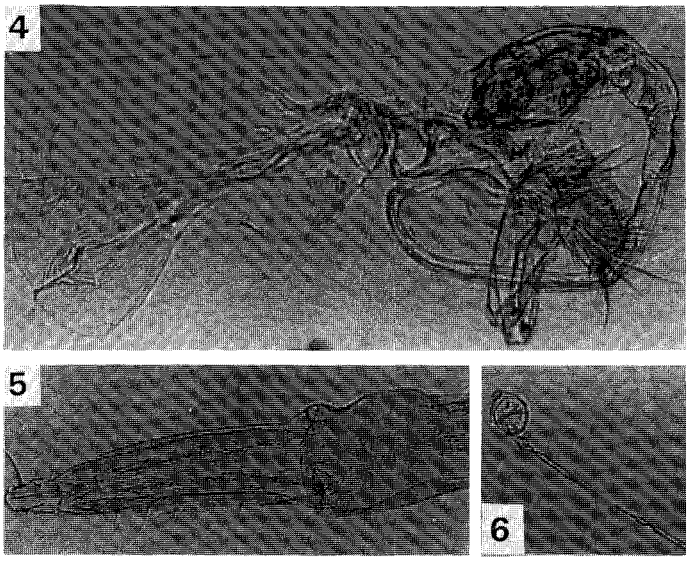
Acanthonevroides bicolor (Macquart), comb. nov.

(Figs 1–6)

Urophora bicolor Macquart, 1855: 144 [124], pl. 7, fig. 7. Type locality Adelaide, SA. Holotype ♀ in HCO [not examined].
Trypeta bicolor. — Froggatt, 1908: 308 (*partim.*).
Rioxa bicolor. — Bezzi, 1919: 4–5; Tryon, 1927: 222.
Rioxa (Dirioxa) bicolor. — Hendel, 1928: 352; Malloch,1939*d*: 436.
Acanthoneura bicolor. — Hardy, 1951: 172.
Acanthonevra bicolor. — Hardy and Foote, 1989: 510.



Figs 1–3. *Acanthonevroides bicolor*: *1*, head; *2*, scutum; *3*, wing.



Figs 4–6. *Acanthonevroides bicolor*: *4*, ♂ genitalia; *5*, aculeus; *6*, 1 of 3 spermathecae. All 40×.

Material Examined

South Australia: 1♂, 1♀, Kinchuca, J. Sutton (UQIC); 1♀, no further data (UQIC).

Diagnosis

Thorax with *prst.* bristles absent and 6 *sc.* bristles. Proepimeron with several moderately strong brown bristles. Scutum with 4 black vittae, the middle pair broad. Wing with a narrow, elongate spot in cell r_{4+5} beyond r-m crossvein and a hyaline band at apex of cell dm, continued to hind margin of wing in cell cua_1. Abdomen partly fulvous, black apically. Length of body 6·0–6·2 mm (♂) or 7·0–7·2 mm (♀), of wing 6·5–6·8 mm (♂ and ♀).

Distribution

South Australia.

Comments

Prior to Hardy (1951), this species was largely confused in the literature with *A. nigriventris*. These two species are very similar but apart from characters listed above and in the key, *A. bicolor* has the spermathecae weakly sclerotised and the aculeus with relatively short lateral bristles.

Acanthonevroides jarvisi (Tryon), comb. nov.

(Figs 7–12)

Rioxa jarvisi Tryon, 1927: 221. Type locality Stanthorpe, Qld. Holotype ♀ in QM [examined].
Acanthonevra jarvisi. — Hardy and Foote, 1989: 510.

Material Examined

Holotype. ♀, Stanthorpe, Qld, 1926, D3139, *Rioxa jarvisi* Tryon (QM - T12175).

Other material examined. **Queensland**: 1♂, Rockhampton (UQIC); 1♂, Eidsvold, Jan. 1923 (UQIC); 1♂, 6 km N Taroom, 25°36′S, 149°46′E, 14.i.1991, G. and A. Daniels (QM); 1♂, 1♀, L. Broadwater, nr Dalby, 27°21′S, 151°06′E, 20.xi.1985 (QDPI); 1♂, Gatton, 20.xi.1953, A. W. S. May (UQIC); 1♂, Goondiwindi, 24.iii.1923, G. R. Bass (UQIC); 1♂, Isla Gorge Natl Pk, 25°11′S, 149°58′E, 10.x.1993, R. Eastwood (UQIC).

Diagnosis

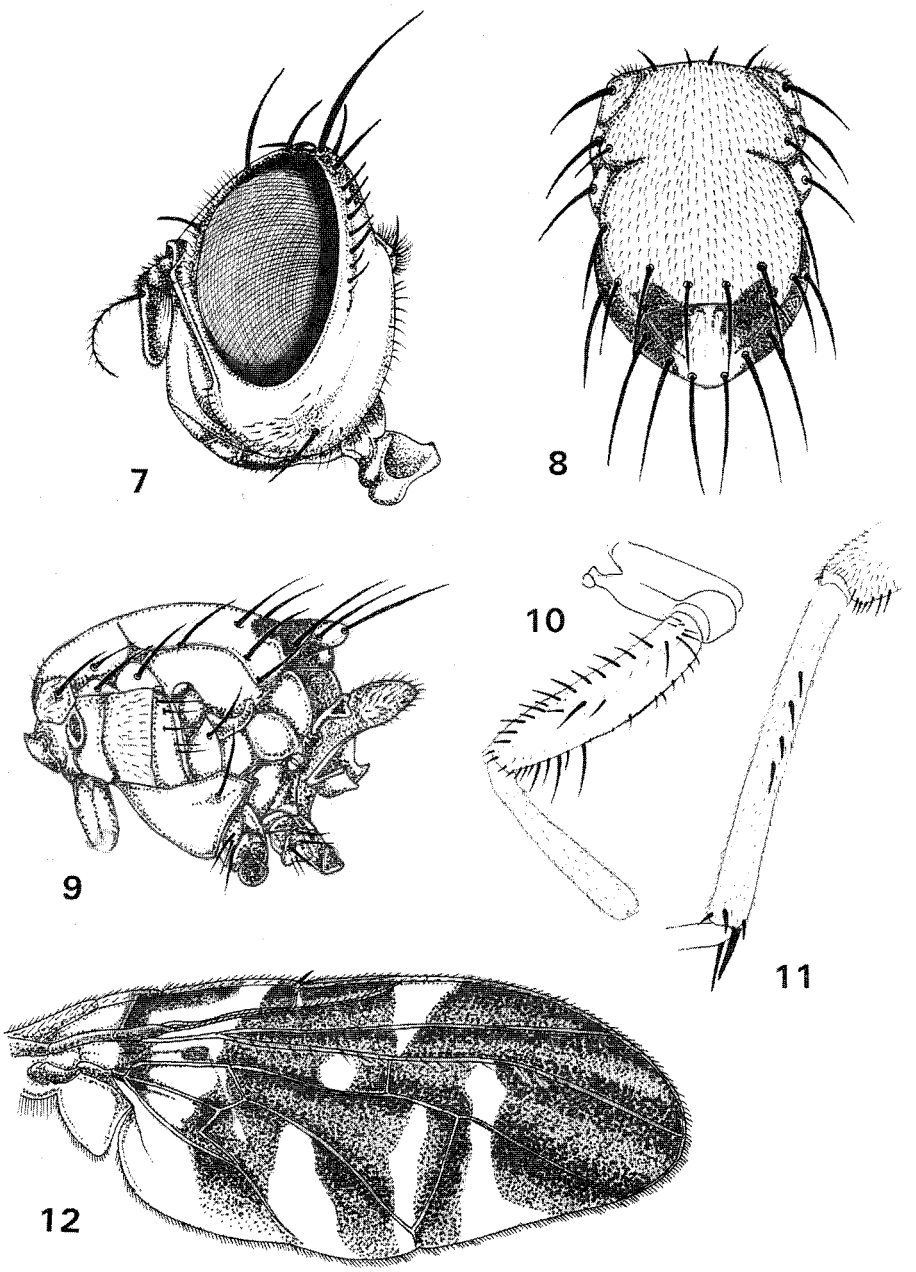
Thorax with *prst.* bristles present and 6 *sc.* bristles. Scutum with a pair of posterior submedian black markings behind *dc.* bristles, continuous with the black anterolateral markings on the scutellum. Wing with a brown costal band over basal $\frac{2}{3}$ of cell c, a large hyaline spot in cell r_{4+5} beyond r-m crossvein, continuous with the hyaline indentation in cell m, and a hyaline band at apex of cell dm, continued to hind margin of wing in cell cua_1. Abdomen banded, rufous in ground colour with narrow white apical bands and black medial bands on terga II–IV. Tergite V black. Length of body 8·0–8·4 mm (♂), 9·0–9·4 mm (♀), wing 8·2–8·5 mm (♂ and ♀).

Distribution

South-east Queensland.

Comments

Apart from failing to mention the distinctive band in cell c and the short *prst.* bristles, Tryon's (1927) description covers most of the salient features. His figured specimen, however, belongs to *A. nigriventris* and this discrepancy has resulted in confusion between these two species in the literature. *A. jarvisi* is closely related to *A. mayi*, differing in details of the wing and abdominal patterns and the scutellum having the medial yellow band expanded posteriorly to include the apical half.



Figs 7–12. *Acanthonevroides jarvisi*: *7*, head; *8*, scutum; *9*, lateral view of thorax; *10*, ♂ fore femur; *11*, ♂ mid tibia; *12*, wing.

Acanthonevroides mayi, sp. nov.

(Figs 13–21)

Material Examined

Holotype. ♂, Gayndah, Qld, Apr. 1940, A. W. S. May (QM - T12217).

Paratypes. **Queensland**: 1♀, same data as holotype (UQIC); 1♂, Toowoomba, Jan. 1926 (UQIC); 1♀, Toowoomba, Nov. 1939, A. W. S. May (UQIC); 1-, Bowenville, Nov. 1934, Fuller (QDPI); 4♂, 2♀, 6 km N Taroom, 25°36′S, 149°46′E, 200 m, 14.i.1991 (1♂), 2.iii.1991 (1♂), 1.x.1991 (1♀), 27.xi.1992

(1♂, 1♀), 11.iv.1993 (1♂), G. or G. and A. Daniels (UQIC); 1♀, Edungalba, nr Duaringa, 22.i.1982, M. S. and B. J. Moulds (AM).

Description

Male

Length of body 6·0–6·4 mm, of wing 6·3–7·0 mm.

Head (Fig. 13). Fulvous, slightly higher than long. Face vertical with deep antennal furrows. Antenna extending $\frac{3}{5}$ length of face, with 3rd segment rufous, apically rounded; arista short-plumose. Frons broad, with 1 pair *fr.* and 2 pairs *or.* bristles, the upper pair of *or.* weak, slightly stronger than *oc.* Gena with 1 strong *gn.* bristle and a row of 5 weaker bristles along oral margin.

Thorax. Predominantly fulvous. Scutum (Fig. 14) with a pair of narrow longitudinal submedian black vittae ending behind level of *sa.* bristles, a pair of presutural black spots behind postpronotal lobes, a pair of narrow postsutural lateral black vittae ending level with *ia.* bristles and a pair of large posterior black markings behind *dc.* bristles, continuous with black lateral areas of scutellum. Scutellum inflated, polished black with yellow medial band and a few scattered black setae over disc. A full complement of thoracic bristles, including *prst.* and 6 *sc.* Postnotum dark brown to black. Legs fulvous; fore femur (Fig. 15) with a row of posterodorsal setae medially and 3–4 posteroventral bristles on apical $\frac{1}{4}$; mid tibia (Fig. 16) with 2–3 strong posterodorsal bristles on basal half and 2 black apical spines; hind femur with a group of 3–4 preapical bristles; hind tibia (Fig. 17) with a row of 6–8 spine-like bristles anterodorsally. Wing (Fig. 18) hyaline at base except blackish brown as a band along humeral vein to base of cell cup and a spot near base of cell br; remainder blackish brown except hyaline as follows: 1 triangular indentation in cell r_1 at end of cell sc, extending to vein R_{4+5}; 2 broadly rounded spots in cells br and r_{4+5}, almost as wide as cells; 1 broad triangular indentation in cell m; 1 elongate apical band in cell dm, joined to outer of 2 indentations in cell cua_1. Veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; lobe of cell cup narrow and elongate.

Abdomen. Mostly fulvous to brown. Terga I+II tinged with a transverse black marking; tergite V with a polished black longitudinal band on each side and a pair of submedian dorsal black spots. Male genitalia (Fig. 19) with surstylus comparatively long, about $\frac{1}{3}$ width of epandrium, broad apically; inner surstylus also long, rod-like with 2 blunt black apical teeth; anal lobe covered with prominent hair-like apical setae; aedeagus thick at apex.

Female

Length of body 7·0–7·4 mm, of wing 6·5–7·0 mm. As for male except abdomen with tergite VI moderately well developed, fulvous, with a row of 4 prominent laterodorsal bristles; oviscape black; aculeus (Fig. 20) elongate, with lateral bristles, tapering posteriorly to a blunt apex with 2 short and 2 long pairs of preapical setae; 3 round spermathecae with prominent apical nipples. Egg (Fig. 21) elongate-oval.

Distribution

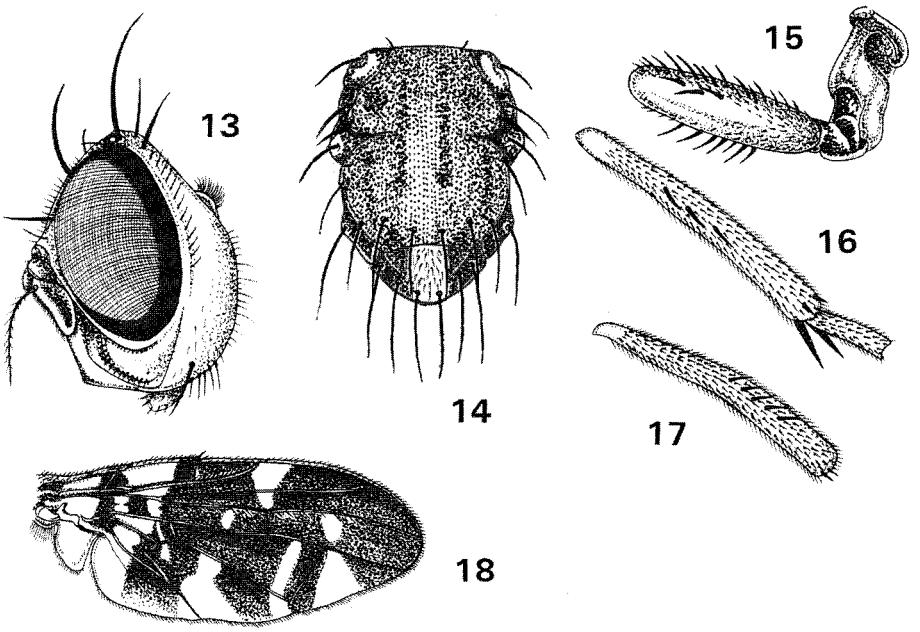
South-east Queensland.

Comments

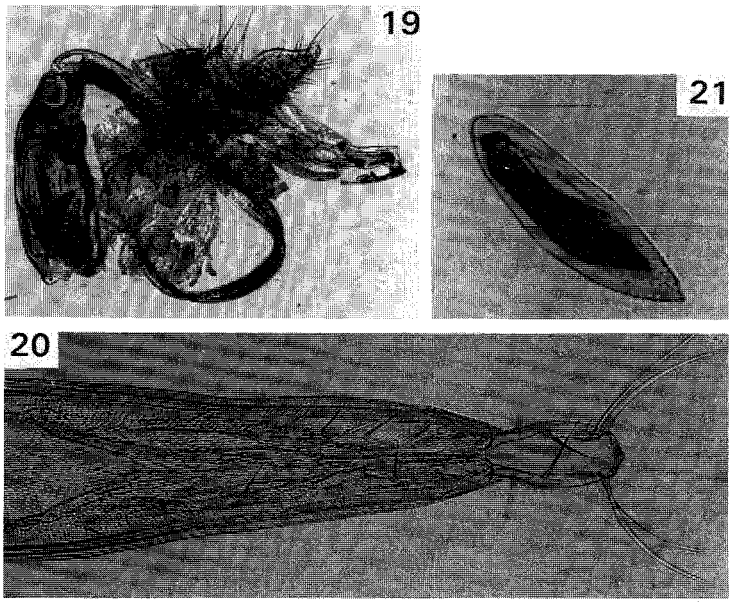
This species is most closely related to *A. jarvisi*, differing in the absence of a brown costal band in cell c, the hyaline spot in cell r_{4+5} not joined to the indentation in cell m and in details of the thoracic and abdominal patterns, particularly the scutellum which has the black lateral margins extending into the apical half. From other species in the genus it differs in the presence of *prst.* bristles and details of the wing pattern.

Etymology

This species is named after Alan May, who collected many of the specimens recorded in this study.



Figs 13–18. *Acanthonevroides mayi*: *13*, head; *14*, scutum; *15*, ♂ fore femur; *16*, mid tibia; *17*, hind tibia; *18*, wing.



Figs 19–21. *Acanthonevroides mayi*: *19*, ♂ genitalia (40×); *20*, aculeus (100×); *21*, egg (100×).

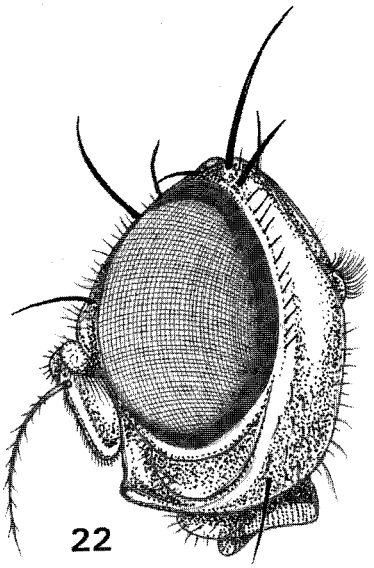
Acanthonevroides nigriventris (Malloch), comb. nov.

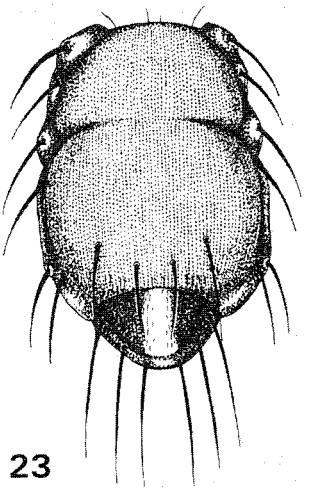
(Figs 22–29)

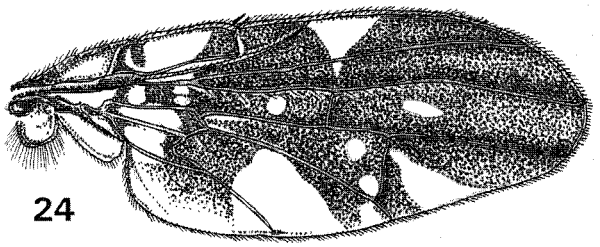
Trypeta bicolor Froggatt, 1908: 308 (*partim*: NSW). Misidentification.
Rioxa jarvisi Tryon, 1927: 222 (*partim*: pl. 24, fig. 13 only) (Stanthorpe, Qld). Misidentification.
Acanthoneura nigriventris Malloch, 1939*d*: 432, pl. 11, fig. 9. Type locality Wattle Flat, NSW. Holotype ♀ in NSWA [not examined].
Acanthonevra nigriventris. — Hardy and Foote, 1989: 510, as syn. of *A. jarvisi* (Tryon).

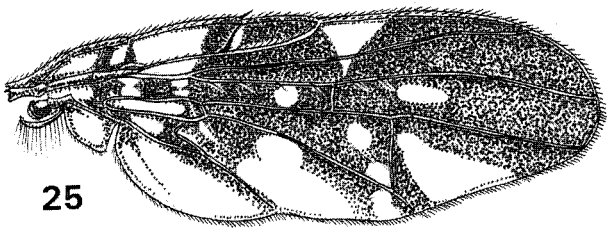
Material Examined

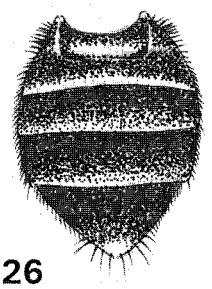
35♂, 38♀, from the following localities. **Queensland**: Stanthorpe, Toowoomba, Gayndah, Brisbane, L. Broadwater nr Dalby. **New South Wales**: Gosford, Grafton, Shoalhaven R., Nowra, Nepean R., Narara, Port Hacking, Gordon, Mendooran, Sydney, Bulahdelah State Forest. **Australian Capital Territory**: Mt Ainslie, Canberra. **Victoria**: Kiata, Warburton, Dandenong Ra., Mornington Pen., Melbourne. (In QM, QDPI, UQIC, NSWA, AM, ANIC.)







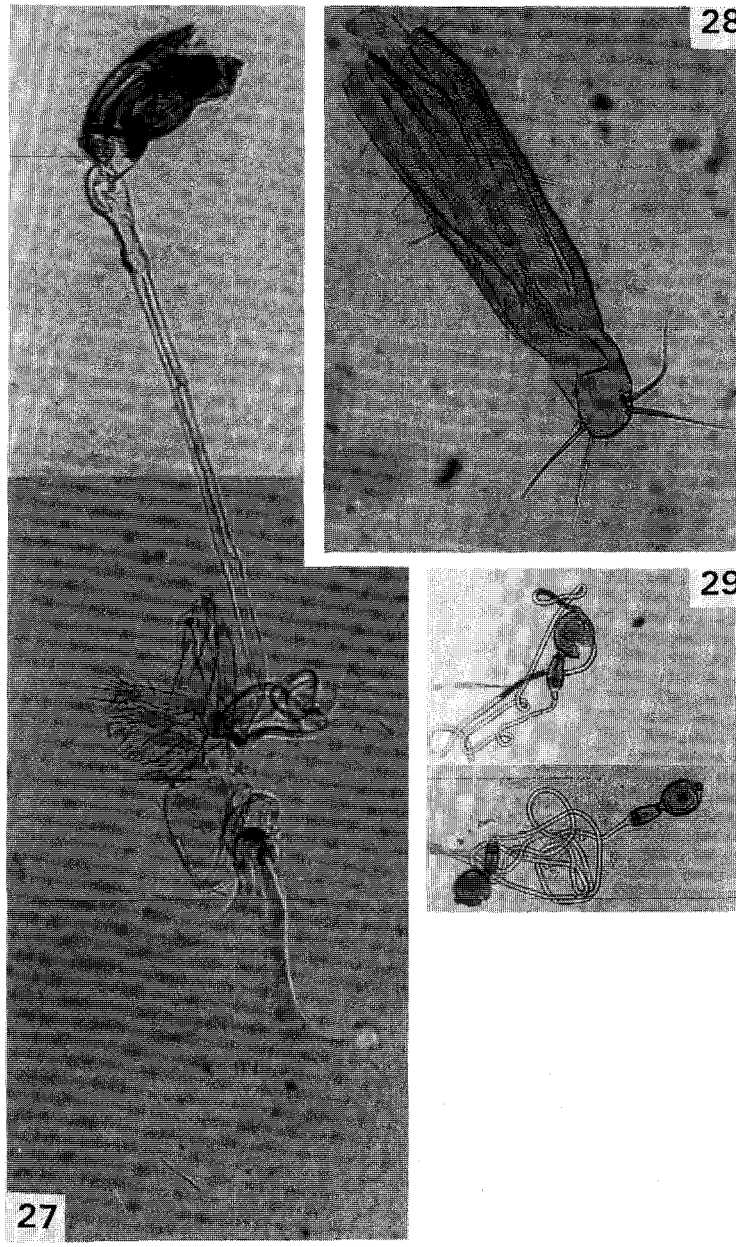




Figs 22–26. *Acanthonevroides nigriventris*: *22*, wing; *23*, scutum; *24–25*, wings; *26*, ♂ abdomen.

Diagnosis

Thorax with *prst.* bristles absent and 6 *sc.* bristles. Proepimeron with several weak, yellowish bristles. Scutum generally red-brown, rarely with traces of black vittae. Wing with a narrow, elongate spot in cell r_{4+5} beyond r-m crossvein and a pair of hyaline spots at apex of cell dm, rarely joined into a band, continued to hind margin of wing in cell cua_1. Abdomen black. Length of body 6·5–7·5 mm (♂) or 7·5–8·5 mm (♀), of wing 7·0–8·0 mm (♂ and ♀).



Figs 27–29. *Acanthonevroides nigriventris*: *27*, ♂ genitalia (40×); *28*, aculeus (100×); *29*, spermathecae (40×).

Distribution

Eastern Australia, from south-east Queensland to Victoria.

Biology

Froggatt's (1908) record of *A. bicolor* occurring on the trunks of wattle trees (*Acacia* sp.) near Bathurst, NSW, almost certainly refers to this species. The larvae probably develop beneath the bark. Two males from Bulahdelah State Forest (in AM) were collected on a *Eucalyptus* trunk in wet sclerophyll forest (label data).

Comments

This has been placed in synonymy with *A. jarvisi* (Hardy and Foote 1989), based on confusion between the two species due to Tryon's (1927) illustration being not conspecific with his description and holotype. *A. nigriventris* differs from *A. bicolor* in characters noted above and in the key, and in the well-sclerotised spermathecae and longer lateral bristles on the aculeus.

Acanthonevroides variegatus, sp. nov.

(Figs 30–34)

Material Examined

Holotype. ♂, Kalbarrie, WA, 21.xi.1978, M. S. and B. J. Moulds (AM).

Paratypes. **Northern Territory**: 1♂, SE of Chabbana Waterhole, NE of Alice Springs [no further data] (UQIC); 1♂, [N of Alice Springs], 23°38′S, 134°40′E, 23.iv.1951, P. Colman, open scrub (AM); 1♀, CSIRO, Alice Springs, 2.i.1988, G. Binks, on fruit of fig tree (ANIC). **Queensland**: 1♂, Eidsvold, Jan. 1923 (UQIC); 1♀, Eidsvold, 1924, Bancroft (UQIC).

Description

Male

Length of body 6·5–7·3 mm, of wing 6·2–6·5 mm.

Head (Fig. 30). Orange tinged with brown, slightly higher than long. Face concave medially, convex at base of antennae, oral margin strongly projecting and tinged with black. Antenna extending almost length of face, third segment slightly pointed apicodorsally; arista pubescent. Frons broad, dark brown, with 1 pair *fr.* and 2 pairs *or.* bristles. Ocellar triangle black, with a pair of black, hair-like *oc.* Occiput yellow to orange. Gena with 1 strong *gn.* bristle and a row of weaker bristles along oral margin; tinged dark brown below eye.

Thorax. Fulvous in ground colour. Scutum (Fig. 31) tinged with a W-shaped black marking and indistinct spots medially and black areas posterolaterally; posteromedially with a bright yellow spot. Scutellum inflated, bilobed distally, polished black with yellow medial band and a few scattered black setae over disc. A full complement of thoracic bristles except *prst.* absent, *ipa.* weak, hair-like and only 4 *sc.*, the middle pair absent; 2 *anepst.* bristles. Pleura fulvous anteriorly, black posteriorly, including postnotum. Sternum fulvous. Legs fulvous, all femora tinged dark brown on basal $\frac{1}{2}$–$\frac{2}{3}$; fore femur with 2 posterodorsal rows of black setae and 1–2 prominent posteroventral bristles at apical $\frac{2}{3}$; mid tibia with a row of 4 strong black posterodorsal bristles and 2 black apical spines; hind tibia with a row of 9–10 anterodorsal black setae medially. Wing (Fig. 32) predominantly blackish brown with hyaline markings as follows: extreme base; middle part of cell c and 2 pairs of small spots in cell br below; 1 triangular indentation in cell r_1 at end of cell sc, extending to vein R_{4+5}; 2 rounded spots in cells br and r_{4+5}; 1 broad triangular indentation in cell m; 1 oval apical spot in cell dm; 1 broad triangular indentation in cell cua_1; middle part of cell cup; below anal vein. Veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; cell cup with apical lobe narrow and elongate.

Abdomen. Terga I–IV polished black, densely covered with black hairs; tergite V black basally, tinged bright yellow apically. Male genitalia (Fig. 33) with surstylus and inner surstylus short, thick and yellowish, the former with fine pale posteroapical setae; anal lobe small, fulvous, covered with black bristles as long as width of surstylus; epandrium fulvous with black posterodorsal bristles.

Female

Length of body 6·8–7·4 mm, of wing 5·9–6·2 mm. As for male except arista short-plumose; fore femur with a row of 3–4 apicoventral bristles on apical $\frac{3}{5}$ and mid tibia with fewer posterodorsal bristles; abdomen with tergite VI moderately well developed; oviscape dark brown, half length of tergite V; aculeus (Fig. 34) broad, tapering posteriorly to a blunt apex, with lateral bristles and 2 short and 2 long pairs of preapical setae; 3 rounded spermathecae.

Variation

The Eidsvold specimens are brighter in colour than those from Western Australia and the Northern Territory, the scutum lacking black markings and the abdomen paler, terga I–II dark brown, terga IV–VI fulvous. All other characters are the same.

Distribution

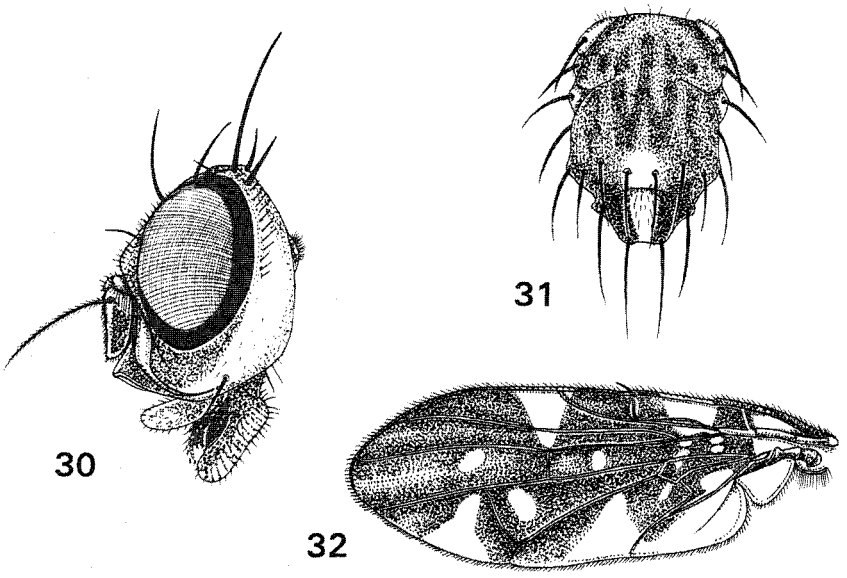
South-central Australia, from the west-central parts of Western Australia, across southern Northern Territory, to south-east Queensland.

Comments

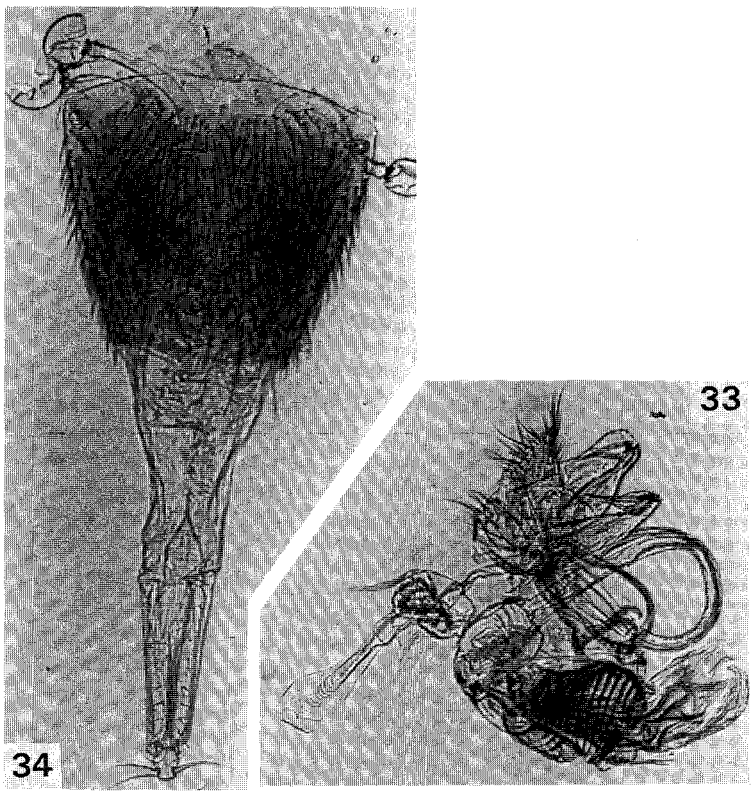
This species differs from all others in the genus in the presence of only four *sc.* bristles and only one hyaline indentation in cell cua_1. In the absence of *prst.* bristles and in the relatively narrow hyaline spot in cell r_{4+5} it most resembles *A. bicolor* and *A. nigriventris*, differing as noted above.

Etymology

The specific name derives from the Latin *variegatus*, referring to the variety of colours on the scutum.



Figs 30–32. *Acanthonevroides variegatus*: *30*, head; *31*, scutum; *32*, wing.



Figs 33–34. *Acanthonevroides variegatus*: *33*, ♂ genitalia (40×); *34*, ovipositor and spermathecae (40×).

Genus ***Aridonevra***, gen. nov.

Type species: *Aridonevra cunnamullae,* sp. nov.

Diagnosis

Head higher than long. Face convex, with deep antennal furrows. Antenna extending $\frac{3}{5}$ length of face, third segment apically rounded; arista abraded. Frons with 1 pair *fr.* and 2 pairs *or.* bristles; *oc.* moderately developed; *pocl.* thin and dark. Gena with 1 strong *gn.* bristle. Thorax with the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa., dc.* placed close to line of *ia., acr.*, 4 *anepst., anepm., kepst.*, 4 *sc.* Scutellum black, swollen and densely covered with short, dark setae. Mid tibia with 2 long apical spines. Wing pattern brown with hyaline indentations, including 1 triangular indentation in cell r_1 at end of cell sc and hyaline bands in cells r_{4+5} + m, dm and cua_1. Cell sc a little shorter than cell c. Veins R_1 and R_{4+5} setose; veins R_{4+5} and M sinuous; cell dm apically expanded, dm-cu crossvein outwardly oblique and sinuous, strongly oblique towards wing tip; r-m crossvein inwardly oblique, well beyond middle of cell dm. Cell cup with apical lobe narrow, elongate. Aculeus blunt apically, with lateral bristles and preapical setae.

Comments

This genus belongs in a group with *Acanthonevroides, Termitorioxa* and *Taeniorioxa*, as discussed under *Acanthonevroides*. It differs in the entirely black scutellum and sinuous wing venation. It is unusual amongst Acanthonevrini in possessing only 4 *sc.* bristles, a condition seen also in *Acanthonevroides variegatus*, but the wing pattern and venation are very different.

The generic name is derived from its arid habitat in south-western Queensland. Only one species is known.

Aridonevra cunnamullae, sp. nov.

(Figs 35–37)

Material Examined

Holotype. ♂, Gilruth Plains, Cunnamulla, Qld, Sept. 1944, G. H. Allen, on *Eremocitrus glauca* (AM).

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

Description

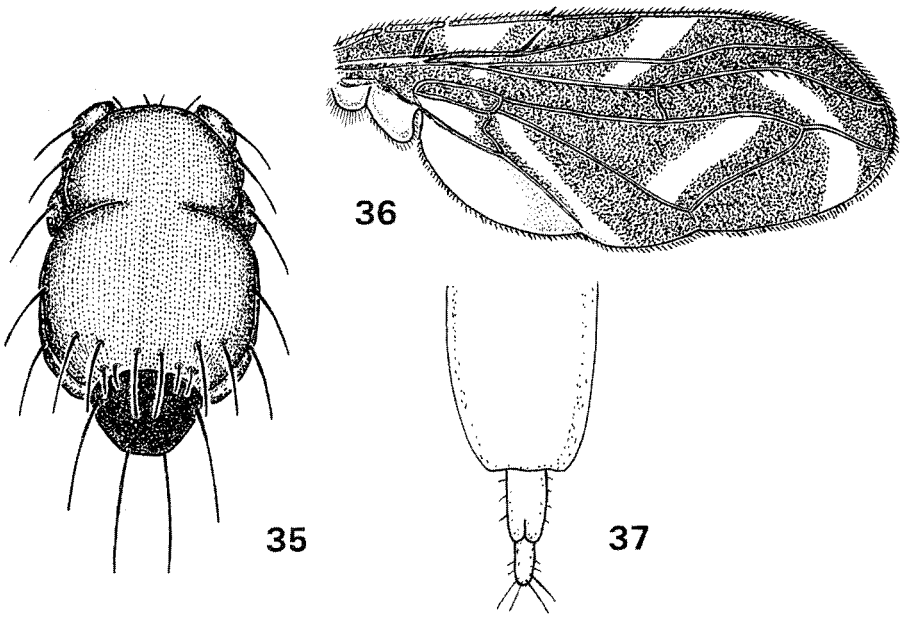
Male

Length of body 5·8 mm, of wing 5·4 mm.

Head. As for genus; fulvous.

Thorax. Scutum (Fig. 35) red-brown. With a full complement of thoracic bristles including *ipa*; 1 strong plus 3 weaker *anepst.* bristles. Scutellum black, swollen, covered with fine black setae; 4 strong *sc.* bristles. Pleura blackish brown. Postnotum black. Legs red-brown, mid and hind femora brown. Fore femur with rows of fine, dark ventral and dorsal setae and 5–6 black apicoventral bristles. Mid tibia with 2 black subequal apical spines. Wing (Fig. 36) brown except hyaline bands as follows: medial portion of cell c; in cell r_1 just beyond cell sc, extending diagonally backwards into cell r_{2+3}, reaching vein R_{4+5}; diagonally across cell r_{4+5} from vein R_{4+5}, to wing border in cell m; transversely near end of cell dm, parallel to dm-cu crossvein; obliquely in cell cua_1, from base of vein CuA_1 to apex of vein $CuP+A_1$; in and below cell cup, leaving apical lobe brown. Cell sc almost as long as cell c; cell dm expanded distally; r-m crossvein oblique; dm-cu crossvein strongly oblique, sinuous; veins R_{4+5} and M sinuous in apical half of wing; veins R_1 and R_{4+5} setose. Cell cup with apical lobe long and narrow.

Abdomen. Blackish brown, narrow; male genitalia not examined.



Figs 35–37. *Aridonevra cunnamullae*: *35*, scutum; *36*, wing; *37*, aculeus.

Female

Length of body 6·5 mm, of wing 5·5 mm. As for male except abdomen with tergite VI present but poorly developed; oviscape dark red-brown, as long as tergite V. Aculeus (Fig. 37) as for genus, with 2 short and 2 long pairs of preapical setae.

Distribution

Known only from Cunnamulla, south-western Queensland.

Comments

This species is readily identified by the wing and other characters noted above.

Etymology

The specific name is derived from the type locality.

Genus *Austronevra*, gen. nov.

Type species: *Acanthoneura australina* Hendel.

Diagnosis

Head with *oc.*, 1 pair *fr.* and 2 pairs *or.* bristles and a row of fine black *pocl.* Arista long-plumose. Thorax fulvous with dark lateral and posterior markings on scutum and the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia, p.sa., dc.* placed midway between *sa.* and *ia., acr.*, 6 *sc.*, the middle pair weak, 2 *anepst., anepm., kepst.* (lower *anepst., anepm.* and *kepst.* thin and pale red-brown); *ipa.* absent or represented by very small, weak setae. Scutellum yellow, bare. Mid tibia with 1 long apical spine. Wing pattern brown with hyaline spots and indentations, including 1 in cell sc and 2 in cell r_1; wings comparatively narrow and elongate. Veins R_1 and R_{4+5} setose. Cell cup with apical lobe broad, elongate. Surstylus long. Oviscape elongate; aculeus blunt apically, with 2 short and 2 long pairs of preapical setae. Three oval spermathecae.

Comments

This genus belongs in a group with *Austrorioxa*, *Copiolepis* and *Dacopsis*, distinguished by the absence of distinct *ipa.* bristles, one long mid-tibial apical spine (plus a short secondary spine in *Copiolepis*) and cell sc often very elongate, at least in males. *Austronevra* differs from the others in wing pattern type, having two hyaline indentations from costa in cell r_1 and lack of cell sc elongation in males, otherwise it appears close to *Austrorioxa*.

From *Acanthonevra* Macquart, in which the species have previously been included, *Austronevra* differs in having narrower wings with two hyaline indentations in cell r_1, weak lower *anepst.* and *kepst.* bristles, a much longer oviscape and different biology. In *Austronevra*, larvae develop beneath the bark of newly felled logs; in *Acanthonevra*, where known, larvae utilise decaying shoots of bamboo. Two species are included.

Key to Species of *Austronevra*

1. Abdominal tergite II marked with black laterally; cell c hyaline except at edges; 1 hyaline indentation in cell m ..... *A. australina*
   Abdominal tergite II entirely yellow; cell c with a medial brown patch; 2 hyaline indentations in cell m ..... *A. bimaculata*

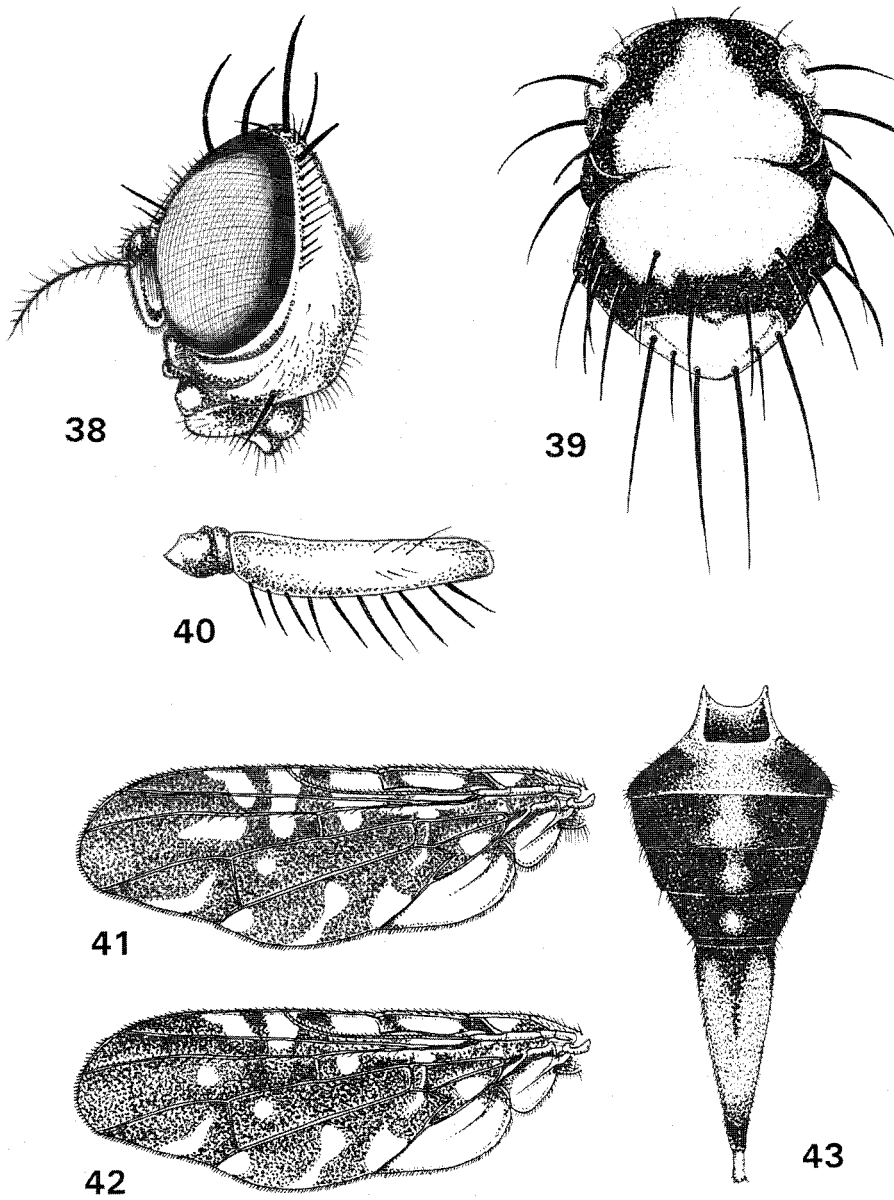
Austronevra australina (Hendel), comb. nov.

(Figs 38–44)

Acanthoneura australina Hendel, 1928: 359. Type locality Cairns, Qld. 3♀ syntypes in DEI [not examined]. — Malloch, 1939*d*: 432; Hardy, 1951: 171; Hardy, 1954: 332.
Acanthonevra australina. — Hardy and Foote, 1989: 510.

Material Examined

10♂, 26♀, from the following localities. **Queensland**: Cairns, Kuranda, Mossman Gorge, Mossman R., Dagma Ra. nr Daintree, Meringa, Mulgrave R. nr Gordonvale, Redlynch, Crystal Cascades nr Cairns,



Figs 38–43. *Austronevra australina*: *38*, head; *39*, scutum; *40*, ♂ fore femur; *41*, ♂ wing; *42*, ♀ wing; *43*, ♀ abdomen.

Julatten, Thornton Ra. to Hutchinson Ck, Tully, Palmerston Natl Pk, The Boulders via Babinda, Kalbo, South Johnstone. (In QDPI, UQIC, AM, ANIC.)

Diagnosis

Wing with hyaline markings a little variable, more extensive in males; no dark band in cell c; 1 or 2 spots near apex of cell dm; 1 elongate indentation in cell m; 1 spot in cell r_{4+5} near dm-cu crossvein. Abdomen with black lateral markings on tergite II. Length of body 5·0–5·2 mm (♂) or 7·3–7·7 mm (♀), of wing 6·0–6·5 mm (♂) or 6·5–7·0 mm (♀).

Distribution

North Queensland, from Daintree to Tully.

Biology

At The Boulders, near Babinda, larvae of this species were found beneath the bark of newly felled *Dysoxylum gaudichaudianum* trees (Meliaceae). It occurs in rainforests.

Comments

This species differs from *A. bimaculata* in characters noted in the key. Hardy (1954) illustrated the female aculeus.

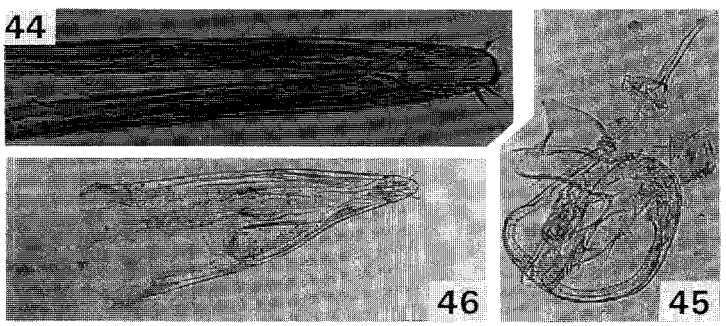


Fig. 44. *Austronevra australina*, aculeus (100×). **Figs 45–46.** *A. bimaculata*: *45*, ♂ genitalia (40×); *46*, aculeus (40×).

Austronevra bimaculata, sp. nov.

(Figs 45–50)

Genus near *Dirioxa*, sp. nr. *A. australina* Hendel. — Dodson and Daniels, 1988: 77 (Iron Ra., Qld).

Material Examined

Holotype. ♂, Iron Ra., Cape York Pen., N Qld, 16–23.xi.1965, G. Monteith (QM - T12207).

Paratypes. **Queensland**: 2♀, same data as holotype (UQIC); 1♀, same data but 26–31.v.1971 (UQIC); 1♀, West Claudie R., 25.vi.1982, M.A. Schneider and G. Daniels (UQIC); 1♀, Gordon Ck area, Claudie R. dist., 20–22.vi.1982, G. Daniels and M. A. Schneider (UQIC); 1♀, Iron Ra., West Claudie R., 4.xii.1985, D. Yeates, rainforest (QM); 1♀, Claudie R., 12°43′5, 143°17′E, 30.v.1992, L. Ring (UQIC); 2♀, West Claudie R., 4 km SW rd junct., 12°44′S, 143°15′E, 8.xii.1986, G. Dodson or G. Daniels and M. A. Schneider (UQIC); 1♂, same locality, 11.i.1987, G. Dodson, reared from *Dysoxylum gaudichaudianum* (UQIC); 1♀, Bamaga-Captain Billy Ck rd junct., 16 km NE Heathlands HS, 11°41′S, 142°42′E, 16.iii.1992, G. Daniels and M. A. Schneider (UQIC); 1♀, Bamaga, Cape York, 24.iii.1994, J. Sailor (QDPI).

Description

Male

Length of body 4·0–4·3 mm, of wing 5·0–5·2 mm.

Head (Fig. 47). Fulvous, slightly higher than long. Face concave. Antenna extending $\frac{3}{4}$ length of face, with 3rd segment rounded apically; arista long plumose. Frons with 1 pair *fr.* and 2 pairs *or.* bristles; *oc.* weak, seta-like. Gena with 1 strong *gn.*

Thorax (Figs 48, 49). Predominantly fulvous; scutum with black lateral and posterior bands, from behind postpronotal lobe to notopleuron, then from behind *sa.* bristle to and across hind margin, enclosing *acr.* bristles. Scutellum yellow, bare. A full complement of thoracic bristles except *ipa.*; *dc.* situated midway between *sa.* and *ia.* bristles, lower *anepst., anepm.* and *kepst.* bristles weak, pale red-brown; 6 *sc.*, the middle pair weak. Postnotum black, red-brown medially. Haltere fulvous. Legs fulvous; fore femur with 2 rows of posterodorsal bristles and a row of 6–7 posteroventral bristles; mid tibia with 1 black apical spine; hind tibia with 2 rows of strong brown bristles, 3–4 anterodorsally and 2–3 anteroventrally. Wing (Fig. 50) narrow, elongate, predominantly brown with hyaline spots and indentations as follows: 1 in cell bc; 2 in cell c; 1 in cell sc; 2 in cell r_1, the basal spot extending almost to vein R_{4+5}; 2 in cell br; 2 in cell r_{4+5}, beyond dm-cu crossvein; 2 indentations in cell m; 2 spots in cell dm near apex; 2 spots and 2 indentations in cell cua_1, 1 spot in cell cup, continued to wing margin; outer margin of anal lobe. Veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; lobe of cell cup broad and elongate.

Abdomen. Terga I+II fulvous; terga III–IV black with a narrow fulvous medial band; tergite V pale brown. Male genitalia (Fig. 45) with surstylus elongate, slightly pointed apically; inner surstylus densely haired near black apical tooth; anal lobe rod-like, apically expanded, equal in length to epandrium which has prominent long dorsal hairs.

Female

Length of body 6·0–6·5 mm, of wing 5·8–6·0 mm. As for male except abdominal terga IV–V black, tergite VI pale brown. Oviscape brown, elongate, as long as rest of abdomen; aculeus (Fig. 46) without lateral bristles, tapering to a blunt apex with 2 short and 2 long pairs of preapical setae; 3 oval, smooth spermathecae with moderately long necks.

Distribution

North Queensland, from Bamaga to Iron Range, Cape York Peninsula.

Biology

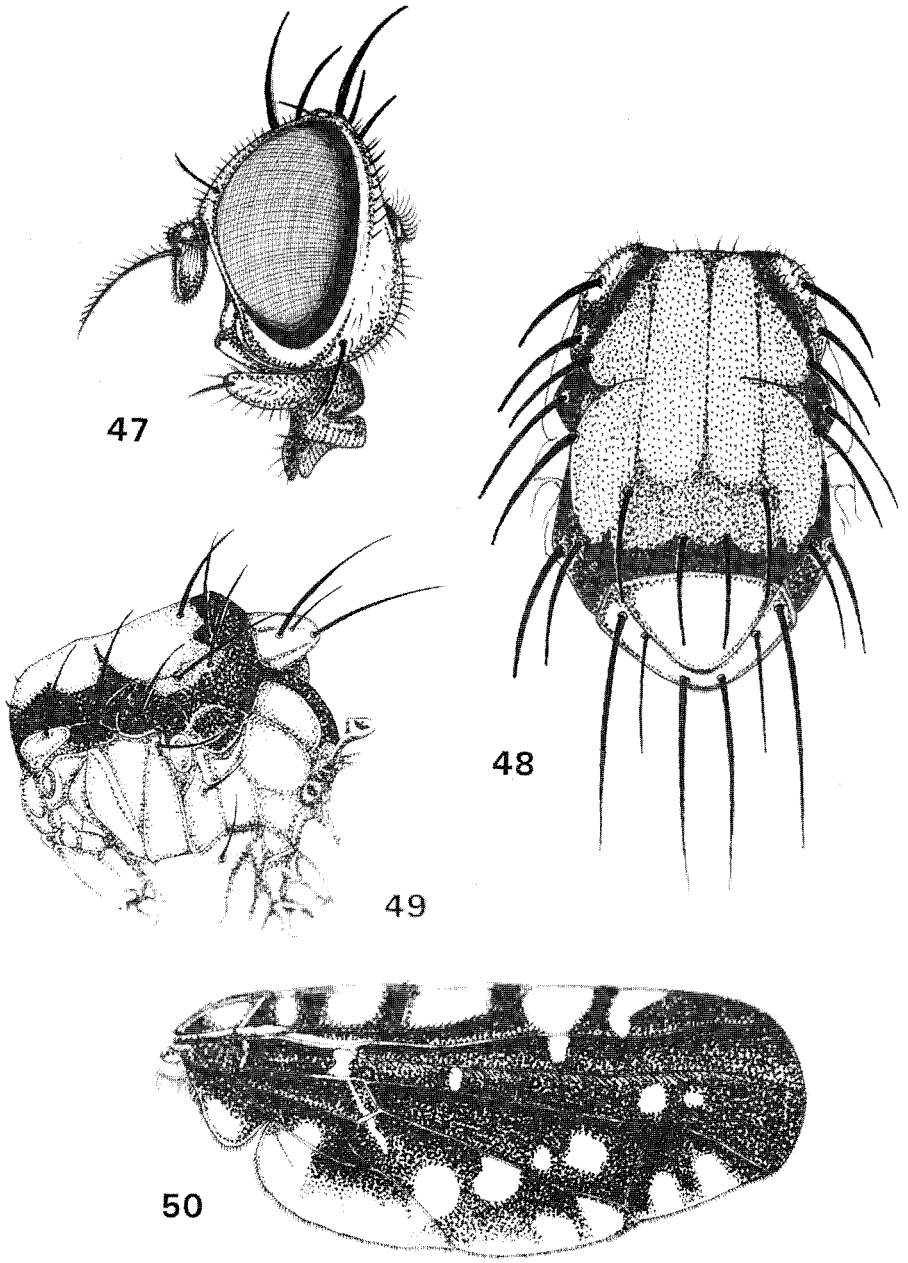
Larvae develop beneath the bark of newly fallen logs of *Dysoxylum gaudichaudianum* (Meliaceae) in rainforests (Dodson and Daniels 1988).

Comments

This species resembles *A. australina* but the sexes are less diverse in wing markings, cell c has a brown submedial band, cell r_{4+5} has two hyaline spots near dm-cu crossvein and cell m has two hyaline marginal indentations.

Etymology

The specific name is derived from the Latin *bis*, twice, and *maculatus*, spotted, referring to the two hyaline spots in cell m.



Figs 47–50. *Austronevra bimac*ulata: *47*, head; *48*, scutum; *49*, lateral view of thorax; *50*, wing.

Genus ***Austrorioxa***, gen. nov.

Type species: *Acanthoneura acidiomorpha* Hendel.

Diagnosis

Head with *oc.*, 1 pair *fr.* and 2 pairs *or.* bristles and a row of fine black *pocl.* Arista long-plumose. Thorax fulvous with dark lateral and posterior markings on scutum and the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., dc.* placed midway between *sa.* and *ia., acr.*, 6

sc., the middle pair weak, 2 *anepst., anepm., kepst.* (lower *anepst.* and *anepm.* thin and pale red-brown); *ipa.* absent. Scutellum yellow, bare. Mid tibia with 1 long apical spine. Wing pattern brown with hyaline spots and indentations, including 1 triangular indentation in cell r_1 at apex of cell sc and elongate bands in cells br., r_{4+5}, dm and cup; wing comparatively elongate. Cell sc as long as cell c in female, $1\frac{1}{2}\times$ as long in male. Veins R_1 and R_{4+5} setose. Cell cup with apical lobe broad, elongate. Surstylus relatively long, about twice as long as anal lobe. Oviscape elongate; aculeus blunt apically, with 2 short and 2 long pairs of preapical setae. Three round, smooth spermathecae.

Comments

This genus belongs in a group with *Austronevra, Copiolepis* and *Dacopsis*, as noted under *Austronevra*. It differs from these genera in wing pattern type. It is closest to *Austronevra*, differing further in the longer cell sc, especially in males, and the better developed *kepst.* bristle.

From *Rioxa* Walker, *Austrorioxa* differs in wing pattern details, in the straight basal portion of vein Sc, and in the downcurved apex of vein R_{4+5}; in *Rioxa* vein sc is arched below cell c and vein R_{4+5} curves upwards at apex. From *Acanthonevra*, in which the type species has previously been included, *Austrorioxa* differs in wing pattern type, elongate cell sc and presumably different biology. *Rioxa* larvae are suspected of developing in rotting wood (Hardy 1986*b*), and *Austrorioxa* larvae are likely to have a similar biology. The genus is monotypic.

Austrorioxa acidiomorpha (Hendel), comb. nov.

(Figs 51–55)

Acanthoneura acidiomorpha Hendel, 1928: 360. Type locality New South Wales. Holotype ♀ in USNM [not examined]. — Malloch, 1939*d*: 421, fig. F, 432; Hardy, 1951: 171 (as *acidomorpha*).
Acanthonevra acidiomorpha. — Hardy and Foote, 1989: 510.

Material Examined

3♂, 19♀, from the following localities. **Queensland**: Windsor Tbld via Mt Carbine, Baldy Mt Rd via Atherton; Wallaman Falls nr Ingham, Mt Spec, Montville, Wide Bay, Eurimbula Ck nr Round Hill Head, Mary Cairncross Pk nr Maleny, Caloundra, Mt Glorious, Mt Tamborine. **New South Wales**: Tweed R., Richmond R., Nightcap Natl Pk nr Lismore, Whian Whian S.F. nr Lismore, Iluka, Sydney. (In QDPI, UQIC, NSWA, AM.)

Diagnosis

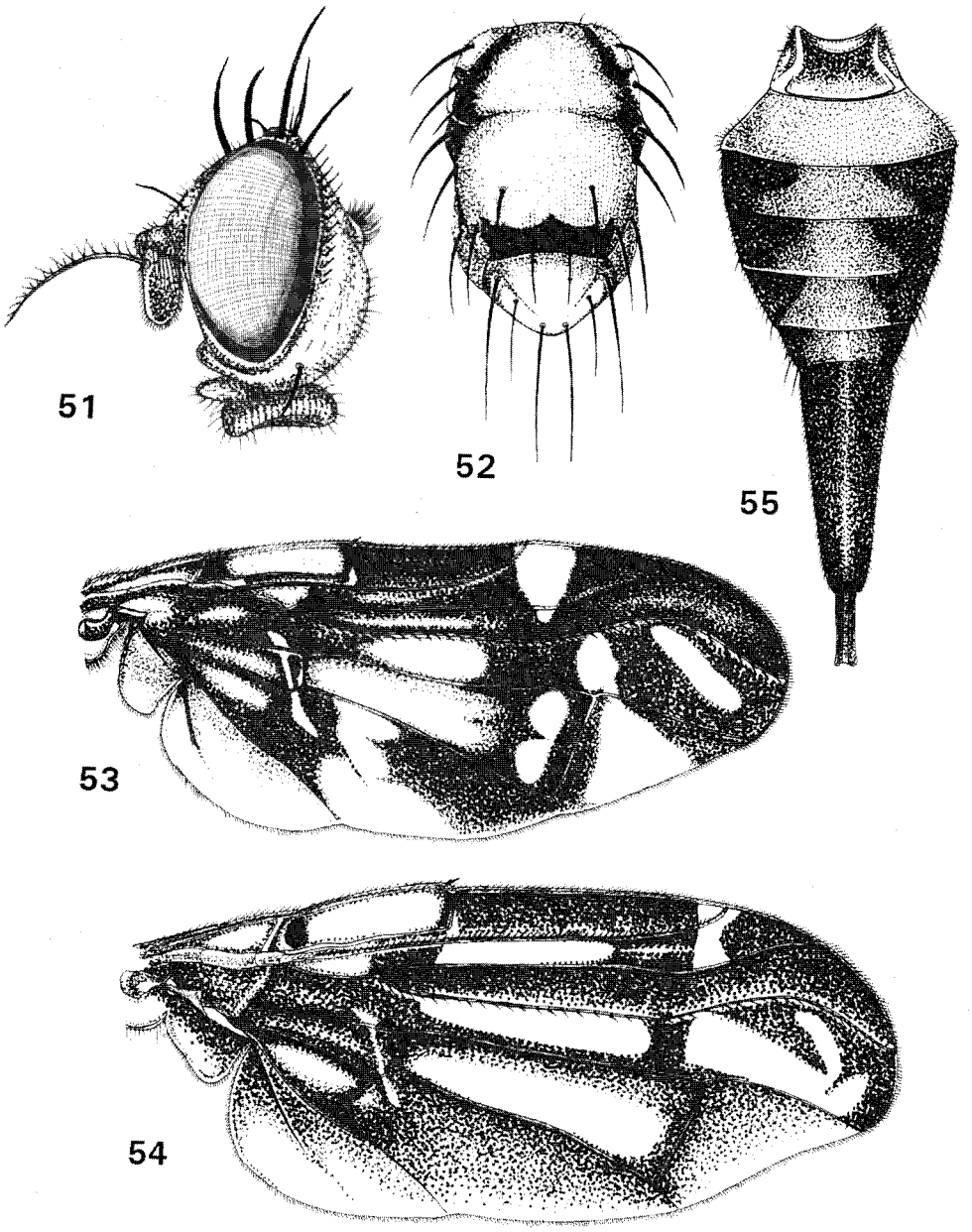
Easily identified by the generic characters noted above and the wing pattern. Cells m and cua_1 largely brown with diffuse hyaline margins in male, brown with distinct hyaline indentations in female; cells dm and br with large longitudinal hyaline bands in both sexes, in female cell dm with an additional transverse hyaline apical band or spots. Scutum with black lateral band from behind postpronotal lobe to notopleuron and a black posterior marking enclosing *acr.* bristles. Abdomen fulvous, terga III–VI black laterally in female, III–V with black lateral spots in male. Length of body 5·8–6·2 mm (♂) or 6·5–7·5 mm (♀), wing 6·5–7·2 mm (♂) or 5·5–6·5 mm (♀).

Distribution

Eastern Australia, from Mt Carbine, north Queensland, to Sydney, New South Wales.

Comments

The long ovipositor and apparent relationship with *Austronevra* species suggests that *A. acidiomorpha* also breeds in logs, possibly also *Dysoxylum* species.



Figs 51–55. *Austrorioxa acidiomorpha*: *51*, head; *52*, scutum; *53*, ♀ wing; *54*, ♂ wing; *55*, ♀ abdomen.

Genus ***Clusiosoma*** Malloch

Clusiosoma Malloch, 1926: 547. Type species: *C. semifusca* Malloch, by original designation.

Diagnosis

Head higher than long. Face concave. Antenna with arista long plumose. Frons with 2 pairs each of *fr.* and *or.* bristles, the upper *or.* usually reduced; *oc.* bristles small, hair-like. Thorax yellow, often with black longitudinal vittae, or sometimes black, with the following bristles: weak *scp.*, *pprn.*, *prst.*, 2 *npl.*, *sa.*, *ia.*, *p.sa.*, *ipa.*, *dc.* situated midway between *sa.* and *ia.*, *acr.*,

anepst., kepst.; anepm. vestigial or absent; 6 *sc.*, the middle pair weak. Fore femur swollen in both sexes but densely bristled or with a secondary ventral process only in males. Mid tibia with 1 long and 1 short apical spine. Wing mostly brown, at least apically, without distinct hyaline spots or indentations. Veins R_1, R_{4+5} and CuA_1 setose. Cell cup with apical lobe broad and relatively short. Aculeus short, blunt apically, with 3 short and 2 longer pairs of preapical setae. Three rounded spermathecae.

Comments

This genus belongs in a group with *Clusiosomina*, *Rabaulia* Malloch and *Trypanocentra* Hendel, characterised by having vein CuA_1 setose, mostly brown wings without hyaline spots or indentations, *anepm.* bristles vestigial or absent, *ipa.* bristles present, six *sc.* bristles and two mid-tibial spines, one long and one short. From the other genera, *Clusiosoma* differs in the concave face, without a pair of dark spots or band, and the swollen fore femora, densely bristled in males.

The larvae develop in the fruit of *Ficus* spp. (Moraceae). The genus occurs from the Moluccas to the Solomon Islands and Australia. For a key to previously described species see Hardy (1986*b*). Two subgenera have been described, both occurring in Australia.

Key to Australian Subgenera and Species of *Clusiosoma*

1. Scutum mostly black; wing largely brown except cells bc and c and medial subhyaline area; male fore femur with a basoventral protuberance bearing 4–5 strong black spines; face black ..... *C. (Paraclusiosoma) papuaense*
   Scutum mostly fulvous or with a black medial band; wing largely hyaline or subhyaline basally, brown distally; male fore femur densely bristled ventrally; face black or yellow .... *C. (Clusiosoma)* ... 2
2. Scutum with narrow black submedial vittae, often incomplete, not connected anteriorly; pleura with 1 narrow dark lateral band ..... *C. (C.) semifuscum*
   Scutum with a broad red-brown to black medial area; pleura with 2 dark bands or mostly dark 3
3. Parafacial, gena, mentum and palpi yellow; face yellow to brown; all legs except fore femora fulvous, tinged with brown basally on mid and hind femora ..... *C. (C.) laterale*
   Parafacial, gena, mentum and palpi black; face shining black; all legs dark brown to black, tinged with yellow apically on tibiae ..... *C. (C.) macalpinei*

Subgenus ***Clusiosoma*** Malloch

Diagnosis

Fore femur in male with dense bristles ventrally, without a basoventral protuberance. Three Australian species.

Clusiosoma (Clusiosoma) laterale (Walker)

(Figs 56–60)

Dacus lateralis Walker, 1865*a*: 123. Type locality 'New Guinea'. Holotype ♀ in BMNH [not examined].

Clusiosoma biseriata Malloch, 1939*d*: 426. Type locality Wewak, Papua New Guinea. Holotype ♂ in AM [not examined].

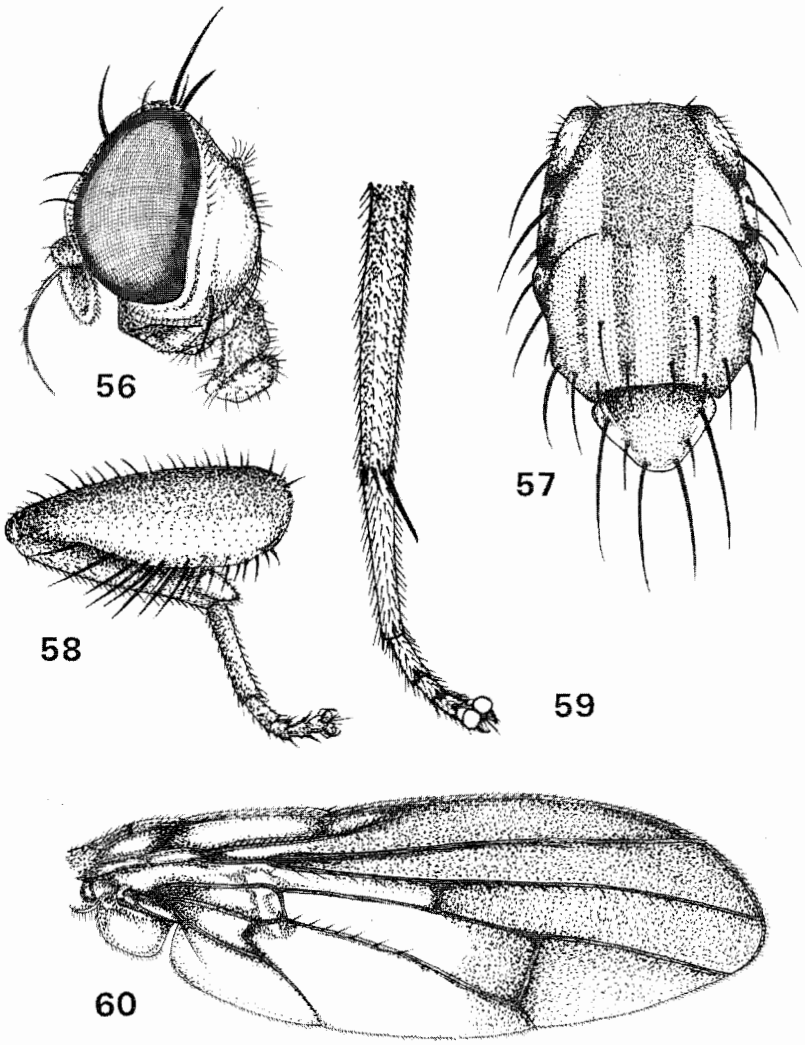
Clusiosoma (Clusiosoma) laterale (Walker). — Hardy, 1986*b*: 42.

Material Examined

Queensland: 1♂, 1 mi NE Mt Lamond, Iron Ra., 12°46′S, 143°16′E, 18.i.1972, D. K. McAlpine and G. A. Holloway (AM); 2♀, West Claudie R. x-ing, Iron Ra., 12°44′S, 143°13′E, 8.i.1994, G. and A. Daniels, R. Eastwood (UQIC).

Diagnosis

Head slightly higher than long. Face concave, yellow to dark brown; parafacia yellow. Clypeus, mentum and palpi yellow tinged with brown. Antenna extending $\frac{4}{5}$ length of face, second segment yellow tinged with black, third segment apically rounded, yellow; arista plumose, with 3 rows of long hairs, the longest about $\frac{3}{4}$ width of third antennal segment. Frons with longitudinal medial brown marking on lower half; 2 pairs each of *fr.* and *or.* bristles, the upper *or.* weak; *oc.* weak. Upper portion of occiput black. Gena yellow, with 1 strong *gn.* bristle. Thorax fulvous. Scutum with a broad black medial band and short dorsolateral vittae behind suture. Anepisternum with a yellow-white band along upper margin from behind postpronotal lobe to wing base, enclosing both *anepst.* bristles. Scutellum flat, bare, yellow tinged with brown. A full complement of thoracic bristles except *anepm.* vestigial; *ipa.* well developed; 6 *sc.*, the middle pair short. Pleura with a longitudinal black medial vitta from below postpronotal lobe to wing base. Katepisternum fulvous except brown along upper margin. Postnotum dark brown to black. Prosternum fulvous. Legs with femora dark brown at least on basal $\frac{3}{4}$, tibiae fulvous; fore



Figs 56–60. *Clusiosoma laterale*: *56*, head; *57*, scutum; *58*, ♂ fore leg; *59*, mid tibia and tarsi; *60*, wing.

femur swollen, with 2 rows of short anterodorsal spines, 2 rows of 8 strong posteroventral bristles and a row of 12–14 anteroventral bristles. Apex of fore tibia with a pad-like process posteroventrally. Mid tibia with a row of 4–5 black posteroventral setae medially and 2 apical spines, the secondary spine about $\frac{1}{3}$ length of major spine. Hind tibia with a row of 5–6 anterodorsal setae medially. Wing subhyaline basally, including all of cell c; distal portion brown, diagonally from base of cell sc to apex of vein CuA_1, extending slightly basally below veins M and CuA_1; r-m crossvein placed beyond middle of cell dm; veins R_1, R_{4+5} and CuA_1 setose; cell cup with anal lobe broad. Abdomen dull fulvous, tinged with dark brown to black on basal $\frac{4}{5}$ of terga I to IV; tergite V dull black except for narrow fulvous posterior margin. Surstylus and inner surstylus slender, long, the latter with a black apical tooth; epandrium polished black; anal lobe slender, covered with black setae. Length of body 5·6 mm, of wing 5·1 mm.

Distribution

Irian Jaya, Papua New Guinea and Iron Range, Cape York Peninsula, north Queensland.

Comments

This species resembles *C. daruense* Hardy except for the paler (not shining black) face, and *C. macalpinei*, sp. nov., except for the paler legs and face and yellow parafacia, gena, mentum and palpi.

Clusiosoma (Clusiosoma) macalpinei, sp. nov.

(Figs 61–66)

Material Examined

Holotype. ♂ Claudie R. nr Mt Lamond, N Qld, 12°46′S, 143°17′E, 21.xii.1971, D. K. McAlpine, G. A. Holloway and D. P. Sands (AM).

Description

Male

Length of body 5·0 mm, of wing 4·6 mm.

Head (Figs 61, 62). Slightly higher than long. Face concave, shining black; parafacia and clypeus black. Antenna extending $\frac{2}{3}$ length of face, second segment dark brown to black, third segment apically rounded, yellow; arista plumose. Frons with a faint dark brown to black marking on lower half; 2 pairs each of *fr.* and *or.* bristles, the upper *or.* weaker; *oc.* weak. Lower portion of occiput black. Gena black, with 1 strong *gn.* bristle.

Thorax (Figs 63, 64). Partially fulvous. Scutum with a broad black medial band, also covering most of anterior portion of scutum. Scutellum flat, bare, dark brown to black. A full complement of thoracic bristles except *anepm.*; *ipa.* well developed; 6 *sc.*, the middle pair short. Pleura with a broad black band from postpronotal lobe to wing base, red-brown above and below. Katepisternum, postnotum and prosternum black. Legs with coxae and femora black; fore femur (Fig. 65) swollen, with 6–8 strong black posteroventral bristles. Fore tibia with a prominent posteroapical pad-like process, covered in tiny pilosity at apex. Mid femur with a row of strong black anterior setae. Mid tibia with 1 strong and 1 short apical spine. Hind femur with 4 strong hair-like dorsoapical setae. Hind tibia with a row of 6 strong anterodorsal setae on basal $\frac{2}{3}$. Wing (Fig. 66) subhyaline basally, including all of cell c, distal portion brown, diagonally from apex of cell c to apex of vein CuA_1; r-m crossvein placed beyond middle of cell dm; veins R_1, R_{4+5} and CuA_1 setose; cell cup with anal lobe broad.

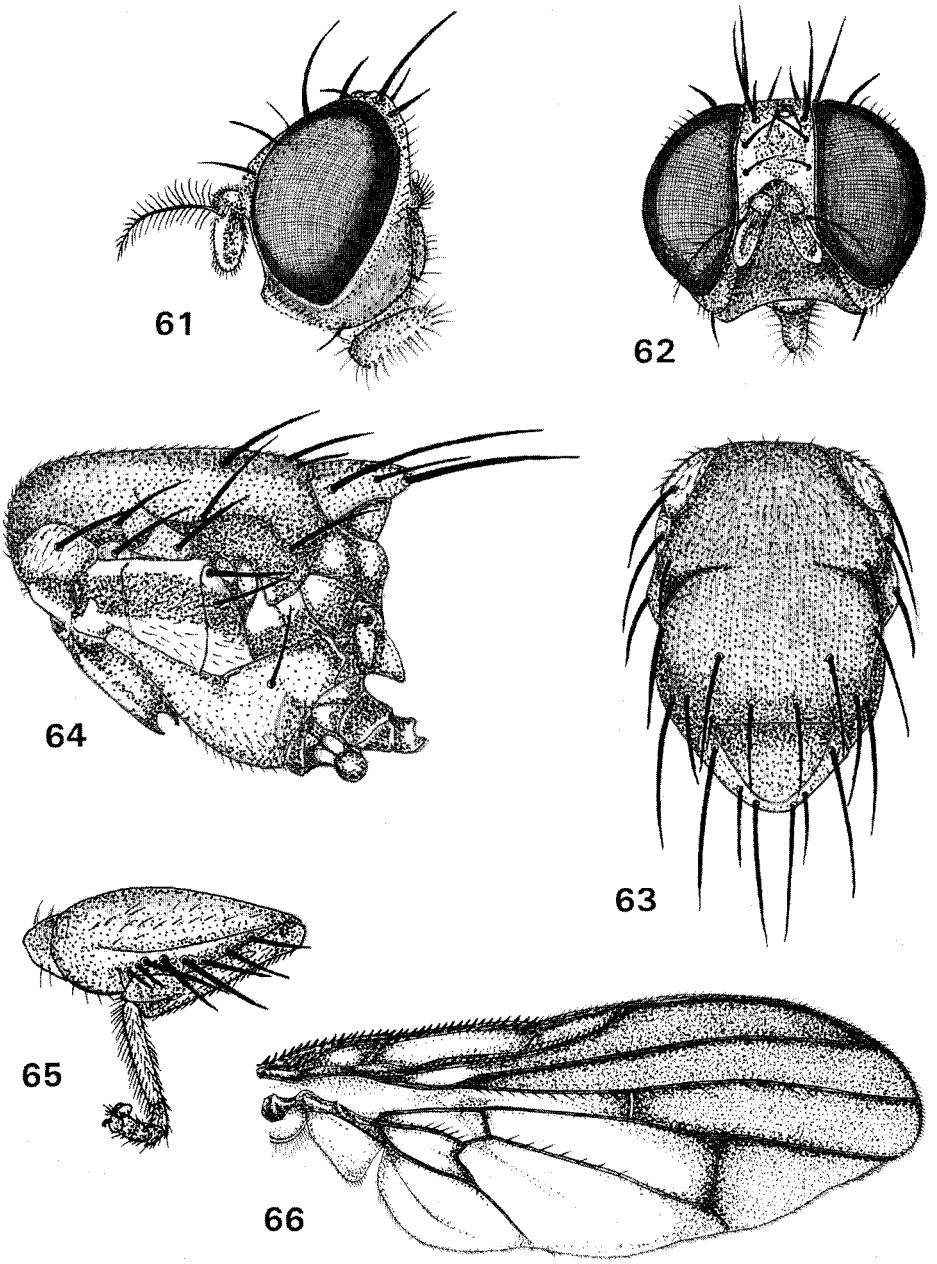
Abdomen. Dull fulvous, tinged with brown on all terga. Tergite V predominantly dark brown except for a narrow fulvous posterior margin. Surstylus and inner surstylus cylindrical, long, reddish brown; epandrium polished black; anal lobe slender.

Female

Unknown.

Distribution

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



Figs 61–66. *Clusiosoma macalpinei*: *61–62*, head; *63*, scutum; *64*, lateral view of thorax; *65*, ♂ fore leg; *66*, wing.

Comments

This species appears closest to *C. pullatum* Hering, differing in the more swollen fore femur, with 6–8 strong black posteroventral bristles, and in the presence of a pad-like posteroapical process on the fore tibia.

Etymology

This species is named after Dr D. K. McAlpine, Australian Museum.

Clusiosoma (Clusiosoma) semifuscum Malloch

(Figs 67–75)

Clusiosoma semifusca Malloch, 1926: 548. Type locality Cairns, Qld. Holotype ♂ in USNM [not examined]. — Malloch, 1939*c*: 425; Hardy, 1951: 175.

Clusiosoma (Clusiosoma) semifusca. — Hardy, 1986*b*: 44; Hardy and Foote, 1989: 511, as syn. of *C. minutum* (de Meijere).

Clusiosoma (Clusiosoma) minutum Hardy, 1986*b:* 45 (partim: Qld specimens).

Material Examined

51 ♂, 55 ♀, from the following localities. **Queensland**: Bamaga, Iron Ra., Rocky R. via Coen, Hutchinson Ck nr Daintree Ra., Kuranda, Cairns, Redlynch, Babinda, South Johnstone, Dunk I., Palm I. **Northern Territory**: Fogg Dam Res. 50 km SE Darwin. (In QM, QDPI, UQIC, ANIC, AM, BARS.)

Diagnosis

Head fulvous except 1st and 2nd antennal segments dark brown to black, frons tinged with a medial brown stripe and upper ¼ of occiput black. Scutum fulvous with a pair each of incomplete submedian and dorsolateral vittae, occasionally connected into a lyre-shaped marking that also connects behind the postpronotal lobes with the lateral vitta from each lobe to wing base. Pleura with a narrow dark band from below postpronotal lobe to wing base. Postnotum dark brown to black. Legs fulvous, fore femur moderately swollen, with short anterodorsal setae and 2 rows of posteroventral bristles, 4–5 large in outer row, 2–3 large and 6–8 short in inner row; pad-like process at apex of fore tibia covered with dense white pilosity. Wing subhyaline basally and posteriorly, dark brown in distal part, the hyaline base extending to r-m crossvein. Abdomen fulvous to red-brown, darker brown medially; tergite V dark brown to black. Male surstylus long, slender; inner surstylus cylindrical, with a small black apical tooth. Female with only 3–4 bristles on fore femur; oviscape dull black, equal in length to terga III-VI; aculeus broad, apically blunt with 3 short and 2 longer preapical setae. Length of body 3·7–4·0 mm (♂) or 3·9–5·2 mm (♀), of wing 3·2–4·3 mm (♂) or 3·5–3·6 mm (♀).

Distribution

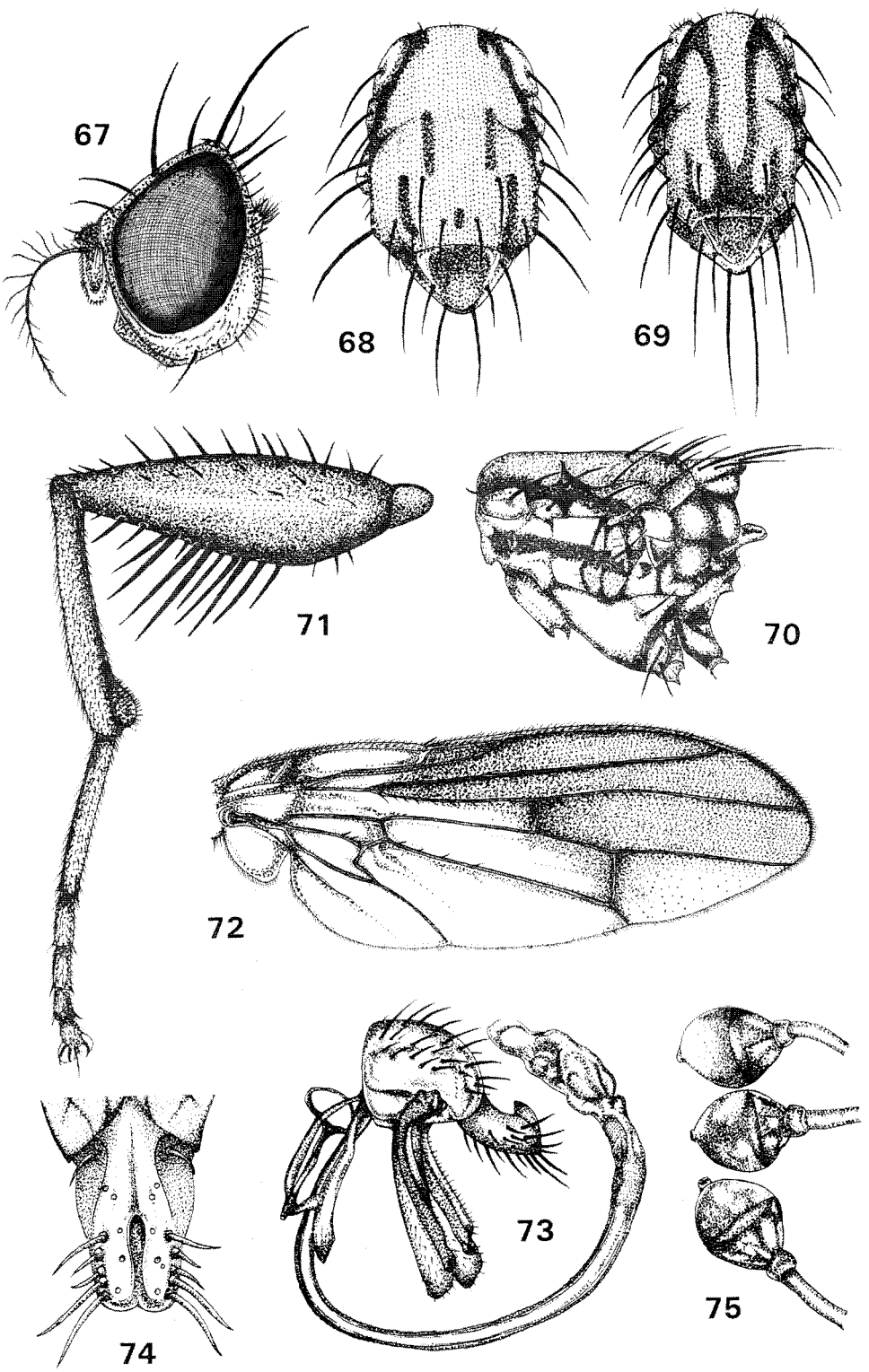
Northern Territory and north-east Queensland, from Cape York to Palm Island near Ingham. Probably also in Papua New Guinea.

Biology

Larvae develop in the fruit of *Ficus hispida* (Moraceae) in the Northern Territory and in *Ficus microcarpa* at Daintree in Queensland.

Comments

This species has been placed in synonymy with *C. minutum* (de Meijere) (Hardy 1986b) but that species has all antennal segments yellow, not with the first two segments black as in Australian specimens. Pending further evidence, we treat *C. semifuscum* as a separate species. At least some Papua New Guinea specimens referred to *C. minutum* may belong to *C. semifuscum.* It is also related to *C. nigricorne* Hardy but that species has the third antennal segment black and more intensely brown wing markings.



Figs 67–75. *Clusiosoma semifuscum*: *67*, head; *68–69*, scutum; *70*, lateral view of thorax; *71*, ♂ fore leg; *72*, wing; *73*, ♂ genitalia; *74*, tip of aculeus; *75*, spermathecae.

Subgenus *Paraclusiosoma* Hardy

Paraclusiosoma Hardy, 1986*b*: 52 (as subgenus of *Clusiosoma*). Type species: *C. (P.) papuaense* Hardy, by original designation.

Diagnosis

Fore femur in male with a prominent basoventral tubercle bearing a cluster of black bristles and spines at apex; without other long ventral bristles; fore tibia with apical pad-like process less well developed than in *Clusiosoma* and row of dense pile along ventral surface absent. Female aculeus with an additional pair of small subapical setae before the usual 5 pairs. The subgenus is monotypic.

Clusiosoma (Paraclusiosoma) papuaense Hardy

(Figs 76–80)

Clusiosoma (Paraclusiosoma) papuaense Hardy, 1986*b*: 52. Type locality near Swikita, Central Province, Papua New Guinea. Holotype ♂ in BPBM [not examined].

Material Examined

Queensland: 1♂, Iron Ra., 13–4.x.1965, G. Monteith (UQIC); 9 specimens, West Claudie R., Iron Ra., 12.x.1974 (AM); 18 specimens, 1 mi NE Mt Lamond, Iron Ra., 26.xii.1971 (at MV light), 1.i. and 8.i.1972, D. K. McAlpine and G. A. Holloway (AM).

Diagnosis

Head with antenna fulvous, 2nd segment tinged brown dorsally; face black, parafacia yellow; arista plumose. Scutum and scutellum black. Postpronotal lobes fulvous. Pleura with a moderately broad black medial band from postpronotal lobe to wing base, yellow above. Postnotum dark brown to black. Legs with fore femur swollen in male, with a prominent basoventral tubercle bearing a cluster of 3–5 strong bristles and some spinules at apex; fore tibia with a ventroapical pad-like process densely covered with black pilosity. Wing mostly brown, cells bc and c and medial portion before r-m crossvein subhyaline. Male abdomen predominantly black, terga I–IV laterally fulvous. Male genitalia with surstylus long and slender, curved posteriorly at basal $\frac{1}{3}$; inner surstylus longer than surstylus; epandrium blackish, semicircular; anal lobe $\frac{2}{3}$ length of epandrium, densely setose. Female with face fulvous on oral margin; fore femur without the basoventral tubercle; abdomen mostly fulvous, tergite I and medial portions of terga II–III black; oviscape black, equal in length to terga III–VI; aculeus broad, blunt apically, with 5 pairs of preapical setae and an additional pair of subapical setae before them; 3 small, rounded spermathecae. Length of body 3·7–4·2 mm (♂) or 3·9–4·4 mm (♀); of wing 3·4–3·9 mm (♂ and ♀).

Distribution

Papua New Guinea and Iron Range, Cape York Peninsula, north Queensland.

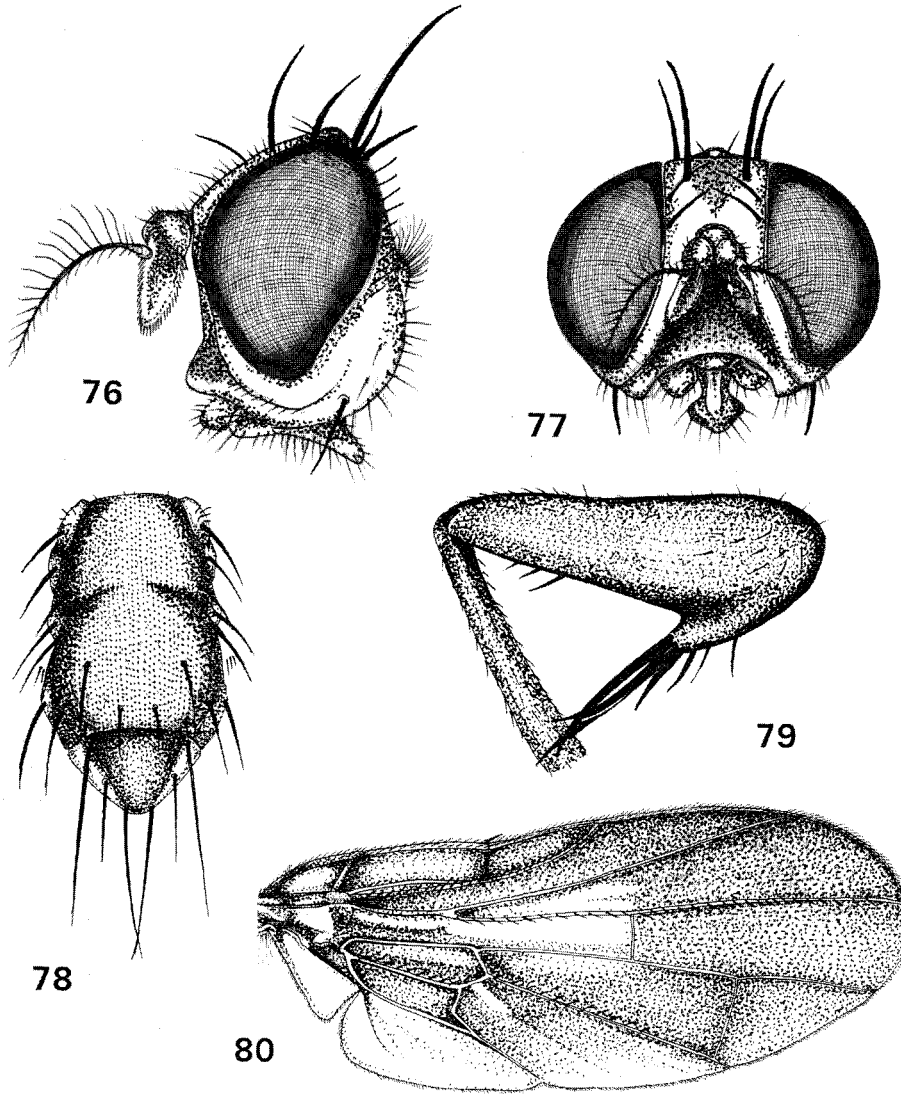
Comments

This species is distinctive, easily recognised by the characters noted above. Hardy (1986*b*) illustrated the tip of the female aculeus and the male genitalia.

Genus *Clusiosomina* Malloch

Clusiosomina Malloch, 1939*d*: 426 (as subgenus of *Clusiosoma*). Type species: *C. (C.) puncticeps* Malloch, by monotypy.

Clusiosomina. — Hardy, 1986*b*: 37 (as genus).



Figs 76–80. *Clusiosoma papuaense*: *76–77*, head; *78*, scutum; *79*, ♂ fore femur; *80*, wing.

Diagnosis

Head higher than long. Face vertical, receding on epistomal margin, with a black spot on each side. Antenna with arista long-plumose. Frons with 2 pairs each of *fr.* and *or.* bristles; *oc.* weak. Vertex distinctly keeled. Scutum fulvous with 2 black medial longitudinal vittae, continued onto scutellum, plus a lateral band from each postpronotal lobe to wing base, with the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa., dc.* a little behind line of *sa., acr., anepst., kepst.; anepm.* absent; 6 *sc.*, the middle pair weak. Pleura with a narrow dark medial band from below postpronotal lobe to wing base. Male fore femur swollen, with posteroventral bristles on apical half, fore tibia with 2 preapical bristles and fore basitarsus with a prominent anteroapical process. Wing brown except subhyaline basomedially. Veins R_1, R_{4+5} and CuA_1, setose. Cell cup with apical lobe broad and short. Abdomen fulvous, black laterally. Aculeus apically blunt, with 3 short, 1 moderately long and 1 long pairs of preapical setae. Three rounded spermathecae. Male surstylus slender, long, sharply pointed posteriorly.

Comments

This genus belongs in the group with *Clusiosoma, Rabaulia* and *Trypanocentra*, as discussed under *Clusiosoma*. *Clusiosomina* differs in the vertical face with two spots and in the structure of the male fore leg.

The larvae develop in the fruit of *Ficus* (Moraceae). The genus is monotypic.

Clusiosomina puncticeps (Malloch)

(Figs 81–87)

Clusiosoma (Clusiosomina) puncticeps Malloch, 1939*d*: 426, pl. 11, fig. 8. Type locality Gosford, NSW. Holotype ♂ in AM [not examined]. — Hardy, 1951: 175.

Clusiosomina puncticeps. — Hardy, 1986*b*: 37; Hardy and Foote, 1989: 511.

Material Examined

92♂, 90♀, from the following localities. **Queensland**: Mackay, Montville, Binna Burra, Springbrook, Mt Crosby, Gatton, Mt Glorious, Mt Tamborine, Camp Mt, Maleny, Eidsvold, Caloundra, Gayndah, Gin Gin, Gympie, Heron I. **New South Wales**: Legume, Tooloom, Brunswick Heads, Macquarie Pass, Gosford, Coff's Hbr, Wyong. (In QM, QDPI, UQIC, NSWA, AM, ANIC, MSU.)

Diagnosis

As for genus. Length of body 4·5–4·7 mm (♂) or 5·0–5·3 mm (♀), of wing 4·0–4·2 mm (♂) or 4·4–4·7 mm (♀).

Distribution

Eastern Australia, from Mackay, Queensland to Illawarra district, New South Wales.

Biology

Larvae develop in the fruit of the sandpaper fig, *Ficus stephanocarpa*. An old record from *Ficus aspara* (= *F. coronata*) (at Gayndah in 1939) requires confirmation.

Comments

Hardy (1951) illustrated the tip of the female aculeus. This species is easily identifiable by the characters given above.

Genus ***Copiolepis*** Enderlein

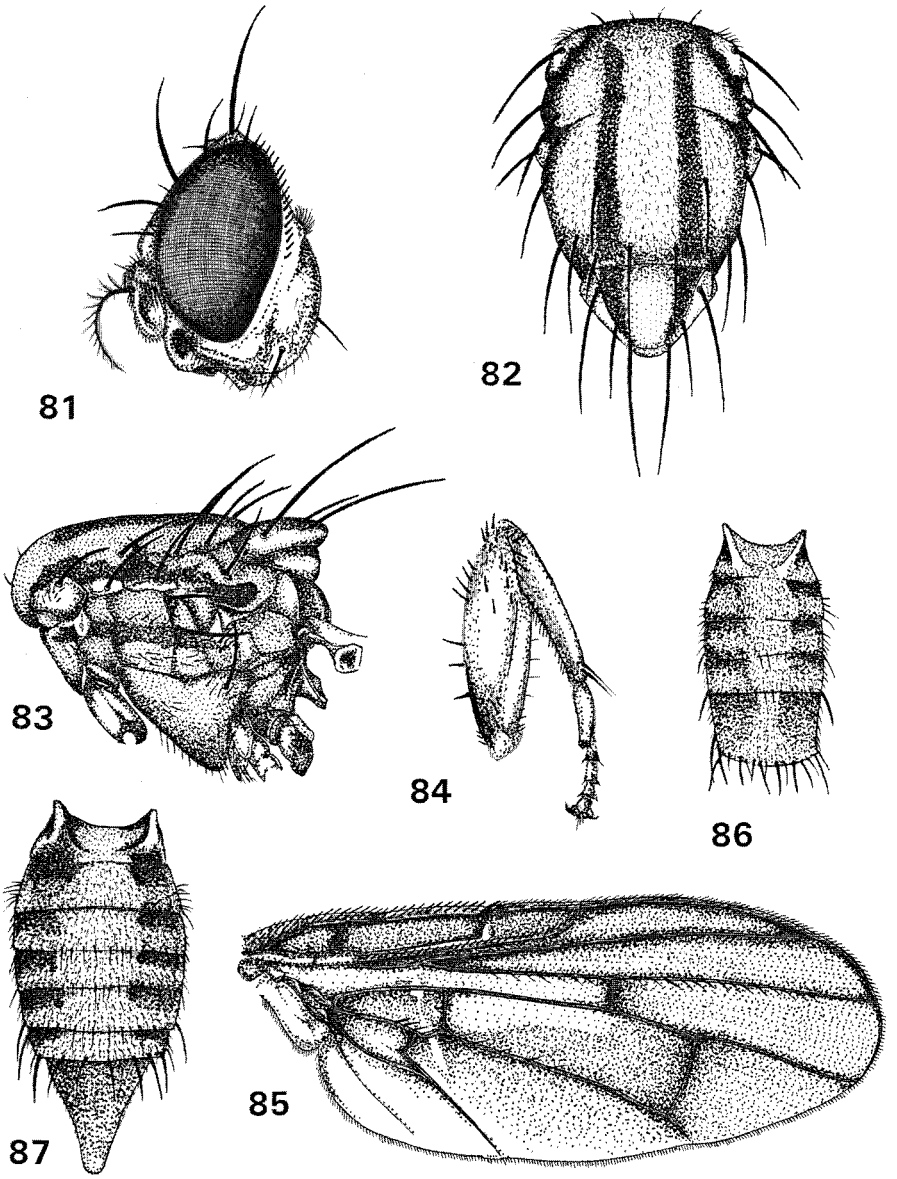
Copiolepis Enderlein, 1920: 341. Type species: *C. quadrisquamosa* Enderlein, by original designation.

Diagnosis

Head with 2 pairs each of *fr.* and *or.* and a row of fine dark *pocl.* bristles. Arista long plumose. Thorax with the following bristles: 4 weak *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., dc.* placed on line of *sa., acr., anepst., anepm., kepst.; ipa.* absent; 4 *sc.* Wing mostly brown without distinct hyaline spots and indentations; veins R_1 and R_{4+5} setose; cell sc much longer than cell c; vein R_{2+3} curved upwards at apex. Abdomen of male with 2-3 pairs of long plume-like processes arising from the base of tergite IV, extending well beyond tip of abdomen. Aculeus blunt apically, with 2 short and 2 long pairs of preapical setae.

Comments

This genus belongs in a group with *Austronevra, Austrorioxa* and *Dacopsis*, as noted under *Austronevra*. It differs in having only four *sc.* bristles, an almost entirely brown wing, and the male abdominal plumes.



Figs 81–87. *Clusiosomina puncticeps*: *81*, head; *82*, scutum; *83*, lateral view of thorax; *84*, ♂ fore leg; *85*, wing; *86*, ♂ abdomen; *87*, ♀ abdomen.

The biology is unknown, but larvae probably develop beneath the bark of logs, as in related genera. The genus occurs in Papua New Guinea and Australia, with one species known from each country. For further detail see Hardy (1988).

Copiolepis colpopteris, sp. nov.

(Figs 88–91)

Material Examined

Holotype. ♂, Claudie R., 1 mi W Mt Lamond, Qld, 17.xii.1971, D. K. McAlpine and G. A. Holloway (AM).

Description

Male

Length of body 3·5 mm, of wing 3·9 mm.

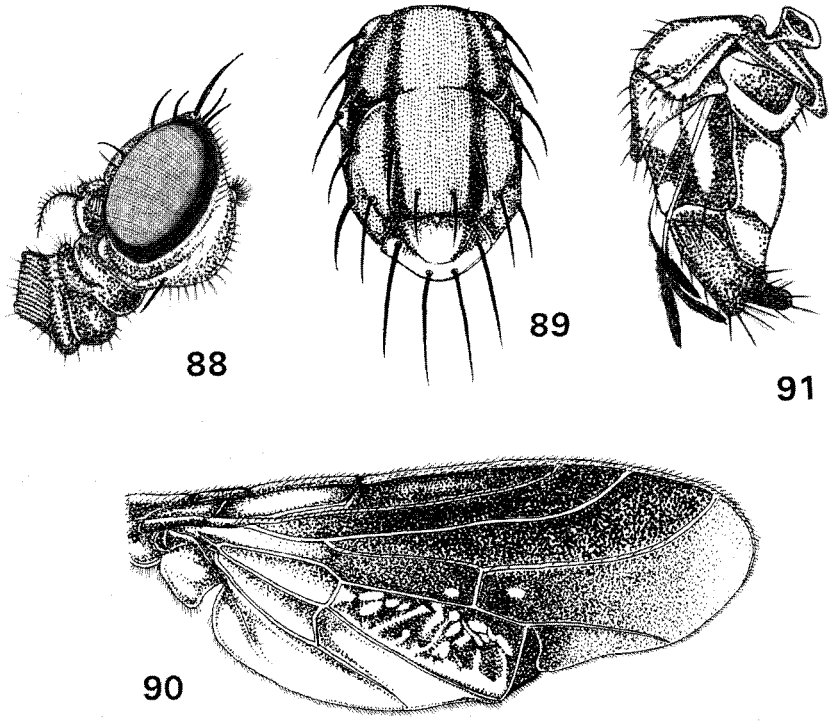
Head (Fig. 88). As high as long. Face concave medially. Antenna extending $\frac{3}{5}$ length of face, third segment apically rounded; arista plumose. Frons with 2 pairs each of *fr.* and *or.* bristles; *oc.* bristles absent. Gena with 1 strong *gn.* bristle.

Thorax. Fulvous to red-brown, scutum (Fig. 89) darker laterally and with a pair of brown submedial vittae in line with *dc.* bristles. With a full complement of thoracic bristles except *ipa.* Pleura fulvous except for a polished black area on katatergite. Scutellum bare, dark brown laterally, continuous with the dark submedial vittae on scutum, with 4 *sc.* bristles. Postnotum dark brown. Legs fulvous; mid tibia with 1 strong and 1 short apical spine. Wing (Fig. 90) dark brown except basally and posteriorly; cells bc and c subhyaline; cell dm with diffuse pale markings; cell sc elongate, much longer than cell c; veins R_1 and R_{4+5} setose; veins R_{2+3} and R_{4+5} strongly curved upwards at apex; r-m crossvein well beyond middle of cell dm; cell cup with apical lobe short, broad; cell m narrow, posterior margin folded.

Abdomen (Fig. 91). Predominantly fulvous; tergite III tinged red-brown medially; terga IV–V mostly black and with a medial longitudinal black marking; 3 pairs of long plume-like bristles arising on each side of tergite IV at base and ending beyond tip of abdomen. Male genitalia with surstylus elongate and epandrium narrow; fulvous tinged with dark brown laterodorsally on epandrium.

Female

Unknown.



Figs 88–91. *Copiolepis colpopteris*: *88*, head; *89*, scutum; *90*, wing; *91*, ♂ abdomen, lateral view.

Distribution

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

Comments

This species differs from *C. quadrisquamosa* Enderlein in having cell sc entirely brown rather than hyaline along the costal margin, cell dm with a hyaline pattern rather than all brown, cell m folded posteriorly and the male with three pairs of abdominal plumes rather than two.

Etymology

The specific name is derived from the Greek *kolpotos*, folded, and *pteron*, wing, referring to the folded wing margin.

Genus ***Dacopsis*** Hering

Dacopsis Hering, 1944: 2. Type species: *Dacopsis dacina* Hering (= *Seraca signata* Walker), by original designation.

Diagnosis

Head with 2 pairs each of *fr.* and *or* bristles; *oc.* rudimentary or absent; a row of fine dark *pocl.* present. Thorax fulvous; with the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., dc.* placed just before the line of *ia., acr., anepst., anepm.; ipa.* absent or vestigial; *kepst.* absent or rudimentary; 6 *sc.* Veins R_1 and R_{4+5} setose; cell sc elongate, much longer than cell c, especially in male; vein R_{2+3} curved upwards near apex, especially in male; cell cup with apical lobe short, broad. Abdomen fulvous, with a pair of dark dorso-lateral spots on tergite V and sometimes also on tergite IV. Aculeus elongate, blunt apically with 2 short and 2 long preapical setae. Three spermathecae.

Comments

This genus belongs in a group with *Austronevra, Austrorioxa* and *Copiolepis*, as noted under *Austronevra. Dacopsis* differs in the wing markings, lack of *kepst.* bristles, relatively long head and single long apical spine on the mid tibia. As in *Austrorioxa*, the sexes differ in wing markings and length of cell sc; *Dacopsis* differs in the relatively straight vein R_{4+5}.

Larvae develop in the bark of newly fallen *Dysoxylum* trees (Hardy 1986*b*). The genus occurs from the Philippines and Malaysia to the Solomon Islands and Australia. One species occurs in north Queensland.

Dacopsis flava (Edwards)

(Figs 92–94)

Rioxa flava Edwards, 1915: 421. Type locality Mimika River, Irian Jaya. Holotype ♀ in BMNH [not examined].

Sophira flava. — Malloch, 1939*d*: 430; Hering, 1953: 521; Hardy, 1958: 369.

Dacopsis flava. — Hardy, 1980: 152; Hardy 1986*b*: 56; Hardy and Foote, 1989: 511.

Dacopsis picturata Hardy, 1980: 155. Type locality Kokoda, Papua New Guinea. Holotype ♂ in BMNH [not examined]. — Hardy, 1986*b*: 56 (as syn.)

Material Examined

Queensland: 1 ♀, 11-mile scrub, 19 km N of Moreton, Cape York Pen., 1–2.vii.1975, G. B. Monteith (UQIC).

Diagnosis

Head as high as long; face concave; antenna with arista long-plumose. Frons with 2 pairs each of *fr.* and *or.* bristles, the *fr.* very close together; *oc.* absent. Gena with 1 strong *gn.* bristle.

Thorax fulvous, except for a small black spot behind each wing base; scutellum whitish. Thorax with full complement of bristles except *ipa.* and *kepst.*; 6 *sc.*; all bristles yellow to pale brown. Legs fulvous; mid tibia with 1 apical spine. Wing almost hyaline, with cell sc and a narrow costal band from near apex of vein R_{2+3} to vein M brown; male with a large, inverted U-shaped brown central patch; female with central patch absent and a narrow brown line along vein CuA; cell sc about $1\frac{1}{2}\times$ as long as cell c in female, about twice as long in male. Abdomen fulvous with a dorsolateral pair of black spots on tergite V. Aculeus as for genus. Length of body 7·0–7·4 mm (♀), of wing 7·5–8·0 mm (♀).

Distribution

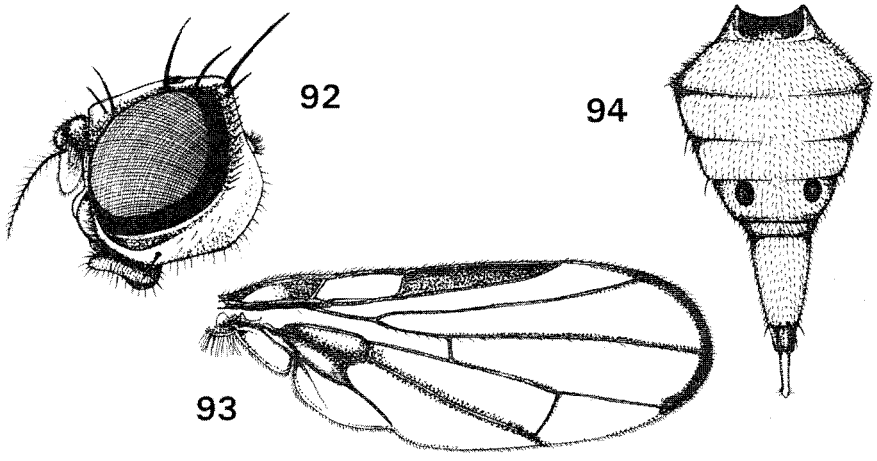
Irian Jaya, Papua New Guinea and Cape York Peninsula, north Queensland.

Biology

Larvae develop in the thick stringy green bark of newly fallen *Dysoxylum gaudichaudianum* trees (Meliaceae) (Hardy 1986*b*; Dodson and Daniels 1988).

Comments

This species is easily recognised by the characters noted above. Hardy (1980) illustrated the wings of both sexes.



Figs 92–94. *Dacopsis flava*: *92*, head; *93*, ♀ wing; *94*, ♀ abdomen.

Genus ***Dirioxa*** Hendel

Dirioxa Hendel, 1928: 353 (as subgenus of *Rioxa*). Type species: *Trypeta musae* Froggatt (= *Trypeta pornia* Walker), by original designation. — Malloch, 1939*d*: 435; Hardy, 1951: 183.
Dirioxa. — Hardy, 1959: 219 (as genus).

Diagnosis

Head with face concave on lower $\frac{2}{3}$; *oc.*, 2 pairs each of *fr.* and *or.* and a row of dark *pocl.* bristles present. Antenna with arista plumose, with 2 rows of dorsal hairs, bare ventrally except at base. Thorax fulvous to red-brown, with the following bristles: 4 *scp.*, *pprn.*, *prst.*, 2 *npl.*, *sa.*, *ia.*, *p.sa.*, *dc.* between line of *sa.* and *ia.*, *ipa.*, *acr.*, 2 *anepst.*, *anepm.*, *kepst.*, 6 *sc.*, the middle pair generally weaker. Scutellum flat, bare. Mid tibia with 1 apical spine. Wing brown with

hyaline base, spots and indentations; one hyaline indentation in cell r_1 beyond cell sc; veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; cell cup with apical lobe short, broad. Abdomen fulvous anteriorly, black posteriorly. Surstylus short and thick. Aculeus blunt at apex, with short lateral setae, 1 or 2 pairs of short subapical setae and 2 pairs of short and 2 pairs of long preapical setae. Three spermathecae.

Comments

This genus appears closest to *Lumirioxa*, differing in wing pattern details, two distinct *fr.* bristles, lack of a medial black scutal and scutellar band and a different biology. From other genera with a similar wing pattern, *Dirioxa* differs in having only one apical spine on the mid tibia and a bare scutellum.

Larvae of *Dirioxa* develop in fruit from several families. The genus is monotypic; *D. quatei* Hardy, described from Vietnam, is a synonym of *Acanthonevra ultima* Hering.

Dirioxa pornia (Walker)

(Figs 95–100)

Trypeta pornia Walker, 1849: 1039. Type locality Port Stephens, NSW. Holotype ♀ in BMNH [not examined].

Trypeta musae Froggatt, 1899: 501. Type locality 'New Hebrides (= Vanuatu)', *loc. err., recte* Qld. Syntypes in NSWA [not examined]. — Gurney, 1912: 75.

Rioxa musae. — Froggatt, 1910: 872; Tryon, 1927: 216, fig. 10.

Rioxa (Dirioxa) musae. — Hendel, 1928: 353.

Rioxa pornia. — Perkins, 1934: 44; Hardy, 1951: 186.

Rioxa (Dirioxa) pornia. — Malloch, 1939*d*: 435; Hardy, 1951: 183, fig. 32.

Rioxa (Dirioxa) confusa Hardy, 1951: 183, fig. 31. Type locality Atherton Tableland, Qld. Holotype ♂ in USNM [not examined]; *syn. nov.*

Dirioxa pornia. — Hardy, 1959: 219; Hardy and Foote, 1989: 512; Hancock and Drew, 1994*a*: 22.

Dirioxa confusa. — Daniels, 1978: 432; Hardy and Foote, 1989: 512.

Material Examined

320 specimens (♂ and ♀) from the following localities. **Queensland**: Iron Ra., Claudie R., Atherton, Malanda, Millaa Millaa, Cairns, Gordonvale, Cardwell, Kairi, Mt Tamborine, Gatton, Brisbane, Palmwoods, Mt Glorious, Montville, Nambour, Mapleton, Eumundi, Toowoomba, Maleny, Palmerston, Yarraman, Imbil, Harlin, Gayndah, Stanthorpe, Ravensbourne. **New South Wales**: Narara. (In QM, QDPI, UQIC, ANIC, AM.)

Diagnosis

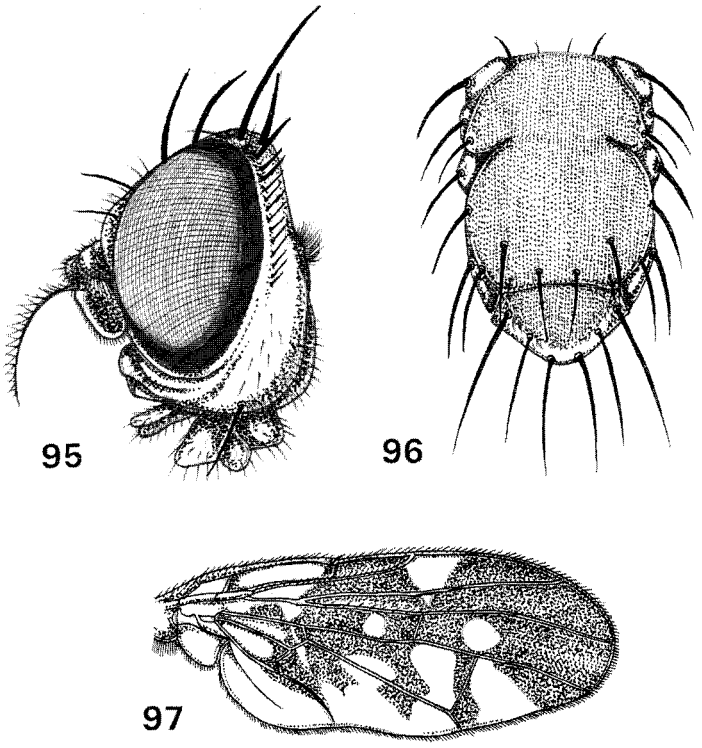
Easily recognised by the generic characters noted above and by the wing pattern, with one triangular hyaline indentation in cell r_1 from apex of cell sc, a spot each in cells br and r_{4+5}, either side of r-m crossvein, 1 broad hyaline indentation in cell m and 2 in cell cua_1, united at posterior margin of wing and continued as a basomedial streak and apical patch into cell dm. Length of body 4·8–5·5 mm (♂) or 5·0–5·5 mm (♀), of wing 5·0–6·0 mm (♂ and ♀).

Distribution

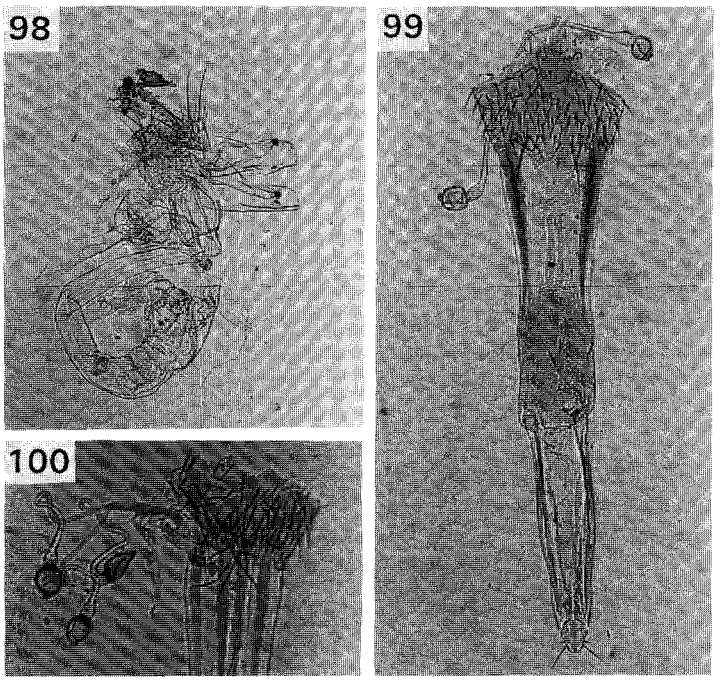
Eastern Australia, from Iron Range, Cape York Peninsula, Queensland, to the Sydney district, New South Wales. Also known from New Caledonia, but records from other Pacific countries require confirmation; these may represent quarantine interceptions. Froggatt's (1899) reports from Vanuatu (New Hebrides) are in error; his samples appear to have been infested during transit in Queensland.

Biology

This species breeds in a wide range of wild and cultivated fruits. Normally only damaged or decaying fruit is attacked; on rare occasions apparently sound fruit may be infested. The



Figs 95–97. *Dirioxa pornia*: *95*, head; *96*, scutum; *97*, wing.



Figs 98–100. *Dirioxa pornia*: *98*, ♂ genitalia; *99*, ovipositor; *100*, spermathecae. All 40×.

following wild hosts have been recorded: *Passiflora alba, Endiandra sankoyana, E. compressa, Castanospermum australe, Planchonella australis, Sideroxylon* sp., *Niemeyera prunifera, Acmena smithii, Amorphospermum antilogum, Pouteria castanospermum, Capparis lucida.* A wide range of cultivated hosts has also been reported (White and Elson-Harris 1992). The species has also been reared from fallen cones of *Araucaria cunninghamii* and from fruit of *Eugenia uniflora* (Surinam cherry). For a larval description see White and Elson-Harris (1992).

Comments

Hardy (1951) described *D. confusa* on the basis of a smaller hyaline spot in cell r_{4+5}. We find this character to be variable in the long series examined; all other characters, including host information, suggest that this species is conspecific with *D. pornia*. Accordingly, *D. confusa* is placed in synonymy. Mating behaviour was studied by Pritchard (1967).

Genus ***Lumirioxa***, gen. nov.

Type species: *Rioxa araucariae* Tryon.

Diagnosis

Head slightly higher than long, fulvous. Face concave, with a median ridge, projecting on oral margin. Antenna extending $\frac{3}{4}$ length of face, third segment apically rounded; arista moderately long-plumose. Frons setose, with 1–2 pairs of weak *fr.* and 2 pairs *or.*; *oc.* small. A row of dark *pocl.* present. Gena with 1 strong *gn.* bristle. Thorax with a black medial vitta, extending onto scutellum, with the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa., dc.* placed about halfway between *sa.* and *ia., acr.*, 1–2 long and 3–4 weaker *anepst., anepm., kepst*; 6 *sc.*, the middle pair weaker. Scutellum flat, with a few dark lateral setae. Proepimeron with 2 prominent black bristles. Postpronotal lobe yellow with fine dark setae dorsally. Postnotum rufous to black. Legs mostly fulvous; male fore femur with 2 rows of posterodorsal bristles and ventrally with 1 outer row of strong black bristles and irregular rows of short, dense bristles. Mid tibia with a row of 3 strong posterodorsal setae and 1 strong black apical spine. Fore and hind tibiae with rows of short setae. Wing brown with hyaline indentations and spots, including 1 indentation in cell r_1 beyond apex of cell sc, 1 spot in cell br, a subapical band in cell dm, 1 indentation in cell cua_1 extending into cell dm medially, 1 large indentation in cell m extending across cell r_{4+5}, and a broad apical indentation in cell r_{4+5}. Veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; cell cup with apical lobe short and broad. Abdomen fulvous with black transverse bands. Male genitalia with surstylus long, slender and apically pointed; anal lobe small, triangular, with 2 strong lateroapical bristles. Aculeus blunt apically, with distinct lateral setae, 2 short subapical setae and 2 short and 2 very long preapical setae. Three rounded spermathecae with well-developed apical nipples and moderately swollen bulbous necks.

Comments

This genus appears closest to *Dirioxa*, differing in thoracic, abdominal and wing patterns, setose fore femur, laterally setose scutellum and larval biology. From other genera with similar wing patterns, *Lumirioxa* differs in having only one distinct apical spine on the mid tibia and in characters noted above.

Larvae develop beneath the bark of *Araucaria* trees (Araucariaceae). The genus is monotypic. The name *Lumirioxa* is derived from the Latin *luma*, a thorn, plus *Rioxa*; it refers to the bristly fore femur.

Lumirioxa araucariae (Tryon), comb. nov.

(Figs 101–108)

Rioxa araucariae Tryon, 1927: 219, fig. 12. Type locality Macpherson Ra., Qld. Holotype ♂ in QM [examined]. — Brimblecombe, 1945: 85; Hardy, 1951: 183; Hardy, 1986*b*: 58.

Diarrhegmoides araucariae. — Malloch, 1939*d*: 438; Hering, 1944: 4; Hardy and Foote, 1989: 511.

Material Examined

Holotype ♂, *allotype* ♀, *paratype* ♂. Macpherson Ra., S Qld, attracted by fresh resin of *Araucaria cunninghamii* (QM).

Other material examined. 75 specimens (♂ and ♀) from the following localities. **Queensland**: Harlin, Bald Mt area via Emu Vale, Natl Pk [Mt Glorious], Tamborine, Toowoomba, Imbil, Brisbane, Bunya Mtns, Macpherson Ra. **New South Wales**: Clarence R., Sutton, Tooloom. (In QDPI, UQIC.)

Diagnosis

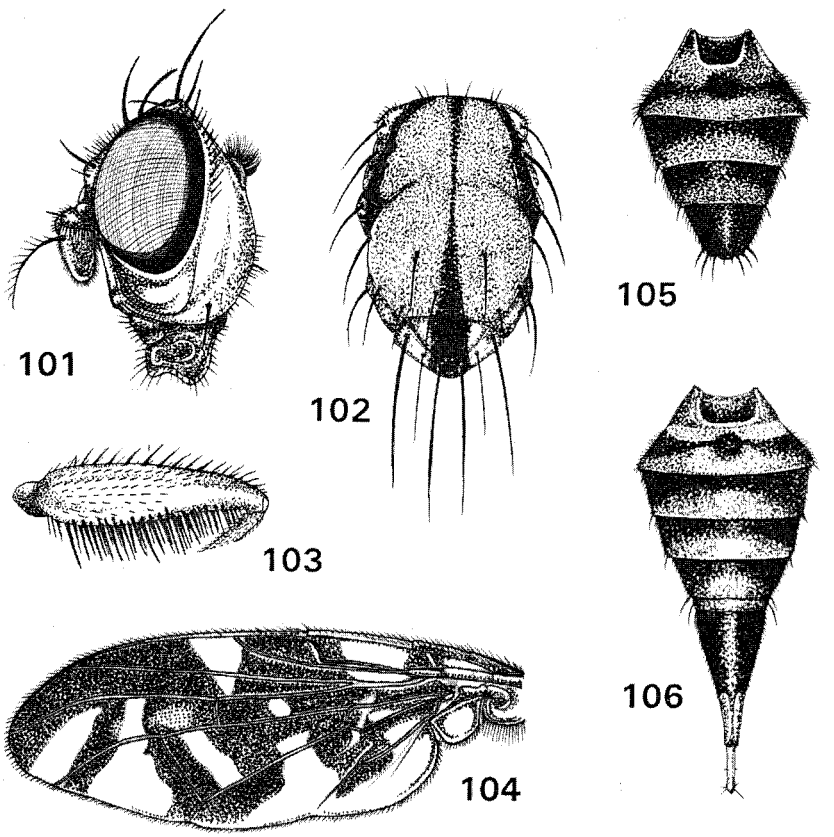
As for genus. Length of body 5·0–5·5 mm (♂) or 7·3–8·0 mm (♀), of wing 5·5–6·5 mm (♂ and ♀). The medial black vitta on the scutum and mesonotum and wing markings readily identify this species.

Distribution

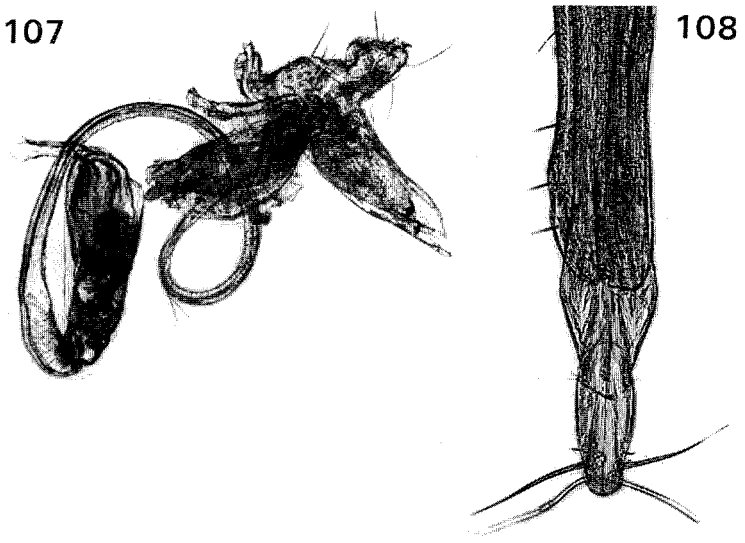
South-east Queensland and north-east New South Wales.

Biology

Larvae develop in a wet rot beneath the lifting bark of hoop pine, *Araucaria cunninghamii* (Araucariaceae) (Brimblecombe 1945). Adults are attracted by oozing resin.



Figs 101–106. *Lumirioxa araucariae*: *101*, head; *102*, scutum; *103*, ♂ fore femur; *104*, wing; *105*, ♂ abdomen; *106*, ♀ abdomen.



Figs 107–108. *Lumirioxa araucariae*: *107*, ♂ genitalia (100×); *108*, aculeus (100×).

Comments

This species has been placed in *Diarrhegmoides* Malloch, but that genus lacks *ipa.* bristles and has a very different aculeus, the tip being produced and pointed, and with all preapical setae short (Hardy 1986*b*).

Genus ***Micronevrina***, gen. nov.

Type species: *Micronevrina apicalis*, sp. nov.

Diagnosis

Small flies, wing length rarely over 5 mm. Head slightly higher than long. Face fulvous, vertical or slightly concave. Antenna extending $\frac{2}{3}$ length of face; third segment apically rounded; arista moderately long-plumose. Frons with 1–2 pairs *fr.* and 2 pairs *or.* bristles; *oc.* moderately developed; *pocl.* thin and dark; *gn.* present. Thorax with the following bristles: 4 *scp.*, *pprn.*, 2 *npl.*, *sa.*, *ia.*, *p.sa.*, *dc.* placed behind line of *sa.*; *ipa.* weak or absent; *anepst.*, *kepst.*, 4 *sc.*; *anepm.* rudimentary or absent; *acr.* and *prst.* present or absent. Scutellum flat, bare. Postnotum brown, at least laterally. Mid tibia with a single apical spine. Wing with hyaline spots and indentations, only 1 indentation in cell r_1 beyond cell sc, rarely with an additional patch apically; veins R_1 and R_{4+5} setose; no strong costal spine above apex of vein Sc; r-m crossvein beyond middle of cell dm; cell cup with apical lobe short, broad. Abdomen mostly black, often with yellow markings. Male surstylus long, slender. Female abdominal tergite VI short; aculeus short, dentate, apically bifurcated and with 4 pairs of small preapical setae. Three round spermathecae with bulbous necks.

Comments

This is an unusual genus with no known close allies, although it bears some resemblance to *Paracanthonevra* Hardy from the Philippines. The species occur in rainforests; most have been collected in malaise traps or swept from trees and no hosts are known. The sexes are often dimorphic in wing shape and pattern and also in scutal markings. Despite the presence of only four *sc.* bristles and the unusual shape of the aculeus, the presence of preapical setae, plumose

arista, *ipa.* bristles and a short female abdominal tergite VI, plus the wing pattern, all suggest that this genus belongs in the Acanthonevrini. Seven species are known, all new. The generic name is derived both from the small size of its species and the microscopic preapical setae on the aculeus.

Key to Species of *Micronevrina*

1. *Prst.* bristles present; sexes strongly dimorphic in wing patterns 2
   Prst. bristles absent; sexes not strongly dimorphic in wing patterns 4
2. Thorax fulvous without medial vittae; scutellum brown laterally; cell bm with a longitudinal hyaline band or streak; male with cell m almost entirely hyaline, mid femur with a basoventral hump bearing a cluster of strong spines and mid tibia with an apicoventral ridge densely covered with fine pilosity; female usually with 2 hyaline spots in cell r_{4+5}; 1 pair *fr.* bristles ..... *M. setosa*
   Thorax with a black medial vitta in males, usually a trace of brown vittae in females at least posteriorly; scutellum brown posteromedially; cell bm with a transverse hyaline apical streak; male with cell m brown with a hyaline medial area, mid leg not as above; female with 1 hyaline spot in cell r_{4+5}; 2 pairs *fr.* bristles 3
3. R-m crossvein no more than its own length from dm-cu crossvein, very close in male; male with hyaline bands in cells dm and cua_1; abdominal terga IV–VI black with a medial yellow band ... *M. apicalis*
   R-m crossvein more than its own length from dm-cu crossvein; male with cells dm and cua_1 brown, without hyaline bands; abdominal terga III–V black, tergite VI yellow ..... *M. mediivitta*
4. Wing with apex of cell r_{2+3} hyaline; cell r_{4+5} with 2 transverse hyaline bands ..... *M. hyalina*
   Wing with apex of cell r_{2+3} brown; cell r_{4+5} with 1 or 2 rounded spots 5
5. Thorax, scutellum, postnotum and abdomen mostly dark brown to black 6
   Thorax and scutellum fulvous, often with black scutal markings; postnotum fulvous medially; abdomen fulvous at least on terga I+II and VI ..... *M. montana*
6. Apical *sc.* bristles very short; wing with hyaline spot in cell r_{4+5} not joined with indentation in cell m .. .. *M. breviseta*
   Apical *sc.* bristles not reduced; wing with hyaline spot in cell r_{4+5} broad, continuous with indentation in cell m ..... *M. gloriosa*

Micronevrina apicalis, sp. nov.

(Figs 109–116)

Material Examined

Holotype. ♂, Tooloom Scrub via Urbenville, NSW, 8.i.1977, B. K. Cantrell (QM - T12194).

Paratypes. **Queensland**: 1♀, Mt Glorious, 24–31.xii.1979, malaise trap in rainforest (QDPI); 1♀, Mt Glorious, 10–31.i.1982, A. Hiller, malaise trap (QDPI). **New South Wales**: 2♀, Tooloom, 29.i.1926 (UQIC); 1♂, Springwood, Blue Mtns, 10.i.1956, D. K. McAlpine (AM); 1♂, Natl Pk, 20.iii.1965, D. K. McAlpine (AM); 2♀, Mooney Mooney Ck, nr Gosford, 20.xi.1975, D. K. McAlpine, and 26.i.1984, D. K. McAlpine, B. J. Day and B. G. Duckworth (AM).

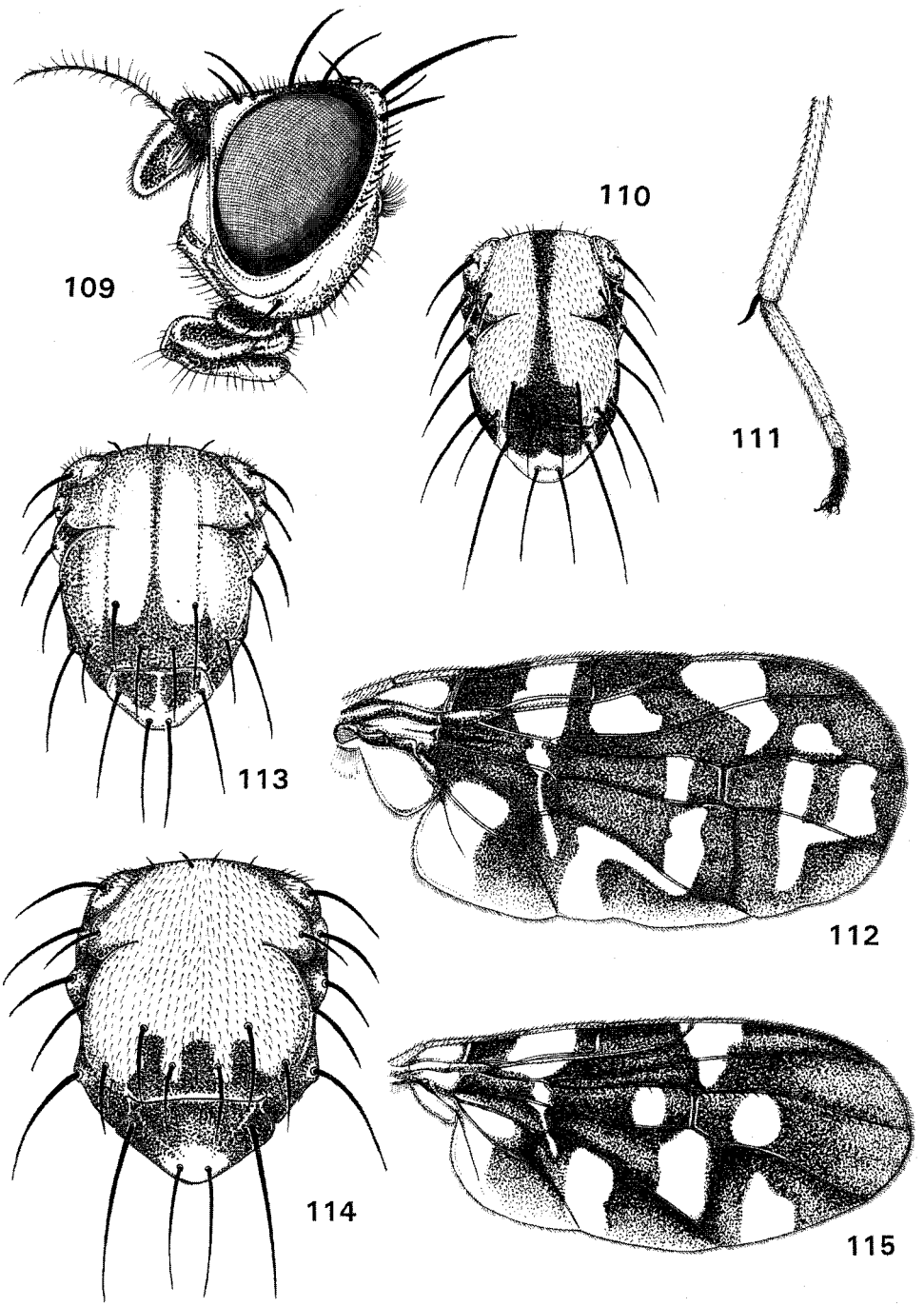
Description

Male

Length of body 3·9 mm, of wing 4·0 mm.

Head (Fig. 109). As for genus. Frons dark brown to black, narrowly fulvous along eye margins; 2 pairs each of *fr.* and *or.* bristles; *oc.* moderately developed.

Thorax. Fulvous. Scutum (Fig. 110) with a narrow black medial vitta, expanded posteriorly from level of *dc.* bristles. With a full complement of thoracic bristles except *anepm; prst.* present; *dc* level with *sa.* or placed midway between *sa.* and *ia.* Scutellum black on disc, yellow laterally and apically; 4 *sc.*, the middle pair well developed. Postnotum brown laterally. Legs fulvous. Fore femur with numerous strong bristles, especially posterodorsally and posteroventrally; last 3 tarsal segments of mid and hind legs black; mid tibia (Fig. 111) with 1



Figs 109–115. *Micronevrina apicalis*: *109*, head; *110*, ♂ scutum; *111*, mid tibia and tarsi; *112*, ♂ wing; *113–114*, ♀ scutum; *115*, ♀ wing.

long apical spine; hind tibia with 2 rows of 6–7 and 4 black setae anterodorsally and anteroventrally respectively. Wing (Fig. 112) broad; cell sc slightly shorter than cell c; vein R_{2+3} undulate; r-m crossvein about $\frac{1}{3}$ its own length from dm-cu crossvein; brown with hyaline

base and as follows: indentations in cells c and r_1, extending to vein R_{4+5}, the former extending as a narrow streak to base of cell cua_1; a large patch below cell sc reaching vein R_{2+3}; transverse patches near apices of cells br and dm, the latter connected to a curved band in cell cua_1; most of cell cup, extending to wing margin; a subapical patch in cell r_{2+3}; a reversed Y-shaped marking in cells r_{4+5} and m.

Abdomen. Terga I+II fulvous with black lateral markings; terga III–V black with a yellow medial stripe. Male genitalia with surstylus fulvous, elongate, $1\frac{1}{2} \times$ length of anal lobe.

Female

Length of body 4·0–4·3 mm, of wing 4·8–5·1 mm. Differs from male in body and wing markings. Scutum (Figs 113, 114) fulvous with very narrow medial and submedial brown vittae, sometimes reduced to posterior portion only. Wing (Fig. 115) with hyaline indentations in cells c and r_1, extending to vein R_{4+5}, the former also extending as a narrow streak to base of cell cua_1; large hyaline spots in cells br and r_{4+5}, either side of r-m crossvein which is placed no further than its own distance from dm-cu crossvein, directly above a large transverse band at apex of cell dm; broad indentations in cells m and basal half of cua_1; most of cell cup, extending to wing margin. Abdomen with tergite VI black with a yellow medial patch. Aculeus (Fig. 116) broad, narrowing sharply and dentate apically, tip bifurcated, with 4 pairs of short preapical setae.

Distribution

South-east Queensland to central New South Wales.

Comments

This species is easily recognised by a combination of *prst.* bristles present, scutum with a medial black vitta, at least in males, proximity of the r-m and dm-cu crossveins, wing pattern and medial yellow abdominal stripe.

Etymology

The specific name is derived from the Latin *apex*, tip, referring to the position of the r-m crossvein in relation to cell dm.

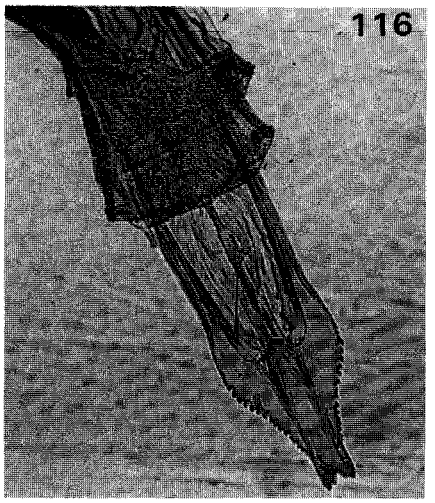


Fig. 116. *Micronevrina apicalis*, aculeus (100×).

Micronevrina breviseta, sp. nov.

(Figs 117–120)

Material Examined

Holotype. ♀, West Claudie R., 4 km SW rd junct., Qld, 12°44′S, 143°15′E, 9.xii.1986, G. Daniels and M. A. Schneider, malaise trap (QM - T12193).

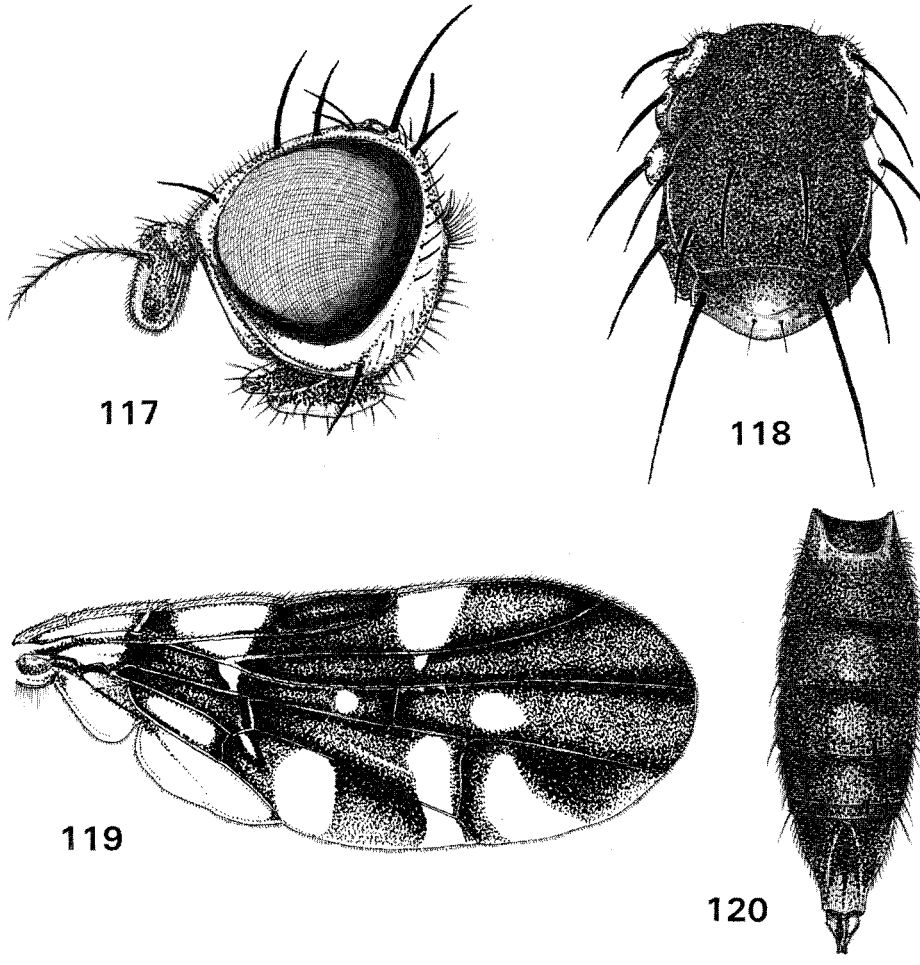
Description

Female

Length of body 4·0 mm, of wing 3·2 mm.

Head (Fig. 117). As for genus. Frons with 1 pair of *fr.* and 2 pairs of *or.* bristles.

Thorax. Scutum (Fig. 118) black. Scutellum dark brown to black, tinged with an apicomedial yellow spot. With a full complement of thoracic bristles except *prst.*, *acr.* and *ipa.*; *dc.* placed on the line of *sa.* Apical *sc.* bristles rudimentary. Pleura fulvous to red-brown, with 1 *anepst.*, *kepst.* and rudimentary *anepm.* Postnotum dark brown to black. Legs fulvous to red-brown. Fore femur with a row of posterodorsal brown bristles and 2–3 black posteroventral bristles on apical half. Mid tibia with 1 apical black spine. Wing (Fig. 119) similar to



Figs 117–120. *Micronevrina breviseta*: *117*, head; *118*, scutum; *119*, wing; *120*, ♀ abdomen.

M. apicalis except hyaline spots in cells br and r_{4+5} smaller and the band at apex of cell dm narrower, continued through cell cua_1 to wing margin; r-m crossvein more than its own length from dm-cu crossvein, not directly above spot in cell dm.

Abdomen (Fig. 120). Black. Tergite VI about $\frac{1}{3}$ length of tergite V. Oviscape black, about as long as terga IV+V. Aculeus broad, narrowing sharply and dentate apically, tip bifurcated, with 4 pairs of short preapical setae.

Male

Unknown.

Distribution

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

Comments

This species is readily recognisable by its black scutum and abdomen, lack of *prst.* and *acr.* bristles and the rudimentary apical *sc.* bristles.

Etymology

The specific name is derived from the Latin *brevi*, short, and *seta*, bristle, referring to the reduced apical scutellar bristles.

Micronevrina gloriosa, sp. nov.

(Figs 121–122)

Material Examined

Holotype. ♀, Mt Glorious S.F., Qld, 12–19.vi.1986, Y. Basset, IT2(MT), [trap in] *Argyrodendron actinophyllum* Edlin, subtropical rainforest (QM - T12203).

Paratype. **Queensland:** ♂, same data as holotype except 8–15.v.1986 and IT4(MT) (QDPI).

Description

Female

Length of body 2·9 mm, of wing 3·1 mm.

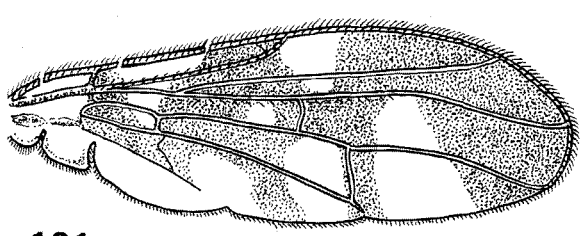
Head. As for genus. Frons fulvous, with 2 pairs each of *fr.* and *or.* bristles; *oc.* vestigial.

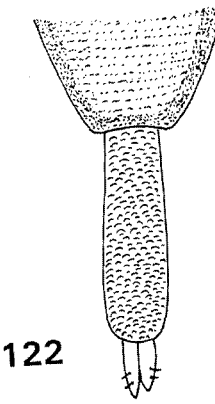
Thorax. Dark brown to black. With a full complement of thoracic bristles except *prst.*, *anepm.* and *ipa.*; *dc.* placed on line of *sa.*; 4 *sc.*, the apical pair well developed. Scutellum and postnotum dark brown. Legs whitish. Fore femur with a row of 3–4 pale posteroventral bristles; mid tibia with 1 apical black spine. Wing (Fig. 121) similar to *M. apicalis* except apical hyaline spot in cell dm extends across cell cua_1 to wing margin and spots in cells r_{4+5} and m are broadly joined; r-m crossvein not closer than its own length to dm-cu crossvein or directly above spot in cell dm.

Abdomen. Dark brown to black. Oviscape broad, tapering posteriorly, as long as terga IV–VI combined. Aculeus (Fig. 122) dentate distally, tip bifurcated, with 4 pairs of short preapical setae.

Male

Length of body 2·4 mm, of wing 3·0 mm. Similar to female. Surstylus long and slender.





Figs 121–122. *Micronevrina gloriosa*: *121*, wing; *122*, aculeus.

Distribution

Known only from Mt Glorious, south-east Queensland.

Comments

This species is readily identified by its black thorax and abdomen, two *fr.* bristles, well-developed apical *sc.* bristles and wing pattern, the hyaline patches in cells r_{4+5} and m large and united. The type specimens were collected in canopy traps in *Argyrodendron actinophyllum*.

Etymology

The specific name is derived from the type locality.

Micronevrina hyalina, sp. nov.

(Figs 123–127)

Material Examined

Holotype. ♂, State Forest nr Caloundra Turnoff, SE Qld, 8.iii.1984, I.D. Galloway (QM - T12197).

Paratypes. **Queensland:** 1♀, Mt Glorious, Mar.1982, A. Hiller, malaise trap (QDPI). **New South Wales:** 1♂, Mt Wilson, Blue Mtns, 9.iv.1986, G. A. Holloway and B. J. Day (AM); 3♀, Mt Wilson, Blue Mtns, 17.iii.1961 and 20.ix.1980, D. K. McAlpine (AM); 1♀, Mooney Mooney Ck, nr Gosford, 12.xii.1978, D. K. McAlpine and B. J. Day (AM); 1♀, Natl Pk, 20.iii.1965, D. K. McAlpine (AM); 1♀, Royal Natl Pk nr Sydney, 17.iii.1977, D. K. McAlpine and M. A. Schneider (AM); 1♀, Sassafras Gully, Springwood, 23.ix.1972, D. K. McAlpine (AM). 2♀, Wentworth Falls, Blue Mtns, 22.iv.1957 and 29.xi.1958, D. K. McAlpine (AM). **Victoria:** 2♂, Noorinbee, 12.xi.1969, A. Neboiss (NMV).

Description

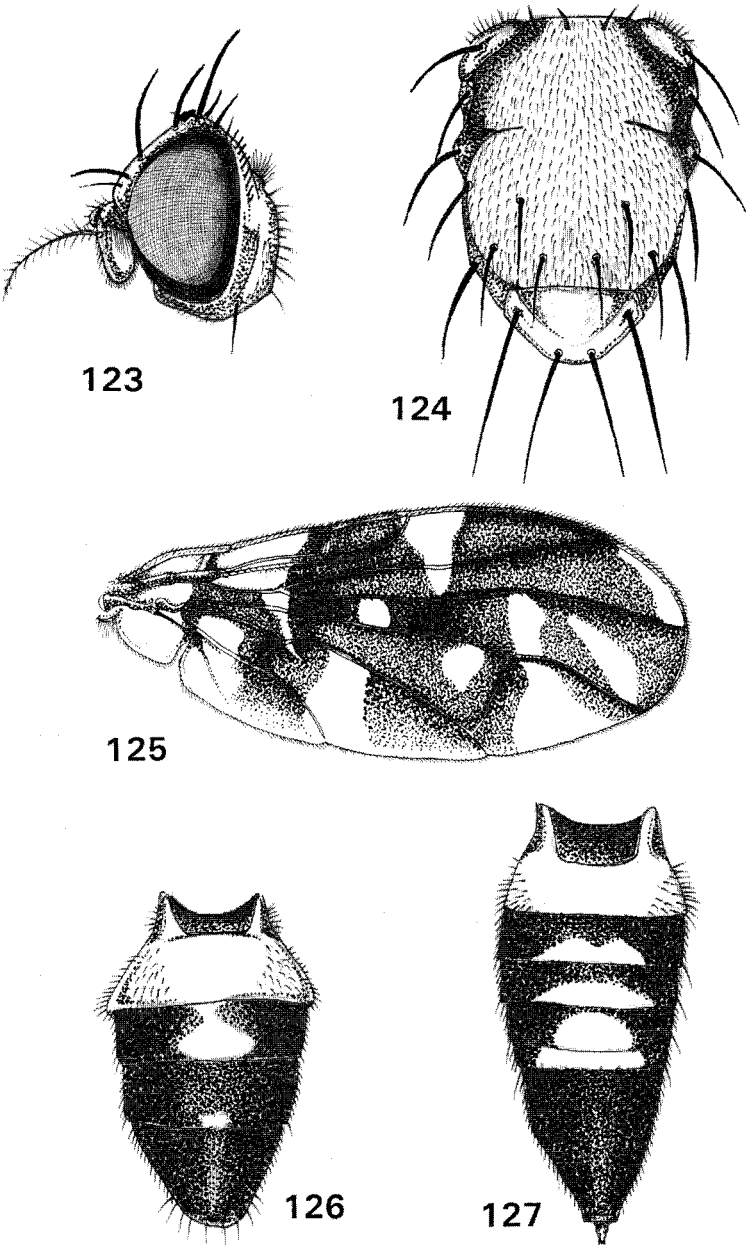
Male

Length of body 4·2–4·4 mm, of wing 4·0–4·2 mm.

Head (Fig. 123). As for genus. Frons fulvous to red-brown with 2 pairs each of *fr.* and *or.* bristles, the lower *fr.* weak; *oc.* weak.

Thorax. Scutum (Fig. 124) fulvous except for a lateral brown vitta from inside margin of each postpronotal lobe to wing base. Scutellum fulvous. A full complement of thoracic bristles except *prst.* and *anepm.*; *ipa.* weak; *dc.* placed behind line of *sa.*; 4 *sc.* with apical pair well developed. Pleura pale fulvous. Postnotum fulvous. Legs fulvous. Fore femur with 2 rows of

bristles, 7 posterodorsally at apical half and 9–10 posteroventrally. Mid tibia with 1 black apical spine. Hind tibia with 3 anterodorsal setae medially. Wing (Fig. 125) similar to female of *M. apicalis* except apex of cell r_{2+3} narrowly hyaline, cell r_{4+5} with 2 hyaline bands, the inner connected to the indentation in cell m, the outer reaching apex of vein M; apical spot in cell dm in upper part only; r-m crossvein not closer than its own length to dm-cu crossvein or directly above spot in cell dm.



Figs 123–127. *Micronevrina hyalina*: *123*, head; *124*, scutum; *125*, wing; *126*, ♂ abdomen; *127*, ♀ abdomen.

Abdomen (Fig. 126). Terga I+II fulvous; terga III and IV black with fulvous apicomedial markings; tergite V black. Male genitalia with anal lobe whitish; epandrium black; surstylus yellow and long, about $1\frac{1}{2}\times$ as long as anal lobe.

Female

Length of body 4·0–4·4 mm, of wing 3·8–4·0 mm. Similar to male except fore femur with 2–3 posteroventral bristles; abdomen (Fig. 127) with terga V and VI yellow with brown lateral markings. Oviscape black, tapering posteriorly, as long as terga IV–VI. Aculeus broad, dentate apically, bifurcated at tip, with 4 pairs of short preapical setae. Three round spermathecae.

Distribution

South-east Queensland to Victoria.

Comments

The hyaline apex to cell r_{2+3} in both sexes serves to distinguish this species.

Etymology

The specific name is derived from the Greek *hyalinos*, referring to the hyaline apex of cell r_{2+3}.

Micronevrina mediivitta, sp. nov.

(Figs 128–136)

Material Examined

Holotype. ♂, Mt Glorious, SE Qld, 26.xi–10.xii.1979, malaise trap, rainforest (QM - T12200).

Paratypes. **Queensland**: 1♀, Mt Glorious, 24–31.xii.1979, malaise trap, rainforest (QDPI); 1♀, Mt Glorious, 1–7.i.1980, malaise trap, rainforest (QDPI); 1♂, Emu Vale, 10.ii.1939, A. R. Brimblecombe (UQIC); 1♀, Bunya Mtns, 30.v.1958, T. E. Woodward (UQIC); 1♀ Bunya Mtns Natl Pk, 11–13.xii.1979, G. Daniels and M. A. Schneider (UQIC); 1♀, O'Reilley's Guest House, via Canungra, 3.ii–2.iii.1980, malaise trap, edge rainforest (QDPI); 1♂, 2♀, Binna Burra, Lamington Natl Pk, 31.i. and 1.ii.1961, D. K. McAlpine (AM); 2♀, Bunya Mtns, 8.ii.1961, D. K. McAlpine (AM); 1♀, 2 mi NW Mt Mowbullan, Bunya Mtns, 3300 ft, 7.i.1970, G. A. Holloway (AM). **New South Wales**: 1♂, 1♀, Tooloom, 29.i.1926 (UQIC); 4♀, Tooloom Scrub via Urbenville, 8.i.1977, B. K. Cantrell (QDPI); 2♀, Minnamurra Falls, 11.iii.1983, K. C. Khoo and B. J. Day, 20.i.1984, D. K. McAlpine (AM); 1♀, Mt Gibraltar Natl Pk, 64 mi W Grafton, 24.ii.1965, D. K. McAlpine (AM); 1♀, Mt Keira, 25.i.1983, G. A. Holloway (AM); 15♂, 9♀, Mooney Mooney Ck, nr Gosford, 20, 25 and 29.xi.1975, D. K. McAlpine, 12.xiii.1978, 18.i.1980, D. K. McAlpine and B. J. Day (AM); 4♂, 9♀, Mt Wilson, Blue Mtns, 26.i.1957, 3.v.1958, 7.ii.1959, 17.iii.1961, 22.iv.1970, 17.iii.1972, D. K. McAlpine (AM); 8♀, Mt Wilson, Blue Mtns, 23.ii.1979, D. K. McAlpine, B. J. Day and D. Kent (AM); 4♂, 1♀, Wentworth Falls, Blue Mtns, 2.ii.1957, 31.i.1959, D. K. McAlpine (AM); 3♂, 1♀, Upper Allyn nr Eccleston, 12.xii.1969, D. K. McAlpine (AM); 2♂, 1♀, Wilson R. Res., via Bellangry, 27–28.xi.1966, D. K. McAlpine (AM); 1♀, Wilson R. Res., 15 km NW Bellangry, 7.xii.1986, D. J. Bickel (AM); 1♂, Otford, 26.i.1959, D. K. McAlpine (AM); 1♂, Natl Pk, 6.xii.1958, D. K. McAlpine (AM); 1♀, Royal Natl Pk, S of Sydney, 22.ii.1983, G. A. Holloway (AM); 1♀, Springwood, Blue Mtns, 30.i.1956, D. K. McAlpine (AM).

Description

Male

Length of body 3·4–3·6 mm, of wing 3·8–4·0 mm.

Head (Fig. 128). As for genus. Frons red-brown, fulvous along eye margins, with 2 pairs each of *fr.* and *or.* bristles, the lower *fr.* weak; additionally covered with short pale setae; *oc.* moderately developed.

Thorax. Scutum (Fig. 129) fulvous with a broad black medial vitta, expanded posteriorly behind *dc.* bristles. Scutellum black on disc, yellow marginally. With a full complement of thoracic bristles except *anepm.*; *prst.* present, *dc.* placed midway between *sa.* and *ia.*; *ipa.* weak; 4 *sc.*, the basal pair well developed. Pleura fulvous. Postnotum brown. Legs fulvous. Fore femur with numerous brown bristles, especially posteroventrally. Mid tibia with 1 strong black apical spine. Mid and hind tarsi with 3 apical segments often black. Wing (Fig. 130) brown except hyaline at base and with hyaline spots and indentations as follows: a triangular indentation in cell c, continuing as a narrow streak to base of cell cua_1; a broad indentation in cell r_1 beyond cell sc, extending into cell r_{2+3}; a spot in cell r_{2+3}; a spot in cell br near r-m crossvein; a broad spot in centre of cell r_{4+5}; a spot in cell m; r-m crossvein placed more than its own length from dm-cu crossvein; cell dm brown; cell cua_1 and apex of cell cup faintly brown, diffuse near wing margin.

Abdomen. Terga I+II with basal $\frac{3}{4}$ fulvous, remainder plus terga III–V black. Male genitalia (Figs 133, 134) with surstylus pale brown, $1\frac{1}{2}\times$ as long as anal lobe.

Female

Length of body 4·8–5·2 mm, of wing 3·9–4·3 mm. Differs from male in body and wing markings. Scutum fulvous with 3–5 narrow, indistinct brown medial vittae, uniting posteriorly behind *dc.* bristles; scutellum red-brown on disc, yellow marginally. Postnotum brown with submedial yellow bands. Wing (Fig. 131) very similar to female of *M. apicalis*, but r-m crossvein much more than its own length from dm-cu crossvein, not directly above hyaline spot in cell dm. Abdomen (Fig. 132) as for male except tergite VI whitish yellow with narrow brown lateral margins and tergite V sometimes with an apical fulvous area. Oviscape black, as long as terga III-V combined. Aculeus (Fig. 135) broad, apically dentate, bifurcated at tip, with 4 pairs of small preapical setae; 3 spermathecae (Fig. 136).

Distribution

South-east Queensland to central New South Wales.

Comments

The male is easily recognised by the thoracic and wing markings, plus the presence of *prst.* bristles. It most resembles *M. apicalis*, particularly the female, the two species separated by the position of the r-m crossvein, much further from the dm-cu crossvein in *M. mediivitta.*

Etymology

The specific name is derived from the Latin *medius*, middle, and *vitta*, stripe, referring to the medial black stripe on the scutum.

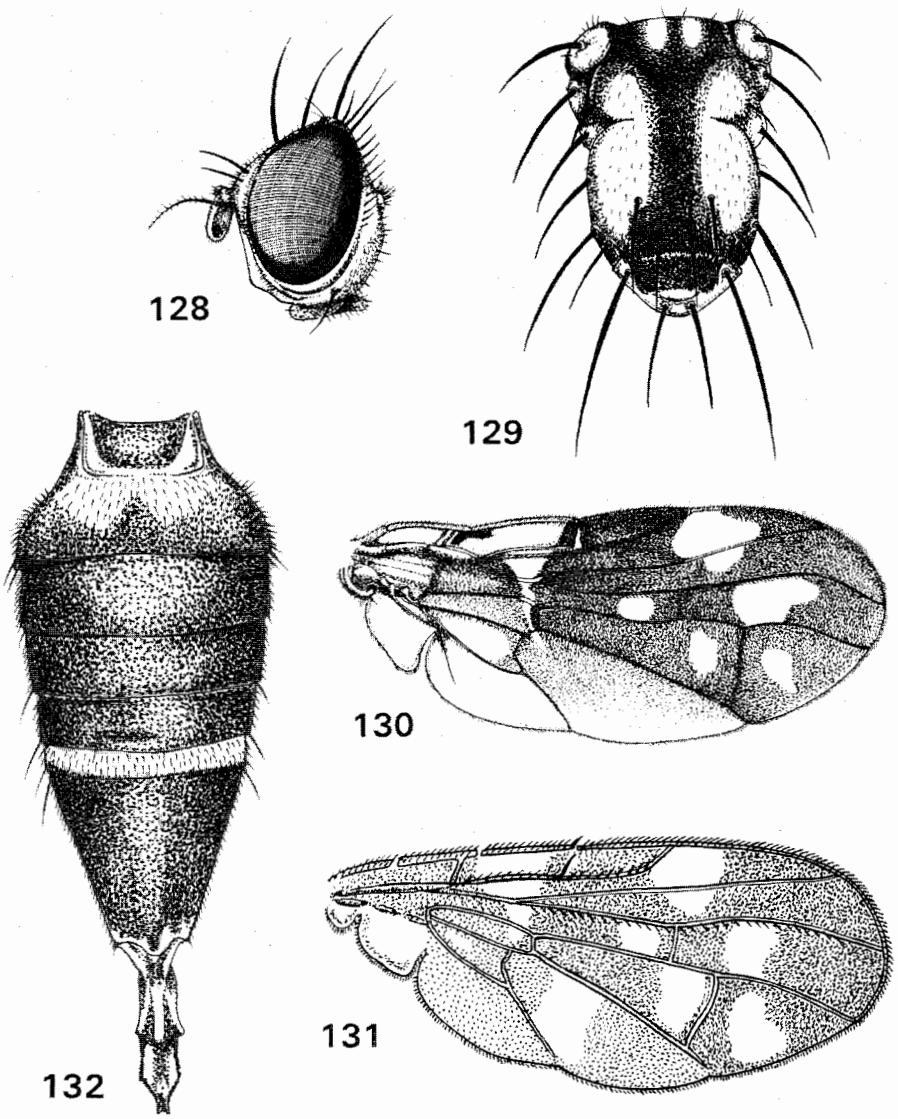
Micronevrina montana, sp. nov.

(Figs 137–144)

Material Examined

Holotype. ♂, Mt Tamborine, SE Qld, Oct.–Nov. 1978, G. Sankowsky, malaise trap (QM - T12195).

Paratypes. **Queensland:** 1♂, Mt Tamborine, 2.ii.1961, D. K. McAlpine (AM); 1♂, Thunderbird Pk via Mt Tamborine, 3.iii.1984, I. D. Galloway (QDPI); 1♀, Mt Tamborine, 16.ii.1960, E. M. Exley (UQIC); 1♂, Mt Glorious, 1–7.i.1980, malaise trap, rainforest (QDPI); 1♀, Mt Glorious, 26.xi.–10.xii.1979, malaise trap, rainforest (QM); 1♀, Mt Glorious, 10–31.i.1982, A. Hiller, malaise trap, rainforest (QDPI); 1♀, Mt Glorious, Feb. 1976, Z. Boucek, malaise trap (QDPI); 1♂, Mt Beerwah, Glasshouse Mtns, 1800 ft, 5.xii.1965, T. Weir (QM); 1♀, Dalrymple Ck, Mistake Mt, 28.iii.1983, malaise trap (QDPI); 1♀, Bunya Mtns, 14.xii.1937, F. A. Perkins (UQIC); 1♀, Eungella Natl Pk, 2000 ft, 27.iii.1971, D. A. Duckhouse (QM); 2♂, 1♀, Broken R., Eungella, 10 and 12.xii.1961, D. K. McAlpine and R. Lossin (AM); 1♂, Barron R., nr Crater, Atherton Tblds, 3.i.1958, D. K. McAlpine (AM); 2♀, the Crater, nr Herberton, 16.xii.1961, D. K. McAlpine and R. Lossin, 30.i.1972, D. K. McAlpine and G.A. Holloway (AM); 1♂, Hugh Nelson



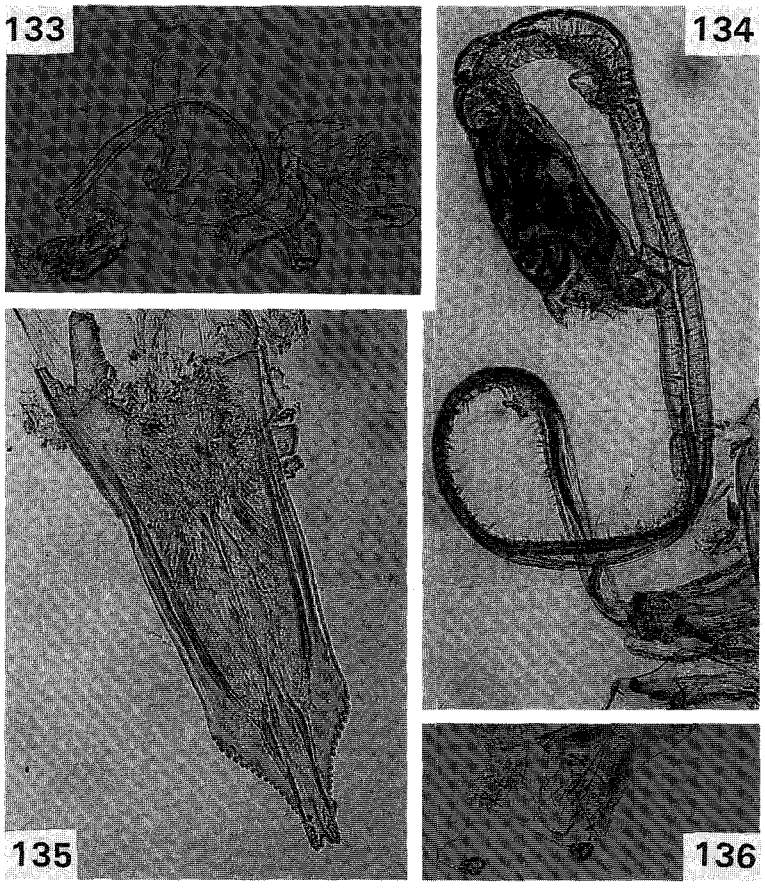
Figs 128–132. *Micronevrina mediivitta*: *128*, head; *129*, ♂ scutum; *130*, ♂ wing; *131*, ♀ wing; *132*, ♀ abdomen.

Ra., 21 km S Atherton, 13.iii–1.iv.1984, malaise trap (QDPI). **New South Wales**: 13♂, 11♀, Wentworth Falls, Blue Mtns, 2.ii.1957, 29.xi.1958, D. K. McAlpine (AM); 1♂, Mt Wilson, Blue Mtns, 7.ii.1959, D. K. McAlpine (AM); 1♂, 2♀, Natl Pk, 28.i. and 19.iii.1957, D. K. McAlpine (AM); 5♂, 3♀, Mooney Mooney Ck, nr Gosford, 20 and 25.xi.1975, D. K. McAlpine, 18.i.1980, 1 and 14.xii.1989, D. K. McAlpine and B. J. Day (AM); 14♂, 4♀, Colovale, 15.iii.1957, W. W. Wirth (AM); 6♂, 2♀, Otford, 26.i.1959, 24.xii.1962, 18.i.1964, D. K. McAlpine (AM), 1♀, Kurrajong, 28.xi.1959, D. K. McAlpine (AM); 1♀, Royal Natl Pk, 6.iii.1971, G. Daniels (UQIC).

Description

Male

Length of body 3·0–3·4 mm, of wing 2·8–3·2 mm.



Figs 133–136. *Micronevrina mediivitta*: *133*, ♂ genitalia (40×); *134*, aedeagus (100×); *135*, aculeus (100×); *136*, 2 of 3 spermathecae (40×).

Head (Fig. 137). As for genus. Frons fulvous, faintly tinged with brown, with 2 pairs each of *fr.* and *or.* bristles, the lower *fr.* bristle weak; additionally with a few pale setae; *oc.* weak.

Thorax. Scutum (Fig. 138) predominantly black, especially medially on apical $\frac{2}{3}$; fulvous laterally and posteriorly. Scutellum dark brown on disc, yellow marginally, often entirely yellow. With a full complement of thoracic bristles except *prst.* and *anepm.*; *dc.* placed on line of *sa.*; *ipa.* weak; 4 *sc.*, the apical pair about $\frac{1}{2}$ length of basals. Postnotum with a pair of black lateral spots and often a very narrow brown medial line. Legs fulvous. Fore femur with 2-3 apicoventral bristles. Mid tibia with 1 black apical spine. Hind femur with a pair of erect hair-like setae dorsoapically. Wing (Fig. 139) similar to female *M. apicalis* but a small outer hyaline spot often present in cell r_{3+4}; r-m crossvein not closer than its own length to dm-cu crossvein or directly above spot in cell dm.

Abdomen. Terga I+II fulvous with a pair of black apicolateral markings; terga III–V black. Male genitalia (Fig. 143) with anal lobe pointed apically, as long as epandrium, dark brown, setose; surstylus slender, about $1\frac{1}{2}\times$ as long as anal lobe.

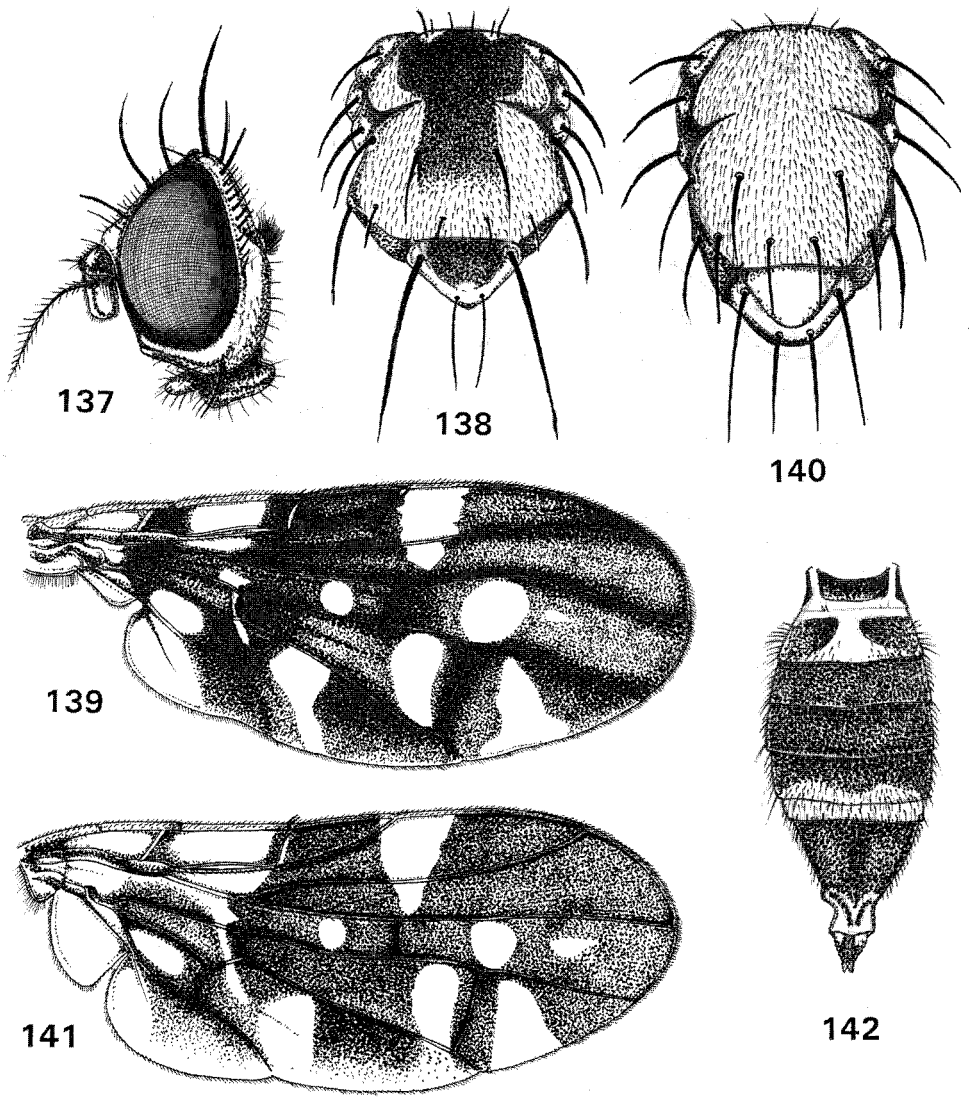
Female

Length of body 3·5–4·1 mm, of wing 2·8–3·5 mm. Similar to male except scutum (Fig. 140) fulvous, without black markings. Scutellum yellow or red-brown on disc. Postnotum fulvous

medially, red-brown laterally. Wing (Fig. 141) as for male but second hyaline spot in cell r_{4+5} present in all available specimens. Abdomen (Fig. 142) with tergite VI yellow; terga III–V often with fulvous to red-brown apical markings. Oviscape black, about as long as terga IV+V. Aculeus (Fig. 144) broad, narrowing sharply and apically dentate, bifurcated at tip, with 4 pairs of short preapical setulae; 3 spermathecae.

Distribution

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



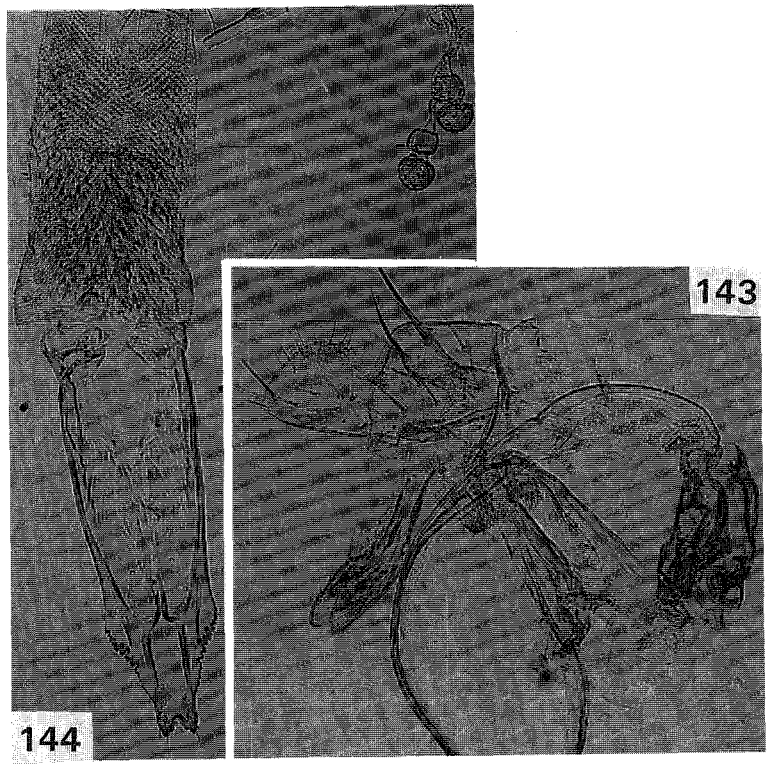
Figs 137–142. *Micronevrina montana*: *137*, head; *138*, ♂ scutum; *139*, ♂ wing; *140*, ♀ scutum; *141*, ♀ wing; *142*, ♀ abdomen.

Comments

This appears to be the most widespread species of the genus. It is easily recognised by the thoracic, abdominal and wing markings, and lack of *prst.* bristles.

Etymology

The specific name is derived from the mountain localities of most of the type specimens.



Figs 143–144. *Micronevrina montana*: *143*, ♂ genitalia (100×); *144*, aculeus and 2 of 3 spermathecae (100×).

Micronevrina setosa, sp. nov.

(Figs 145–149)

Material Examined

Holotype. ♂, Royal Natl Pk, NSW, 22.xi.1970, G. Daniels (QM - T12201).

Paratypes. **Queensland:** 1♂, The Crater nr Herberton, 15.xii.1961, D. K. McAlpine and R. Lossin (AM); 2♀, Summer Ck, Little Yabba Forestry Rd, nr Kenilworth, 5.ii.1961, D. K. McAlpine (AM); 2♀, Tamborine Mtn, 20.xii.1961, D. K. McAlpine and R. Lossin (AM). **New South Wales:** 1♂, Royal Natl Pk, 22.xi.1970, A. Green (QM); 1♂, 2♀, Royal Natl Pk, S of Sydney, 22.ii.1963 and 21.ii.1983, G. A. Holloway (AM); 2♀, Royal Natl Pk, nr Sydney, 7.ii.1978, G. Daniels, M. A. Schneider (AM); 13♂, 15♀, Natl Pk, 7.i.1956, 28.i.1957, 13.iv.1957, 8 and 24.xii.1960, 30.iii.1965, D. K. McAlpine (AM); 2♂, 1♀, Mooney Mooney Ck nr Gosford, 20 and 29.xi.1975, 3.xii.1976, D. K. McAlpine (AM); 3♂, 4♀, Mt

Wilson, Blue Mtns, 2.iii.1957, 7.ii.1959, 14.iv.1959, D. K. McAlpine (AM); 1♂, Mt Wilson, Blue Mtns, 30.iii.1976, D. K. McAlpine and M. A. Schneider (AM); 1♂, 1♀, Huonbrook nr Mullumbimby, 4.xii.1961, 2.iii.1965, D. K. McAlpine and R. Lossin (AM); 2♂, 3♀, Wentworth Falls, Blue Mtns, 2 and 28.ii.1957, D. K. McAlpine (AM); 1♀, Bulladelah S. F., 28.xii.1981, G., J. and A. Holloway (AM); 1♀, Terania Ck nr Lismore, 3.ii.1980, D. K. McAlpine and B. J. Day (AM); 1♀, 'Tuglo', 48 km N Singleton, 2.iii.1980, C. N. Smithers and B. J. Day (AM); 2♀, Otford, 26.i.1959, 3.ii.1962, D. K. McAlpine (AM).

Description

Male

Length of body 4·9–5·2 mm, of wing 5·0–5·4 mm.

Head (Fig. 145). As for genus. Frons fulvous, with 1 pair *fr.* and 2 pairs *or.* bristles; *oc.* weak.

Thorax. Largely fulvous. Scutum (Fig. 146) with a pair of small dark spots near *prst.* bristles. Scutellum yellow with darker sublateral markings. A full complement of thoracic bristles except *anepm.*; *prst.* present; *dc.* placed close to line of *sa.*; 4 *sc.*, the apical pair as long as basals; with 4–5 additional pale *kepst.* bristles. Legs fulvous; mid femur (Fig. 147) with a basoventral clump of dense pale brown bristles, 1–2 prominent black posteroventral bristles and a row of 8-10 posterodorsal bristles; mid tibia with a densely pilose apicoventral ridge and 1 small apical spine, first tarsal segment with 5–6 hair-like basoventral setae; mid and hind coxae each with a strong pale red-brown bristle; hind tibia with a row of 2–3 black anterodorsal setae medially. Wing (Fig. 148) elongate, quadrate in shape, with a broad hyaline sub-basal band from cell c to below cell cup, narrowed in cell bm; also with hyaline spots and indentations as follows: an indentation in cell r_1, beyond cell sc, extending to vein R_{4+5}; apical areas of cells r_1, r_{2+3} and r_{4+5} except narrowly brown along costa; small spots in cell br and at upper subapical part of cell dm; a large patch in cell r_{4+5}, more or less continuous with the patch almost filling cell m; a medial and a basal spot in cell cua_1; r-m crossvein not closer than its own length to dm-cu crossvein or directly above spot in cell dm.

Abdomen. Fulvous, with dark brown to black basolateral markings on terga II–V. Male genitalia with surstyli slender, long, bent posteriorly on apical half; epandrium dark brown, as long as anal lobe, setose; anal lobe with dense setae and 1 brown dorsoapical bristle.

Female

Length of body 4·7–5·2 mm, of wing 4·5–5·0 mm. Differs from male in abdominal and wing markings. Legs normal. Wing (Fig. 149) similar to *M. apicalis* but with a second, hyaline outer spot in cell r_{4+5} (rarely absent) and sometimes 2 small hyaline markings in cell r_{2+3}; r-m crossvein not closer than its own length to dm-cu crossvein or directly above spot in cell dm. Abdomen with tergite VI and apices of terga I+II–V yellow. Oviscape dark brown, equal in length to terga V+VI. Aculeus broad, tapering distally, serrate, bifurcated at tip, with 4 pairs of short preapical setae.

Distribution

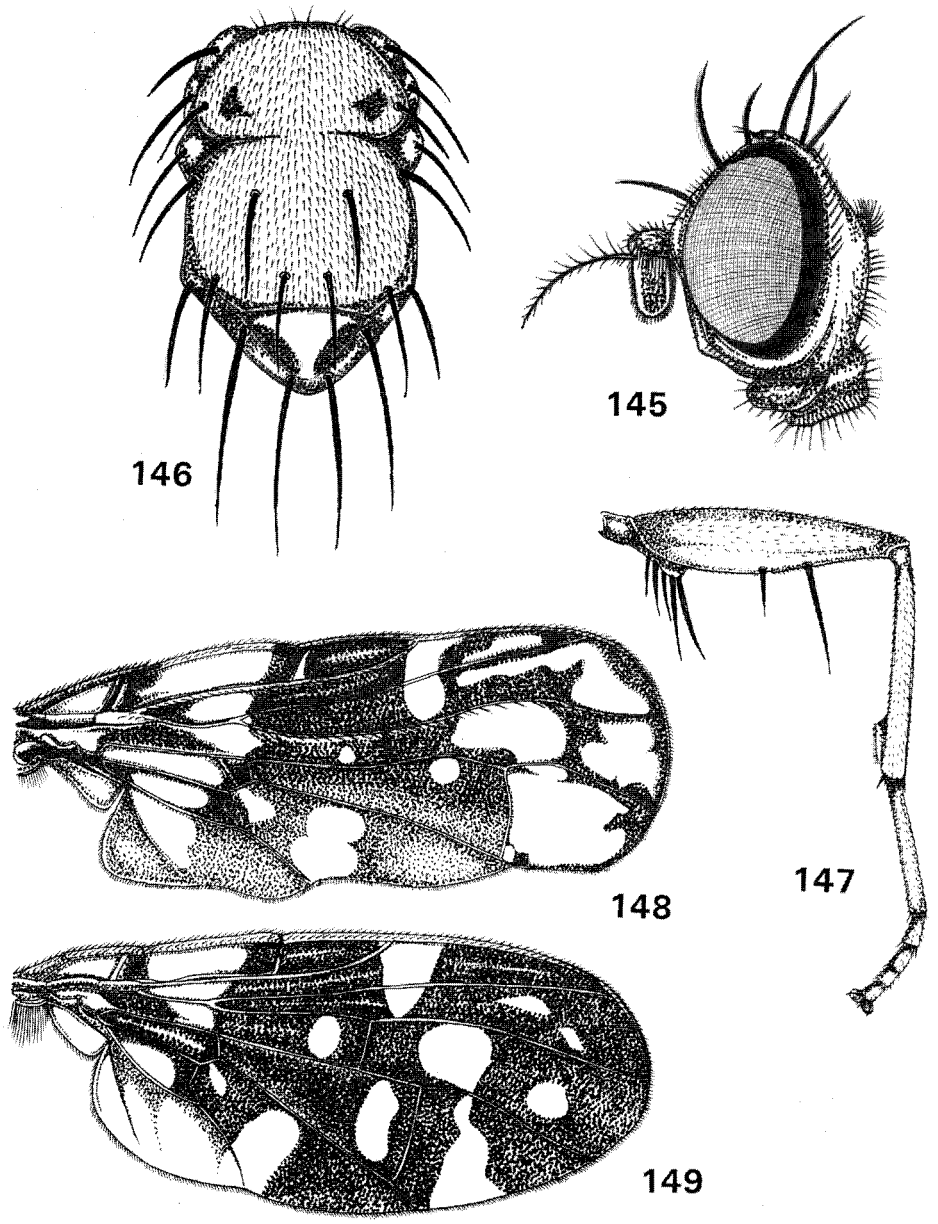
North Queensland to central eastern New South Wales.

Comments

Males of this species have distinctive wing markings and mid legs. Females resemble those of *M. apicalis*, which also has *prst.* bristles present, but *M. setosa* differs in having only one *fr.* bristle and in details of the wing and abdomen.

Etymology

The specific name is derived from the Latin *setosus*, bristly, referring to the additional katepisternal bristles and those of the mid femur.



Figs 145–149. *Micronevrina setosa*: *145*, head; *146*, scutum; *147*, ♂ mid leg; *148*, ♂ wing; *149*, ♀ wing.

Genus *Neothemara* Malloch

Neothemara Malloch, 1939*a*: 253. Type species: *Rioxa formosipennis* Walker, by original designation.

Diagnosis

Head higher than long. Face vertical, slightly projecting on oral margin. Antenna extending $\frac{3}{5}$ length of face, third segment apically rounded; arista long plumose. Frons with 2 pairs each of *fr.* and *or.* bristles; *oc.* hair-like; *pocl.* thin and dark. Gena with erect black setulae and 1 prominent *gn.* bristle. Thorax fulvous with longitudinal black vittae, with the following bristles:

4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa., dc.* placed close to line of *ia., acr., anepst., anepm., kepst.*, 6 *sc.* Scutellum flat, with scattered brown to black setae on dorsal and lateral surfaces. Fore femur with a row of strong posteroventral bristles and 2 rows of posterodorsal setae. Mid tibia with a row of posterodorsal setae, 1 long and 1 short apical spine. Hind tibia with a row of 8 anterodorsal setae and 1 black posterodorsal spine medially. Wing mostly brown with hyaline spots and indentations, including 1 in cell r_1 and 3 in cell m. Veins R_1 and R_{4+5} setose; vein R_{2+3} undulate; r-m crossvein slightly beyond middle of cell dm; a prominent costal spine at apex of cell c. Cell cup with apical lobe long and narrow. Aculeus elongate, blunt apically, with 1 pair of subapical, 2 short and 2 very long pairs of preapical setae. Three small round spermathecae.

Comments

This genus belongs in a group with *Pseudacanthoneura* Malloch, sharing the presence of two *fr.*, two *or.*, six *sc.* and well-developed *ipa.* bristles, one long and one shorter mid-tibial spine, setose scutellum, three hyaline indentations in cell m, undulate vein R_{2+3} and an apically blunt, long-setose aculeus. *Neothemara* differs in having only one hyaline indentation in cell r_1. The genus occurs in Irian Jaya, Papua New Guinea and northern Queensland. Hardy (1986*b*) recognised three species, but *N. digressa* Hardy has a bare scutellum and pointed aculeus and probably does not belong here; we place *N. trigonifera* Hering in synonymy. Hosts are unknown.

Neothemara formosipennis (Walker)

(Figs 150–152)

Rioxa formosipennis Walker, 1861*a*: 252. Type locality Dory [= Manokwari], Irian Jaya. Holotype ♂ in BMNH [not examined].

Neothemara formosipennis. — Malloch, 1939*a*: 254; Malloch, 1939*d*: 434, pl. 11, fig. 10; Hering, 1951: 6; Hardy, 1986*b*: 83; Hardy and Foote, 1989: 513.

Neothemara formosipennis f. *trigonifera* Hering, 1951: 7. Type locality New Guinea. Holotype ♀ in ZMHB [not examined].

Neothemara trigonifera. — Hardy, 1986*b*: 85; Hardy and Foote, 1989: 513; *syn. nov.*

Material Examined

Queensland: 1♀, Dividing Ra., 15 km W of Captain Billy Ck, Cape York Pen., 12°46′S, 143°17′E, 5–12.ii.1976, G. B. Monteith (UQIC).

Diagnosis

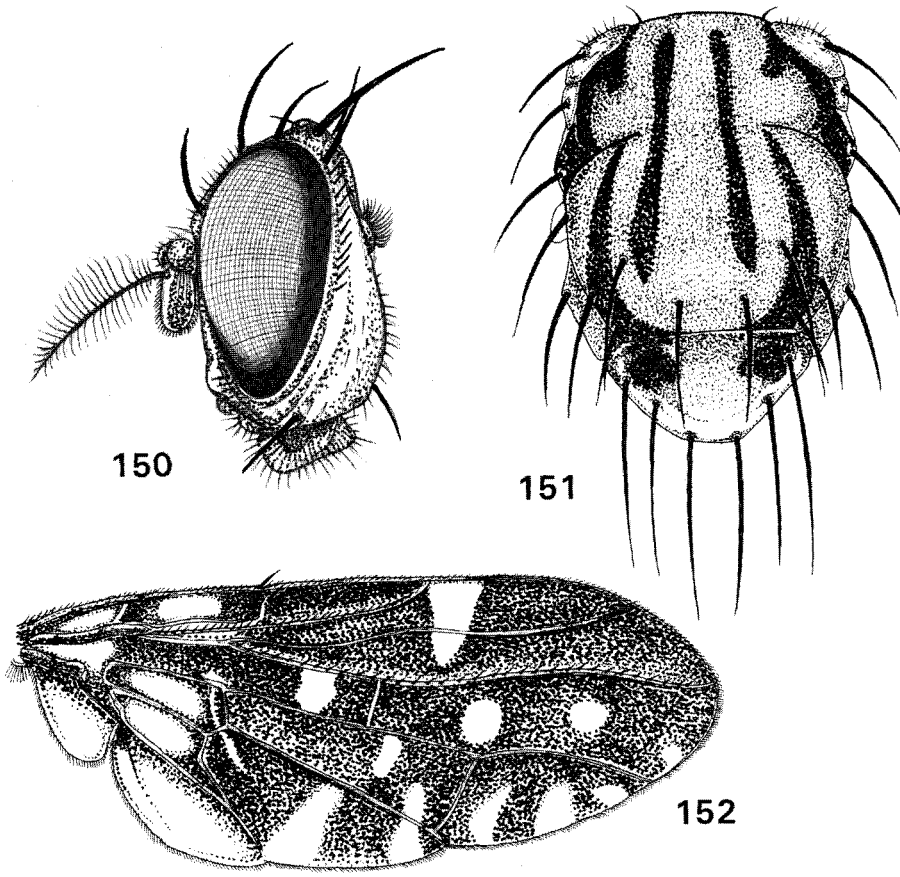
As for genus. Wing with hyaline spots or indentations as follows: 1 in cell r_1 extending into cell r_{2+3}; 1 in cell br; 2 or 3 in cell r_{4+5}, the apical spot present or absent; 2 near apex of cell dm; 3 in cell m; 2 in cell cua_1; a broad spot each in cells bm and cup. Scutum with 2 submedial black vittae, a lateral band around each postpronotal lobe to notopleuron, 2 dorsolateral bands, curved inwards posteriorly. Scutellum with a pair of large dorsolateral basal spots. Abdomen fulvous, with transverse black bands on terga III-V. Length of body 7·0 mm, of wing 6·5 mm.

Distribution

Irian Jaya, Papua New Guinea and Cape York Peninsula, north Queensland.

Comments

The size of the wing spots and presence or absence of the apical spot in cell r_{4+5} is variable in this species and we consider *N. trigonifera* to be a synonym. The above specimen shares features of both taxa, having the apical spot of *N. formosipennis* plus the larger spots in cells r_1-r_{2+3} and in cells br and r_{4+5} typical of *N. trigonifera*. Hardy (1986*b*) illustrated the tip of the female aculeus and the male genitalia.



Figs 150–152. *Neothemara formosipennis*: *150*, head; *151*, scutum; *152*, wing.

Genus ***Paedohexacinia*** Hardy

Paedohexacinia Hardy, 1986*b*: 92. Type species: *P. flavithorax* Hardy, by original designation.

Diagnosis

Head higher than long. Face vertical, receding on oral margin. Antenna extending $\frac{2}{5}$ length of face; third segment apically rounded; arista plumose. Frons with 3–4 pairs *fr.* and 2 pairs *or.* bristles; *oc.* moderately developed; *pocl.* thin and dark; 1 black *gn.* bristle. Thorax fulvous to red-brown, with the following bristles; 4 *scp., pprn., npl., prst., sa., ia., p.sa.; ipa., dc.* placed between *sa.* and *ia., acr., anepst., anepm., kepst.;* anepisternum with an additional black bristle near lower medial margin. Legs fulvous. Fore femur with a row of strong posteroventral bristles and irregular rows of shorter ventral bristles. Mid tibia with 1 long and 1 shorter apical spine. Wing entirely dark brown. Veins R_1 and R_{4+5} setose; r-m crossvein placed well beyond middle of cell dm; cell cup with apical lobe short and broad. Aculeus apically produced to a point, 1 pair of subapical setae, 2 short and 2 long pairs of preapical setae. Three rounded spermathecae.

Comments

This genus resembles *Hexacinia* Hendel in the presence of an extra anepisternal bristle near lower medial margin, but differs in wing shape, entirely brown wing colour, well-developed *ipa.* bristles, lack of a row of curved genal bristles, ventrally bare arista and apically pointed aculeus.

The genus is confined to Papua New Guinea and northern Queensland. The biology is unknown. Both described species occur in Australia.

Key to Species of *Paedohexacinia*

1. Male with fore femur moderately swollen and conspicuously bristled beneath and fore tibia apically produced, with a comb of black spinules; vein R_{2+3} curved sharply upwards to meet costa; *dc.* bristles placed midway between *sa.* and *ia.* bristles ..... *P. clusiosomopsis*
   Male with fore femur slightly swollen and weakly bristled beneath and fore tibia unmodified; vein R_{2+3} curved gently upwards to meet costa; *dc.* bristles placed closer to *ia.* than *sa.* bristles ..... *P. flavithorax*

Paedohexacinia clusiosomopsis Hardy

(Figs 153–156)

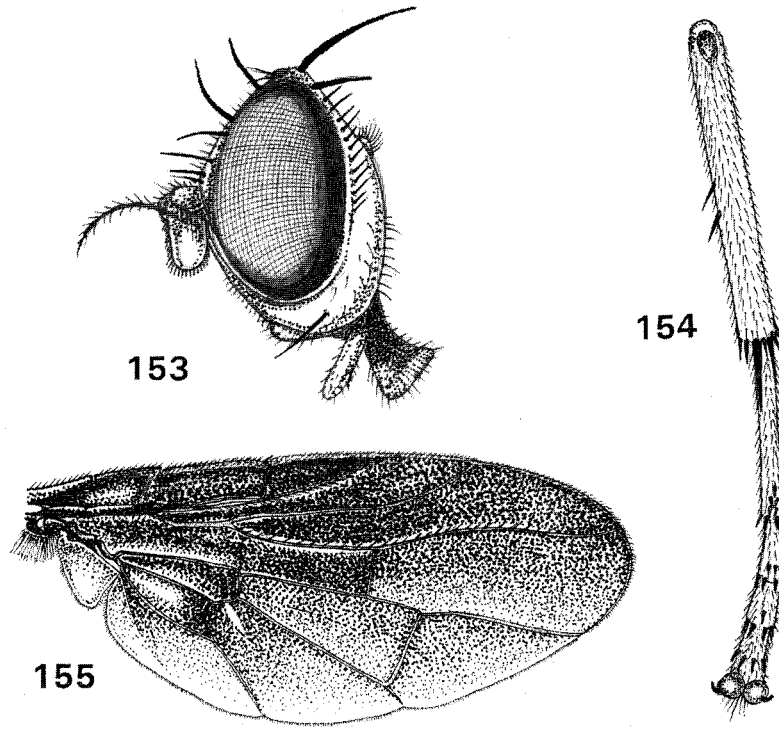
Paedohexacinia clusiosomopsis Hardy, 1986*b*: 92. Type locality Laloki, Papua New Guinea. Holotype ♂ in BPBM [not examined]. — Hardy and Foote, 1989: 513.

Material Examined

Queensland: 1 ♂, Cape York, Farm Ck, Aug. 1949 (UQIC).

Diagnosis

As for genus. Thorax with *dc.* bristles situated halfway between *sa.* and *ia.* bristles. Male fore femur moderately swollen, 2 rows of prominent black posteroventral bristles and dense spinules basoventrally; dorsally with 2 rows of fine black hair-like setae. Fore tibia apicoventrally slightly produced and densely covered with black spinules. Mid femur with 2



Figs 153–155. *Paedohexacinia clusiosomopsis*: *153*, head; *154*, mid tibia and tarsi; *155*, wing.

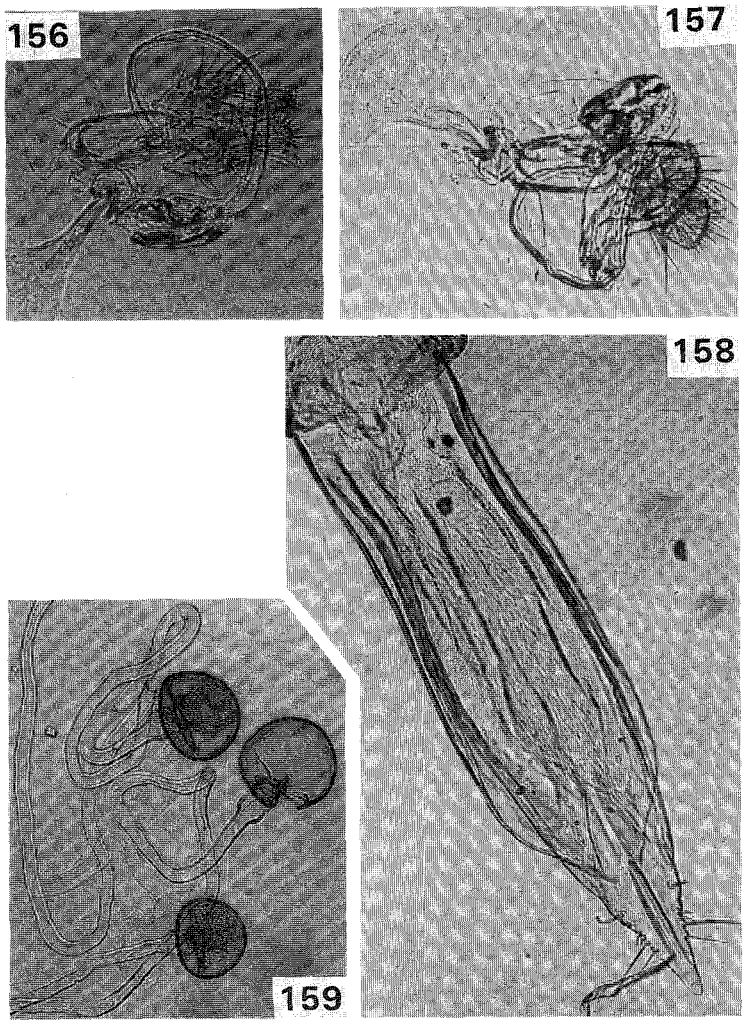


Fig. 156. *Paedohexacinia clusiosomopsis*, ♂ genitalia (40×). **Figs 157–159.** *P. flavithorax*: *157*, ♂ genitalia (40×); *158*, aculeus (100×); *159*, spermathecae (100×).

strong black posteroventral bristles. Mid tibia with a row of 2-3 brown posterodorsal bristles medially. Hind tibia with 2 rows of strong anterodorsal setae. Vein R_{2+3} curved sharply upwards to meet costa. Abdomen fulvous anteriorly, dark brown to black posteriorly. Male genitalia with surstylus long, bent posteriorly at apical half, rounded at apex; inner surstylus slightly shorter and with 2 black apical teeth. Length of body 4·8 mm, of wing 4·2 mm.

Distribution

Papua New Guinea and Cape York, north Queensland.

Comments

The shape of the male fore femur and tibia distinguishes this species from *P. flavithorax*; this was illustrated by Hardy (1986*b*). The female is unrecorded.

Paedohexacinia flavithorax Hardy

(Figs 157–161)

Paedohexacinia flavithorax Hardy, 1986*b*: 93. Type locality Kalumandau Hill, Woodlark I., Papua New Guinea. Holotype ♂ in BPBM [not examined]. — Hardy and Foote, 1989: 513.

Material Examined

Queensland: 1♀, Cairns, 18.xi.1934, F. A. Perkins (UQIC); 2♂, Mission Beach, 17°52′S, 146°06′E, 7.vii.1965, G. Monteith (UQIC); 1♀, CREB Track, 16·5 km N Daintree rainforest, 520 m, 16°15′S, 145°19′E, 20.xi.1985, D. K. Yeates (UQIC); 1 specimen, Kuranda, 23.xii.1959 (AM); 1 specimen, Lake Barrine, nr Yungaburra, 3.i.1967 (AM).

Diagnosis

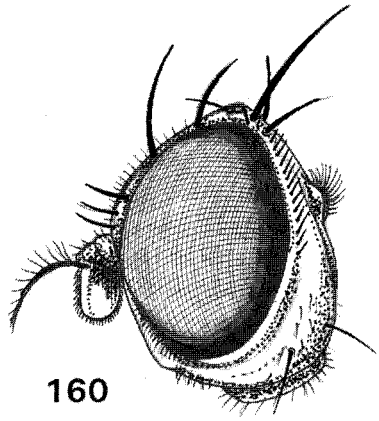
As for genus. Thorax with *dc.* bristles placed closer to line of *ia.* than *sa.* bristles. Male fore femur slightly swollen with a row of 6 posteroventral bristles, irregular rows of shorter ventral setae and basoventral clump of short black bristles; dorsally with 2 rows of fine black hair-like setae. Fore tibia without an apicoventral protuberance. Mid femur with a row of short anterolateral setae. Mid tibia with 1 strong and 1 shorter apical spine. Hind femur with 1 prominent ventral bristle at basal third. Hind tibia with rows of anteroventral and anterolateral hair-like setae. Vein R_{2+3} curved gently upwards to meet costa. Abdomen fulvous anteriorly, dark brown to black posteriorly. Male genitalia with surstylus short, apically rounded; inner surstylus thin and short. Female with abdominal tergite VI half length of tergite V; oviscape black, as long as terga IV-VI combined. Aculeus broad and long, narrowing sharply to a point, with 1 pair of subapical setae, 2 pairs of short and 2 pairs of long preapical setae. Length of body 4·0–4·6 mm (♂) or 5·0–6·0 (♀), of wing 4·4–5·0 (♂) or 5·4–6·0 mm (♀).

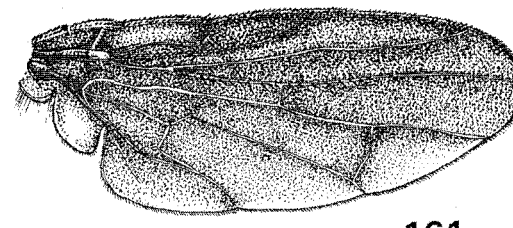
Distribution

Papua New Guinea and north-east Queensland.

Comments

This species differs from *P. clusiosomopsis* in details of the male fore legs, position of *dc.* bristles and curvature of vein R_{2+3}. Hardy (1986*b*) illustrated the tip of the female aculeus.





Figs 160–161. *Paedohexacinia flavithorax*: *160*, head; *161*, wing.

Genus *Pseudacanthoneura* Malloch

Pseudacanthoneura Malloch, 1939*d*: 434. Type species: *P. septemnotata* Malloch (= *Acanthoneura sexguttata* de Meijere), by original designation.

Diagnosis

Head higher than long. Face vertical, receding on oral margin. Antenna extending $\frac{2}{5}$ length of face, third segment apically rounded; arista long-plumose. Frons with 2 pairs *fr.* and 2 pairs *or.* bristles, the lower pair *or.* placed at middle of frons; *oc.* well developed; *pocl.* thin and dark; 1 *gn.* bristle. Thorax mostly fulvous, with 7 small brown spots visible in lateral view; with the following bristles; 4 *scp., pprn.; prst.*, 2 *npl., sa., ia., p.sa., ipa.* well developed, *acr., dc.* placed close to line of *ia., anepst., anepm., kepst.*, 6 strong *sc.* Scutellum flat, bare except a few lateral setae. Mid tibia with 1 long and 1 shorter apical spine. Wing predominantly yellow-brown in male, brown in female, with numerous hyaline spots and indentations, including 3–4 in cell r_1 and 3 in cell m, generally better developed in female. Wing elongate; veins R_1 and R_{4+5} setose; base of vein CuA_1 (above cell cup) setose in Australian species; cell cup with apical lobe broad and relatively long; a distinct costal bristle at apex of cell c; vein R_{2+3} undulate; r-m crossvein placed beyond middle of cell dm. Aculeus broad, apically blunt, wih 1 pair of subapical setae, 2 short and 2 long pairs of preapical setae. Three rounded spermathecae.

Comments

This genus appears to belong in a group with *Neothemara*, as discussed under that genus. It differs in having 3–4 hyaline indentations in cell r_1. It occurs in Irian Jaya, Papua New Guinea and northern Queensland. Two species are known, one occurring in Australia. The biology is unknown.

Pseudacanthoneura sexguttata (de Meijere)

(Figs 162–167)

Acanthoneura sexguttata de Meijere, 1913: 364. Type locality Lorenze R., Irian Jaya. Holotype ♂ in ZMUA [not examined].

Pseudacanthoneura septemnotata Malloch, 1939*d*: 434, pl. 11, fig. 11. Type locality Vanimo, Papua New Guinea. Holotype ♂ in AM [not examined]. — Hardy, 1986*b* (as syn.); Hardy and Foote, 1989: 514 (as syn.).

Pseudacanthoneura sexguttata. — Hardy, 1986*b*: 110; Hardy and Foote, 1989: 514.

Material Examined

Paratype. ♂ (of *P. septemnotata*), Gordonvale, Qld, 1919, E. Jarvis (QDPI).

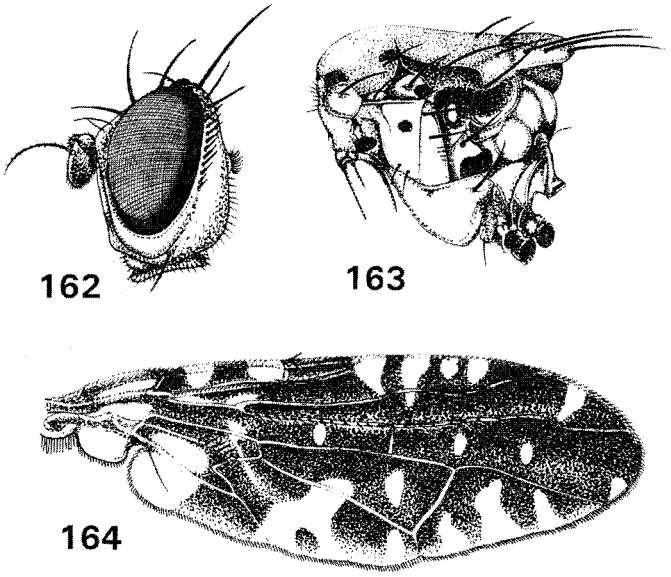
Other material examined. 30♂, 24♀, from the following localities. **Queensland**: Bamaga; Heathlands; Dividing Ra. nr Captain Billy Ck, Cape York Pen.; Iron Ra.; '11-mile scrub' nr Moreton; Stewart R., Silver Plains; Blue Mtns, Cape York Pen.; Endeavour R., Cooktown; Kuranda; Cairns; Meringa; Gordonvale; Barron R.; Bramston Beach nr Innisfail; Tully. (In QDPI, UQIC, AM, ANIC, NMV.)

Diagnosis

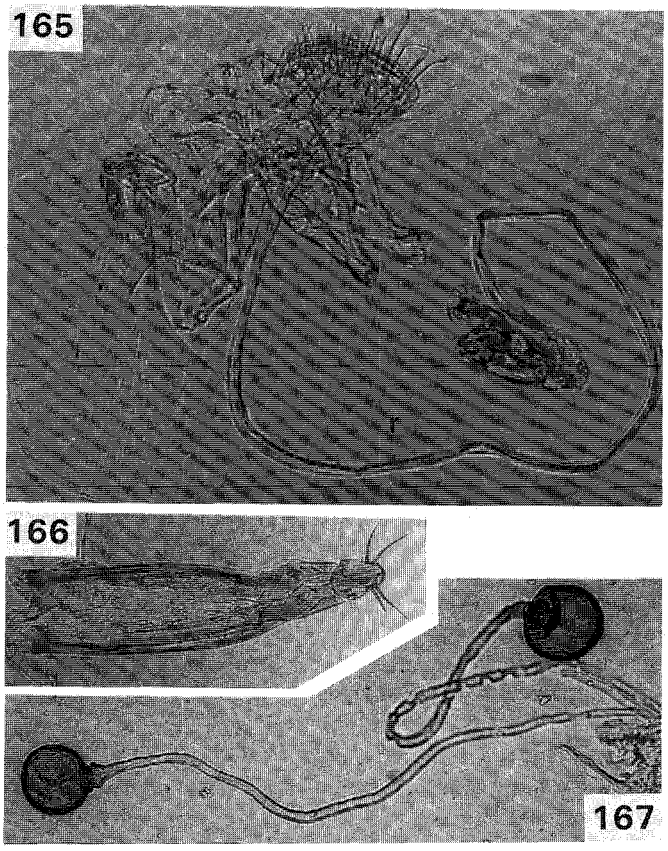
As for genus. Vein CuA_1 setose at base, above cell cup. Wing pattern yellow-brown and partly diffuse in male, brown and distinct in female; cell r_1 with 3–4 hyaline indentations, cell r_{2+3} with an apical spot, cell br with 2 spots, cell r_{4+5} with 2 medial and 1 apical spot, cell m with 3 indentations, cell cua_1 with 2-3 indentations and cell dm with 1–2 spots. Abdomen with terga III and IV fulvous to red-brown in male, black in female; tergite V mostly brown to black in both sexes; female with tergite VI yellow, oviscape black. Male genitalia with surstylus and inner surstylus short and thick. Length of body 7·4–7·6 mm (♂) or 9·0–9·3 mm (♀), of wing 8·8–9·0 mm (♂), 7·8–8·0 mm (♀).

Distribution

Irian Jaya, Papua New Guinea and north-east Queensland from Cape York to Tully.



Figs 162–164. *Pseudacanthoneura sexguttata*: *162*, head; *163*, lateral view of thorax; *164*, wing.



Figs 165–167. *Pseudacanthoneura sexguttata*: *165*, ♂ genitalia (100×); *166*, aculeus (40×); *167*, 2 of 3 spermathecae (100×).

Comments

This species differs from the very similar *P. aberrans* Hardy in having setae on vein CuA_1, lacking a dark brown to black band across the hind margin of the scutum and having an apical spot in cell r_{4+5} in males.

Genus ***Rabaulia*** Malloch

Rabaulia Malloch, 1939*a*: 257. Type species: *R. fascifacies* Malloch, by original designation.

Diagnosis

Head higher than long. Face gently convex, with a prominent black band across middle of face in Australian species. Antenna extending $\frac{1}{2}$ length of face, third segment apically rounded; arista long-plumose. Frons with 2 pairs each of *fr.* and *or.* bristles; *oc.* minute; *pocl.* thin and dark; 1 strong *gn.* bristle. Thorax predominantly brown with yellow markings on scutum and a yellow band along upper anepisternal margin. Scutellum flat, bare. Thorax with the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa., acr., dc.* closer to line of *ia.* than *sa.*; 2 *anepst., kepst.; anepm.* absent; 6 *sc.*, the middle pair shortest. Mid tibia with 1 long and 1 shorter apical spine. Wing brown; veins R_1, R_{4+5} and CuA_1 setose; cell cup with apical lobe short and broad; r-m crossvein placed at middle of cell dm. Abdomen brown. Aculeus broad, apically blunt, with 3 pairs of short and 2 pairs of long preapical setae. Three mushroom-shaped spermathecae.

Comments

This genus belongs in a group with *Clusiosoma, Clusiosomina* and *Trypanocentra*, as discussed under *Clusiosoma*. *Rabaulia* differs in the convex face, usually with a black transverse medial band.

The genus occurs in Irian Jaya, Papua New Guinea, the Solomon Islands and northern Queensland. At least one species (*R. fascifacies*) breeds in fruit of *Ficus* spp. (QDPI: label data). Three species are known, two occurring in Australia.

Key to Australian Species of *Rabaulia*

1. Mid and hind tibiae mostly black; scutum with a diffuse, anteromedial yellow area ..... *R. nigrotibia*
   All tibiae yellow; scutum with 3 longitudinal yellow vittae ..... *R. fascifacies*

Rabaulia fascifacies Malloch

(Figs 168–172)

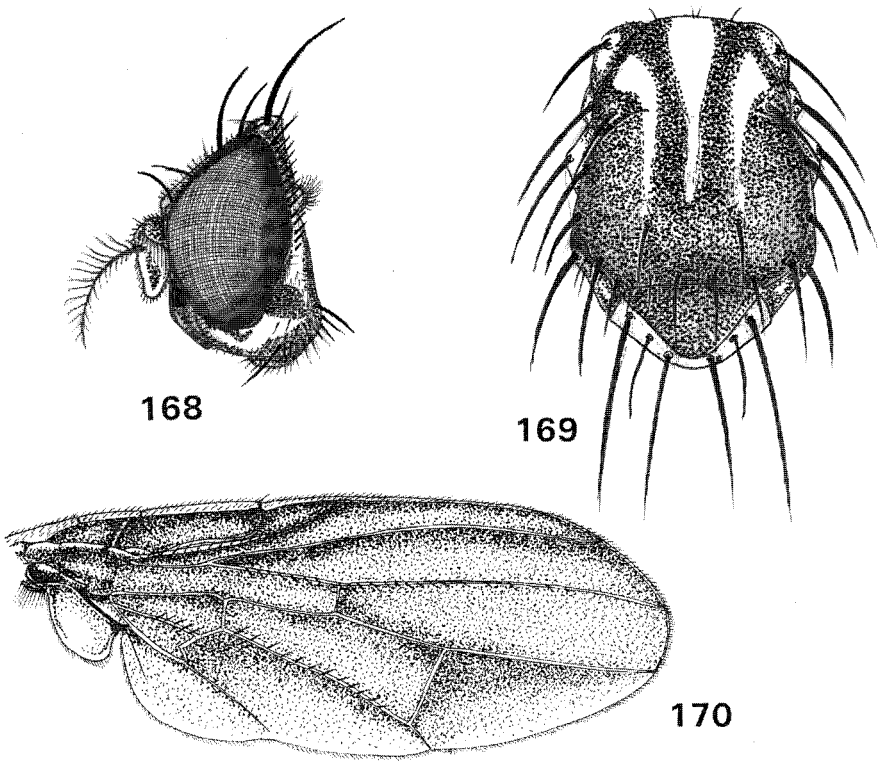
Rabaulia fascifacies Malloch, 1939*a*: 257. Type locality Lunga, Guadalcanal. Holotype ♂ in BMNH [not examined]. — Malloch, 1939*d*: 422; Hardy, 1986*b*: 116; Hardy and Foote, 1989: 514.

Material Examined

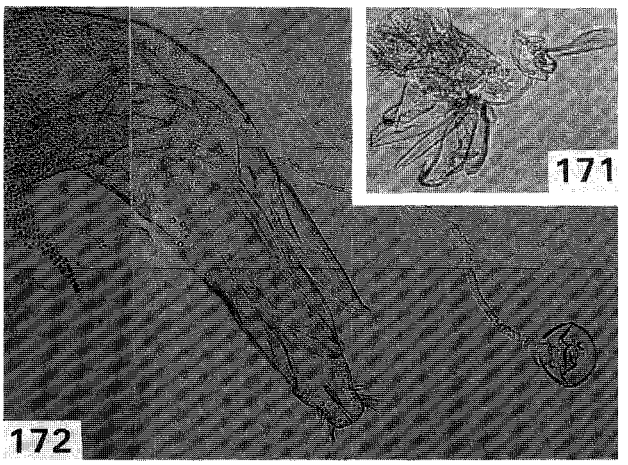
Queensland: 1♂, 2♀, no locality data except 127, 16.vii.1926 (QDPI); 1 specimen, Mulgrave R., 4 mi W of Gordonvale, 4.i.1959 (AM); 1 specimen, 2 mi E of Gordonvale, 5.i.1967 (AM), 1 specimen, 3 km ENE of Mt Tozer, 12°44′S, 143°14′E, 28.vi.–4.vii.1986, D. H. Colless (ANIC).

Diagnosis

As for genus. Scutum with 3 yellow vittae, narrowing posteriorly, the medial vitta ending level with *dc.* bristles. Postpronotal lobe yellow and a yellow band extending along upper margin of anepisternum to wing base. Tibiae and tarsi fulvous. Fore femur with scattered black dorsolateral setae and a row of 4–5 posteroventral bristles. Hind femur with 2–4 moderately strong preapical bristles, a row of 5–6 hair-like setae and a row of 4–5 black anterodorsal setae.



Figs 168–170. *Rabaulia fascifacies*: *168*, head; *169*, scutum; *170*, wing.



Figs 171–172. *Rabaulia fascifacies*: *171*, ♂ genitalia (40×); *172*, aculeus and 1 of 3 spermathecae (100×).

Male genitalia with surstylus short, $\frac{1}{2}$ width of epandrium; inner surstylus short, $\frac{3}{4}$ length of surstylus, with 2 prominent black apical teeth. Oviscape as long as terga IV–V combined. Aculeus as for genus. Length of body 4·1–4·3 mm (♂) or 4·0–4·3 mm (♀), of wing 4·0–4·3 mm (♂) or 3·8–4·0 mm (♀).

Distribution

Solomon Islands, New Britain and north-east Queensland, south to the Cairns district.

Comments

This species differs from *R. nigrotibia* in the scutal markings and fulvous tibiae. The tip of the female aculeus was figured by Hardy (1986*b*).

Rabaulia nigrotibia Hering

(Figs 173–174)

Rabaulia nigrotibia Hering, 1941*b*: 61. Type locality Aitape, Papua New Guinea. Holotype ♂ in TMB [not examined]. — Hardy, 1986*b*: 117; Hardy and Foote, 1989: 514.

Material Examined

Queensland: 1♂, 1♀, Cairns, 16.vii. and 23.vii.1937, F. A. Perkins, bred host 45 (UQIC).

Diagnosis

As for genus. Scutum with a diffuse yellow anteromedial patch. Postpronotal lobe yellow and a yellow band extending along upper margin of anepisternum to wing base. Fore tibia fulvous; mid and hind tibiae brown on basal $\frac{3}{4}$, fulvous apically. All tarsi fulvous. Hind femur with a row of 6 strong anteroventral bristles. Hind tibia with 1 prominent black bristle anterodorsally. Male genitalia with surstylus broad, rounded apically; inner surstylus short and thick. Oviscape as long as terga IV-V combined. Aculeus as for genus. Length of body 4·1–4·3 mm (♂) or 4·0–4·3 mm (♀), of wing 4·0–4·3 mm (♂) or 3·8–4·0 mm (♀).

Distribution

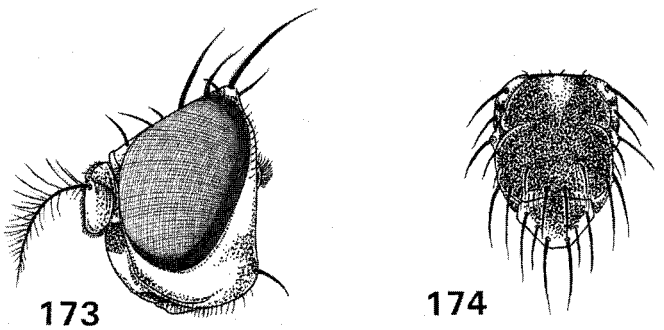
Papua New Guinea and north Queensland.

Biology

The above specimens were reared from 'host 45'; this is unidentified but presumably is a fruit.

Comments

This species differs from *R. fascifacies* in scutal markings and the brown mid and hind tibiae. Hardy (1986*b*) illustrated the male genitalia.



Figs 173–174. *Rabaulia nigrotibia*: *173*, head; *174*, scutum.

Genus *Taeniorioxa*, gen. nov.

Type species: *Taeniorioxa quinaria*, sp. nov.

Diagnosis

Head rufous, higher than long. Face vertical. Antenna extending $\frac{2}{3}$ length of face, the bases narrowly separated, third segment apically rounded; arista moderately long-plumose. Frons with 1 pair *fr.* and 2 pairs *or.* bristles; *oc.* moderately developed; *pocl.* thin and dark. Gena with 1 strong *gn.* bristle. Thorax red-brown with the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa.* weak, *dc.* placed close to line of *ia.*, 2 *anepst., anepm., kepst.*; 6 *sc.*, all well developed. Scutellum yellow, moderately swollen and densely covered with short, black setae. Mid tibia with 2 long apical spines. Wing largely reddish brown with 5 longitudinal and oblique hyaline bands, none reaching costa in cell r_1. Veins R_1 and R_{4+5} setose; r-m and dm-cu crossveins oblique, the latter lobate posteriorly. Cell cup with apical lobe elongate, slender. Costal spine strong. Abdomen red-brown with transverse yellow and black bands. Aculeus broad, apically blunt, with 2 short and 2 long pairs of preapical setae. Three rounded spermathecae with oval bulbous necks.

Comments

This genus belongs in a group with *Acanthonevroides, Aridonevra* and *Termitorioxa*, characterised by the presence of two long mid-tibial spurs and a setose scutellum. *Taeniorioxa* most resembles *Acanthonevroides* and *Aridonevra*, differing in wing pattern type and in the yellow, rather than black or black and yellow, scutellum. From *Termitorioxa* it differs in wing pattern type and the swollen scutellum.

Only one species is known. The generic name is derived from the Latin, *taenia*, ribbon, referring to the banded wings. Nothing is known of its biology.

Taeniorioxa quinaria, sp. nov.

(Figs 175–179)

Material Examined

Holotype. ♀, Gatton, Qld, 20.ii.1953, A. W. S. May (QM - T12214).

Paratypes. **Queensland:** 1♂, Toowoomba, 16.xi.1953, A. W. S. May (UQIC); 1♀, Gatton, 10.1.1951, A. W. S. May (UQIC).

Description

Female

Length of body 9·2–9·5 mm, of wing 7·4–7·6 mm.

Head (Fig. 175). As for genus.

Thorax. Scutum red-brown, covered with scattered black setae. With a full complement of thoracic bristles, including *ipa.* Scutellum yellow-brown, moderately inflated and covered with black setae, a few on disc, more numerous on sides; 6 strong *sc.* bristles. Pleura red-brown. Postnotum red-brown to brown with 2 large black lateral spots. Legs red-brown. Fore femur with 2 rows of black dorsal setae and 3–4 black apicoventral bristles. Mid tibia with 4 posteroventral spines medially and 2 black subequal apical spines. Hind tibia with a row of 10–12 anterodorsal setae. Wing (Fig. 176) hyaline basally except reddish brown costal band in cell c and at base of cell br; remainder reddish brown with 5 hyaline streaks, 2 longitudinally in cells r_1-r_{2+3} and cell r_{4+5}, 3 obliquely in cell m, cell cua_1 and from cell bm, across cell dm, to apex of cell cua_1. Cell sc shorter than cell c; veins R_1 and R_{4+5} setose; r-m and dm-cu crossveins oblique, the latter broadly lobate at apex. Cell cup with apical lobe long and narrow.

Abdomen. Predominantly red-brown with transverse yellow bands at apices of terga II–V and transverse medial black bands on terga III–V. Tergite VI poorly developed, almost concealed by tergite V. Oviscape blackish, tapering posteriorly, twice as long as tergite V. Aculeus (Fig. 177) as for genus. Three round, well sclerotised spermathecae (Fig. 178) with prominent apical nipples and oval, bulbous necks.

Male

Length of body 6·7 mm, of wing 7·2 mm. As for female except abdomen. Male genitalia (Fig. 179) with anal lobe short, sharply pointed posteroapically, covered with scattered bristles. Epandrium as long as anal lobe, with a few strong dorsal bristles. Surstylus long, slender, broadly rounded distally; inner surstylus long and slender, with a prominent black apical tooth.

Distribution

Known only from south-east Queensland.

Comments

This species is readily identified by the wing and other characters noted above.

Etymology

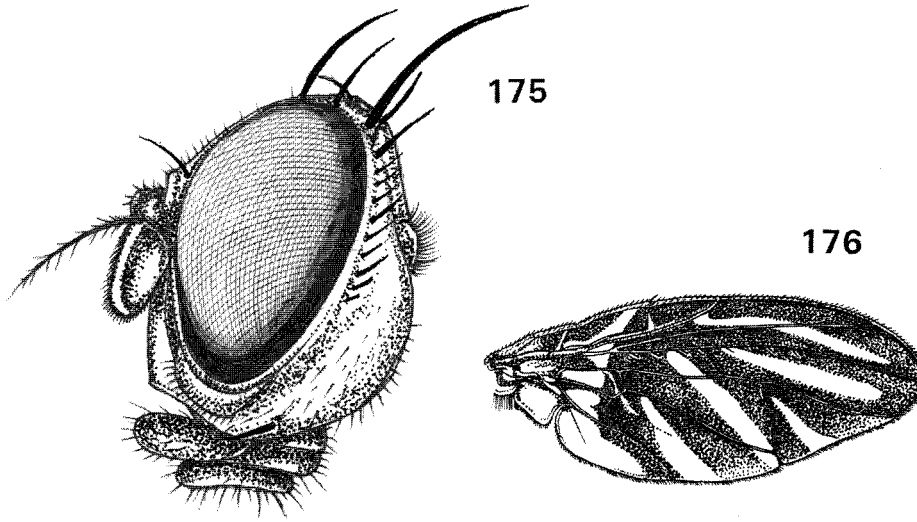
The specific name is derived from the Latin *quinarius*, five, referring to the five hyaline bands over the wing.

Genus ***Termitorioxa*** Hendel

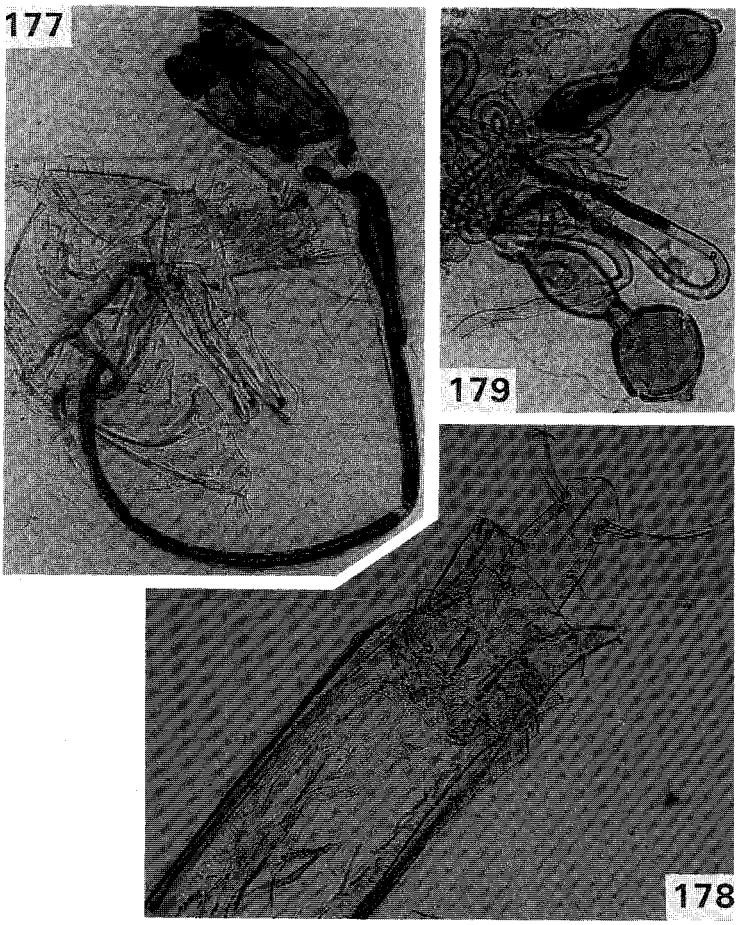
Termitorioxa Hendel, 1928: 351 (as subgenus of *Rioxa*). Type species: *Rioxa termitoxena* Bezzi, by monotypy.

Termitorioxa. — Malloch, 1939*d*: 436 (as genus).

Kertesziola Hering, 1941*b*: 50. Type species: *Ptilona lateralis* Kertesz (= *Helomyza meritoria* Walker), by original designation; *syn. nov.*



Figs 175–176. *Taeniorioxa quinaria*: *175*, head; *176*, wing.



Figs 177–179. *Taeniorioxa quinaria*: *177*, ♂ genitalia; *178*, aculeus; *179*, 2 of 3 spermathecae. All 100×.

Diagnosis

Head fulvous, slightly higher than long. Face vertical or slightly concave; antenna extending $\frac{2}{3}$ length of face, third segment apically rounded; arista plumose. Frons with 1 or 2 pairs of *fr.* and 1 or 2 pairs of *or.* bristles; upper *or.* often weak; a few additional weak *fr.* setae often present; *oc.* moderately to well developed; *pocl.* thin and dark. Gena with 1 strong *gn.* bristle. Thorax fulvous to red-brown; scutum sometimes with a pair of brown posterior spots; with the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa., acr., dc.* placed between *sa.* and *ia.*; 6 *sc.*, the middle pair often shorter; usually one or more additional small black bristle-like setae before or behind *sa.*; 3–4 *anepst.*, the upper strongest, *anepm., kepst.* Scutellum flat, yellow or with a pair of brown basal patches; with black setae on sides. Mid tibia with 2 long apical spines. Wing with brown to yellow-brown markings and hyaline spots and indentations, including 1 each in cells r_1 and m. Veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; cell cup with apical lobe elongate. Abdomen fulvous with pale and dark transverse bands. Aculeus broad, blunt apically, with 2 short and 2 long pairs of preapical setae. Three oval spermathecae with bulbous necks.

Comments

This genus belongs in a group with *Acanthonevroides, Aridonevra* and *Taeniorioxa*, differing in the non-swollen, less densely setose scutellum and brown to yellow-brown wing markings.

Termitorioxa previously has been considered to include only those species with one *or.* bristle, species with two *or.* bristles being referred to *Kertesziola*. We consider this not to be a generic character. Many of the included species have the upper *or.* weak or vestigial. The wing pattern and colour, presence of extra, small scutal bristles near the *sa.* and general appearance suggest that the two genera should be combined.

The genus occurs from Timor and the Moluccas to Papua New Guinea and northern Australia, where six species occur. Only the biology of *T. termitoxena* (Bezzi) is known; it has been collected in termite galleries beneath the bark of trees.

Key to Australian Species of *Termitorioxa*

1. Scutum with a pair of brown posterior dorsolateral markings before scutellum 2
   Scutum entirely red-brown or yellowish, without brown posterior markings 3
2. 1 *or.* bristle; scutellum with a pair of dark basal markings; wing without a longitudinal hyaline streak at apex of cell r_{4+5} ..... *T. termitoxena*
   2 *or.* bristles; scutellum entirely yellow; wing with a curved longitudinal hyaline streak from spot above dm-cu crossvein to apex in cell r_{4+5} ..... *T. bicalcarata*
3. Cell dm with an elongate hyaline band posteromedially, along vein CuA_1; hyaline spot in cell r_{4+5} connected to indentation in cell m ..... *T. testacea*
   Cell dm dark except for a transverse hyaline subapical band or spot; hyaline spot in cell r_{4+5} not connected to indentation in cell m 4
4. Cell c with a yellow costal band over basal $\frac{2}{3}$ ..... *T. laurae*
   Cell c without a costal band 5
5. Hyaline indentation in cell r_1 extends across vein R_{2+3} into cell r_{2+3}; cell cua_1 with a hyaline indentation at apex, below dm-cu crossvein ..... *T. exleyae*
   Hyaline indentation in cell r_1 small, not crossing vein R_{2+3}; apex of cell cua_1 without a hyaline indentation ..... *T. inconnexa*

Termitorioxa bicalcarata (Hering), comb. nov.

(Figs 180–184)

Diarrhegmoides bicalcaratus Hering, 1944: 4, fig. 6. Type locality Cape York, Qld. Holotype ♀ in NHMV [not examined]. — Hardy and Foote, 1989: 511.

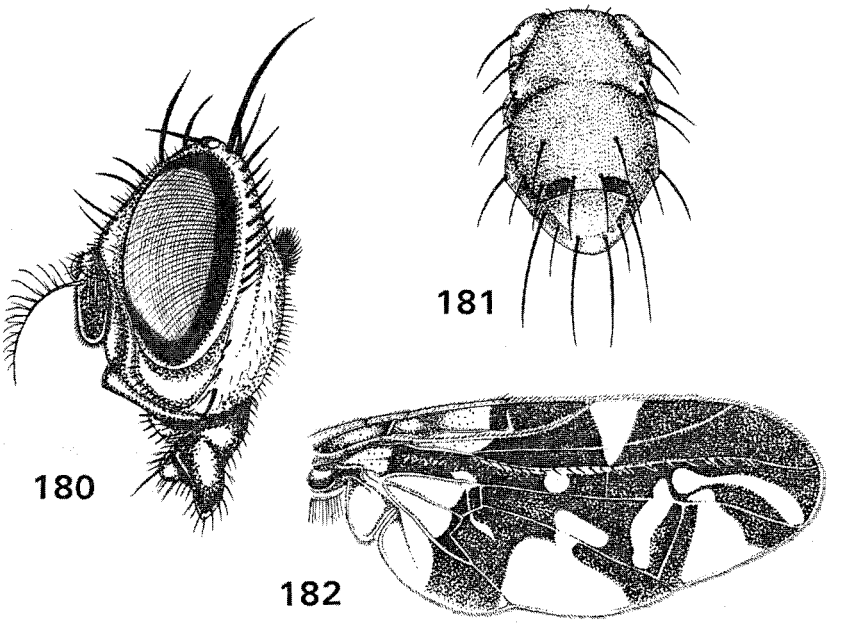
Material Examined

Queensland: 1♀, Burnett R., 1915, T. L. Bancroft (UQIC); 2♂, Eidsvold, Jan. 1923 (UQIC); 4♀, Eidsvold, T. L. Bancroft (UQIC); 1♀, Mt Moffatt Natl Pk, Top Moffatt Camp, 25°03′S, 148°03′E, 13.xii.1987, D. K. Yeates, mv light (UQIC); 1♀, Toowoomba, 2.xi.1953 (UQIC); 1♂, 1♀, Toowoomba, 30.x. and 13.xi.1961, A. W. S. May (QDPI).

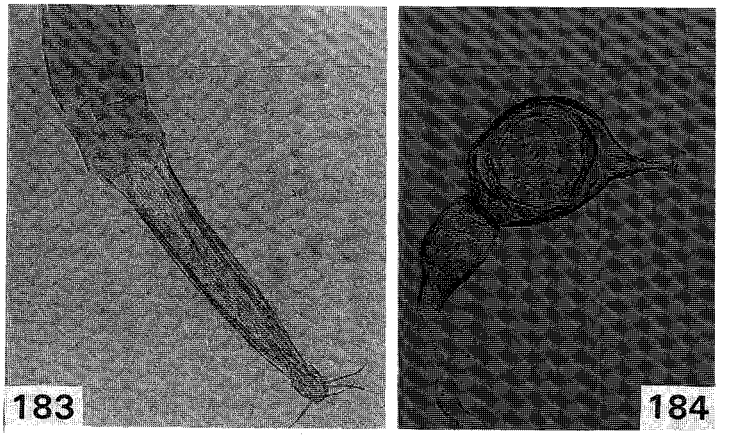
Diagnosis

Head fulvous. Frons with 2 pairs each of *fr.* and *or.* bristles, sometimes 2-3 pairs of fine, hair-like *fr.* additionally present; *oc.* well developed. Scutum fulvous to red-brown with a brown marginal band from behind each postpronotal lobe to wing base and a pair of dark brown posterior spots before scutellum. With a full complement of thoracic bristles including well-developed *ipa.*, a small additional bristle before *sa.*, and 3–4 *anepst.* Scutellum yellow, with 6 *sc.* and a few brown lateral setae. Postnotum blackish brown. Postpronotal lobe with long, pale setae anteriorly. Legs fulvous. Mid tibia with 2 apical spines, the second a little shorter. Wing pattern brown to yellow-brown, with base and cells bc and c largely pale yellow-brown and with hyaline indentations and spots as follows: 1 triangular indentation in cell r_1, beyond cell sc,

extending to vein R_{4+5}; 1 round spot in cell br; 1 round spot in cell r_{4+5} above dm-cu crossvein, extending as a curved streak to apex at end of vein M; 1 broad indentation in cell m, crossing into cell r_{4+5}; 1 longitudinal posteromedial band and 1 transverse subapical band in cell dm, the latter extending into cell r_{4+5}, the former united with a broad indentation in cell cua_1. Cell cup with apical lobe long and narrow. Abdomen fulvous, with black transverse basal bands on terga III–V; tergite VI in female short, fulvous. Male genitalia with surstyli long and slender. Oviscape black, as long as terga IV–VI combined. Length of body 5·5 mm (♂) or 5·9–6·1 mm (♀), of wing 5·6 mm (♂) or 5·8–6·0 mm (♀).



Figs 180–182. *Termitorioxa bicalcarata*: *180*, head; *181*, scutum; *182*, wing.



Figs 183–184. *Termitorioxa bicalcarata*: *183*, aculeus (40×); *184*, 1 of 3 spermathecae (400×).

Distribution

Queensland; known from Cape York and from central and south-east localities.

Comments

Hering (1944) placed this species in *Diarrhegmoides* Malloch, but it differs from that genus in having a small costal spine, two mid-tibial apical spines and well-developed *ipa.* bristles. In these and other characters, particularly the presence of additional small bristles near the *sa.* bristles and wing markings, it appears to belong in *Termitorioxa*. It is readily distinguished from other species in the genus by the two posterior dark spots on the scutum and the longitudinal subapical hyaline band in cell r_{4+5} on the wing.

Termitorioxa exleyae, sp. nov.

(Figs 185–192)

Material Examined

Holotype. ♂, 7 mi E Kununurra, N Western Australia, 12–13.vii.1975, E. M. Exley and R. Storey, on *Eucalyptus* sp. (QM - T12210).

Paratypes. **Western Australia**: 1♂, same data as holotype (QM); 1♀, 1-, 6 km S Broome, 15.xii.1975, E. M. Exley and R. Storey, on *Eucalyptus* sp. (UQIC); 1-, 14 mi S Kununurra, 5.iii.1973, E. M. Exley, on *Eucalyptus pruinosa* (UQIC); 1♂, Wyndham, 17.i.1930, T. G. Campbell (UQIC). **Northern Territory**: 1♂, 15 mi E Katherine, 15.iii.1973, E. M. Exley, on *Eucalyptus dichromophloia* (UQIC); 1♂, 1-, Coomalie Ck, 57 mi S Darwin, 13.iii.1973, E. M. Exley, on *Eucalyptus porrecta* (UQIC); 2♂, Roper R., N. B. Tindale (UQIC).

Other material examined. 1♂, Rockhampton, Qld (UQIC), is possibly mislabelled and excluded from the type series.

Description

Male

Length of body 6·8–7·2 mm, of wing 6·8–7·2 mm.

Head (Fig. 185). Slightly higher than long. Face vertical. Frons with 1 pair *fr.* and 2 pairs *or.* bristles, the upper *or.* weak; *oc.* weak; *pocl.* poorly developed; *oc.* and *gn.* pale brown.

Thorax (Figs 186, 187). Fulvous, with a full complement of bristles, including *ipa.* and usually one or more small additional bristles before or behind *sa.*; *dc.* placed close to line of *ia.*; 5 *anepst.* Scutum fulvous, unmarked. Scutellum yellow, covered with pale brown setae. Postnotum fulvous. Postpronotal lobe with long, pale hairs anteriorly. Legs fulvous. Fore femur with 2 rows of posterodorsal bristles and 5–6 posteroventral bristles. Mid tibia (Fig. 188) with 3-4 prominent black posterodorsal setae and 2 long apical spines. Hind tibia with a row of anterodorsal setae. Wing (Fig. 189) with pattern brown to yellow brown, with hyaline base and spots and indentations as follows: 1 triangular indentation in cell r_1 beyond cell sc, extending into cell r_{2+3}; 2 round spots in cell br and 1 in cell r_{2+3}; a broad indentation in cell m; a subapical transverse band in cell dm; a broad indentation in cell cua_1 plus a small apical spot below band in cell dm. Veins R_1 and R_{4+5} setose; r-m crossvein behind middle of cell dm; cell cup with apical lobe long and narrow.

Abdomen. Terga I+II fulvous; terga III–V red-brown, with apical yellow bands on terga III and IV. Male genitalia (Fig. 190) with surstyli moderately long, the inner surstylus with 1 prominent apical tooth. Epandrium short, densely setose.

Female

Length of body 6·8–7·5 mm, of wing 6·5–7·0 mm. Similar to male except abdomen paler; tergite VI poorly developed. Oviscape brown. Aculeus (Figs 191, 192) broad, narrowing slightly posteriorly, blunt apically with 2 short and 2 long pairs of preapical setae. Three oval spermathecae with long, bulbous necks.

Distribution

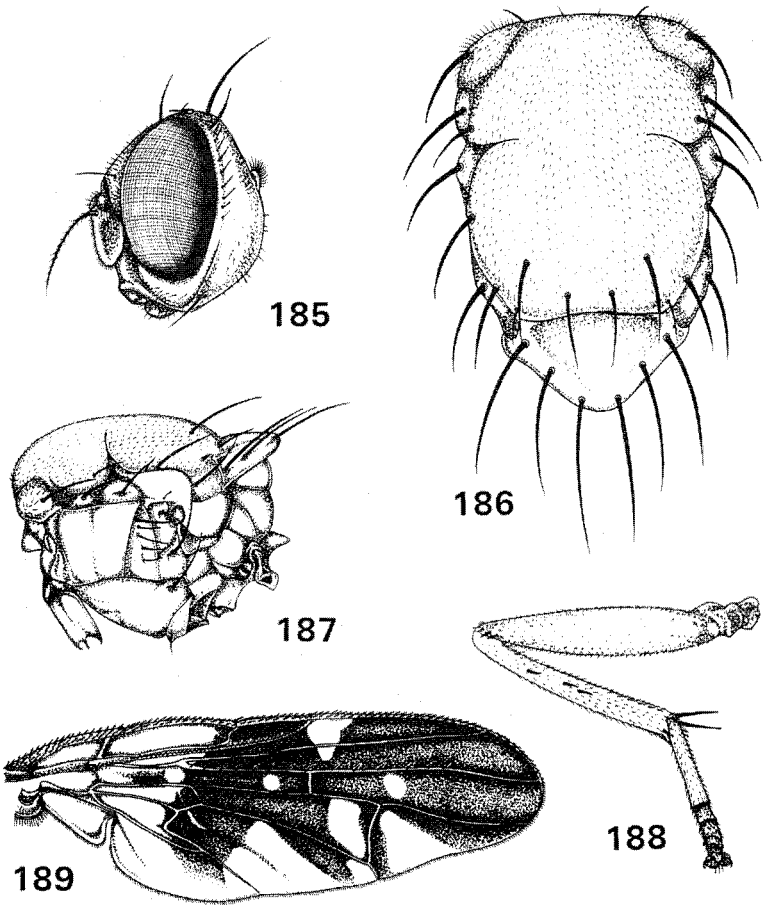
Northern Western Australia and the Northern Territory.

Comments

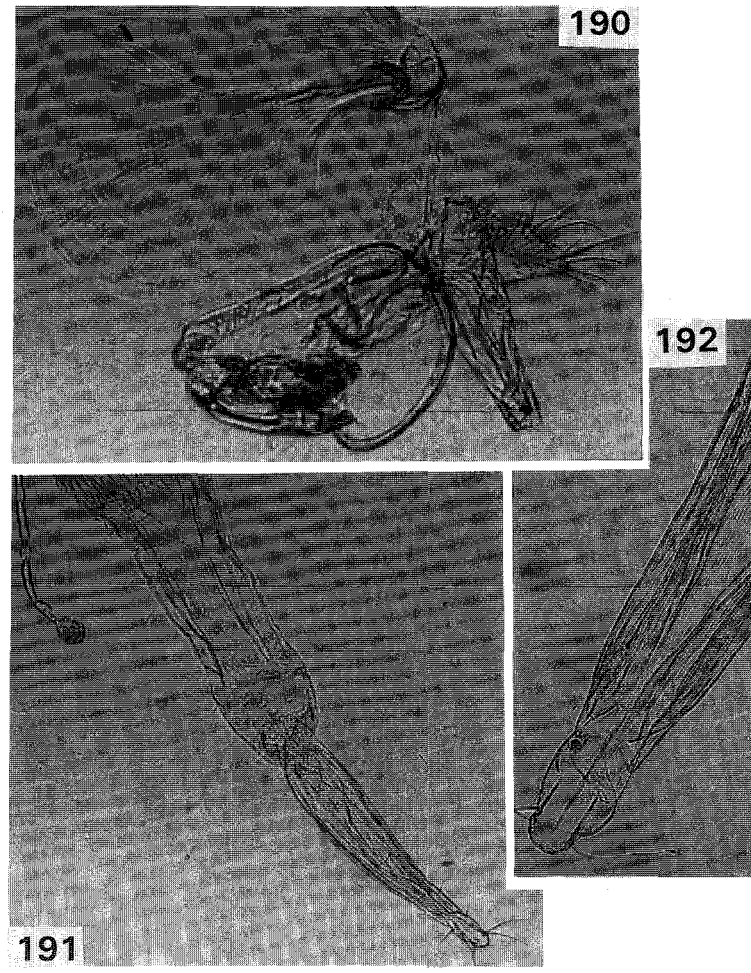
This species may be recognised by the pale, unmarked scutum and wing pattern, cell cua_1 having an additional hyaline spot at the apex. It most resembles *T. laurae*, sp. nov., but that species has a distinct yellow band along the costal margin of cell c.

Etymology

This species is named after Dr E. M. Exley, University of Queensland.



Figs 185–189. *Termitorioxa exleyae*: *185*, head; *186*, scutum; *187*, lateral view of thorax; *188*, mid leg; *189*, wing.



Figs 190–192. *Termitorioxa exleyae*: *190*, ♂ genitalia (100×); *191*, ovipositor and 1 of 3 spermathecae (40×); *192*, tip of aculeus (100×).

Termitorioxa inconnexa, sp. nov.

(Figs 193–195)

Material Examined

Holotype. ♂, 15 km S Barrow Ck, Northern Territory [*c.* 21°30′S, 134°00′E], 7.xi.1974, E. M. Exley and R. Storey, on *Eucalyptus camadulensis* (QM - T12209).

Description

Male

Length of body 5·0 mm, of wing 4·5 mm.

Head (Fig. 193). Slightly higher than long. Face vertical. Frons with 1 pair *fr.* and 2 pairs *or.* bristles, the upper *or.* weak; slightly humped and covered with dense short black setae. *Oc.* weak; *pocl.* poorly developed; *oc.* and *gn.* pale brown.

Thorax. Fulvous, with a full complement of bristles; *dc.* placed close to line of *sa.*; 5 *anepst.* Scutum (Fig. 194) fulvous, unmarked. Scutellum yellow, covered with scattered black setae. Postnotum fulvous. Postpronotal lobe with long, pale hairs anteriorly. Legs fulvous. Fore femur with 2 rows of posterodorsal bristles and 5–6 posteroventral bristles. Mid tibia with 2 long apical spines. Hind tibia with a row of anterodorsal setae. Wing (Fig. 195) with pattern brown to yellow-brown, with hyaline base and spots and indentations as follows: most of cell c, the base and apex yellow-brown; a spot in cell r_1 beyond cell sc, not extending below vein R_{2+3}; an oval spot in each of cells br and r_{4+5}; an oval spot near apex of cell dm; a broad indentation in cell m; a broad indentation in cell cua_1, the apex brown. Veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; cell cup with apical lobe long and narrow.

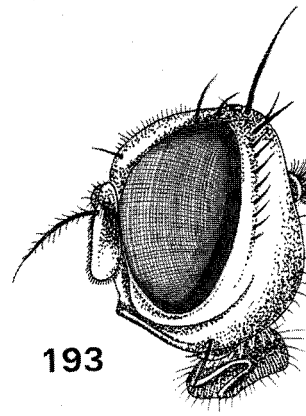
Abdomen. Fulvous, darker on basal half of tergites III and IV. Male genitalia with surstyli long and slender, tapering apically.

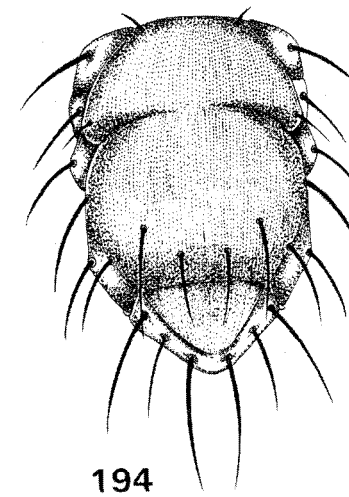
Female

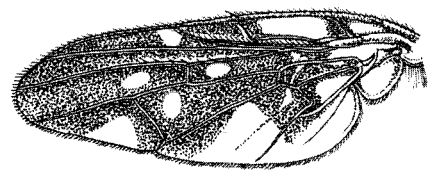
Unknown.

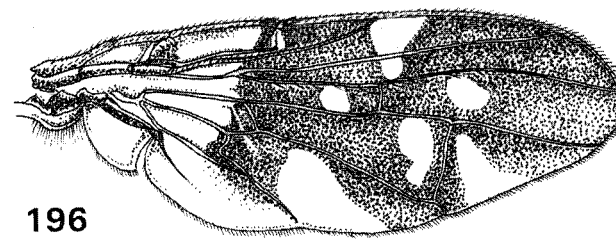
Distribution

Known only from southern Northern Territory.









Figs 193–195. *Termitorioxa inconnexa*: *193*, head; *194*, scutum; *195*, wing.
Fig. 196. *T. laurae*, wing.

Comments

This species differs from all others in the genus in the reduced wing spots, particularly those in cells r_1 and dm. In the pale scutum and abdomen it most resembles *T. exleyae*, differing in wing pattern.

Etymology

The specific name is derived from the Latin *inconnexus*, separate, referring to the species' geographical isolation and its distinctiveness from related species.

Termitorioxa laurae, sp. nov.

(Fig. 196)

Material Examined

Holotype. ♂, Hann R., N Laura, Qld, 24.vi.1976, J. Donaldson (QM - T12204).

Paratypes. **Queensland:** 1♂, 40 km N Coen, Peaches Crossing, 5.xi.1978, E. M. Exley and K. Walker, on *Tristania laurina* (UQIC). **Northern Territory:** 2♀, Murganella Lagoon [*c.* 12°S, 133°E], 20.viii.1977 and 1.vi.1978, cue lure (QDPI); 1-, Port Darwin, W. D. Dodd (UQIC); 1♂, Pine Ck, Sept. 1921, G. F. Hill (UQIC). **Western Australia:** 1♂, Broome, 16.xii.1975, E. M. Exley and R. Storey, flowering *Cassia* (UQIC); 1♀, Derby, 1.iii.1973, E. M. Exley, on *Eucalyptus* sp. (UQIC); 1♂, NW Aust. (UQIC); 4♂, Emma Gorge, El Questo Stn, E Kimberley, 28.xii.1991, M. S. and B. J. Moulds (AM).

Description

Male

Length of body 7·0–7·4 mm, of wing 7·0–7·4 mm.

Head. Slightly higher than long. Face vertical. Frons with 1 pair *fr.* and 2 pairs *or.* bristles, the upper weaker than the lower; covered with dense short black setae; with 1–2 additional hair-like *fr.* setae. *Oc.* weak; *pocl.* moderately developed; *oc.* and *gn.* pale brown.

Thorax. Fulvous, with a full complement of bristles, including *ipa.* and 1 or more small additional bristles before or behind *sa.*, *dc.* placed close to line of *ia.*, 4–5 *anepst.*, the upper one strongest. Scutum fulvous, unmarked. Scutellum yellow, with pale brown setae at sides. Postnotum fulvous. Postpronotal lobe with long, pale hairs anteriorly. Legs fulvous. Fore femur with 2 rows of posterodorsal bristles and 3–4 posteroventral bristles. Mid tibia with 2–3 prominent black posterodorsal setae and 2 long spines. Hind femur with a cluster of black setae dorsoapically. Hind tibia with a row of anterodorsal setae. Wing (Fig. 196) with pattern brown to yellow-brown, with hyaline base and spots and indentations as follows: most of cell c except yellowish at base and apex and as a narrow costal band extending about $\frac{2}{3}$ length of cell; a triangular indentation in cell r_1 beyond cell sc, extending into cell r_{2+3}; 1 rounded spot in each of cells br and r_{4+5}; an indentation in cell m; a transverse subapical band in cell dm; a broad indentation in cell cua_1, the apex brown. Veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; cell cup with apical lobe long and narrow.

Abdomen. Fulvous; terga II–IV with a yellowish white apical band; tergite V with brown markings laterally. Male genitalia with surstyli long.

Female

Length of body 7·9–8·5 mm, of wing 7·5–8·0 mm. As for male except abdominal terga III–V darker basally, sometimes forming dark brown bands. Oviscape dark brown, about $1\frac{1}{2}\times$ length of tergite V; tergite VI poorly developed. Aculeus as for genus.

Distribution

Northern Western Australia, the Northern Territory and Cape York Peninsula, Queensland.

Comments

This species is easily identified by the wholly fulvous scutum and the wing pattern, differing from related species such as *T. exleyae* and *T. inconnexa* in the yellowish costal band in cell c, lack of an apical hyaline spot in cell cua_1 and hyaline indentation in cell r_1 crossing vein R_{2+3}.

Etymology

The specific name is derived from the township of Laura, close to the type locality.

Termitorioxa termitoxena (Bezzi)

(Figs 197–204)

Rioxa termitoxena Bezzi, 1919: 2, fig. 1. Type locality Port Darwin, NT. Syntypes (♂ and ♀) in BMNH [not examined]. — Tryon, 1927: 223, fig. 11.
Rioxa (Termitorioxa) termitoxena. — Hendel, 1928: 351.
Termitorioxa termitoxena. — Malloch, 1939*d*: 436; Hardy and Foote, 1989: 515.

Material Examined

34♂, 41♀, from the following localities. **Western Australia**: Kimberley Res. Stn, Prince Regent R. Res., Drysdale R. **Northern Territory**: Darwin, Brock's Ck, Katherine, Holmes Jungle Natl Pk, Berrimah Res. Farm, Nightcliff, Lee Pt, East Alligator R., Stapleton, Groote Eylandt. **Queensland**: Townsville, no precise locality. (In QDPI, UQIC, BARS, ANIC.)

Diagnosis

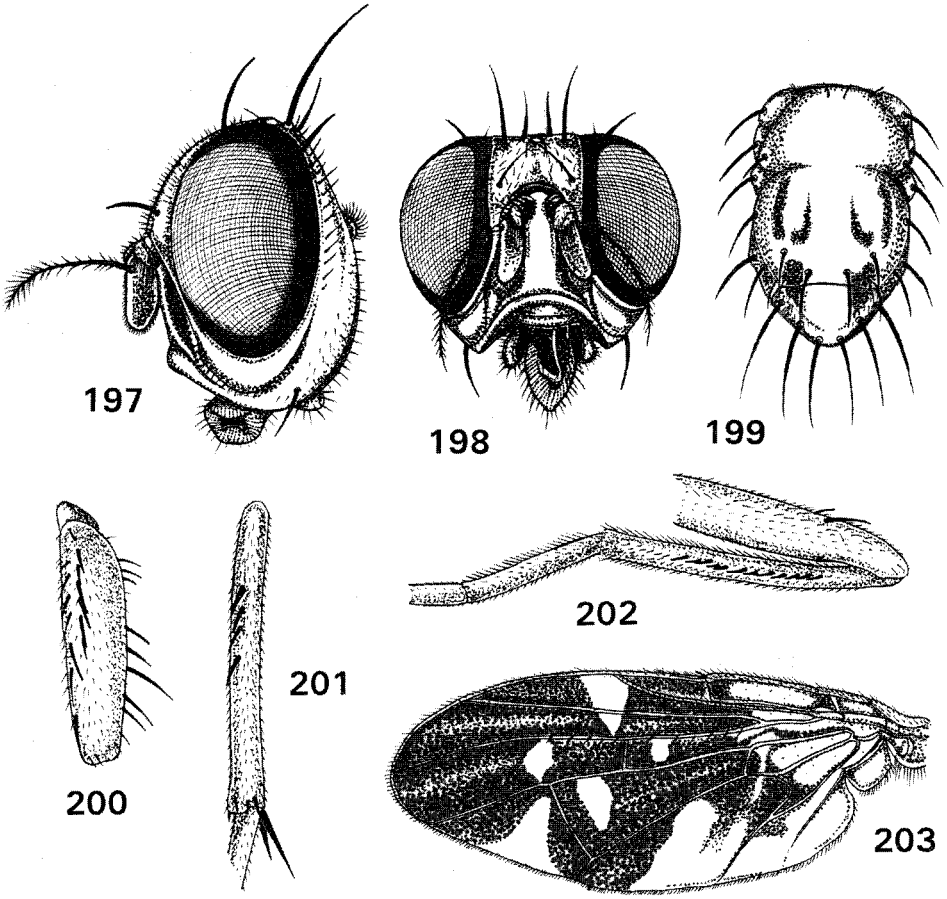
Head fulvous to red-brown. Frons with scattered black setae and 1 pair each of *fr.* and *or.* bristles; *oc.* weak. Antennae distinctly separated at base. Arista plumose; male with a distinct tuft of closely spaced hairs at apical quarter. Scutum fulvous to red-brown, with a pair of dark brown posterior spots before scutellum and occasionally a pair of dark brown streaks before them. With a full complement of thoracic bristles, including *ipa.* and usually also a small additional bristle before *sa.*; 4–5 *anepst.* Scutellum yellow with a basal pair of brown spots, 6 *sc.* and covered with scattered brown setae. Postnotum blackish brown. Postpronotal lobe with long, pale setae anteriorly. Legs fulvous. Mid tibia with 2 apical spines. Wing pattern brown to yellow-brown with base and cells bc and c largely pale yellow-brown and with hyaline indentations and spots as follows: 1 triangular indentation in cell r_1 beyond cell sc, extending to vein R_{4+5}; 1 round spot each in cells br and r_{4+5}; an elongate subapical transverse spot in cell dm; 1 broad indentation each in cells m and cua_1, apex of the latter brown. Cell cup with apical lobe long and narrow. Abdomen fulvous to red-brown with transverse brown bands on terga III–V, usually incomplete medially; apices of terga II–IV pale fulvous. Female tergite VI poorly developed. Male genitalia with surstyli long and slender. Oviscape blackish brown, as long as terga IV-VI combined. Aculeus broad, narrowing distally, blunt at apex with 2 short and 2 long pairs of preapical setae. Three oval spermathecae with bulbous necks and prominent apical nipples. Length of body 6·1–6·3 mm (♂) or 6·5–6·8 mm (♀), of wing 6·3–6·5 mm (♂) or 6·4–6·7 mm (♀).

Distribution

Northern Western Australia, the Northern Territory and Queensland, as far south as Townsville.

Biology

Bezzi (1919) noted that *T. termitoxena* larvae were collected from galleries of termites (*Mastotermes* sp.) in tree trunks at Darwin, from the collection data of G. F. Hill. A. J. Allwood and P. I. Whelan (label data) recorded a female ovipositing on *Delonix (= Poinciana) regia* and a male under bark in oozing resin damage by Cerambycidae on *Terminalia* sp., both in Darwin.



Figs 197–203. *Termitorioxa termitoxena*: *197–198*, head; *199*, scutum; *200*, fore femur; *201*, mid tibia; *202*, hind leg; *203*, wing.

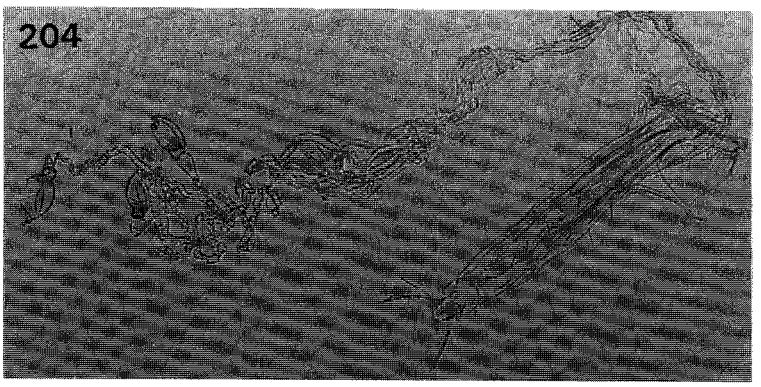


Fig. 204. *Termitorioxa termitoxena*, ovipositor and spermathecae (40×).

Comments

This species is readily identifiable by the presence of only one pair of *or.* bristles, the dark scutal and scutellar markings and the wing pattern. The tuft of hairs at the end of the male arista is also characteristic. Although previously considered the only species in *Termitorioxa*, its overall similarity to others included here suggests that its diagnostic characters are specific rather than generic. It appears closest to *T. bicalcarata*, differing primarily in wing pattern.

Termitorioxa testacea (Hendel), comb. nov.

(Figs 205–209)

Rioxa (Dirioxa) testacea Hendel, 1928: 352. Type locality North Queensland. Holotype ♂ in DEI [not examined]. — Malloch, 1939*d*: 435; Hardy, 1951: 183.
Dirioxa testacea. — Hardy and Foote, 1989: 512.

Material Examined

Queensland: 2♂, Cape Tribulation, 5.i.1982, G. and A. Daniels (UQIC, AM); 3♀, Kuranda, F. P. Dodd (UQIC, AM); 1♂, no locality (UQIC).

Diagnosis

Head fulvous to red-brown. Frons with scattered black setae and 2 pairs each of *fr.* and *or.* bristles; *oc.* moderately developed. Scutum fulvous. With a full complement of thoracic bristles, including *ipa.* and a small additional bristle before *sa.* Scutellum yellow with 6 *sc.* and scattered brownish dorsolateral setae. Postnotum brownish black. Postpronotal lobe with long, pale setae anteriorly. Legs fulvous. Mid tibia with 2 apical spines. Hind femur with an apicodorsal cluster of black bristles. Wing pattern brown to yellow-brown with cells bc and c mostly pale yellowish and hyaline spots and indentations as follows: 1 triangular indentation in cell r_1 beyond cell sc, extending to vein R_{4+5}; 1 round spot in cell br.; 1 large spot in cell r_{4+5}, confluent with indentation in cell m; 1 longitudinal posteromedial band and 1 transverse subapical band in cell dm, the former more or less joined to a broad indentation in cell cua_1; apex of cell cua_1 brown. Cell cup with apical lobe long and slender. Abdomen fulvous to red-brown, terga III–V brown to black laterally. Female tergite VI poorly developed. Male genitalia with surstyli long and slender. Oviscape dark brown. Aculeus broad, narrowing distally; apex blunt; 2 short and 2 long pairs of preapical setae. Length of body 6·9 mm (♂) or 8·7 mm (♀), of wing 8·0 mm (♂) or 8·3 mm (♀).

Distribution

North Queensland.

Comments

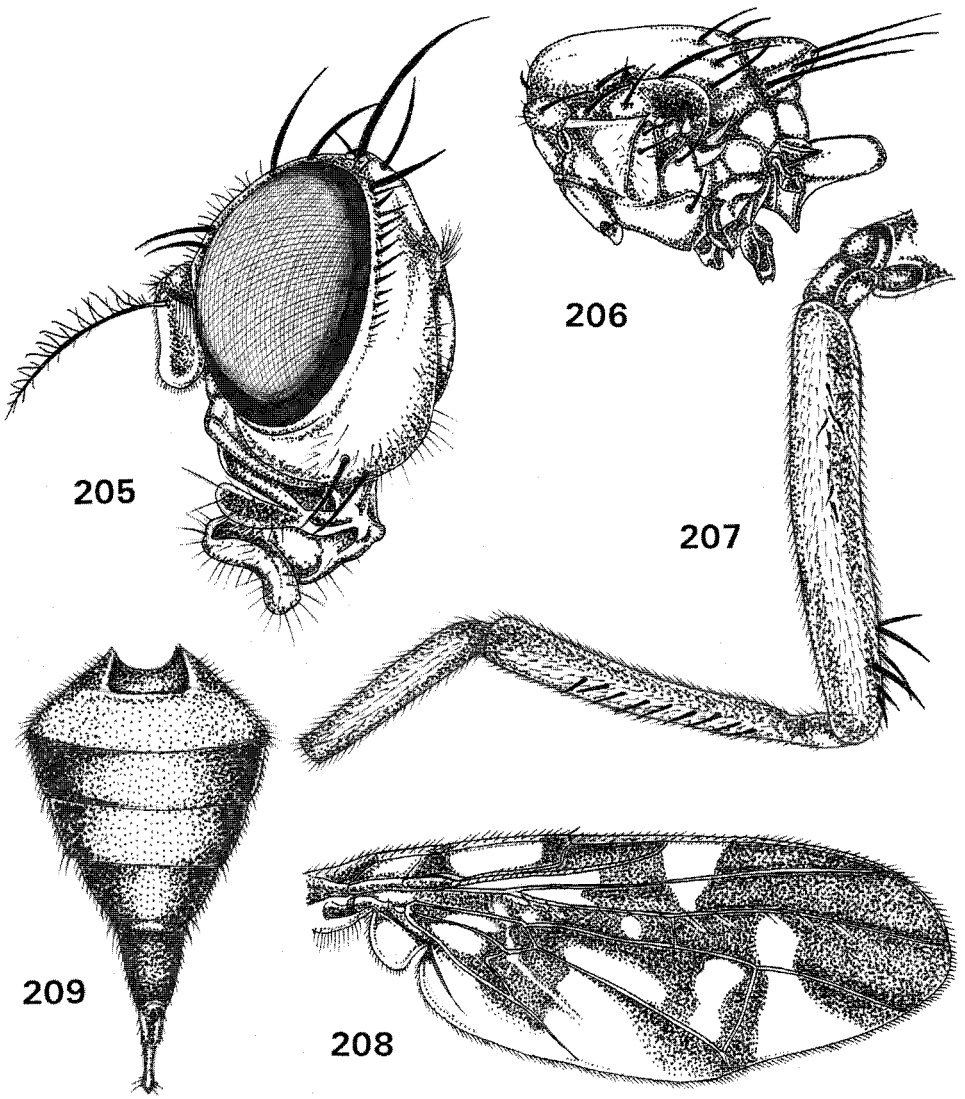
This species was placed in *Dirioxa* by Hardy and Foote (1989) and earlier authors, but more closely resembles other species of *Termitorioxa*, particularly in the vertical face, presence of an additional small bristle near *sa.* and wing markings. It differs from related species primarily in the wing pattern.

Genus ***Trypanocentra*** Hendel

Trypanocentra Hendel, 1914: 77. Type species: *T. nigripennis* Hendel (= *T. atripennis* Malloch), by original designation.

Diagnosis

Head higher than long, face vertical. Antenna with arista long plumose. Frons with 2 pairs each of *fr.* and *or.* bristles; *oc.* small, hair-like. Thorax with the following bristles: weak *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa., dc.* situated behind the line of *sa., acr.*, 2 *anepst., kepst.;*



Figs 205–209. *Termitorioxa testacea*: *205*, head; *206*, lateral view of thorax; *207*, hind leg; *208*, wing; *209*, ♀ abdomen.

anepm. absent; 6 *sc.*, the middle pair weak. Scutellum flat, bare. Fore femur not swollen. Mid tibia with 1 long and 1 short apical spine. Wing mostly brown, paler in baso-posterior portion, without distinct hyaline spots or indentations. Veins R_1, R_{4+5} and CuA_1 setose. Cell cup with apical lobe broad and relatively short. Aculeus short, blunt apically, with 3 short and 2 longer preapical setae. Three rounded spermathecae.

Comments

This genus belongs in a group with *Clusiosoma, Clusiosomima* and *Rabaulia*, as discussed under *Clusiosoma*. From the other genera, *Trypanocentra* differs in the vertical face without a pair of brown lateral spots. From *Clusiosoma* it also differs in the unswollen fore femur.

In subgenus *Clusiomorpha* Hering, the male fore leg has a ventral comb on the basitarsus. This comb is lacking in typical *Trypanocentra*, to which the only recorded Australian species belongs.

The genus occurs in Irian Jaya, Papua New Guinea and north-east Queensland. Nothing is known of its biology but, like related genera, larvae probably develop in fruit.

Trypanocentra nigrithorax Malloch

(Figs 210–214)

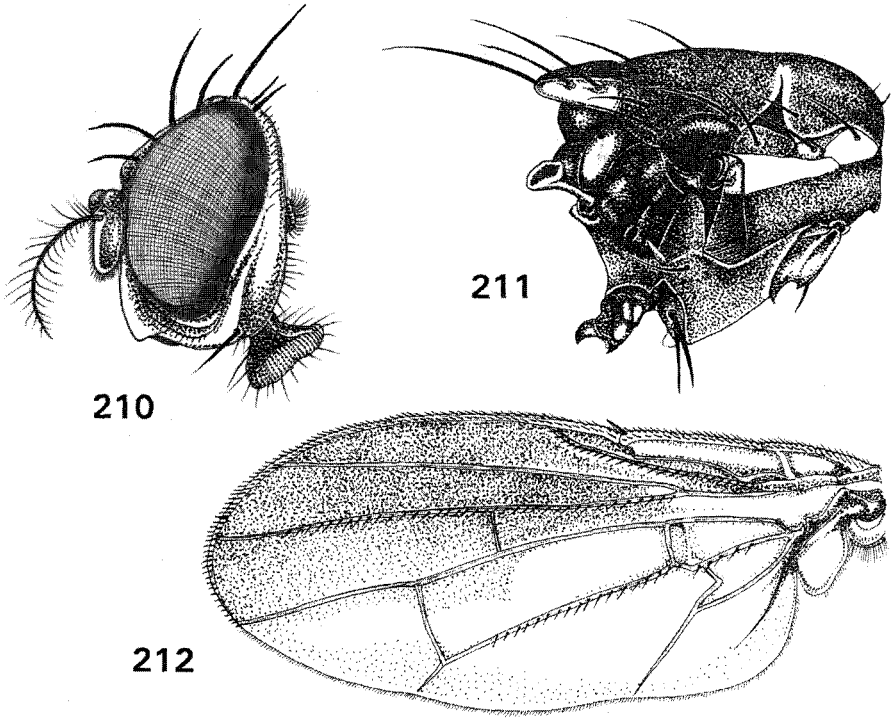
Trypanocentra nigrithorax Malloch, 1939*d*: 428. Type locality Wewak, Papua New Guinea. Holotype ♀ in BMNH [not examined]. — Hardy, 1986*b*: 171; Hardy and Foote, 1989: 516.

Material Examined

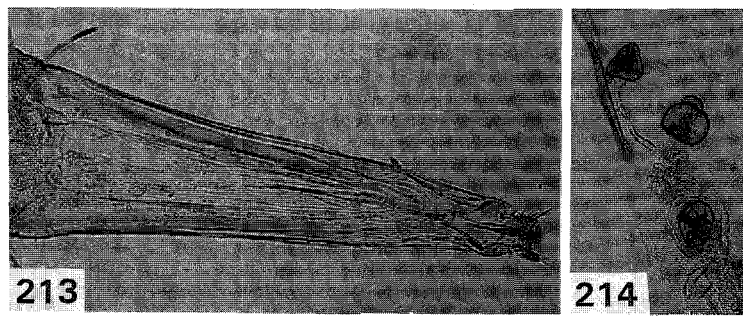
Queensland: 1♂, Iron Ra., W Claudie R., 12°47′S, 143°15′E, 5.xii.1985, D. K. Yeates (UQIC); 8 (♂,♀), Claudie R. nr Mt Lamond, 12°46′S, 143°17′E, 1.vi.1966, D. K. McAlpine (AM); 1♂, 2 mi NE Mt Lamond, Iron Ra., 22.xii.1971, D. K. McAlpine and G. A. Holloway (AM); 3-, 3 km ENE Mt Tozer, 12°44′S, 143°14′E, 28.vi–4.vii.1986 (ANIC); 1-, Daintree, 31.xii.1958 (AM); 1♀, Cairns, 23.xi.1935, F. A. Perkins (UQIC); 4 (♂,♀), Cairns, 30.xi.1965, G. L. Bush (MSU); 1♀, Bartle Frere, 10.x.1929 (QDPI); 1♀, South Johnstone, 24.i.1958, A. W. S. May (QDPI); 1♀, 2 mi SW Paluma, 3000 ft, 19°00′S, 146°12′E, 17.i.1970, G. A. Holloway (AM); 1♂, The Boulders, nr Babinda, 29.i.1991, D. K. McAlpine and B. J. Day (AM).

Diagnosis

As for genus. Thorax dark brown to black except for a yellow lateral stripe from postpronotal lobe across top of anepisternum to wing base. Scutellum black with yellow margins. Wings dark brown with cells bc and c, basal and posterior portions subhyaline. Femora fulvous in male, mostly brown in female. Abdomen dark brown to black except pale yellow laterally and along posterior margin of tergite II in male, yellow along posterior margins of



Figs 210–212. *Trypanocentra nigrithorax*: *210*, head; *211*, lateral view of thorax; *212*, wing.



Figs 213–214. *Trypanocentra nigrithorax*: *213*, aculeus (100×); *214*, spermathecae (100×).

terga II, III and sometimes IV in female. Tergite VI black. Male genitalia with surstylus short, tapered, with short fine posterodorsal hairs; inner surstylus short, with a prominent apical tooth. Aculeus as for genus. Length of body 3·5–3·9 mm (♂) or 5·2–5·4 mm (♀), of wing 3·4–3·6 mm (♂) or 4·6–5·0 mm (♀).

Distribution

Papua New Guinea and north-east Queensland, as far south as Paluma.

Comments

This species differs from all others in the genus in having the cells bc and c, basal and posterior portions of the wing subhyaline, contrasting with the brown apical portion.

Genus *Xarnuta* Walker

Xarnuta Walker, 1856: 28. Type species: *X. leucotela* Walker, by monotypy.

Diagnosis

Head nearly twice as high as long. Face vertical. Antenna extending $\frac{1}{2}$–$\frac{2}{3}$ length of face; third segment apically rounded; arista short-plumose. Frons with 3 pairs *fr.* and 2 pairs *or.* bristles; *oc.* weak; *pocl.* thin and dark. Thorax fulvous to red-brown, sometimes tinged with brown to dark brown, with the following bristles: 4 *scp., pprn., prst.*, 2 *npl., sa., ia., p.sa., ipa., acr., dc.* placed closer to *ia.* than *sa.*, 2 *anepst., anepm., kepst.*, 8–12 *sc.* Scutellum flat, covered with short but conspicuous setae. Legs fulvous. Fore femur with a row of posteroventral bristles. Mid tibia with 6–7 dark brown to black posterior bristles and 2 strong apical spines. Wing predominantly brown with or without hyaline markings. Costal spine weak. Veins R_1 and R_{4+5} setose. Cell cup with apical lobe long and narrow.

Comments

This genus is readily recognisable by the presence of 8–12 *sc.* bristles. Its affinities are uncertain but it may be related to *Paedohexacinia* and *Hexacinia* Hendel, particularly with regard to the wing pattern and aculeus shape. Hardy (1986*b*) noted that two types of aculeus and spermathecae occurred within the genus: in one group the aculeus is flattened dorsoventrally and serrate distally, whilst the spermathecae are binodose or round; in the other group the aculeus is distally pointed and bifid, whilst the spermathecae are oblong in shape. The two Australian species belong to the latter group. The aculeus has four very short pairs of preapical setae.

The genus occurs in the Palaearctic, Oriental and Australasian Regions. Nothing is known of its biology.

Key to Australian Species of *Xarnuta*

1. Wing with numerous, small hyaline spots scattered throughout the brown areas ..... *X. cribralis*
   Wing dark brown with hyaline apex and pale yellow patches, particularly posteriorly, not as above ....
   ..... *X. confusa*

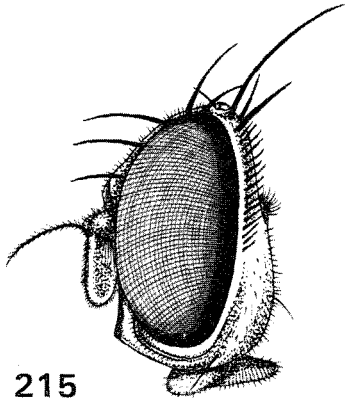
Xarnuta confusa Malloch

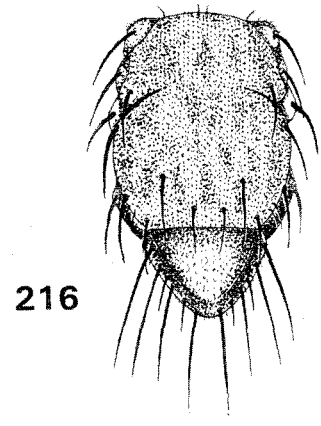
(Figs 215–219)

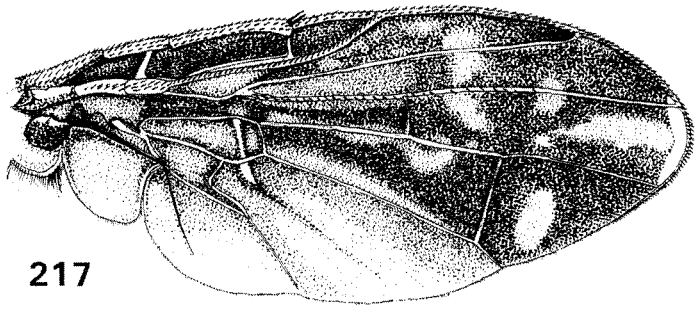
Xarnuta confusa Malloch, 1939*a*: 261. Type locality Malaupaina, Solomon Islands. Holotype ♀ in BMNH [not examined]. — Malloch, 1939*d*: 440; Hardy, 1986*b*: 181; Hardy and Foote, 1989: 516.

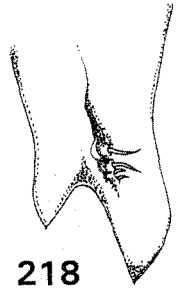
Material Examined

Queensland: 1 ♀, Iron Ra., Cape York Pen., 16–23.xi.1965, G. Monteith (UQIC); 1-, 11 km ENE of Mt Tozer, 12°45′S, 143°13′E, 11–16.vii.1986 (ANIC); 1 ♂, Claudie R., 5 mi W of Mt Lamond, 9.i.1972, D. K. McAlpine and G. A. Holloway (AM); 1 ♀, Thornton Ra. to Hutchinson Ck, Daintree R. district, 8.i.1967, D. K. McAlpine and G. A. Holloway (AM); 1 ♀, Daintree, 3.xii.1968, D. K. McAlpine (AM); 1-, Merinda, 11–20.xi.1925 (ANIC); 1-, Curtain Fig Tree, Yungaburra, 16.i.1970 (ANIC); 1 ♂, Mulgrave R., 6 km W of Gordonvale, 11.i.1976, D. K. McAlpine (AM); 1-, Mulgrave R., 4 mi W of Gordonvale, 2.i.1967 (AM); 1 ♂, Lake Placid nr Cairns, 2.i.1959, D. K. McAlpine (AM); 2 ♂, Palm I., 30.vi.1926 (UQIC).









Figs 215–218. *Xarnuta confusa*: *215*, head; *216*, scutum; *217*, wing; *218*, apex of aculeus.

Diagnosis

As for genus. Scutum rufous, covered with short brown setae. Scutellum with 8 (♀) or 10 (♂) strong bristles, plus 6 hair-like setae in females. Wing largely yellow with dark brown markings, especially in apical half; apex narrowly hyaline. Abdomen rufous, densely covered with short brown setae. Male genitalia small; surstylus thin, as long as epandrium, apically truncate. Aculeus broad, tapering to a sharp point distally and dorsoventrally bifid, with 2 short upper and 2 very short lower pairs of preapical setae. Three oblong spermathecae with conspicuous spicules. Length of body 6·0–6·2 mm (♂) or 6·5–7·0 mm (♀), of wing 5·8–6·2 mm (♂, ♀).

Distribution

Solomon Islands, Papua New Guinea and north-east Queensland, as far south as Palm Island (near Ingham).

Comments

The wing pattern distinguishes this species from *X. cribralis*, the only other species recorded from Australia.

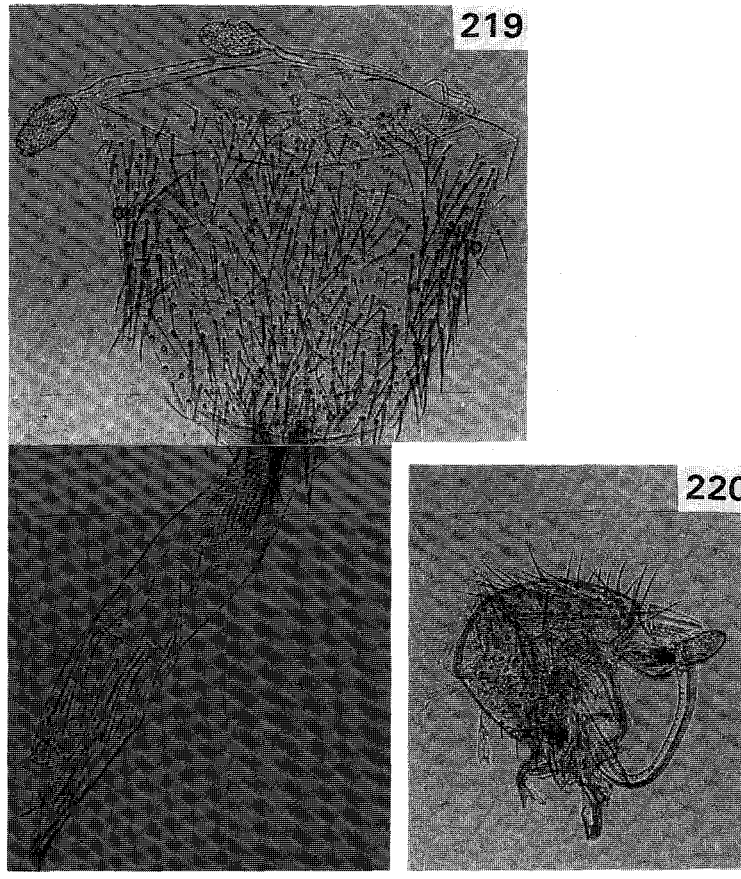


Fig. 219. *Xarnuta confusa*, ovipositor and 2 of 3 spermathecae (40×).
Fig. 220. *X. cribralis*, ♂ genitalia (40×).

Xarnuta cribralis Hering

(Figs 220–223)

Xarnuta cribralis Hering, 1941*b*: 57. Type locality Kapapapa, Papua New Guinea. Syntypes (2♂) in TMB [not examined]. — Hardy, 1986*b*: 181; Hardy and Foote, 1989: 516.

Material Examined

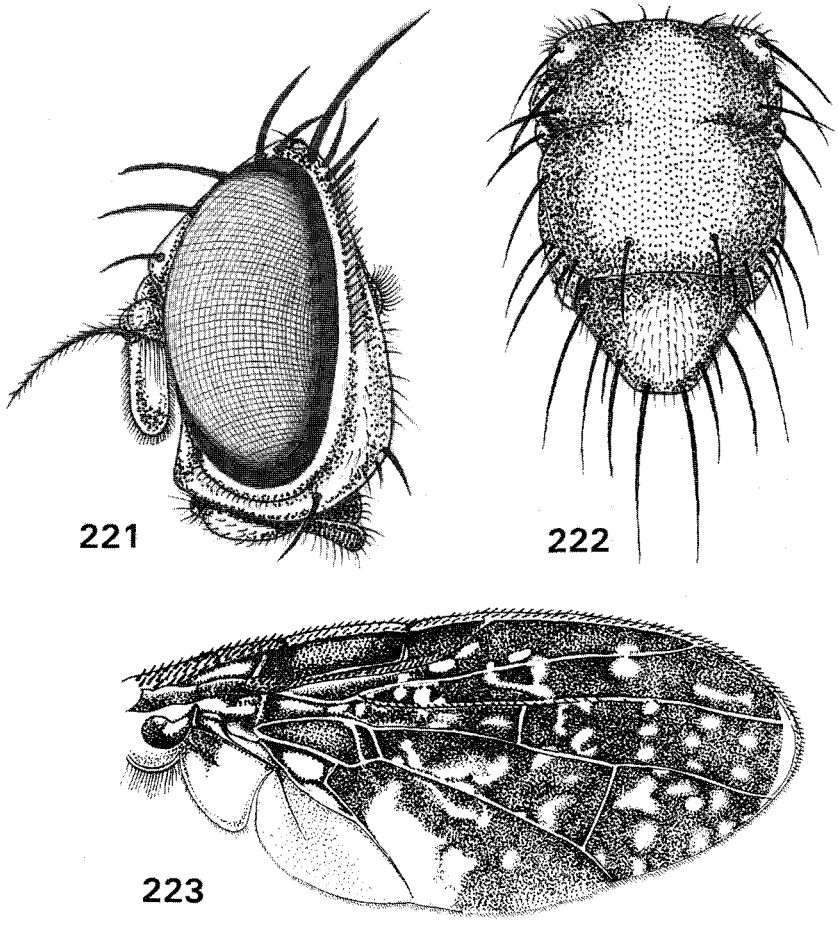
Queensland: 1♂, Darnley I., 1910 (ANIC); 1♂, Cape York Pen., 1910 (ANIC); 1♂, Claudie R., 12°43′S, 143°17′E, 30.v.1992, L. Ring (UQIC).

Diagnosis

As for genus. Scutum rufous, covered with short black setae. Scutellum as for *X. confusa*. Wing brown with numerous small hyaline spots, paler basoposteriorly; apex narrowly hyaline. Abdomen rufous, densely covered with short black setae. Male genitalia small; surstylus short, thick and posteriorly pointed; inner surstylus short, half length of surstylus, with 2 prominent black apical spines. Length of body 8·0–8·1 mm (♂), of wing 7·6–7·9 mm (♂).

Distribution

Papua New Guinea, Torres Strait and Cape York Peninsula, Queensland.



Figs 221–223. *Xarnuta cribralis*: *221*, head; *222*, scutum; *223*, wing.

Comments

The wing pattern readily identifies this species. The female is unknown.

Tribe **ADRAMINI** Hendel

Three genera and four species occur in Australia. Hosts have been recorded only for *Adrama* Walker; in Australia the larvae develop in fruit of freshwater mangroves (Lecythidaceae), occasionally in the seeds of tea.

This tribe is only weakly separable from Euphrantini and may eventually be combined; the name Adramini Hendel (1914) has priority over Euphrantini Hering (1941*a*). The major character previously used to separate them is the great reduction of thoracic bristles in the Adramini. This character is now known to be a poor indicator of relationships and the group is better defined by the presence of a complete, well-sclerotised metathoracic postcoxal bridge. However, this character also is known to be polyphyletic. We provisionally retain separate tribal status pending a phylogenetic analysis of all genera included in the two tribes.

Key to Genera of Australian Adramini

1. *Pprn., prst., dc., acr., kepst.* and *anepm.* bristles all present; lower *or.* bristle strongly developed, strap-like; wing with fine hairs along veins R_1, R_{4+5} and CuA_1; 2 *sc.* bristles ..... *Soita*
   Pprn. bristles weak or absent, the other bristles listed above all absent; *or.* bristles weakly developed; wing with vein CuA_1 bare; 2 or 4 *sc.* bristles 2
2. 1 pair of *fr.* bristles; wing with a narrow costal band and no brown subapical patch crossing dm-cu crossvein or bar extending across r-m crossvein; scutum without a yellow medial vitta ..... *Ichneumonosoma*
   2 pairs of *fr.* bristles; wing with a brown subapical patch crossing dm-cu crossvein and a bar extending across r-m crossvein; scutum with a yellow medial vitta ..... *Adrama*

Genus ***Adrama*** Walker

Adrama Walker, 1859: 117. Type species: *A. selecta* Walker, by monotypy.
Acanthipeza Rondani, 1875: 438. Type species: *A. maculifrons* Rondani (= *Dacus determinatus* Walker), by monotypy.

Diagnosis

Head slightly higher than long. Antenna extending $\frac{2}{3}$–$\frac{3}{4}$ length of face, third segment apically rounded; arista short-plumose. Frons with 2 pairs *fr.* and 1 pair *or.* bristles; *oc., pocl.* and *gn.* vestigial or absent. Thorax with *dc.* vestigial or absent; *pprn., prst., acr., anepm.* and *kepst.* bristles absent; 2 *npl., sa., ia., p.sa.* and *anepst.* present. Scutellum flat, triangular, with 2 or 4 *sc.* and covered with numerous small black setae. Laterotergite covered with fine, long hairs. Metathoracic postcoxal bridge broadly sclerotised. Legs with prominent ventral spines on all femora, 2 rows each on mid and hind femora. Wing with cell sc short, half length of cell c; veins R_1 and R_{4+5} setose, r-m crossvein beyond middle of cell dm; cell cup with apical lobe short and broad. Abdomen elongate, narrow. Male genitalia with surstylus short, truncate. Aculeus pointed, apically dentate, with short preapical setae. Three oblong to gourd-shaped spermathecae.

Comments

This genus is readily recognisable by the presence of *fr.* bristles and ventral spines on all femora, antenna shorter than face, and reduced thoracic chaetotaxy. It occurs throughout the Indo-Australian region. Larval hosts include fruit of several families and the germinating seeds of tea, *Camellia sinensis*.

Two species occur in Australia.

Key to Australian Species of *Adrama*

1. 2 *sc.* bristles; face with 1 medial black spot near oral margin; scutellum black except marginally ..... *A. biseta*
   4 *sc.* bristles; face with a pair of well-separated black spots; scutellum rufous ..... *A. selecta*

Adrama biseta Malloch

(Figs 224–230)

Adrama biseta Malloch, 1939*c*: 322. Type locality Cairns, Qld. Holotype ♂ in AM [not examined]. — Allwood and Angeles, 1979: 107; Hardy, 1986*a*: 59; Smith *et al.*, 1988: 20; Hardy and Foote, 1989: 519.

Material Examined

Northern Territory: 3♂, 1♀, Alligator R., Aug. 1976, A. Smith, bred from *Barringtonia acutangula* (QDPI); 3♂, 3♀, Flying Fox Ck, Arnhem Hwy, 3.ii.1977, T. Angeles (BARS); 2♀, Howard Springs, 2.i.1979, R. Piper (UQIC); 2♂, 1♀, Old Bynoe Rd, Berry Springs, 18.xi.1987, E. S. C. Smith and D. Chin (BARS); 1♀, Red Lilly Billabong, Sth Alligator R., 19.viii.1985, S. Collins (BARS); 1♂, 1♀, Katherine, 15.i.1982, J. Waldeck (BARS); 1♂, Nourlangie Ck, 8 km N of Mt Cahill, 12°48′S, 132°42′E, 16.vi.1973, T. Weir and T. Angeles (ANIC); 1♀, Malanbanandju Camp, Kakadu Natl Pk, 28.iii.1988, E. S. C. Smith and D. Chin (BARS); 1♀, Coastal Plains Res. Stn, 3.xi.1986, E. S. C. Smith and D. Chin, on *Ficus racemosa* (BARS). **Queensland**: 1♂, Claudie R. nr Mt Lamond, 29.v–5.vi.1966, D. K. McAlpine (AM); 1♂ Middle Claudie R., Iron Ra., Cape York Pen., 20.x.1974, G. Daniels (UQIC); 2♂, 2♀, Iron Ra., Cape York Pen., 16–23.xi.1965, G. Monteith (QDPI); 1♂, Mt Molloy, 28.vi.1980, B. K. Cantrell (QDPI).

Diagnosis

As for genus. Face with a single broad black spot on oral margin, rarely weakly divided. Scutum red-brown with a yellow medial vitta beyond suture and variable black submedial markings, these sometimes reduced or absent; *dc.* bristles weak, hair-like, placed close to line of *ia.* bristles, often absent. Scutellum black on disc, yellow marginally, with 2 apical *sc.* bristles. Postnotum black to red-brown. Postpronotal lobe and a broad triangular anepisternal area yellow. Fore femur with 1–2 short stout posteroventral spines near apex. Mid femur with 2 rows of 6–8 anteroventral and posteroventral spines on outer half. Mid tibia with 1 apical black spine. Hind femur with 2 rows of 4–6 anteroventral and posteroventral spines on outer half. Wing with cell sc yellow; a brown transverse bar from costa across r-m crossvein to vein M; a brown apical patch from near apex of vein R_1, across dm-cu crossvein to wing margin, paler in apical parts of cells r_{4+5} and m. Abdomen rufous, club-shaped, narrowed at base. Female tergite VI about $\frac{3}{5}$ length of tergite V. Oviscape red-brown, as long as terga IV–VI combined. Male genitalia predominantly black; surstylus short, poorly developed; inner surstylus short with black apical teeth. Aculeus distally serrate, apically pointed, with minute preapical setae. Length of body 8·0–8·5 mm (♂) or 9·5–10 mm (♀), of wing 8·0–9·0 mm (♂) or 8·0–9·3 mm (♀).

Variation

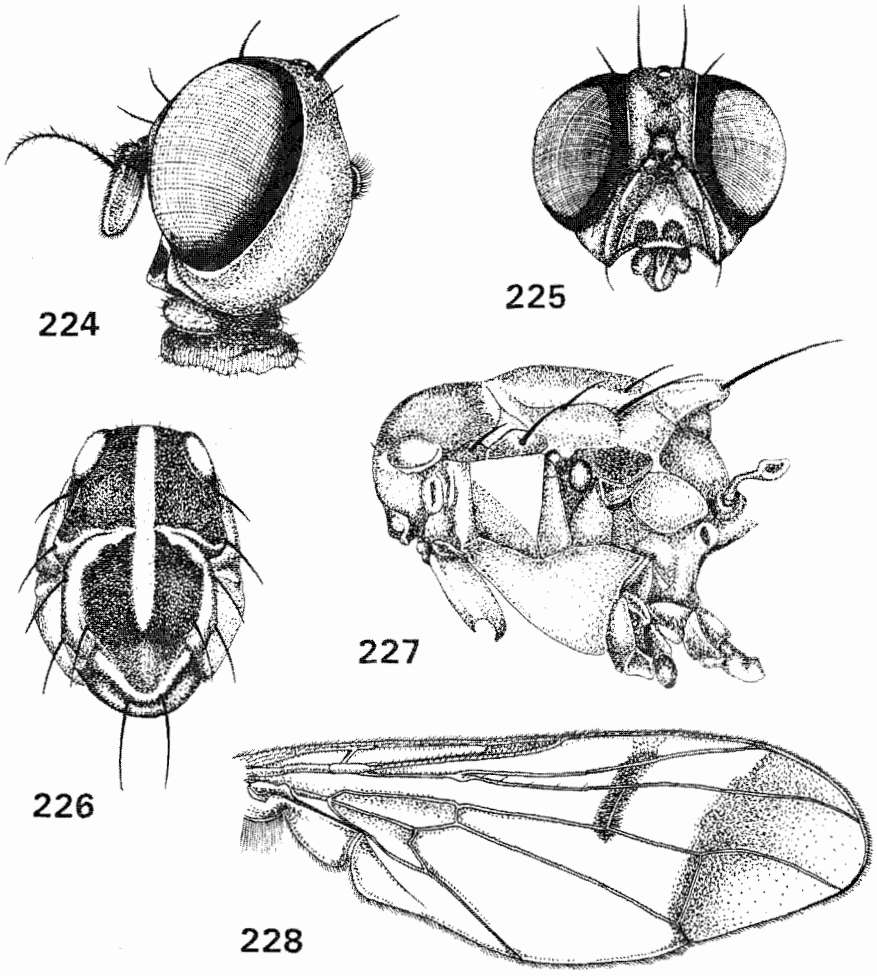
The amount of black on the scutum varies from broad submedial bands, interrupted at the suture, to narrow lines; in some specimens the black is absent, the scutum entirely red-brown except for the yellow medial vitta. The postnotum also varies from black to red-brown.

Distribution

Northern Territory and North Queensland.

Biology

Larvae develop in the fruit of freshwater mangrove, *Barringtonia acutangula* (Allwood and Angeles 1979; Smith *et al.* 1988). It is likely to be the developing cotyledons which are actually utilised.



Figs 224–228. *Adrama biseta*: *224–225*, head; *226*, scutum; *227*, lateral view of thorax; *228*, wing.

Comments

The presence of two *sc.* bristles, a single black facial spot and a largely black scutellum distinguishes this species. It is not known outside Australia.

Adrama selecta Walker

(Figs 231–237)

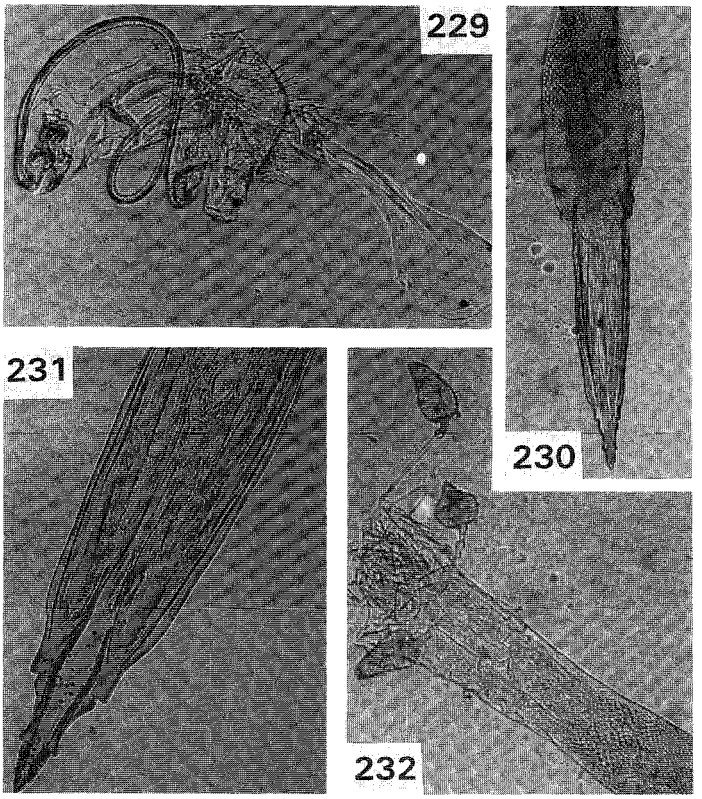
Adrama selecta Walker, 1859: 118. Type locality Aru Is. Holotype ♂ in BMNH [not examined]. — Hardy, 1982: 285; Hardy, 1986*a*: 66; Hardy and Foote, 1989: 519.

Psila cruciata Walker, 1865*a*: 126. Type locality New Guinea. Holotype ♂ lost. — Hardy, 1986*a*: 66 (as syn. of *selecta*).

Adrama spinata Enderlein, 1920: 360. Type locality New Britain. 2 syntypes (♂,♀) in ZMHB [not examined]. — Hardy, 1986*a*: 67; Hardy and Foote, 1989: 519; *syn. nov.*

Adrama centralis Malloch, 1939*a*: 247. Type locality Kovagambi, Guadalcanal, Solomon Is. 3 syntypes (♂,♀) in BMNH [not examined]. — Hardy, 1986*a*: 67 (as syn. of *spinata*); *syn. nov.*

Adrama papuensis Malloch, 1939*c*: 333. Type locality Wewak, Papua New Guinea. Holotype ♂ in AM [not examined]. — Hardy, 1982: 285 (as syn. of *selecta*); Hardy, 1986*a*: 66 (as syn. of *selecta*).



Figs 229–230. *Adrama biseta*: *229*, ♂ genitalia (40×); *230*, aculeus (40×).
Figs 231–232. *A. selecta*: *231*, aculeus (100×); *232*, spermathecae (40×).

Material Examined

Queensland: 3♂, 1♀, Gordon's Mine area, Iron Ra., 12–18.ii.1976, G. B. Monteith, rainforest (UQIC); 1♀, Cairns, Apr. 1970, I. C. Cunningham, ex tea (QDPI); 1♂, 2♀, Mt Spec, 2600 ft, 5.iii.1964, I. F. B. Common and M. S. Upton (ANIC); 1-, Mt. Webb Natl Pk, 28.viii.1981 (AM); 1-, Gap Ck, 5 km ESE Mt Finnigan, 14.v.1981 (AM); 1-, Station Ck, 7 km WSW of Hopevale Mission, 10.v.1981 (AM); 1-, Annan R., 3 km W of Black Mtn, 26.iv.1981 (AM); 1-, Mt Tozer area, Iron Ra., 29.iv–1.v.1973 (ANIC); 1-, 11 km ENE of Mt Tozer, 11–16.vii.1986 (ANIC); 3-, Claudie R., 5 mi W of Mt Lamond, 30.xii.1971, 9.i.1972 and 19.i.1972, D. K. McAlpine and G. A. Holloway (AM). **Northern Territory**: 1-, Adelaide R., Dec. 1977, ex *Barringtonia acutangula* (BARS).

Diagnosis

As for genus. Face with 2 well-separated black spots on oral margin. Scutum red-brown with a yellow postsutural medial vitta and variable black anterior and submedial markings; $\frac{2}{2}$ *dc.* bristles absent. Scutellum rufous, with 4 *sc.* bristles. Postnotum red-brown. Posterior $\frac{2}{3}$ of postpronotal lobe and a broad anepisternal area yellow to white. Fore femur with 1–2 strong black posteroventral spines near apex. Mid femur with 2 rows of 6–8 anteroventral and posteroventral spines on outer half. Mid tibia with 1 apical black spine. Hind femur with 2 rows of 2–3 anteroventral and posteroventral spines on outer half. Wing with cell sc yellow; a brown transverse bar from costa across r-m crossvein to vein M; a brown apical patch from near apex of vein R_1, across dm-cu crossvein to wing margin, paler in apical parts of cells r_{4+5} and m. Abdomen rufous, club-shaped, narrowed at base. Female tergite VI about $\frac{3}{5}$ length of tergite V. Oviscape red-brown, as long as terga IV–VI combined. Male genitalia fulvous; surstylus broad, blunt distally; inner surstylus short, with 1 black apical tooth. Aculeus distally serrate, apically

pointed, with minute preapical setae. Length of body 8·5–10·3 mm (♂) or 10·0–12·5 mm (♀), of wing 7·6–8·5 mm (♂) or 7·3–8·2 mm (♀).

Variation

The amount of black on the scutum varies from broadly covering the anterior portion (to about level with *sa.* bristles), to submedial bands, narrowing posteriorly to end near level of *sa.* bristles, plus small dorsolateral patches above anterior *npl.* bristles.

Distribution

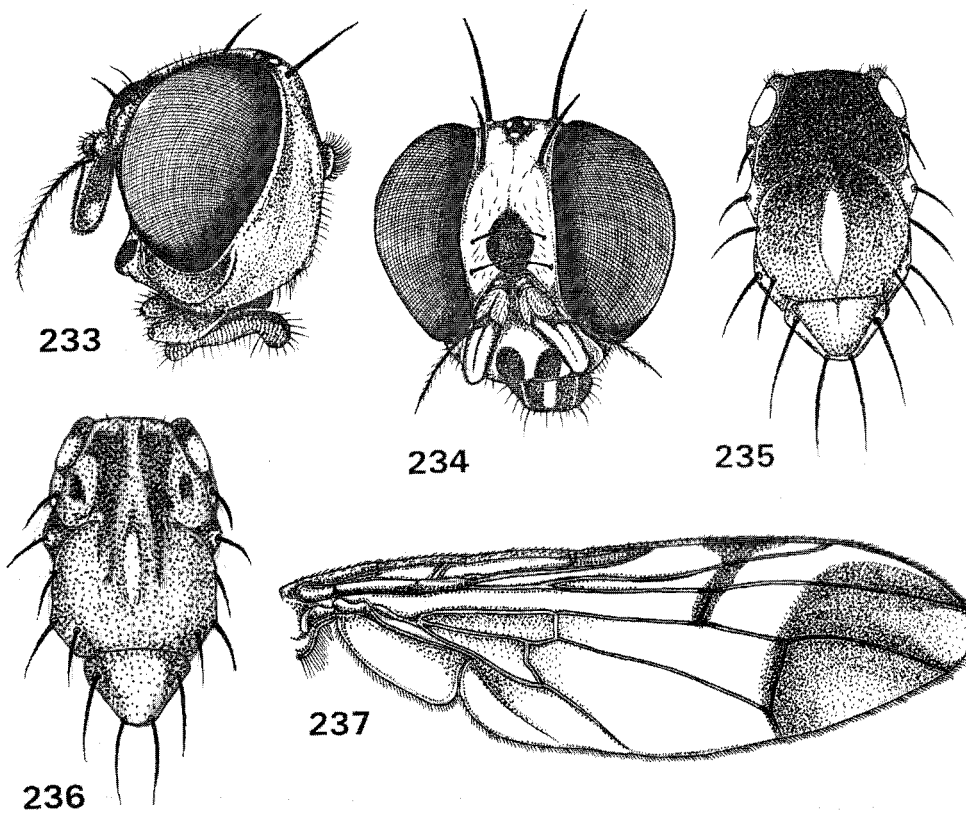
Aru Islands, Irian Jaya, Papua New Guinea, the Solomon Islands, the Northern Territory and northern Queensland, as far south as Mt Spec, Townsville.

Biology

Larvae develop in the fruit of freshwater mangrove, *Barringtonia acutangula*, and seeds of tea, *Camellia sinensis*. In both cases it is likely to be the developing cotyledons which are actually utilised.

Comments

The presence of four *sc.* bristles, two facial spots and rufous scutellum distinguishes this species. The amount of black on the scutum varies, as in *A. biseta*, and *A. spinata* Enderlein and *A. centralis* Malloch are placed in synonymy. Hardy (1986a) recorded a specimen of *A. spinata* from Cairns, whilst those from Mt Spec recorded above are similar in appearance. The *A. selecta* of Malloch (1939*c*), from the Philippines, is *A. rufiventris* (Walker).



Figs 233–237. *Adrama selecta*: *233–234*, head; *235–236*, scutum; *237*, wing.

Genus *Ichneumonosoma* de Meijere

Ichneumonosoma de Meijere, 1914: 195. Type species: *Lagarosia imitans* de Meijere, by original designation.

Axania Enderlein, 1920: 337. Type species: *A. ichneumonea* Enderlein (= *Lagarosia imitans* de Meijere), by original designation.

Diagnosis

Head slightly higher than long. Antenna extending almost length of face, third segment apically rounded; arista short-plumose. Frons with 1–2 pairs of *fr.* and 1 pair of *or.* bristles; *oc.*, *pocl.* and *gn.* bristles absent. Thorax with *dc.* vestigial or absent; *pprn.*, *prst.*, *acr.*, *anepst.*, *anepm.* and *kepst.* bristles absent; *scp.*, 2. *npl.*, *sa.*, *ia.* and *p.sa.* bristles present. Scutum with lateral sutures connected by a complete transverse groove. Scutellum flat, shorter than wide, with a few black basolateral setae, 2 strong basal *sc.* bristles and 2 vestigial apical *sc.*, sometimes absent. Laterotergite covered with fine, long hairs. Metathoracic postcoxal bridge broadly sclerotised. Legs fulvous. Mid tibia with 1 apical spine. Femora without rows of spines. Wing with cell sc narrow, shorter than cell c; veins R_1, and R_{4+5} setose; r-m crossvein beyond middle of cell dm; cell cup with apical lobe short and broad. Abdomen elongate, narrow, terga V and VI broadened; terga I+II almost as long as terga III–V. Female tergite VI about $\frac{1}{2}$ length of tergite V.

Comments

This genus was referred to the Euphrantini by Hardy (1983*b*) and to the Adramini by Hardy (1986*a*). It is readily recognisable by the very elongate abdomen, absence of many head and thoracic bristles and wing pattern. There are three species, the genus occurring from north-east India to Papua New Guinea and Torres Strait. Hosts are unknown.

One species occurs in Australia.

Ichneumonosoma consors (Walker)

(Figs 238–240)

Adrama consors Walker, 1861*b*: 296. Type locality Batjan, Moluccas, Indonesia. Holotype ♀ in BMNH [not examined].

Ichneumonosoma consors. — Hardy, 1986*a*: 72; Hardy and Foote, 1989: 520.

Material Examined

Queensland: 2♀, Banks I., Torres Strait, 3.vi.1969, A. Neboiss (NMV).

Diagnosis

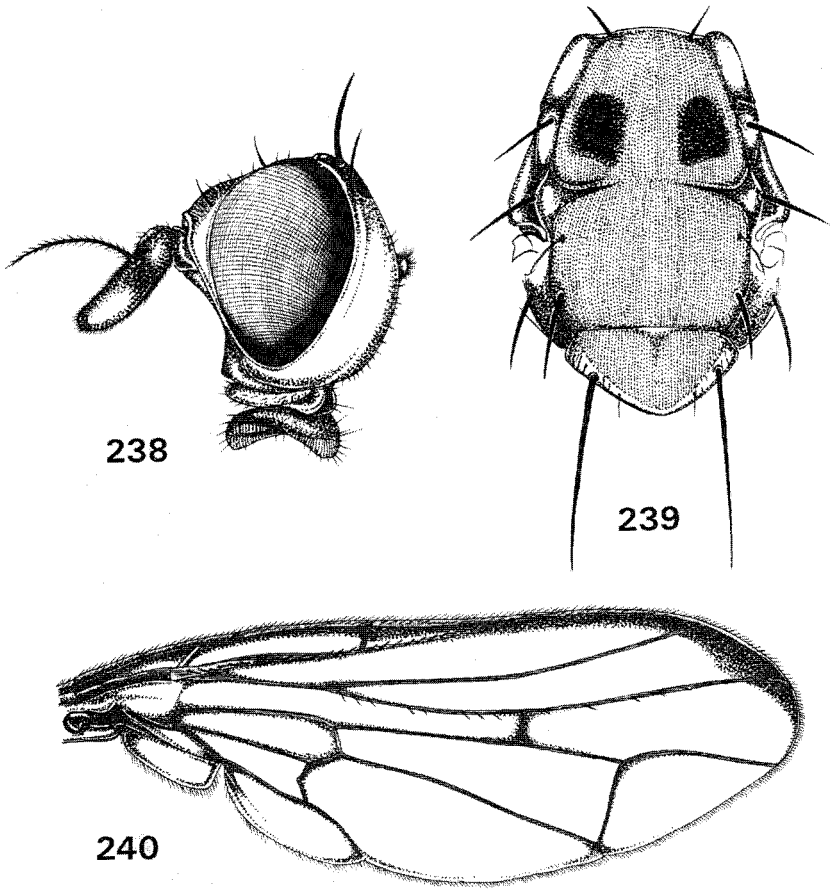
As for genus. Head with a large shiny black or brown spot behind ocelli. Frons with 1 pair of *fr.* bristles. Scutum fulvous, with a pair of large, shiny black dorsolateral patches before suture. Wing hyaline, with a narrow fuscous costal band to wing apex and slight infuscation over r-m crossvein. Oviscape rufous, conical, as long as abdominal terga III–VI combined. Aculeus laterally compressed at tip, with median dorsal ridge bearing minute saw-like teeth, without distinct preapical setae. Length of body 10·5 mm, of wing 7·4 mm (♀).

Distribution

Northern Moluccas, Papua New Guinea and Torres Strait, Queensland.

Comments

The presence of only one pair of *fr.* bristles and large black spots on the scutum readily identifies this species.



Figs 238–240. *Ichneumonosoma consors*: *238*, head; *239*, scutum; *240*, wing.

Genus *Soita* Walker

Soita Walker, 1865*b*: 136. Type species: *S. psiloides* Walker, by monotypy.

Diagnosis

Head slightly higher than long. Antenna longer than face, third segment apically rounded; arista short-plumose. Frons with 1–2 pair of weak *fr.* and 1 pair of very strong *or.* bristles, situated near middle of frons; *oc.*, *pocl.* and *gn.* bristles rudimentary. Thorax with anterior *npl.* bristles absent; *scp.*, *pprn.*, *prst.*, posterior *npl.*, *sa.*, *ia.*, *p.sa.*, *acr.* bristles present; *dc.* placed just behind suture, close to line of *npl.*; *anepst.*, *anepm.*, *kepst.* bristles present. Scutum with lateral sutures connected by a complete transverse groove. Scutellum flat, shorter than wide, with 2 strong basal *sc.* bristles. Laterotergite covered with long, fine hairs. Metathoracic postcoxal bridge broadly sclerotised. Legs fulvous. Mid tibia with 2 apical spines. Femora with bristles but no rows of spines. Wing with cell sc narrow, shorter than cell c; veins R_1, R_{4+5} and CuA_1 setose; r-m crossvein just beyond middle of cell dm; cell cup with apical lobe short and broad. Abdomen elongate, narrow.

Comments

Although previously placed in the Euphrantini (Hardy 1983*b*, Hardy and Foote 1989), the sclerotised metathoracic bridge and elongate abdomen suggest that *Soita* is better referred to the

Adramini. It closely resembles *Ichneumonopsis*, differing in the setose vein CuA_1, distinct, strap-like *or.* bristle, antenna longer than face and presence of most of the thoracic bristles. Three species are known, two from the Philippines and one from Irian Jaya to Australia.

Soita psiloides Walker

(Figs 241–245)

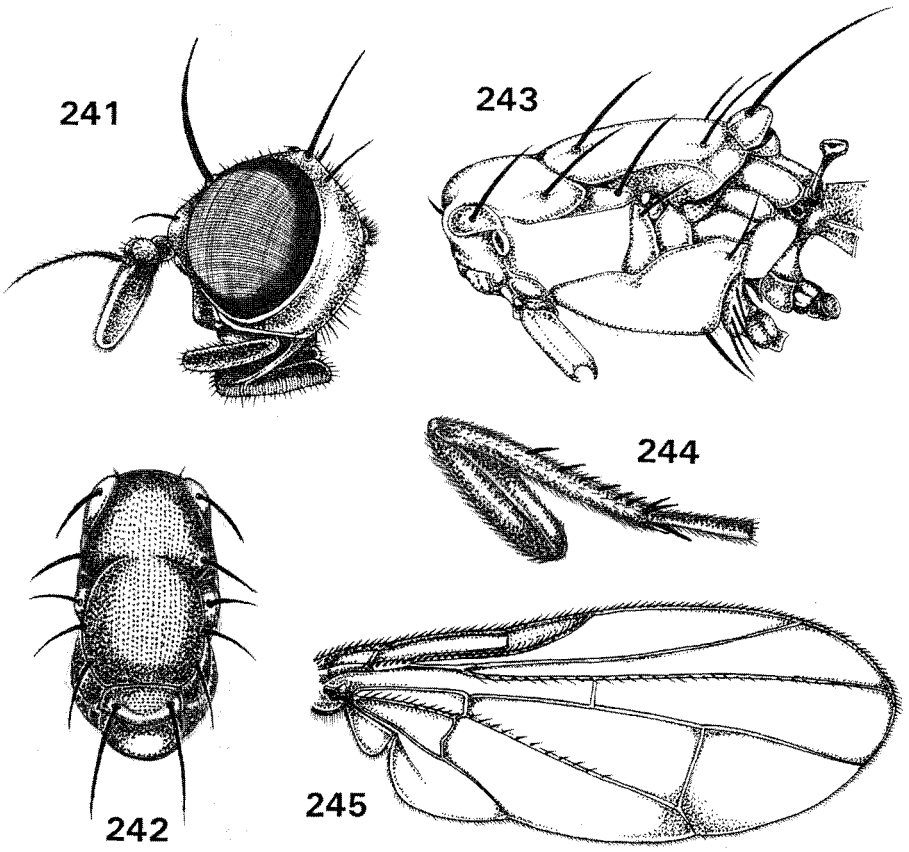
Soita psiloides Walker, 1865*b*: 136. Type locality Salawati I., Irian Jaya. Holotype ♂ in BMNH [not examined]. — Hardy, 1959: 197; Hardy, 1983*b*: 204; Hardy and Foote, 1989: 522.

Material Examined

Queensland: 1 ♂, Silkwood, nr Innisfail, 30.xii.1958, D. K. McAlpine (AM).

Diagnosis

As for genus. The *or.* bristle is, at least in male, well developed and strap-like. Thorax and abdomen fulvous, unmarked. Wing hyaline except cell sc yellowish and slight infuscation at apices of veins R_{2+3}, R_{4+5} and CuA_1. Male genitalia yellow to rufous with surstyli short and thick, covered with fine, pale hairs. Aculeus broad, with minute apical serrations and 2 large indentations; with 3 pairs of minute preapical setae. Three elongate spermathecae. Length of body 7·0 mm, of wing 9·0 mm (♂).



Figs 241–245. *Soita psiloides*: *241*, head; *242*, scutum; *243*, lateral view of thorax; *244*, mid leg; *245*, wing.

Distribution

Salawati Island, Papua New Guinea and north-east Queensland.

Comments

The presence of two *sc.* bristles, an entirely fulvous abdomen and absence of a row of short black spines on the anepisternum and katepisternum identify this species. Hardy (1983*b*) illustrated the female aculeus and spermathecae.

Tribe **EUPHRANTINI** Hering

Four genera and 19 species occur in Australia. Hosts, so far as is known for the Australian fauna, are the flower buds, fruits or seeds of various plants, including mangroves. Larvae of *Coelotrypes* Bezzi develop in the flower buds of *Ipomoea* (Convolvulaceae), of *Elleipsa* Hardy and *Hardyadrama* Lee in the fruit of *Excoecaria* (Euphorbiaceae), and of *Euphranta* Loew in the fruit (or seeds) of several families, including *Avicennia* mangroves (Verbenaceae).

As noted under the Adramini, these two tribes are separated on characters which are known to be polyphyletic and eventually they may be combined. The name Adramini Hendel (1914) has nomenclatural precedence over Euphrantini Hering (1941*a*). Separate tribal status for Euphrantini is retained pending a phylogenetic analysis of all genera included in the two tribes.

There is also need for a generic revision in this tribe. Until such a revision is undertaken, we provisionally recognise those genera that are currently accepted.

Key to Genera of Australian Euphrantini

1. Scutum and scutellum with a medial yellow vitta; anepisternum with a yellow band along upper margin from postpronotal lobe to wing base; r-m crossvein well beyond middle of cell dm; if mid and hind femora spinose then *poc.* bristles absent 2
   Scutum and scutellum without a medial yellow vitta, at most a prescutellar patch; anepisternum without a yellow band along upper margin; r-m crossvein near middle of cell dm, if well beyond then mid and hind femora spinose and *poc.* bristles present 3
2. Face with a large medial black spot at oral margin; *poc.* and *acr.* bristles present; arista plumose; mid and hind femora not spinose ..... *Coelotrypes*
   Face yellow; *poc.* and *acr.* bristles absent; arista pubescent; mid and hind femora with or without 2 rows of short spines ..... *Hardyadrama*
3. Mid and hind femora with 2 rows of ventral spines; 3 *fr.* bristles; arista at most with microscopic pubescence; r-m crossvein well beyond middle of cell *dm* ..... *Elleipsa*
   Mid and hind femora without 2 rows of ventral spines; 2 or 3 *fr.* bristles; arista plumose; r-m crossvein near middle of cell dm ..... *Euphranta*

Genus ***Coelotrypes*** Bezzi

Coelotrypes Bezzi, 1924: 494. Type species: *C. vittatus* Bezzi, by original designation.
Euphrantochlaena Hering, 1940: 3. Type species: *E. pulchellina* Hering, by original designation.
Staurocneros Hering, 1944: 2. Type species: *Staurella circumscripta* Hering, by original designation; *syn. nov.*

Diagnosis

Head as high as long. Antenna longer than face, third segment apically rounded; arista short-plumose. Face concave, with a prominent black medial spot above oral margin. Frons with 2 or 3 pairs *fr.*, the upper pair situated very close to the single pair of *or.* bristles; *oc.* weak, hair-like; *poc.* present; *pocl.* thin and dark. Gena with 1 strong *gn.*; an additional bristle on lower occipital margin. Thorax with the following bristles: 4 *scp.*, *pprn.*, 2 *npl.*, *sa.*, *ia.*, *p.sa.*, *dc.* placed behind line of *sa.*; *anepst.*, *anepm.*, *kepst.*; *acr.* usually present. Scutellum flat, triangular, with 4 *sc.* bristles and a few pale setae. Scutum and scutellum with a medial yellow vitta. Laterotergite

covered with fine, long hairs. Mid tibia with 1 black apical spine. Wing with veins R_1 and R_{4+5} setose; r-m crossvein placed beyond middle of cell dm; cell cup with apical lobe short and broad; wing apex with a whitish spot. Abdomen narrow; oviscape elongate. Male genitalia with surstyli short and broad. Female aculeus narrowing apically to a point, with coarse subapical serrations and 4 pairs of small preapical setae. Three oblong spermathecae with numerous spine-like processes on surface.

Comments

This genus is closely allied to *Euphranta* and the two eventually may be combined. Asian species were included previously in *Staurocneros*, placed as a synonym of *Euphranta* by Hardy (1974, 1983*b*). The presence of a distinct black facial spot, yellow scutal and anepisternal vittae and biology suggest that *Coelotrypes* forms a monophyletic group distinct from *Euphranta* and they are maintained here as separate genera.

Coelotrypes is primarily Afrotropical; one species occurs in the South Pacific, three in the Oriental and Papuan regions, with one reaching Australia. The larvae develop in the buds of *Ipomoea* (Convolvulaceae) (Hancock 1986, 1991).

Coelotrypes circumscriptus (Hering), comb. nov.

(Figs 246–252)

Staurella circumscripta Hering, 1941*c*: 28. Type locality Rana Mese, Flores I., Indonesia. Holotype ♀ in DEI [not examined].

Staurocneros circumscripta. — Hering, 1944: 2; Hardy, 1955: 82.

Staurocneros imitator Hardy, 1970: 99. Type locality Dalawan Bay, Balabac. Holotype ♂ in ZMUC [not examined]; *syn. nov.*

Euphranta (Staurella) imitator. — Hardy, 1974: 137.

Euphranta (Staurella) circumscripta. — Hardy, 1983*b*: 183.

Adrama sp. — Smith *et al.*, 1988: 20.

Material Examined

Queensland: 3♂, Atherton, 13.vii.1956, A. W. S. May (UQIC); 2♂, 5♀, South Johnstone, 29.iii. and 5.iv.1957, A. W. S. May (QDPI). **Northern Territory**: 2♀, Gunn Pt, 12°11′S, 131°00′E, 16.iii.1987, E. S. C. Smith and D. Chin, (BARS); 2♀, Maningrinda, 12°03′S, 134°13′E, 20.ix.1982 (BARS).

Diagnosis

As for genus. Face with a prominent brownish black medial spot at oral margin. Frons with 3 *fr.* bristles and a large oval black medial patch, enclosing ocellar triangle. Occiput with broad black triangular markings dorsolaterally. Thorax with a full complement of bristles except *prst.; acr.* present. Scutum fulvous, with or without indistinct brown submedial vittae and with a yellowish medial vitta, extending onto scutellum. Anepisternum with a narrow yellow band along upper margin from postpronotal lobe to wing base. Wing predominantly subhyaline with a yellowish brown costal margin and distinct pale brown preapical marking enclosing dm-cu crossvein; apex of cell r_{4+5} white; cells bc and c yellowish; cell sc yellow, almost as long as cell c; vein R_{4+5} setose only near base. Abdomen fulvous; oviscape as long as terga III–VI combined; tergite VI about $\frac{3}{5}$ length of tergite IV; oviscape black at tip. Male with surstyli as long as epandrium; epandrium shining brown; aedeagus with a few white basoventral setae distally. Aculeus as for genus. Length of body 5·7–5·9 mm (♂) or 7·0–7·2 mm (♀), of wing 4·9–5·0 mm (♂) or 5·0–5·2 mm (♀).

Variation

Australian specimens are paler than those from Flores, lacking dark abdominal markings and with those on the scutum indistinct or absent. All other characters appear similar and this variation is probably not specifically significant. These black markings tend to be variable in many species of Euphrantini and Adramini. Specimens from the Philippines (= *imitator*) closely

resemble those from Australia but have the middle pair of *fr.* bristles vestigial or absent. This is not considered a specifically significant character; the number of *fr.* bristles is variable in some species of *Euphranta* (Hardy 1983*b*).

Distribution

Flores Island (Indonesia), the Philippines and the Northern Territory to north Queensland.

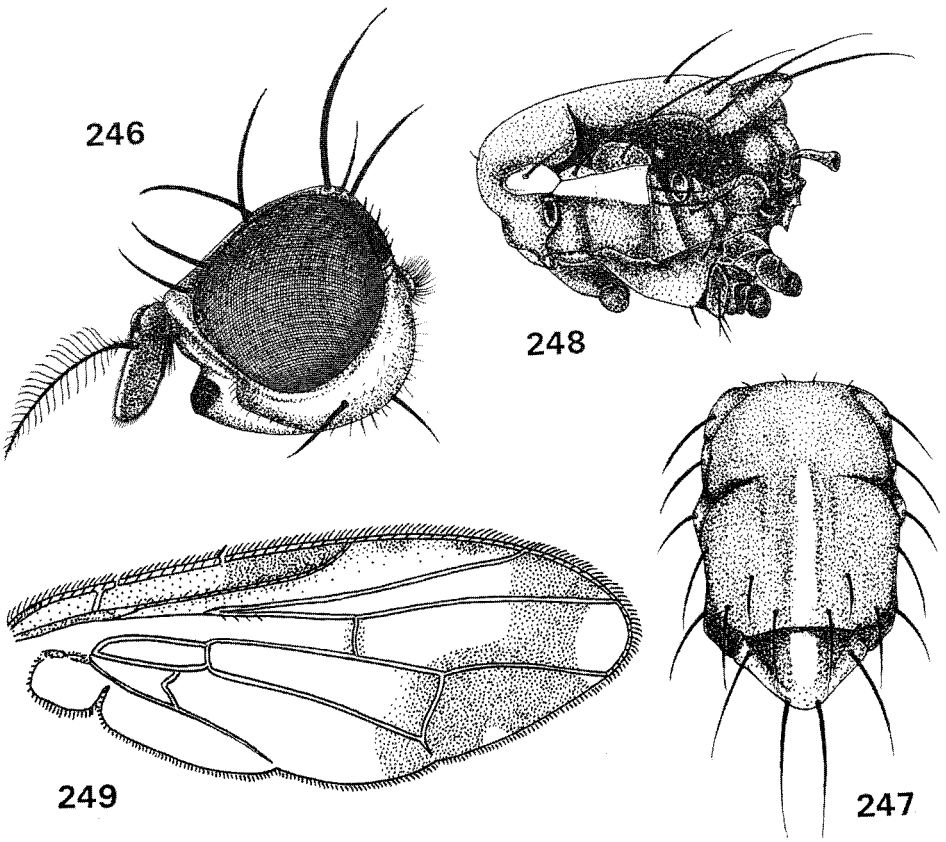
Biology

Larvae develop in the flower buds of *Ipomoea abrupta* (Smith *et al.* 1988, as *Adrama* sp.).

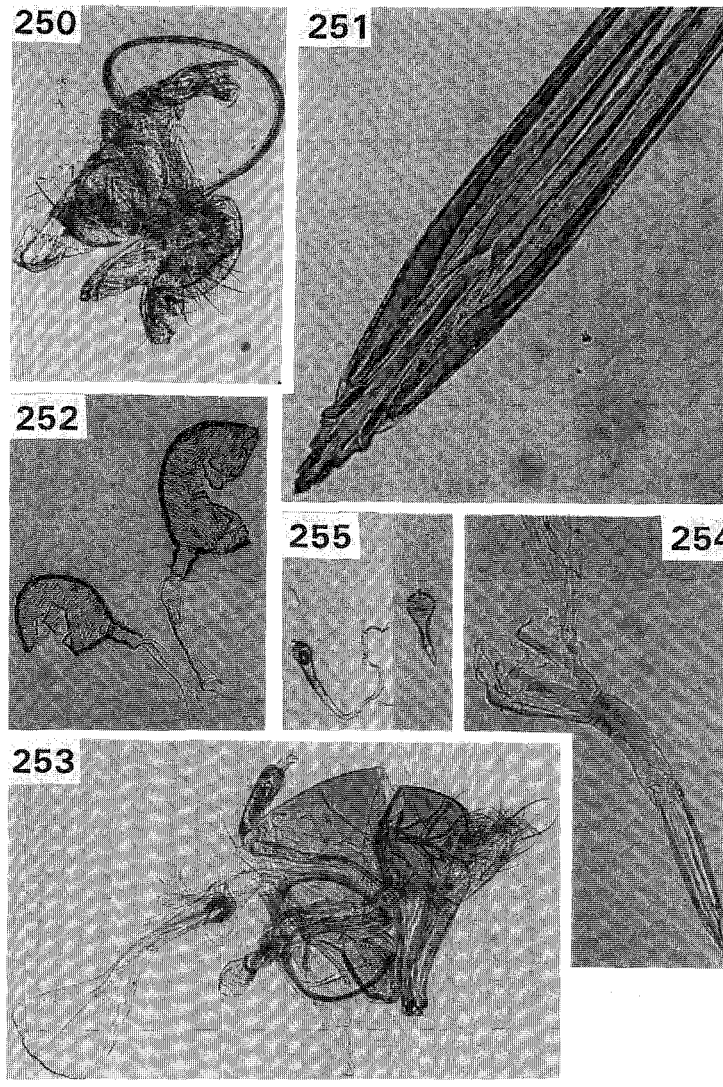
Comments

This species is recognisable by the wing pattern, yellow medial vitta on the scutum and black facial, frontal and occipital spots. It resembles *C. flavinus* (Hering) from Papua New Guinea but that species lacks the black frontal and occipital spots and has the wing markings yellow and diffuse, not distinct as in *C. circumscriptus*. In *C. latilimbatus* (Enderlein) the wing markings are more extensive and the thorax and abdomen largely black. In *C. punctilabris* (Bezzi) from Fiji, Tonga and Samoa, the wings are almost entirely brown.

Coelotrypes flavinus has been swept from sweet potato in the Western Highlands of Papua New Guinea (QDPI: label data), and *C. punctilabris* bred from a Convolvulaceae vine in Tonga (Hancock and Drew 1994*a*).



Figs 246–249. *Coelotrypes circumscriptus*: *246*, head; *247*, scutum; *248*, lateral view of thorax; *249*, wing.



Figs 250–252. *Coelotrypes circumscriptus*: *250*, ♂ genitalia (40×); *251*, aculeus (100×); *252*, 2 of 3 spermathecae (100×). **Figs 253–255.** *Elleipsa distincta*: *253*, ♂ genitalia; *254*, aculeus; *255*, 2 of 3 spermathecae. All 40×.

Genus ***Elleipsa*** Hardy

Elleipsa Hardy, 1970: 90. Type species: *E. quadrifasciata* Hardy, by original designation.

Diagnosis

Head much higher than long. Antenna about as long as face, third segment apically rounded; arista with no more than microscopic pubescence. Face concave. Frons with 3 pairs *fr.* and 1 pair *or.* bristles; *oc.* rudimentary or absent; *poc.* present; *pocl.* thin and dark. Gena with 1 black *gn.* bristle; an additional bristle on lower occipital margin. Thorax with the following bristles: 4 *scp., pprn.*, 2 *npl., sa., ia., p.sa, acr., dc.* placed behind line of *sa.* or absent; 1–2 *anepst., anepm., kepst.* Scutellum flat, triangular, with 4 *sc.* bristles and a few pale setae. Laterotergite covered with fine, long hairs. Mid tibia with 1 black apical spine. Mid and hind femora with 2

rows of short black ventral spines. Wing with veins R_1 and R_{4+5} setose; r-m crossvein placed beyond cell sc and middle of cell dm; cell cup with apical lobe short and broad; wing apex with a brown costal band. Abdomen narrow, slightly clavate. Male genitalia with surstylus long and slender. Female aculeus narrowing apically to a point with 3–4 pairs of very short preapical setae and coarse subapical dentations. Three club-shaped spermathecae with round surfaces and short apical nipples.

Comments

This is a distinctive genus, readily recognisable by the spinose mid and hind femora and the wing pattern, having one sub-basal brown band from cell sc and three apical/subapical bands radiating from cell r_1. Two species are known; one is widespread from the Philippines to the South Pacific and breeds in the mangrove *Excoecaria agallocha* (Euphorbiaceae).

Key to Species of *Elleipsa*

1. *Dc.* bristles absent; scutum mostly blackish brown, at least medially; middle of the 3 subapical wing bands meeting costal band at costa; mid and hind femora fulvous ..... *E. quadrifasciata*
   Dc. bristles present; scutum mostly red-brown, with 2 black submedial vittae; middle of the 3 subapical wing bands directed towards discal band below costa; mid and hind femora partly brown ... *E. distincta*

Elleipsa distincta, sp. nov.

(Figs 253–261)

Material Examined

Holotype. ♂, Toowoomba, Qld, Nov. 1939, A. W. S. May (QM - T12215).

Paratypes. **Queensland**: 1♂, Gatton, 6.xi.1933, F. A. Perkins (UQIC); 1♀, Gatton, Nov. 1941 (UQIC); 1♀, DPI Res. Stn, Gatton, 14–21.ix.1981, malaise trap (QDPI); 1♂, 4♀, Toowoomba, Nov. 1939, A. W. S. May (UQIC and QDPI); 1♂, Toowoomba, 9.x.1961, A. W. S. May (QDPI); 1♂, Toowoomba, Dec. 1932, C. Reves (UQIC); 1♀, Brisbane, 7.ix.1927, J. Mann (UQIC); 5♀, Eidsvold, Jan. 1923, CSIR (UQIC); 1♂, Yeppoon, 6.ii.1928 (UQIC); 1♂, Eidsvold, Bancroft (AM).

Description

Male

Length of body 6·0–6·4 mm, of wing 4·8–5·3 mm.

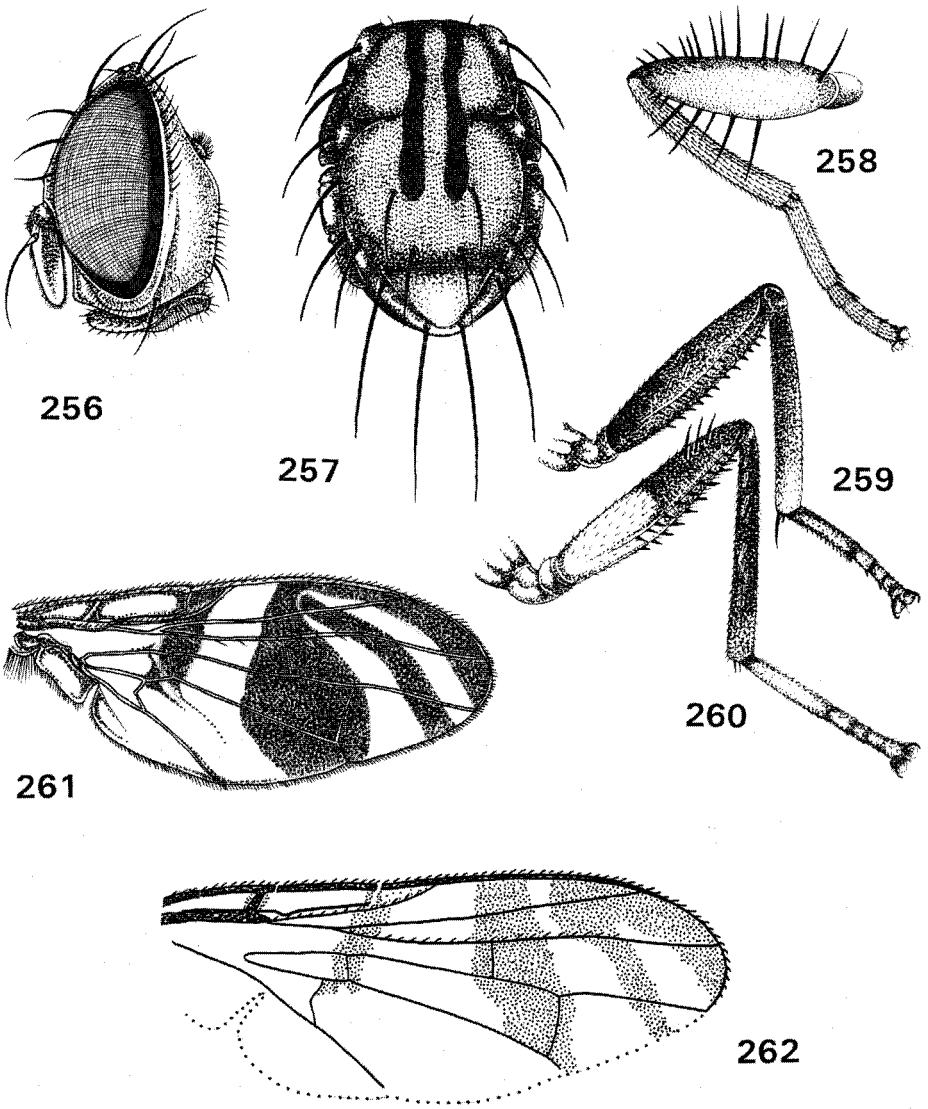
Head (Fig. 256). Entirely red-brown except for black ocellar triangle. Frons with 3 pairs *fr.* and 1 pair *or.* bristles; *oc.* rudimentary, hair-like; *pocl.* thin and dark.

Thorax. Scutum (Fig. 257), including postpronotal lobes, red-brown with a pair of submedial longitudinal black vittae extending posteriorly to *dc.* bristles. With a full complement of thoracic bristles except *prst.* lacking; *dc.* placed between *sa.* and *ia.* bristles. Scutellum flat, red-brown, with 4 *sc.* bristles. Pleura largely black, red-brown on posterior part of anepisternum and on anepimeron; 2 *anepst.* bristles. Postnotum black. Legs (Figs 258–260) fulvous except mid femur, apical half of hind femur, and hind tibia dark brown; mid tibia streaked with brown. Fore femur with a row of strong black posteroventral bristles on apical $\frac{1}{2}$ and 2 rows of small black posterodorsal bristles; mid and hind femora with 2 rows of short black anteroventral and posteroventral spines on apical $\frac{1}{2}$–$\frac{2}{5}$. Mid tibia with 1 black apical spine. Hind tibia with a row of 10–12 black anterodorsal setae. Wing (Fig. 261) with veins R_1 and R_{4+5} setose; cell sc short; r-m crossvein placed well beyond end of cell sc, at apical $\frac{2}{3}$ of cell dm. Cell cup with apical lobe short and broad. Pattern comprised of 4 brown bands: 1 transverse from cell sc to base of cell cua_1; 1 broadened posteriorly, transverse, from costa at middle of cell r_1 to wing margin and enclosing both r-m and dm-cu crossveins; 1 costal band from 2nd transverse band to wing apex; 1 subapical band, narrowly separated from junction of 2nd transverse and costal bands, reaching wing margin in cell m.

Abdomen. Black with a grey pollinose transverse band at apex of terga I+II and base of tergite III; clavate, gradually expanded posteriorly and widest at segment IV. Male genitalia (Fig. 253) with surstyli long and slender. Epandrium rounded, polished black.

Female

Length of body 6·9–7·5 mm, of wing 5·2–5·8 mm. As for male except upper occiput blackened. Abdominal terga IV and V with grey pollinose basal bands; tergite VI well developed, half length of tergite V. Oviscape black, as long as terga V and VI combined. Aculeus (Fig. 254) broad, narrowed sharply at apex, with 2 prominent apical dentations and microscopic preapical setae. Three club-shaped spermathecae (Fig. 255) with rough surfaces and short apical nipples.



Figs 256–261. *Elleipsa distincta*: *256*, head; *257*, scutum; *258*, fore leg; *259*, mid leg; *260*, hind leg; *261*, wing. **Fig. 262.** *E. quadrifasciata*, wing.

Distribution

Known only from south-east Queensland, as far north as Yeppoon.

Comments

This species may be distinguished from *E. quadrifasciata* by the mostly red-brown scutum, presence of *dc.* bristles and wing pattern details.

Etymology

The specific name is derived from the Latin *distinctus*, separate, different, referring to its status in relation to *E. quadrifasciata*.

Elleipsa quadrifasciata Hardy

(Fig. 262)

Elleipsa quadrifasciata Hardy, 1970: 90. Type locality Dalawan Bay, Balabac, Philippines. Holotype ♂ in ZMUC [not examined]. — Hardy, 1974: 116; Lee, 1991: 114; Hancock and Drew, 1994*a*: 24.

Material Examined

Queensland: 12♂, 4♀, Saibai I., Torres Strait, 11.v.1993, E. Hamacek, bred ex *Excoecaria agallocha* (QDPI).

Diagnosis

Head as for genus; *oc.* bristles rudimentary or absent. Thorax mostly black, including pleura and postnotum. Scutum varies from entirely black to broadly black medially, red-brown laterally; postpronotal lobe and disc of scutellum black or red-brown to fulvous, scutellum fulvous marginally. With a full complement of thoracic bristles except *prst.* and *dc.* absent; 1 *anepst.*; 4 *sc.* Legs fulvous, tinged with brown on hind tibia. Wing with 4 brown bands, the 3 apical-subapical bands either united at costa in cell r_1 or the 2 outer bands not joined to the inner transverse band, otherwise as for genus. Abdomen black or medially to almost entirely red-brown; clavate. Male and female genitalia as for genus. Length of body 5·7–7·0 mm (♂ ♀), of wing 4·4–5·6 mm (♂ ♀).

Distribution

Balabac Island (Philippines), Singapore, Tonga and Torres Strait, north Queensland.

Biology

This species breeds in the fruit of the mangrove *Excoecaria agallocha* (Euphorbiaceae) (Lee 1991; Hancock and Drew 1994*a*). Larvae attack the developing seeds.

Comments

The black scutum, lack of *dc.* bristles, fulvous legs and wing pattern details differentiate this species from *E. distincta*.

Genus ***Euphranta*** Loew

Euphranta Loew, 1862: 28. Type species: *Musca connexa* Fabricius, by monotypy.
Rhacochlaena Loew, 1862: 50. Type species: *Trypeta toxoneura* Loew, by monotypy.
Epochra Loew, 1873: 238. Type species: *Trypeta canadensis* Loew, by monotypy.
Lagarosia van der Wulp, 1892: 210. Type species: *L. lacteata* van der Wulp, by subsequent designation (Hendel, 1914: 78).
Staurella Bezzi, 1913: 121. Type species: *Musca crux* Fabricius, by original designation.
Xanthotrypeta Malloch, 1939*a*: 250. Type species: *X. bimaculata* Malloch, by original designation.

Diagnosis

Head higher than long. Antenna shorter than face, third segment apically rounded; arista pubescent to long plumose. Face concave, yellow or with 2 black spots, sometimes joined. Frons with 2 or 3 *fr.* and 1 *or.* bristles; *oc.* vestigial or absent; *poc.* present; *pocl.* thin and dark. Gena with 1 strong *gn.*; an additional bristle on lower occipital margin. Thorax with the following bristles: 4 *scp., pprn.*, 2 *npl., sa., ia., p.sa., dc.* placed between *sa.* and *ia., anepst., anepm., kepst.; prst.* absent; *acr.* present or absent. Scutellum flat, triangular, with 4 *sc.* bristles and a few pale setae. Laterotergite covered with fine, long hairs. Mid tibia with 1 black apical spine. Mid and hind femora without ventral spines. Wing with veins R_1 and R_{4+5} setose; r-m crossvein placed near middle of cell dm in Australian species; cell cup with apical lobe short and broad. Abdomen narrow. Male genitalia with surstyli long and slender. Aculeus apically pointed, typically serrate or dentate and with very short preapical setae. Three spermathecae, variously shaped.

Comments

We are abandoning the concept of subgenera based upon the presence or absence of *acr.* bristles. This division results in groupings that are clearly polyphyletic; furthermore, in the related genus *Coelotrypes*, presence or absence of *acr.* bristles is an infraspecific character in at least one species (Hancock 1986). A more suitable character would appear to be the number of *fr.* bristles, but even that can vary within a single species (Hardy 1983*b*). A subgenus *Rhacochlaena* (= *Epochra*) may be recognisable on characters other than bristles (Norrbom 1993), but none of the species recorded from Australia belongs in it. Consequently, we place all Australian species in typical *Euphranta*.

Hardy (1973) suggested that *E. presignis* Hardy might not belong in this genus. Both this and a similar new species appear to be more closely related to *Hardyadrama*, despite the lack of spines on the mid and hind femora, and we include them in the latter genus. *Hardyadrama* species differ in the presence of yellow thoracic vittae and lack of *poc.* bristles.

The genus is widespread throughout the Palaearctic, Nearctic and Oriental-Pacific Regions. Most species breed in fruit, a few in pods or stems. Known hosts of Australian species include the fruit of Oleaceae, Verbenaceae, Annonaceae and Convolvulaceae.

The 12 recorded Australian species may be identified by the following key.

Key to Australian Species of *Euphranta*

1. Wing without an isolated hyaline apical spot; *acr.* bristles absent 2
   Wing with an isolated hyaline apical spot; *acr.* bristles present except in *E. variabilis* 4
2. Wing with a diffuse brown discal patch, no transverse bands; cells r_1 and r_{2+3} almost entirely hyaline .. .. *E. mediofusca*
   Wing with a distinct brown transverse band through cell sc and a subapical brown patch; cells r_1 and r_{2+3} with 1 or 2 hyaline transverse bands 3
3. Wing with a large brown apical area and 2 hyaline to yellowish transverse bands through cell r_1 from costa ..... *E. numeralis*
   Wing with a hyaline longitudinal band through preapical brown area and 1 hyaline transverse band through cell r_1 from costa ..... *E. marina*
4. *Acr.* bristles absent; 2 pairs of *fr.* bristles; wing with a broad brown transverse band from cell sc to medial portion of cell dm and a broad brown preapical area; face yellow ..... *E. variabilis*
   Acr. bristles present; 2 or 3 pairs of *fr.* bristles, if 2 then wing not as above or face black above oral margin 5
5. Face with 2 black spots or a dark band above oral margin 6
   Face yellow, unspotted 8
6. 3 pairs of *fr.* bristles; cell sc fulvous medially ..... *E. mulgravea*
   2 pairs of *fr.* bristles; cell sc entirely dark brown 7
7. Scutum largely red-brown; anepisternum with a dorsal yellow patch; wing with brown band from cell sc joined with preapical patch below cell dm ..... *E. linocierae*
   Scutum largely black; anepisternum without a dorsal yellow patch; wing with brown band from cell sc not joined with preapical patch below cell dm ..... *E. athertonia*

8. 2 pairs of *fr.* bristles; wing with a transverse brown band from cell sc to below cell dm and a large brown preapical area, almost bisected by a broad hyaline indentation from cell r_1 to vein M; wing apex hyaline over apex of cell r_{4+5}, apical half of cell r_{2+3} and apical portion of cell m .... *E. minor*
3 pairs of *fr.* bristles; wing markings not as above 9
9. Wing with a transverse hyaline V-shaped band from costa to cell dm ..... *E. lemniscata*
Wing with hyaline bands or indentations not V-shaped 10
10. Anepisternum with an additional *anepst.* bristle dorsomedially, before suture; cell sc almost or entirely brown; r-m crossvein placed beyond end of cell sc 11
Anepisternum without a dorsomedial *anepst.* bristle before suture; cell sc hyaline medially; r-m crossvein placed below end of cell sc ..... *E. ternaria*
11. Wing with 2 hyaline wedges from costa in cells r_1 and r_{2+3}, not reaching cell dm ..... *E. meringae*
Wing with 2 hyaline transverse bands from costa in cell r_1 reaching hind wing margin ... *E. leichhardtiae*

Euphranta athertonia, sp. nov.

(Figs 263–269)

Material Examined

Holotype. ♀, Atherton, Qld, 24.ix.1956, A. W. S. May (QM - T12479).

Paratype. ♂, Atherton, Qld, 1.xi.1954, A. W. S. May, ex lure trap (UQIC).

Description

Female

Length of body 6·2 mm, of wing 5·5 mm.

Head (Figs 263, 264). Yellow to rufous, slightly higher than long. Antenna yellow; arista plumose. Face yellow, with a broad dumbell-shaped black marking near oral margin; concave. Lunule black. Frons with 2 pairs of widely spaced *fr.* and 1 pair of *or.* bristles; a pair of longitudinal black vittae extending from ocellar triangle to between level of *fr.* bristles; *oc.* vestigial. Upper half of occiput with broad black lateral patches.

Thorax (Figs 265, 266). Predominantly black; with a full complement of bristles except *prst.; dc.* placed about midway between *sa.* and *ia.* bristles. Scutum with a large prescutellar yellow spot; postpronotal lobe and lateral margin yellow. Scutellum flat, triangular, yellow, with 4 *sc.* and a few black setae laterally. Postnotum black. Anepisternum without a pale vitta along upper margin. Legs mostly fulvous; mid tibia brown on basal half and hind tibia brown except at apex. Fore femur with 7–9 strong black posteroventral bristles and 2 rows of small posterodorsal bristles. Mid tibia with 1 strong black apical spine. Wing (Fig. 267) hyaline with brown markings as follows: 1 transverse band from costa through cell sc and r-m crossvein to middle of cell dm, with an isolated spot below vein CuA_1; a broad preapical area from costa in cell r_1, crossing dm-cu crossvein to wing margin, leaving apex of cell r_{4+5} and extreme tip of cell r_{2+3} hyaline, and with hyaline indentations in cell r_1 to vein R_{4+5} or beyond and in cell m. Veins R_1 and R_{4+5} setose; r-m crossvein placed a little before middle of cell dm, below end of cell sc; cell cup with apical lobe short and broad.

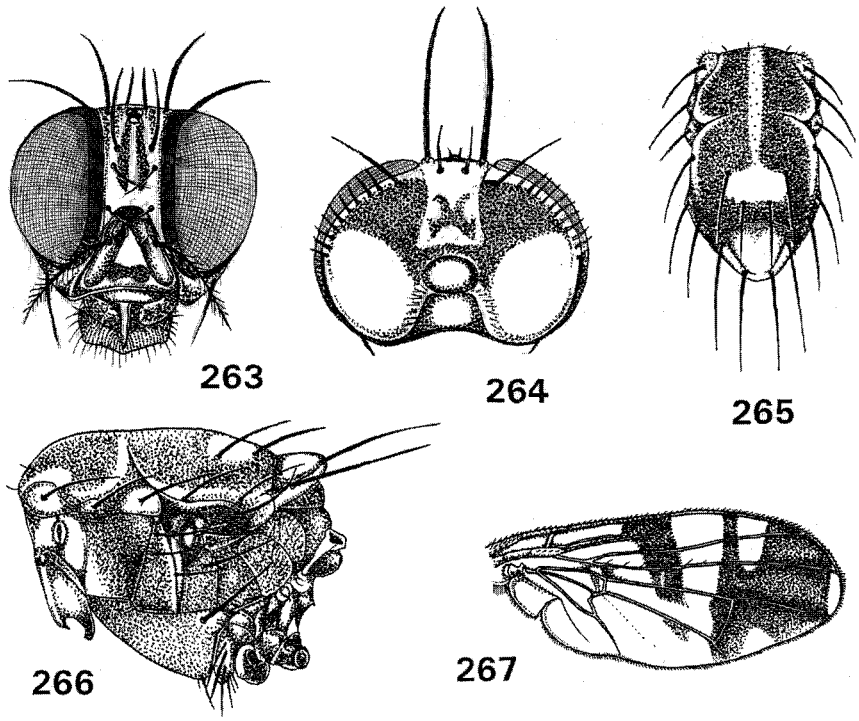
Abdomen. Predominantly polished black, with a fulvous medial band on terga I–IV and fulvous lateral margins on terga I+II. Oviscape black. Aculeus (Fig. 268) broad, tapering sharply to a blunt apex, with weak preapical dentations and very short preapical setae. Three elongate, ribbon-like spermathecae (Fig. 269) with expanded ducts.

Male

Length of body 6·0 mm, of wing 5·3 mm. As for female except r-m crossvein placed at middle of cell dm. Male genitalia not examined.

Distribution

Known only from Atherton, north Queensland.



Figs 263–267. *Euphranta athertonia*: *263–264*, head, front and rear views; *265*, scutum; *266*, lateral view of thorax; *267*, wing.

Comments

This species resembles *E. linocierae*, differing in the lack of anepisternal yellow areas, the blacker thorax and the wing pattern, the transverse band through r-m crossvein shorter, not joined to the preapical brown area below cell dm. The shape of the aculeus and spermathecae also differs from that of *E. linocierae*.

Etymology

The specific name is derived from the type locality, Atherton.

Euphranta leichhardtiae, sp. nov.

(Figs 270–275)

Material Examined

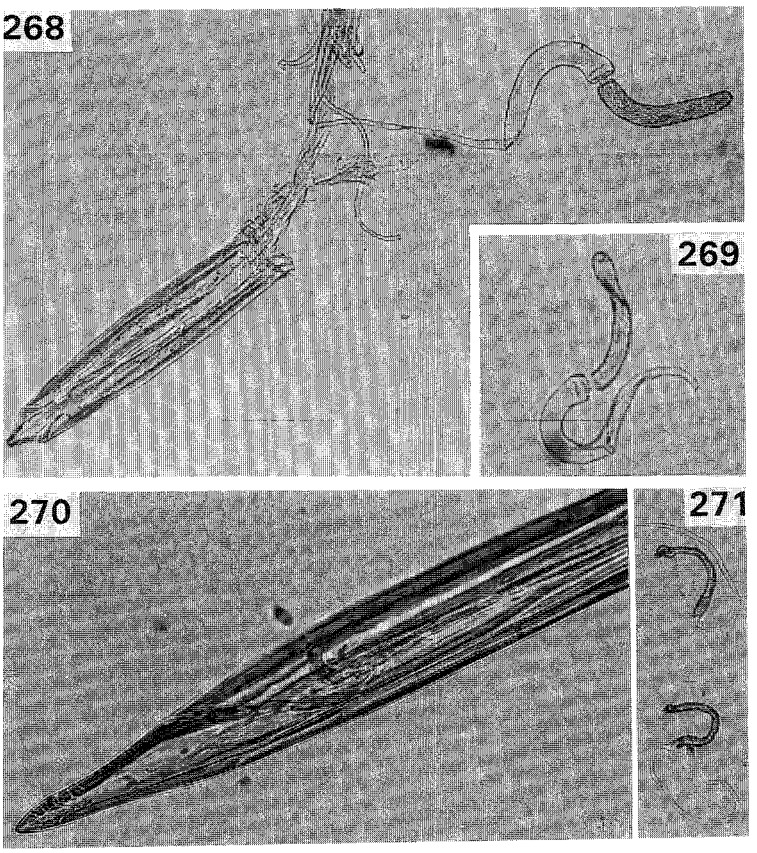
Holotype. ♀, Rocky R., via Coen, Cape York Pen., N Qld, 14–16.xii.1964, G. Monteith (QM - T12221).

Paratypes. **Queensland**: 1♂, Claudie R., 5 mi W Mt Lamond, 30.xii.1971, D. K. McAlpine and G. A. Holloway (AM); 1♀, Brisbane, 6.iii.1960 (UQIC); 1♀, Natl Pk [= Mt Glorious, Brisbane], 25.x.1923 (UQIC); 1♂, Wolli Ck, 31.i.1962, H. G. G., ex fruit of *R. leichardtii* [*sic*] (QDPI). **New South Wales**: 1♂, Victoria Pk, Alstonville, 15 km E of Lismore, 9.iii.1981, M. J. Fletcher and G. R. Brown, at MV lamp (NSWA).

Description

Female

Length of body 7·7–8·1 mm, of wing 5·8–6·0 mm.

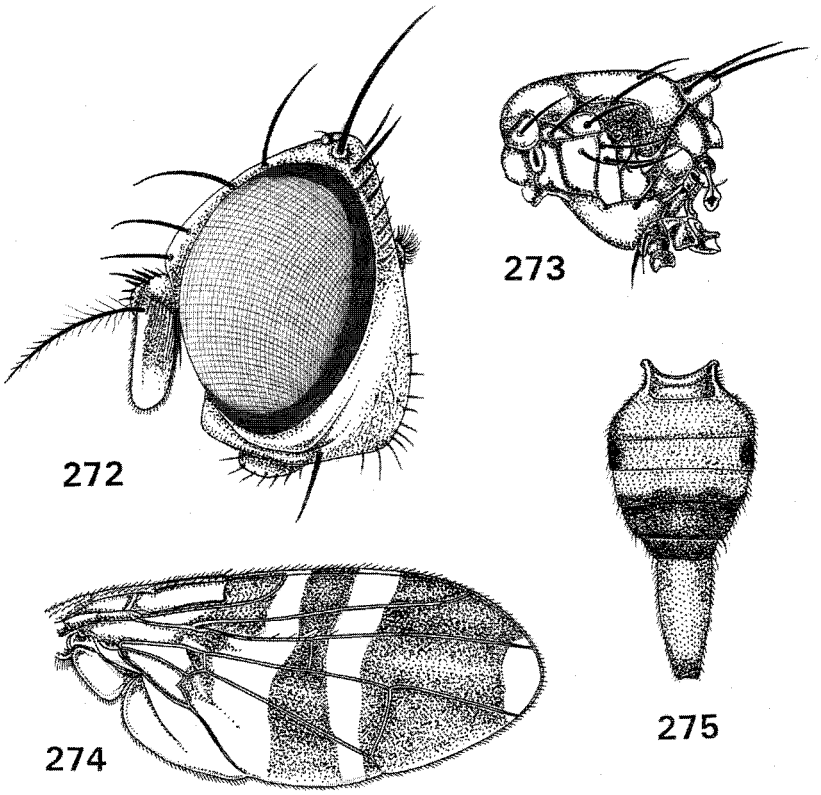


Figs 268–269. *Euphranta athertonia*: *268*, aculeus and 1 of 3 spermathecae (40×); *269*, spermatheca (40×). **Figs 270–271.** *E. leichhardtiae*: *270*, aculeus (100×); *271*, 2 of 3 spermathecae (40×).

Head (Fig. 270). Yellow except dark brown ocellar triangle; higher than long. Antenna yellow; arista plumose. Face yellow, concave. Frons with 3 pairs *fr.* and 1 pair *or.* bristles; *oc.* vestigial or absent.

Thorax (Fig. 271). Fulvous to red-brown; with a full complement of bristles except *prst.; dc.* closer to *ia.* than *sa.* Scutellum flat, triangular, with 4 *sc.* and scattered black setae. Postnotum rufous. Anepisternum with an additional *anepst.* bristle dorsomedially. Legs rufous. Fore femur with 2 rows of black dorsal bristles and 4–5 strong posteroventral bristles. Mid femur with a pair of posterodorsal bristles. Mid tibia with 1 apical black spine. Hind tibia with a row of 9–10 brown setae. Wing (Fig. 272) hyaline with 3 transverse brown bands: 1 from costa through cell sc to base of cell dm; 1 complete from costa in cell r_1, across r-m crossvein to wing margin; 1 broad preapical band from apical part of cell r_1 across dm-cu crossvein, leaving apex of wing in cell r_{4+5} and extreme tip of cells r_{2+3} and m hyaline. Veins R_1 and R_{4+5} setose; r-m crossvein placed near middle of cell dm, a little beyond end of cell sc; cell cup with apical lobe short and broad.

Abdomen (Fig. 273). Fulvous to red-brown; tergite III with dorsolateral black spots; apical third of tergite IV and all of tergite V and VI brown. Oviscape red-brown, as long as tergites III–VI combined. Aculeus (Fig. 274) elongate, smooth and sharply pointed at apex. Three elongate, ribbon-like spermathecae (Fig. 275) with narrow ducts.



Figs 272–275. *Euphranta leichhardtiae*: *272*, head; *273*, lateral view of thorax; *274*, wing; *275*, ♀ abdomen.

Male

Length of body 6·8 mm, of wing 6·5 mm. Similar to female except abdomen black, with apices of terga II, III and IV fulvous. Male genitalia not examined.

Distribution

Eastern Australia, from Claudie River, Cape York Peninsula, to northern New South Wales.

Biology

Larvae develop in the fruit of *Rauwenhoffia leichhardtiae* (Annonaceae).

Comments

This species resembles *E. meringae,* sp. nov., in having an additional *anepst.* bristle dorsomedially. It differs in the wing pattern and shorter oviscape. In wing pattern it resembles *E. apicalis* Hendel from South-east Asia, but that species has only two *fr.* bristles and a shorter oviscape.

Etymology

The specific name is derived from that of its host plant.

Euphranta lemniscata Enderlein

(Figs 276–282)

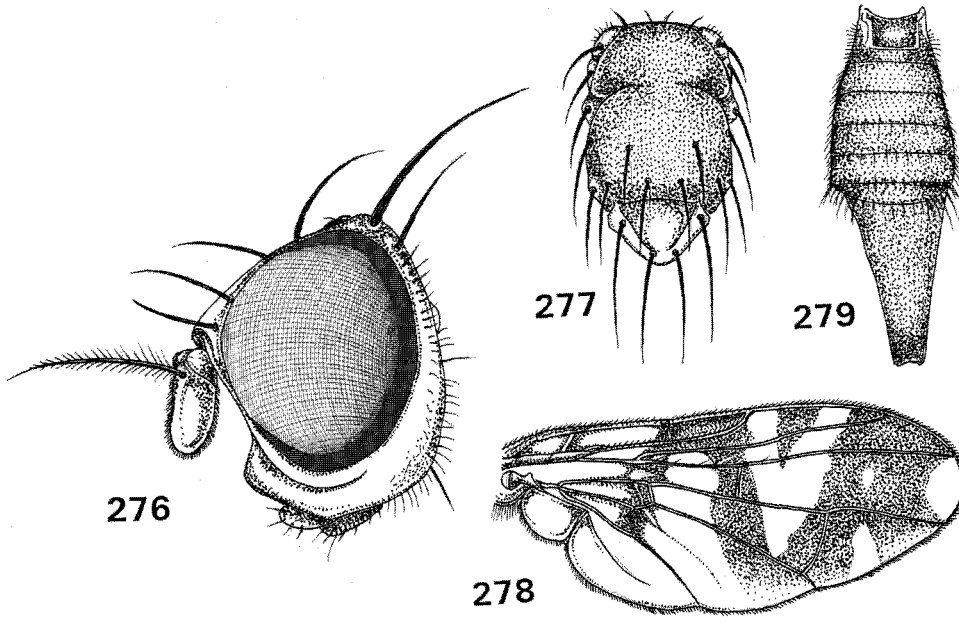
Euphranta lemniscata Enderlein, 1911: 426. Type locality Takao, Taiwan. Holotype ♂ in PIZW [not examined]. — Hancock and Drew, 1994*a*: 24.
Euphranta rivulosa Bezzi, 1928: 109. Type locality Suva, Fiji. Holotype ♂ in BMNH [not examined].
Euphranta (Staurella) lemniscata. — Hardy, 1955: 82; Hardy and Adachi, 1956: 15; Hardy, 1983*b*: 187.
Euphranta (Rhacochlaena) lemniscata. — Hardy and Foote, 1989: 521.

Material Examined

Queensland: 1♂, Cairns district (UQIC); 1♀, Atherton, summer 1955–56 (UQIC); 1♀, Ayr, 28.vii.1952 (UQIC); 1♂, McLeod R. x-ing, Mt Carbine, 16°29′S, 144°59′E, 27.xii.1984, G. and A. Daniels (UQIC); 2♀, Gordonvale, 14.ix.1926, B. G. Bates, ex native fruit (UQIC); 2♀, Sth Johnstone, 31.v.1957 and 22.xi.1957, A. W S. May (QDPI); 1♂, Ayr, 1.v.1957, A. W. S. May (QDPI).

Diagnosis

Head yellow to rufous, higher than long. Antenna yellow; arista plumose. Face rufous, concave. Frons with 3 pairs *fr.* and 1 pair *or.* bristles; *oc.* weak. Thorax fulvous to red-brown; scutum with submedian and dorsolateral brown vittae, these often joined into 2 broad bands; with a full complement of thoracic bristles except *prst.* Legs yellow to rufous; fore femur moderately swollen; mid tibia with 1 black apical spine. Wing with a characteristic V-shaped hyaline marking from cell r_1 to cell dm; apex of cell r_{4+5} hyaline; r-m crossvein placed near middle of cell dm, below end of cell sc. Abdomen fulvous to red-brown, often with darker lateral markings. Oviscape elongate, almost as long as abdomen. Aculeus apically serrate and pointed. Three oblong, roughly surfaced spermathecae with narrow ducts. Male genitalia with surstyli elongate. Length of body 4·7–5·2 mm (♂) or 8·0–8·5 mm (♀), of wing 5·0–5·5 mm (♂) or 5·8–6·2 mm (♀).



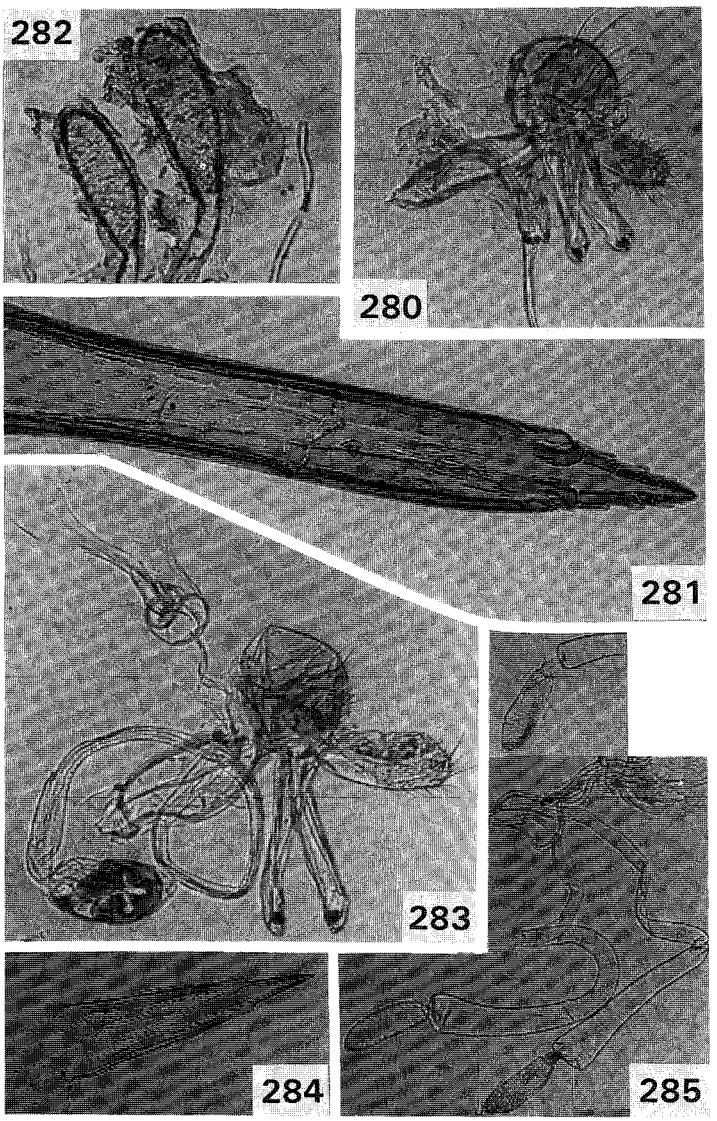
Figs 276–279. *Euphranta lemniscata*: *276*, head; *277*, scutum; *278*, wing; *279*, ♀ abdomen.

Distribution

India, Myanmar, Thailand, Taiwan, Papua New Guinea, Micronesia, Tonga, Fiji and north-east Queensland.

Biology

In Tonga, larvae develop in the fruit of *Stictocardia tiliifolia* (Convolvulaceae) (Hancock and Drew 1994*a*). In Australia it has been reared from an unidentified native fruit.



Figs 280–282. *Euphranta lemniscata*: *280*, ♂ genitalia (40×); *281*, aculeus (100×); *282*, 2 of 3 spermathecae (1200×). **Figs 283–285.** *E. linocierae*: *283*, ♂ genitalia (100×); *284*, aculeus (40×); *285*, spermathecae (100×).

Comments

This is a widespread species related to *E. jucunda* Hendel from Taiwan. It differs in having the brown marking in the middle of cell r_1 completely isolated, not joined to the preapical brown area, cell c without a brown medial area, and the r-m crossvein placed near the middle of cell dm rather than distinctly beyond the middle.

Euphranta linocierae Hardy

(Figs 283–289)

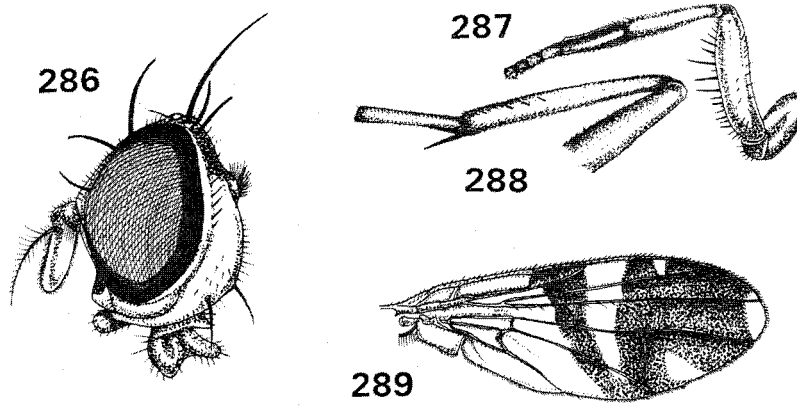
Euphranta linocierae Hardy, 1951: 176. Type locality Cairns, Queensland. Holotype ♂ in USNM [not examined].
Euphranta (Staurella) linocierae. — Hardy, 1955: 82.
Euphranta (Rhacochlaena) linocierae. — Hardy and Foote, 1989: 521.

Material Examined

73♂, 69♀ from the following localities. **Queensland:** Iron Ra., Cairns, Kamerunga, Gordonvale, Dimbulah, Atherton, Snapper I. (16°18′S, 145°30′E), McIvor R. rd 6 km N Isabella Falls, Mt Cook (Cooktown), Cooktown, Shipton's Flat (31 km S Cooktown), Lizard I. (nr Cooktown), Mt Lewis via Julatten, Daintree Natl Pk nr Mossman, Cardstone, Paluma, Paluma Dam, Palm I., Byfield S.F. N of Yeppoon, Yeppoon. (In QDPI, UQIC, AM.) A ♀ in UQIC, labelled 'Brisbane, ii.1962, N. Heather' appears to be a locality error.

Diagnosis

Head largely rufous, slightly higher than long. Antenna yellow; arista plumose. Face yellow with a pair of dark brown to black spots near oral margin, sometimes joined; concave. Frons with 2 pairs of widely spaced *fr.* and 1 pair *or.* bristles; *oc.* weak. Lunule black. Frons with a pair of longitudinal black vittae from ocellar triangle to lower margin, fused distally. Occiput fulvous, often with a pair of black dorsolateral markings. Thorax predominantly red-brown; scutum often blackened dorsolaterally and with lateral yellow areas and a large prescutellar yellow spot; postpronotal lobe, notopleuron and upper portion of anepisternum yellow. With a full complement of thoracic bristles except *prst.* Scutellum greyish basally, yellow on apical $\frac{2}{3}$. Postnotum black. Legs fulvous except mid tibia brown on basal half and hind tibia brown except at apex. Fore basitarsus slightly broadened at base, flattened and concave on posterior surface. Mid tibia with 1 black apical spine. Wing with a brown transverse band from costa through cell sc and r-m crossvein, extending through cell dm almost to wing margin, usually



Figs 286–289. *Euphranta linocierae*: *286*, head; *287*, ♂ fore leg; *288*, ♂ mid leg; *289*, wing.

connected with preapical brown area below cell dm; wing apex hyaline in cell r_{4+5} and extreme tip of cell r_{2+3}; hyaline indentations in cell r_1, often extending to vein R_{4+5} or beyond, and in cell m; r-m crossvein placed near middle of cell dm, below end of cell sc. Abdomen largely black, fulvous medially on terga I-IV and laterally on tergite I; in female also fulvous laterally on terga IV-VI. Aculeus tapering apically to a sharp point, with very small preapical setae and a distinct subapical dentation. Three oval, roughly surfaced spermathecae with expanded ducts. Male genitalia with surstyli long and slender; epandrium mostly black. Length of body 6·9–7·2 mm (♂) or 6·4–9·0 mm (♀), of wing 5·8–6·3 mm (♂) or 5·0–7·0 mm (♀).

Distribution

Eastern Queensland, from Iron Range (Cape York Peninsula) to Yeppoon.

Biology

Larvae develop in the seeds within the fruit of *Chionanthus (= Linociera) ramiflorus* (Oleaceae) (Hardy 1951; data labels of F. A. Perkins, A. W. S. May, B. McCulloch, M. Elson-Harris and H. Churches).

Comments

This species resembles *E. athertonia* and several South-east Asian species (Hancock and Drew 1994*b*), differing in the fusion of the medial and preapical brown areas on the wing, the paler, mostly red-brown thorax and the shape of the aculeus and spermathecae.

Euphranta marina, sp. nov.

(Figs 290–295)

Material Examined

Holotype. ♂, Bribie I., Qld, 28.ix.1990, S. Permkam (QM - T12219).

Paratypes. **Queensland**: 3♂, 10♀, same data as holotype (QM, UQIC); 1-, Deception Bay, T. L. Bancroft (QDPI); 1♂, Brisbane, 29.x.1936 (QDPI); 1-, Little Mulgrave R., Gordonvale, 17°09′S, 145°43′E, 26–27.vii.1989, P. Surakrai (UQIC); 1♂, Dagmar Range, Daintree, 16°20′S, 145°20′E, 14–15.vii.1989, P. Surakrai, mining cotyledons of fallen seeds of *Avicennia marina* (mangrove) (UQIC); 1♂, Saibai I., Torres Strait, 09°23′S, 142°40′E, 8.ii.1986, K. Houston and E. Hamacek, at light (QDPI); 2♂, 2♀, Yam I., Torres Strait, 22.iii.1985, J. W. Turner, at light (QDPI). **New South Wales**: 1♂, Harwood nr Maclean, 3.xi.1965, M. S. Upton (ANIC). **Northern Territory**: 1♀, Beatrice Hill, 15.iii.1976, A. L. Dyce (BARS); 1♀, Dinah Beach, Darwin, 23.ii.1982, B. Gaver (BARS).

Description

Male

Length of body 6·0–6·5 mm, of wing 5·4–6·1 mm.

Head (Fig. 290). Fulvous, higher than long. Antenna yellow; arista plumose. Face yellow, with a pair of black spots above oral margin; concave. Frons with 2 pairs of widely spaced *fr.* and 1 pair *or.* bristles; *oc.* vestigial; ocellar triangle black.

Thorax. Predominantly fulvous; with a full complement of bristles except *prst.* and *acr.*; *dc.* placed close to level of *ia.* Scutum (Fig. 291) black except fulvous laterally and often medially; with a broad yellow prescutellar spot, bordered by *dc.* bristles; postpronotal lobe yellow. Scutellum flat, triangular, with 4 *sc.* and scattered hair-like setae laterally. Postnotum black. Legs fulvous. Fore femur with 2 rows of posterodorsal setae and a row of posteroventral bristles. Mid tibia with 4–6 posterodorsal setae and 1 black apical spine. Hind tibia with a row of 9-10 black anterodorsal setae. Wing (Fig. 292) hyaline with dark brown markings as follows: cell sc, extending basally to base of cell dm and distally as a curved band through r-m crossvein to apex of cell cua_1, united below cell dm with a broad preapical area that has a longitudinal

band from cell r_{2+3} to apex of cell r_{4+5} and most of cell m hyaline. Veins R_1 and R_{4+5} setose; r-m crossvein placed at middle of cell dm, below cell sc; cell cup with apical lobe short and broad.

Abdomen. Fulvous; terga III–V blackened laterally. Male genitalia (Fig. 293) with surstyli long and slender; epandrium black; anal lobe as long as epandrium, pale brown.

Female

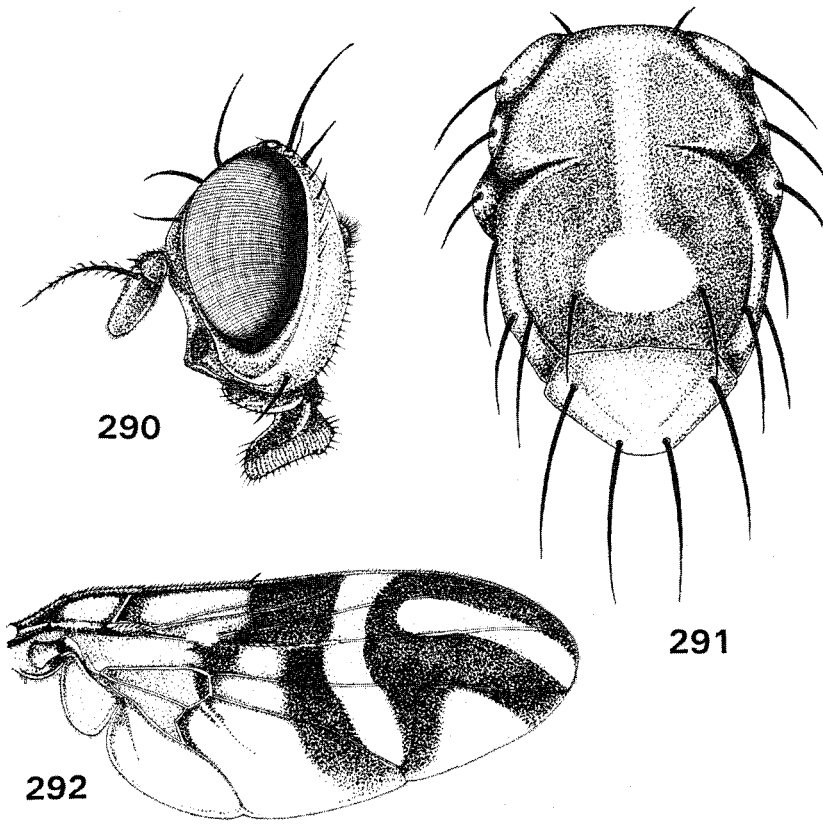
Length of body 7·0–7·3 mm, of wing 5·7–6·4 mm. As for male except abdomen. Tergite VI fulvous. Oviscape fulvous, black at apex, as long as terga IV–VI combined. Aculeus (Fig. 294) apically smooth and pointed, with very small preapical setae. Three oval, roughly surfaced spermathecae (Fig. 295) with expanded ducts.

Distribution

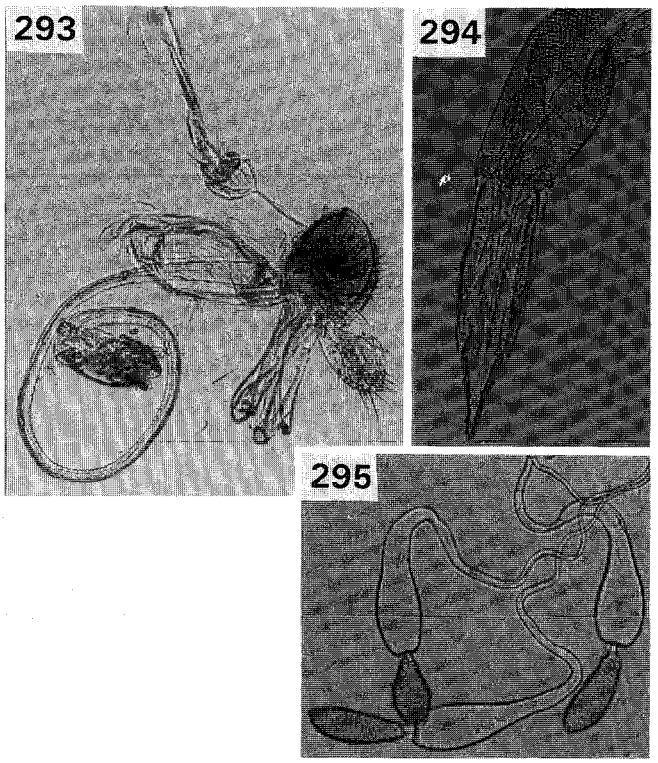
Coastal areas of the Northern Territory, Queensland and New South Wales.

Biology

Larvae mine the cotyledons of mangroves, *Avicennia marina* var. *australica* (Verbenaceae). McAlpine (1965) first reported this species from mangroves. Eggs are laid in the fruit whilst still on the tree. A long series in AM was largely bred from larvae and pupae in still attached fruit of *Avicennia* at Careel Bay near Sydney (D. K. McAlpine, personal communication).



Figs 290–292. *Euphranta marina*: *290*, head; *291*, scutum; *292*, wing.



Figs 293–295. *Euphranta marina*: *293*, ♂ genitalia (40×); *294*, aculeus (40×); *295*, spermathecae (100×).

Comments

This species is related to *E. signatifacies* Hardy from Malaysia and Thailand, which utilises both *Avicennia* and *Rhizophora* mangroves (Hancock and Drew 1994*b*). It differs primarily in the wing pattern; the subapical longitudinal band does not reach the wing margin in the latter species. Some specimens seen from the Northern Territory have the anterior part of the mesonotum largely fulvous.

Etymology

The specific name is derived from the host plant, *Avicennia marina*.

Euphranta mediofusca (Hering)

(Figs 296–300)

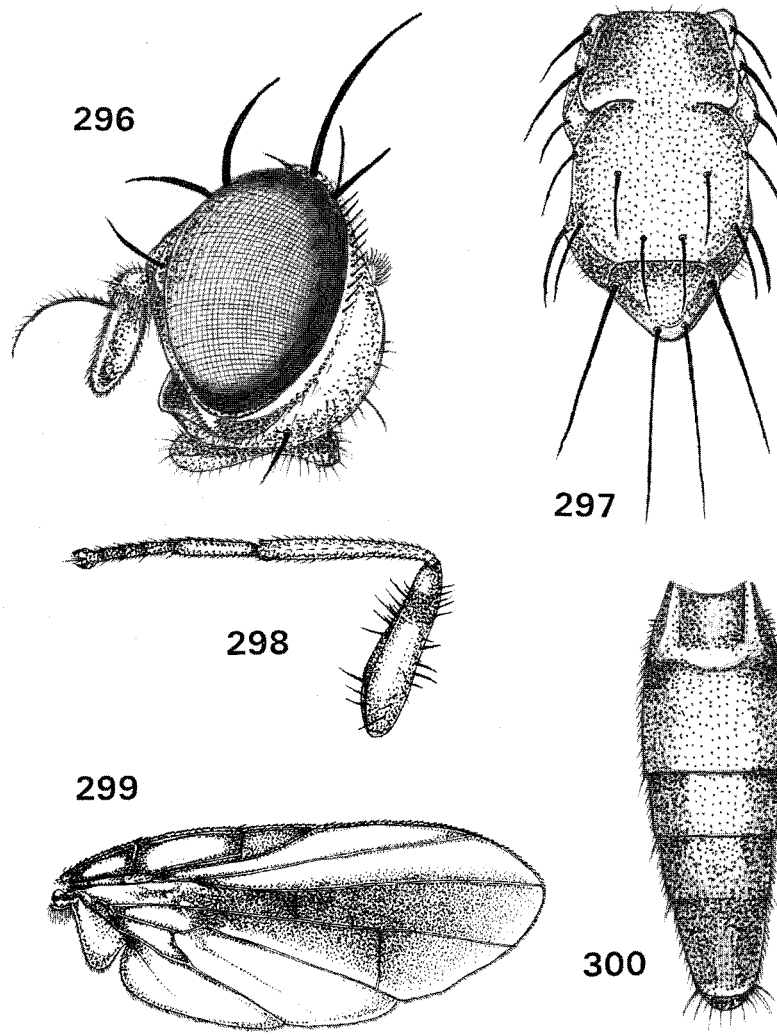
Staurella mediofusca Hering, 1941*a*: 14. Type locality Herbertshöhe auf Ralum (= Kokopo, New Britain). Holotype ♀ in ZMHB [not examined].
Euphranta (Staurella) mediofusca. — Hardy, 1955: 82; Hardy, 1983*b*: 192.
Euphranta (Rhacochlaena) mediofusca. — Hardy and Foote, 1989: 521.

Material Examined

Queensland: 3♂, 3♀, Iron Ra., 6.xi.1989, M. Elson-Harris and H. Churches, bred ex *Faradaya splendida* (QDPI); 1♂, Iron Ra., 16–23.xi.1965, G. Monteith (UQIC); 1♀, Gordon Ck, Iron Ra., 16°39′S, 130°59′E, 28.ix.1974, mv lamp (ANIC); 2-, Middle Claudie R., Iron Ra., 12°46′S, 143°17′E, 19.x.1974, mv lamp (ANIC); 1♂, 1 mi NE Mt Lamond, Iron Ra., 12°46′S, 143°16′E, 1.i.1972, D. K. McAlpine and G. A. Holloway (AM); 2-, Claudie R., 5 mi W Mt Lamond, 12°46′S, 143°17′E, 30.xii.1971, D. K. McAlpine and G. A. Holloway, malaise trap (AM).

Diagnosis

Head fulvous, slightly higher than long. Antenna rufous; arista plumose. Face yellow with 2 black spots near oral margin; concave. Frons with 2 pairs of widely spaced *fr.* and 1 pair of *or.* bristles; *oc.* vestigial. Lunule dark brown to black. Occiput with a pair of large black dorsolateral markings. Thorax predominantly red-brown; scutum brown above each postpronotal lobe, often continued as a submedial vitta along line of *dc.* bristle; with a full complement of thoracic bristles except *prst.*; *dc.* placed behind line of *sa.* Legs fulvous. Fore femur with a brown preapical posterolateral spot. Mid tibia with 1 black apical spine. Wing hyaline to subhyaline, with cell sc pale brown and a diffuse brown discal area covering most of cells r_{4+5}, br, dm and m. Abdomen dark red-brown to black, medial portions of terga II–IV tinged yellow; tergite V black. Oviscape red-brown, a little longer than terga IV–VI combined. Male genitalia with surstyli long and slender. Length of body 6·8–7·2 mm (♂) or 7·0–7·5 mm (♀), of wing 5·0–5·5 mm (♂) or 4·7–5·0 mm (♀).



Figs 296–300. *Euphranta mediofusca*: *296*, head; *297*, scutum; *298*, ♂ fore leg; *299*, wing; *300*, ♂ abdomen.

Distribution

New Britain (Papua New Guinea) and Iron Range area, Cape York Peninsula, Queensland.

Biology

Larvae develop in the fruit of *Faradaya splendida* (Verbenaceae).

Comments

This species is easily recognised by the distinctive wing pattern. In Papua New Guinea its host plant, *Faradaya splendida*, is utilised by *E. perkinsi* Hardy (QDPI: label data).

Euphranta meringae, sp. nov.

(Figs 301–304)

Material Examined

Holotype. ♀, Meringa [nr Gordonvale], Qld, Nov. 1926, Goldfinch (QM - T12224).

Description

Female

Length of body 8·7 mm, of wing 5·5 mm.

Head (Fig. 301). Predominantly fulvous, higher than long. Antenna yellow; arista plumose. Face yellow, concave. Frons with 3 pairs *fr.* and 1 pair *or.* bristles; *oc.* weak.

Thorax (Fig. 302). Fulvous to pale red-brown; with a full complement of thoracic bristles except *prst.*; *dc.* placed midway between *sa.* and *ia.* bristles. Scutellum flat, triangular, with 4 *sc.* and scattered black setae. Postnotum red-brown. Anepisternum with an additional *anepst.* bristle dorsomedially. Legs fulvous. Fore femur with 4–5 strong posteroventral bristles and 2 rows of hair-like dorsal setae. Mid femur with 1 black posteroventral bristle on basal $\frac{1}{3}$. Mid tibia with a row of 4 posterodorsal setae medially and 1 apical black spine. Hind femur with 5–6 posteroventral bristles. Hind tibia with a row of 8–10 strong anterodorsal setae. Wing (Fig. 303) hyaline with distal half, from cell sc to margin of cell cua_1, largely brown, with wing apex in cell r_{4+5} and extreme tips of cells r_{2+3} and m hyaline; also with 2 hyaline indentations from costa in cell r_1 to vein R_{4+5} and 1 indentation in cell cua_1 and cell dm; also a weak brown stripe from cell sc to base of cell dm. Veins R_1 and R_{4+5} setose; r-m crossvein placed near middle of cell dm, a little beyond end of cell sc; cell cup with apical lobe short and broad.

Abdomen (Fig. 304). Terga I–III red-brown; terga IV and V black with narrow apical fulvous margins; tergite VI black, well developed. Oviscape black, as long as rest of abdomen. Aculeus not exposed.

Male

Unknown.

Distribution

Known only from the Cairns district, north Queensland.

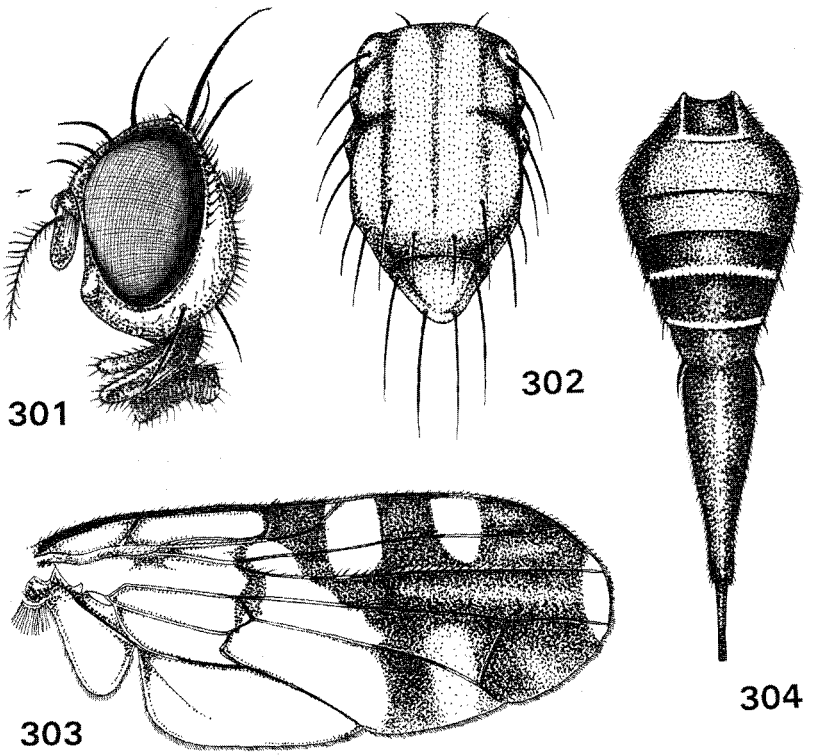
Comments

This species resembles *E. leichhardtiae* in the presence of three *fr.* bristles, an additional, dorsomedial *anepst.* bristle and position of the r-m crossvein, beyond the end of cell sc. It differs in the wing pattern and much longer oviscape. It also appears to be related to

E. canangae Hardy from South-east Asia but that species has the brown wing markings more extensive in cells cua_1 and dm. *E. canangae* breeds in the fruit of *Cananga odorata* (Annonaceae) and *E. meringae* may have a similar host.

Etymology

The specific name is derived from the type locality.



Figs 301–304. *Euphranta meringae*: *301*, head; *302*, scutum; *303*, wing; *304*, ♀ abdomen.

Euphranta minor Hendel

(Figs 305–309)

Euphranta minor Hendel, 1928: 362. Type locality Palmerston (= Darwin), Northern Territory. Holotype ♀ in DEI [not examined]. — Malloch, 1939*d*: 443; Hardy, 1951: 176.
Euphranta (Euphranta) minor. — Hardy and Foote, 1989: 520.

Material Examined

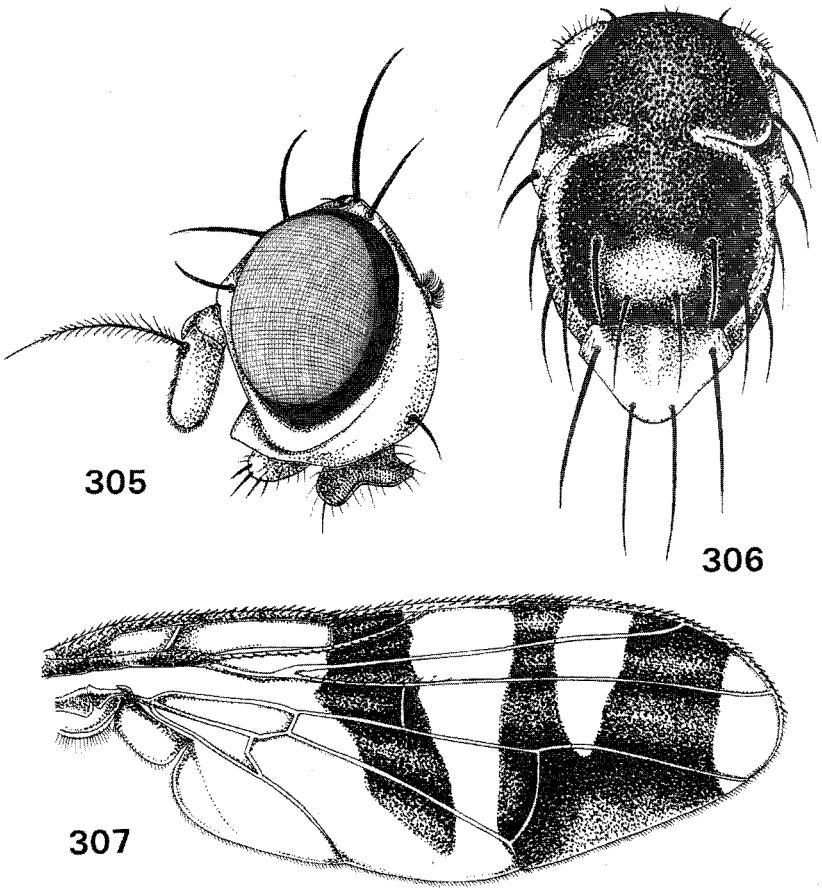
Queensland: 1♀, 9 km ENE of Mt Tozer, 12°43′S, 143°17′E, 5–10.vii.1986, D. H. Colless (ANIC); 2♂, Claudie R., 5 mi W Mt Lamond, 24 and 30.xii.1971, D. K. McAlpine and G. A. Holloway (AM); 1♀, 2 mi NE Mt Lamond, Iron Ra., 28.xii.1971, D. K. McAlpine and G. A. Holloway (AM); 1♂, Kuranda, 24.xii.1958, D. K. McAlpine (AM); 1♂, 1♀, Little Laura R., 'Jowalbinna', 15°46′S, 144°14′E, 8.v.1989, G. and A. Daniels, mv lamp (QM and UQIC); 1♀, Atherton, 7.x.1960, A. W. S. May, ex lure trap in citrus (QDPI); 1♀, Peach Ck, 25 km NNE of Coen, 2.xi.1979, M. S. and B. J. Moulds (AM); 1♀, Isabella Ck, 32 km WNW of Cooktown, 230 m, 22.v.1977 (ANIC).

Diagnosis

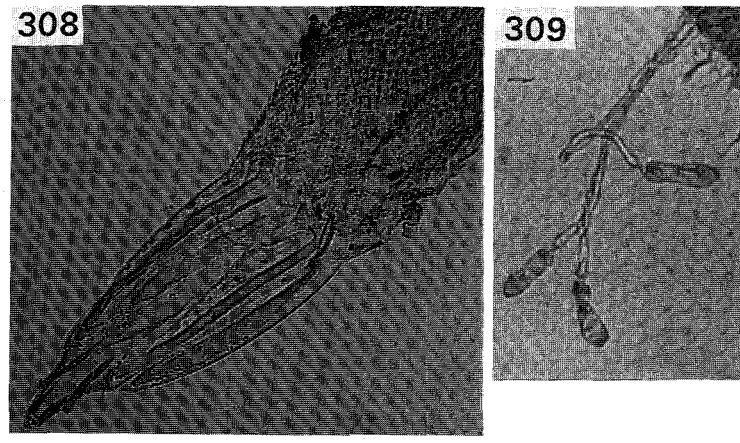
Head fulvous to red-brown, slightly higher than long. Antenna yellow; arista plumose. Face yellow, concave. Frons with 2 pairs of widely spaced *fr.* and 1 pair *or.* bristles; *oc.* vestigial. Thorax brown to black; scutum normally paler medially, with a yellowish prescutellar patch. With a full complement of thoracic bristles except *prst.* Scutellum yellow to yellow-brown, with scattered black dorsolateral setae. Postnotum dark brown to black. Legs fulvous, femora often tinged with brown. Mid tibia with 1 black apical spine. Wing with a broad brown transverse band from costa through cell sc and r-m crossvein, extending into cell cua_1 below middle of cell dm; a broad preapical brown area from cell r_1 through dm-cu crossvein to wing margin, leaving wing apex broadly hyaline in cell r_{4+5}, apical half of cell r_{2+3} and tip of cell m; with or without a hyaline indentation in cell m; r-m crossvein placed near middle of cell dm, below end of cell sc. Abdomen red-brown to dark brown; tergite VI well developed. Oviscape black, as long as tergites IV-VI combined. Aculeus short, broad, narrowing sharply, with 1 pair of preapical serrations and 4 pairs of short preapical setae. Three elongate spermathecae. Length of body 3·7–4·0 mm (♂), 4·6–4·8 mm (♀), of wing 3·7–4·0 mm (♂ ♀).

Distribution

Northern Territory and north-east Queensland.



Figs 305–307. *Euphranta minor*: *305*, head; *306*, scutum; *307*, wing.



Figs 308–309. *Euphranta minor*: *308*, aculeus (100×); *309*, spermathecae (40×).

Comments

This species is distinctive in its small size and general appearance.

Hardy and Foote (1989) placed *E. minor* in subgenus *Euphranta*, despite the presence of *acr.* bristles, as noted by Hendel (1928), that would have placed this species in subgenus *Rhacochlaena* under previous classifications.

Although no material from the Northern Territory has been examined, the descriptions by Hendel (1928) and Malloch (1939*d*) readily identify this species.

Euphranta mulgravea, sp. nov.

(Figs 310–311)

Material Examined

Holotype. ♂, Mulgrave R., 4 mi W of Gordonvale, N Qld, 4.i.1959, D. K. McAlpine (AM).

Paratypes. **Queensland**: 1 ♂, 1 ♀, same data as holotype but 2.i.1967 and 25.i.1972 (AM).

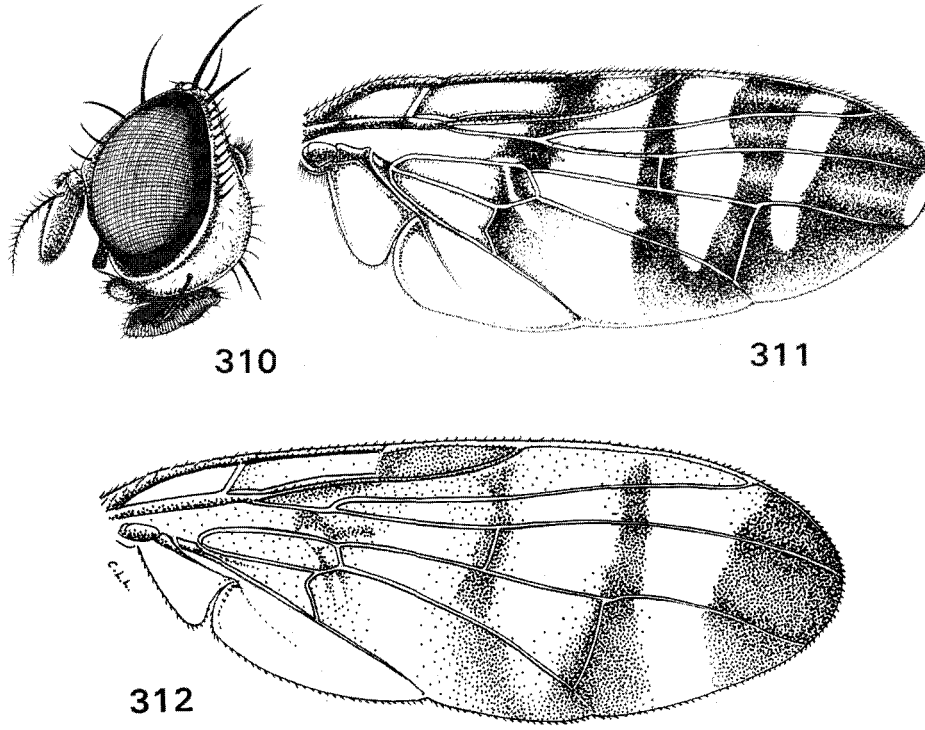
Description

Male

Length of body 7·4–7·7 mm, of wing 7·8–8·1 mm.

Head (Fig. 310). Fulvous, slightly higher than long. Antenna yellow; arista plumose. Face yellow with a broad dark mark near oral margin, concave. Frons with 3 pairs *fr.* and 1 pair *or.* bristles; *oc.* vestigial.

Thorax. Fulvous to red-brown; with a full complement of thoracic bristles except *prst.*; *dc.* placed midway between *sa.* and *ia.* bristles. Scutum red-brown. Scutellum flat, triangular, red-brown, with 4 *sc.* bristles. Anepisternum with a whitish band along upper margin, from postpronotal lobe to wing base. Legs fulvous, tinged with brown. Fore femur with 5–9 strong black posteroventral bristles plus 2 rows of posterodorsal setae. Mid tibia tinged brown basally, with 1 strong black apical spine. Wing (Fig. 311) hyaline with 4 transverse brown bands, the 3 preapical bands joined in cells m and cua_1; the inner band from base of cell sc to base of cell cua_1; the 2 middle bands enclose r-m and dm-cu crossveins respectively; cell sc largely yellowish, at least medially; apex of cell r_{4+5} hyaline. Veins R_1 and R_{4+5} setose; r-m crossvein placed near middle of cell dm, below end of vein Sc; cell cup with apical lobe short and broad.



Figs 310–311. *Euphranta mulgravea*: *310*, head; *311*, wing. **Fig. 312.** *E. numeralis*, wing.

Abdomen. Black with a broad median yellow vitta from apical half of terga I+II to apex of tergite IV; apical margins of terga II–IV also yellow. Genitalia not dissected.

Female

Length of body 8·9 mm, of wing 7·9 mm. Similar to male. Abdominal tergite VI well developed; oviscape black. Aculeus not exposed.

Distribution

Known only from the Cairns district, north Queensland.

Comments

This species resembles *E. ternaria*, sp. nov., and *E. borneana* Hardy (from East Malaysia), in having wings with cell sc hyaline medially. It differs from *E. ternaria* in wing pattern, and from *E. borneana* in the non-swollen fore femur in males and minor details of the wing pattern, particularly the smaller hyaline apical area and united preapical bands.

Etymology

The specific name is derived from the type locality.

Euphranta numeralis, sp. nov.

(Fig. 312)

Material Examined

Holotype. ♂, 0·5 km SE of Lansdowne [nr Taree], NSW, 15.i.1993, G. A. Williams, ex riverine rainforest (AM).

Description

Male

Length of body 7·1 mm, of wing 7·1 mm.

Head. Largely fulvous, slightly higher than long. Frons fuscous medially from ocellar triangle, broadening below *or.* bristles almost to eye margin, with 2 pairs of widely spaced *fr.* and 1 pair of *or.* bristles; *oc.* vestigial. Antenna fulvous, third segment apically darkened; arista plumose. Face yellow, with a broad brown medial band above oral margin, concave. Occiput with a broad subtriangular black area behind upper part of each eye.

Thorax. Red-brown to fuscous; with a full complement of bristles except *prst.* and *acr.*; *dc.* placed midway between *sa.* and *ia.* bristles; 1 strong and 1 weak *anepst.* bristle, near upper margin. Scutum dark red-brown, with fulvous lateral postsutural vittae bordered along inner edges by fuscous longitudinal bands; presutural area largely fuscous except dark red-brown medially. Anepisternum fuscous anteriorly, with a yellow band posteriorly. Postpronotal lobe yellow. Scutellum flat, triangular, with 4 *sc.* bristles. Legs fulvous to red-brown; hind tibia fuscous. Fore femur with 3 strong black posteroventral bristles plus 2 rows of posterodorsal setae. Mid tibia with 1 strong black apical spine. Wing (Fig. 312) hyaline with base below costal cells yellow, a large brown apical area without a hyaline spot, and 3 transverse bands medially, the basal band yellow and united to basal yellow area, the medial band brown with broad yellow borders, the distal band brown with narrow yellow borders; the transverse bands united in the shape of a sideways '2'; cell sc yellowish brown; cell r, largely yellow, with a hyaline patch beyond cell sc; the 2 brown bands united along posterior wing margin. Veins R_1 and R_{4+5} setose; r-m crossvein placed a little beyond middle of cell dm, below end of vein Sc; cell cup with apical lobe short and broad.

Abdomen. Red-brown laterally, fuscous dorsolaterally, with a broad median yellow vitta from apical half of terga I+II to apex of tergite IV; tergite V black. Genitalia not dissected.

Distribution

Known only from the Taree district, north-east New South Wales.

Comments

This species is distinct from all others known from Australia, particularly in the bicoloured wing bands and lack of an apical hyaline spot. The facial markings and lack of *acr.* bristles suggest an affinity with *E. marina* but the wing markings are very different. It appears most closely related to *E. tricolor* Hardy, from Papua New Guinea, differing in the more extensive yellow wing markings and presence of *pprn.* bristles.

Etymology

The specific name is from the Latin *numeralis*, of number, referring to the 2-shaped pattern of the wing bands seen in longitudinal view.

Euphranta ternaria, sp. nov.

(Figs 313–317)

Material Examined

Holotype. ♂, Iron Ra., Cape York Pen., N Qld, 16–23.xi.1965, G. Monteith (QM - T12223).

Paratypes. **Queensland**: 1♂, same data as holotype (UQIC); 1♀, Claudie R., 12°43′S, 143°17′E, 29.v.1992, L. Ring (UQIC); 1♂, Claudie R. nr Mt Lamond, 29.v.1966, D. K. McAlpine (AM); 1♂, Claudie R. nr Mt Lamond, 18.xii.1971, D. K. McAlpine, G. A. Holloway, D. P. Sands, malaise trap (AM); 1♀, Claudie R., 1 mi W Mt Lamond, 19.xii.1971, D. K. McAlpine, G. A. Holloway, D. P. Sands (AM).

Description

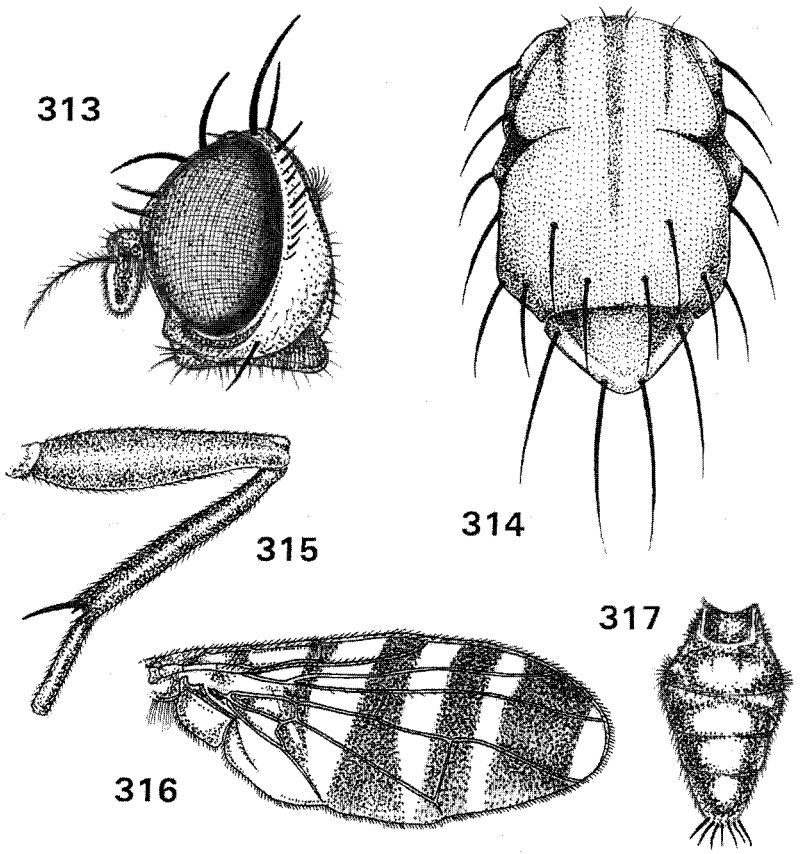
Male

Length of body 5·2-6·0 mm, of wing 4·6–5·3 mm.

Head (Fig. 313). Yellow except for black ocellar triangle, slightly higher than long. Antenna yellow; arista plumose. Face yellow, concave. Frons with 3 pairs *fr.* and 1 pair *or.* bristles; *oc.* vestigial.

Thorax (Fig. 314). Fulvous to red-brown; pleura and sterna generally paler than scutum; with a full complement of bristles except *prst.; dc.* placed just behind line of *sa.* Scutellum flat, triangular, with 4 *sc.* and scattered black setae. Postnotum red-brown. Legs fulvous. Fore femur with a row of 5–6 black posteroventral bristles on apical half and weaker bristles basally; also with 2 rows of posterodorsal bristles. Mid tibia (Fig. 315) with a row of 4 black posterodorsal setae medially and 1 strong apical spine. Hind tibia with a row of 6–8 black medial setae. Wing (Fig. 316) hyaline with 4 transverse brown bands; the basal band from costa, through base of cell sc to base of cell cua_1; the 3 distal bands reaching wing margin, the inner band from outer part of cell sc, through r-m crossvein, the middle band from costa through dm-cu crossvein, the preapical band broad, leaving wing apex hyaline, in cells r_{4+5} and tips of cells r_{2+3} and m. Veins R_1 and R_{4+5} setose; r-m crossvein placed at middle of cell dm, below end of cell sc; cell cup with apical lobe short and broad.

Abdomen (Fig. 317). Fulvous to red-brown, darker laterally. Male genitalia with surstyli long, narrow; epandrium yellow, setose.



Figs 313–317. *Euphranta ternaria*: *313*, head; *314*, scutum; *315*, mid leg; *316*, wing; *317*, ♂ abdomen.

Female

Length of body 6·5 mm, of wing 6·0 mm. As for male except oviscape fulvous, as long as terga V and VI combined. Aculeus not exposed.

Distribution

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

Comments

In having three *fr.* bristles, the wing with cell sc hyaline medially, the transverse band through r-m crossvein reaching the hind wing margin and the wing apex hyaline, this species resembles *E. mulgravea* and *E. borneana* Hardy. It differs from *E. borneana* in the non-swollen fore femur in males and from both these species in wing pattern.

Etymology

The specific name is from the Latin *ternarius*, in threes, referring to the three complete brown transverse bands in the distal part of the wing.

Euphranta variabilis (Kertész)

(Figs 318–323)

Ptilona variabilis Kertész, 1901: 426. Type locality Erima, Astralobe Bay, NE Papua New Guinea. Holotype ♂ in TMB [not examined].
Cyclopsia variabilis. — Hering, 1941*b*: 49.
Euphranta (Euphranta) variabilis. — Hardy, 1983*b*: 174; Hardy and Foote, 1989: 521.

Material Examined

Queensland: 1♀, 9 km ENE of Mt Tozer, 12°43′S, 143°17′E, 5–10.vii.1986, D. H. Colless (ANIC); 1♀, Cairns, 10.i.1928 (QDPI).

Diagnosis

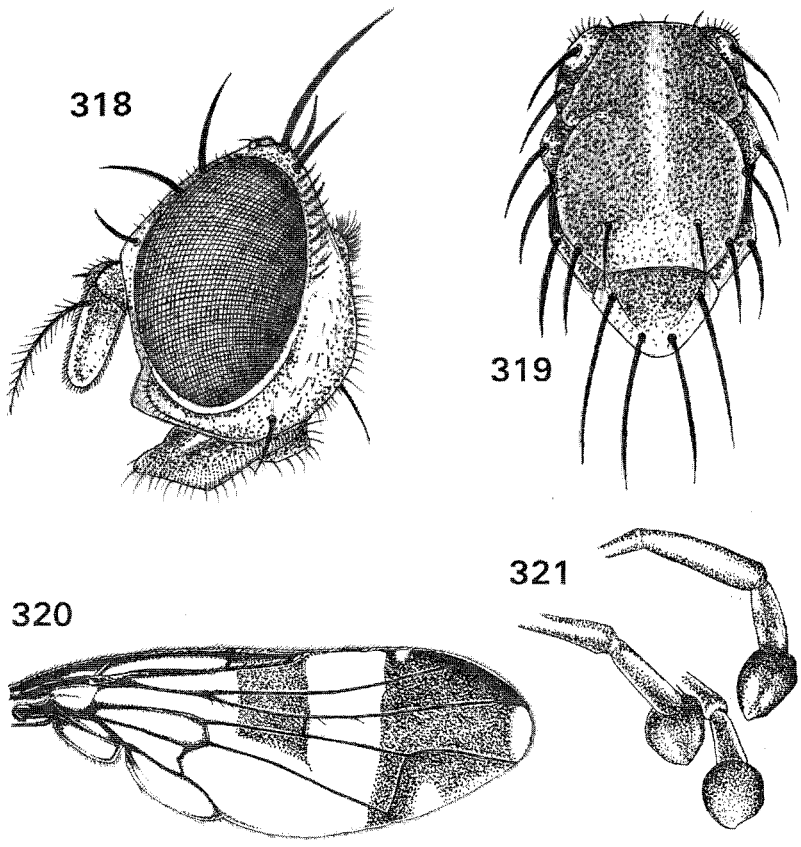
Head yellow to rufous, slightly higher than long. Antenna yellow; arista plumose. Face yellow, concave. Frons with 2 pairs of well-separated *fr.* and 1 pair *or.* bristles; *oc.* weak. Thorax dark red-brown, scutum blackish, paler medially and posteriorly; scutellum red-brown, paler marginally; with a full complement of thoracic bristles except *prst.* and *acr.* Legs fulvous, tinged with brown; mid tibia with 1 black apical spine. Wing hyaline, with a broad brown transverse band from costa through cell sc and r-m crossvein to middle of cell dm and a large brown preapical area, leaving apex of cell r_{4+5} hyaline and with hyaline indentations in cells m and, usually, r_1; r-m crossvein placed at middle of cell dm, below end of cell sc. Abdomen blackish brown, with a broad fulvous medial vitta from apical half of terga I+II to apex of tergite IV. Tergite VI almost as long as tergite V. Oviscape black. Aculeus short, broad, with a pair of subapical dentations and 4 pairs of short preapical setae. Three club-shaped spermathecae. Length of body 6·7 mm (♀), of wing 6·3 mm (♀).

Distribution

Papua New Guinea, Irian Jaya and north-east Queensland.

Comments

This species belongs in a group with *E. basalis* (Walker), *E. pallida* Hardy and *E. simonthomasi* Hardy. They differ in minor wing pattern details and body markings (Hardy 1983*b*) and eventually may prove to be conspecific.



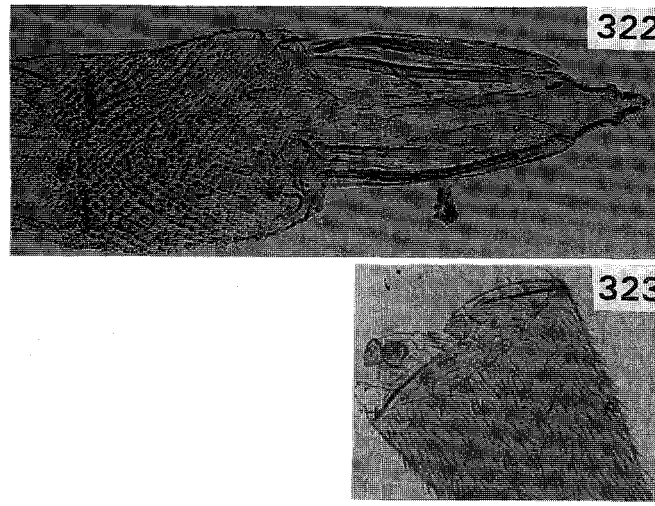
Figs 318–321. *Euphranta variabilis*: *318*, head; *319*, scutum; *320*, wing; *321*, spermathecae.

Genus ***Hardyadrama*** Lee

Hardyadrama Lee, 1991: 106. Type species: *H. excoecariae* Lee, by original designation.

Diagnosis

Head slightly higher than long. Antenna as long as or longer than face, third segment apically rounded; arista with short or microscopic pubescence. Face concave, yellow. Frons with 1 or 2 pairs of *fr.* bristles and 1 pair of *or.* bristles; *oc.* and *poc.* absent; *pocl.* thin and dark. Gena with 1 strong *gn.* Thorax with the following bristles: 2 *scp.* (middle pair vestigial or absent), 2 *npl., sa., ia., p.sa., anepst., anepm.; prst.*, and *acr.* absent; *pprn., dc.* and *kepst.* present or absent; *dc.*, when present, placed close to line of *ia.* bristles. Scutellum flat, triangular, with 4 *sc.* and short, fine setae. Scutum with a yellow medial vitta extending onto scutellum. Anepisternum with a yellow vitta along upper margin from postpronotal lobe to wing base. Laterotergite covered with fine, long hairs. Metathoracic postcoxal area thickened but not forming a well-sclerotised bridge. Mid tibia with 1 black apical spine. Mid and hind femora with or without 2 rows of short, black ventral spines. Wing predominantly hyaline with dark markings in cell sc and subapical area; veins R_1 and R_{4+5} setose; r-m crossvein placed well beyond middle of cell dm and well beyond end of cell sc; cell cup with apical lobe short and broad; wing apex with a whitish spot. Abdomen narrow; oviscape at least as long as segments IV-VI combined. Male genitalia with surstyli long and slender. Female aculeus elongate, apically pointed. Three oblong to gourd-shaped spermathecae.



Figs 322–323. *Euphranta variabilis*: *322*, aculeus (100×); *323*, spermathecae (40×).

Comments

This genus was referred to the Adramini by Lee (1991) but the metathoracic postcoxal area is not developed into a strongly sclerotised bridge. Nevertheless, this genus illustrates the likelihood of the tribes Adramini and Euphrantini being combined eventually. Despite the absence of femoral spines in some species, the general appearance and lack of *poc.* bristles suggests that they form a monophyletic group. Two species have been reared from mature seed capsules of the mangrove *Excoecaria agallocha* (Euphorbiaceae) (Lee 1991) and all species may in fact be associated with mangroves. The genus is known from southern Thailand and the Philippines to Australia; four species are included here, all known in Australia.

Key to Australian Species of *Hardyadrama*

1. Mid and hind femora with 2 rows of ventral spines; *kepst.* bristles absent 2
   Mid and hind femora without ventral spines; *kepst.* bristles present 3
2. 1 pair of *fr.* bristles; *dc.* bristles present; scutum marked with black posteriorly; wing markings with an isolated dark patch over dm-cu crossvein ..... *H. excoecariae*
   2 pairs of *fr.* bristles; *dc.* bristles absent; scutum without black markings; wing markings with transverse bands from costa crossing r-m and dm-cu crossvein ..... *H. magister*
3. Scutum, pleura and sterna shining black except for yellow vittae ..... *H. presignis*
   Scutum, pleura and sterna mostly red-brown, scutum with black posterior markings ..... *H. alyta*

Hardyadrama alyta, sp. nov.

(Figs 324–327)

Material Examined

Holotype. ♀, Gap Ck, 6 mi N Bloomfield R., N Qld., 13–14.ix.1965, G. Monteith (QM T 12218).
Paratype. ♂, Iron Ra., Qld, 7.iv.1964, I. F. B. Common and M. S. Upton (ANIC).

Description

Female

Length of body 5·0 mm, of wing 4·2 mm.

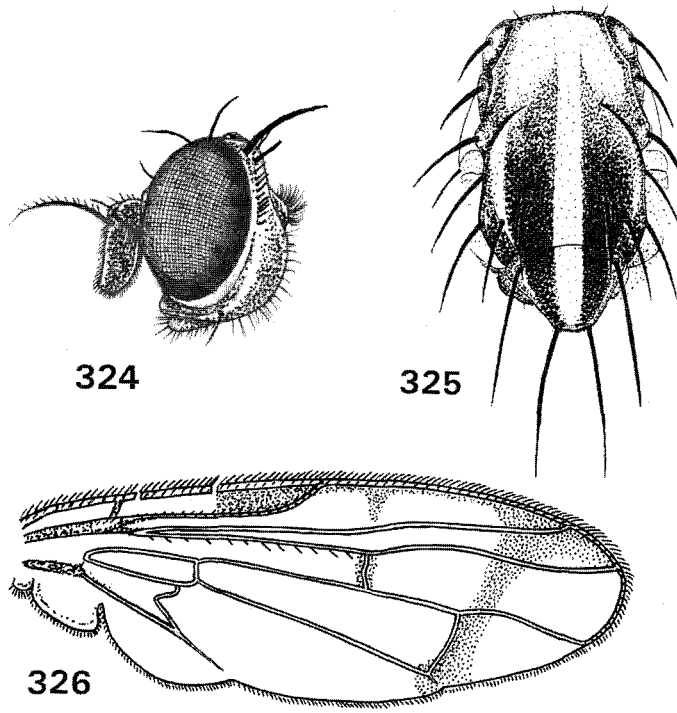
Head (Fig. 324). Yellow to rufous, slightly higher than long. Antenna yellow, as long as face; arista pubescent. Face yellow, concave. Frons with 2 pairs of widely spaced *fr.* and 1 pair *or.* bristles; *oc.* absent; *poc.* absent. Upper half of occiput dark brown to black.

Thorax. Predominantly fulvous to red-brown; with a full complement of bristles except *prst.* and *acr.*, *dc.* placed closer to *ia.* than *sa.* Scutum (Fig. 325) with 3 yellow vittae, 1 medial from just behind level of postpronotal lobes, 2 lateral from suture, all extending onto scutellum; posterior portion of scutum between the vittae black, extending onto scutellum. Scutellum flat, triangular, with 4 *sc.* and a few pale dorsolateral setae. Anepisternum fulvous to red-brown, with a moderately broad yellow vitta along upper margin from postpronotal lobe to wing base. Legs fulvous. Fore femur with a few dorsal and ventral brown bristles on apical half. Mid tibia with 1 strong black apical spine. Hind femur with 3–4 dorsal preapical bristles. Hind tibia with a row of 8–10 anterodorsal setae. Wing (Fig. 326) hyaline except cell sc brown, a short brown transverse bar from costa to level of r-m crossvein and a large brown preapical band from end of cells r_1 and r_{2+3} extending across dm-cu crossvein to wing margin; apical portions of cells r_{4+5} and m hyaline; apex of cell r_{4+5} whitish. Veins R_1 and R_{4+5} setose; r-m crossvein placed near apical $\frac{3}{5}$ of cell dm, well beyond end of cell sc; cell cup with apical lobe short and broad.

Abdomen. Fulvous to red-brown; tergite VI poorly developed; oviscape black at tip. Aculeus (Fig. 327) broad, sharply pointed with coarse preapical serrations. Three broad spermathecae, rounded basally, slightly pointed distally.

Male

Length of body 4·5 mm, of wing 4·2 mm. As for female except male genitalia with surstyli long; epandrium entirely yellow.



Figs 324–326. *Hardyadrama alyta*: *324*, head; *325*, scutum; *326*, wing.

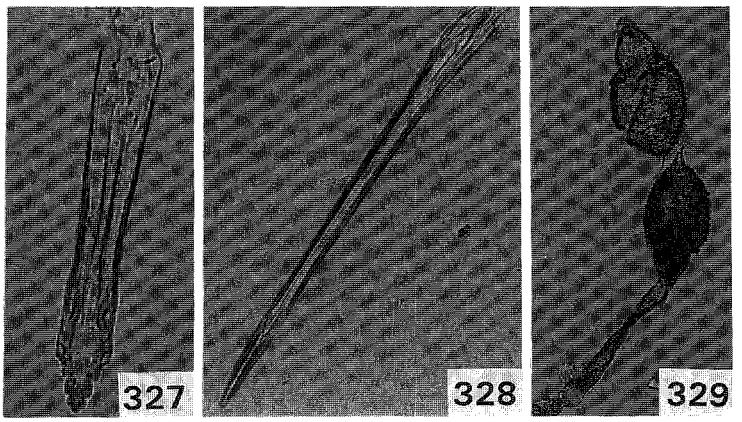


Fig. 327. *Hardyadrama alyta*, aculeus (40×). **Figs 328–329.** *H. excoecariae*: *328*, aculeus (40×); *329*, 2 of 3 spermathecae (100×).

Distribution

North-east Queensland.

Comments

This species is closely related to *H. presignis*, differing in the primarily red-brown, rather than black, thorax and oviscape. Both species differ from others in the genus in lacking spines on the mid and hind femora.

Etymology

The specific name is derived from the Greek *alytos*, unbroken, continuous, referring to the continuation of the scutal yellow and black vittae onto the scutellum.

Hardyadrama excoecariae Lee

(Figs 328–334)

Hardyadrama excoecariae Lee, 1991: 107. Type locality Sungei Buloh, Singapore. Holotype ♂ in BMNH [not examined].

Material Examined

Queensland: 4♀, Halftide, nr Mackay, 8.ii.1966, E. C. Dahms (QM and UQIC); 1♂, Ayr, 17.iii.1956, A. W. S. May (QDPI); 1♂, Ross R., Hermit Pk, Townsville, 19°18′S, 146°19′E, 4.xii.1991, C. Burwell, sweeping mangroves (UQIC); 1♂, Kamerunga (nr Cairns) (UQIC); 1♂, 2 mi W Paluma, 3000 ft, 13.i.1970, G. A. Holloway, mv lamp (AM). **Western Australia**: 1♀, Koolan I., 1.xii.1988, D. K. Yeates (WADA).

Diagnosis

Head fulvous. Antenna yellow, slightly longer than face; arista short-pubescent. Frons with 1 (lower) pair *fr.* and 1 pair *or.* bristles. Thorax mostly fulvous to red-brown, with longitudinal yellow-white vittae on scutum and anepisternum; scutum also with anterior submedian stripes of silvery pubescence ending at suture and posterior black markings; medial yellow vitta extending onto scutellum; with a full complement of thoracic bristles except *pprn., prst., acr.* and *kepst.; dc.* weak, placed close to line of *ia.* Legs fulvous; mid tibia with 1 black apical spine; mid and hind femora with 2 rows of short ventral spines. Wing hyaline except cell sc subhyaline and with darker, brownish markings at apices of cells r_1, r_{2+3} and upper part of r_{4+5};

an isolated brown area over lower end of dm-cu crossvein; apex of cell r_{4+5} distinctly whitish. Veins R_1 and R_{4+5} setose; r-m crossvein placed near apical $\frac{3}{5}$ of cell dm, well beyond end of cell sc. Abdomen fulvous. Oviscape as long as tergites I-IV combined, fulvous except apical $\frac{2}{5}$ black. Male genitalia with surstyli elongate. Aculeus long, needle-like, without apical serrations, with 4 pairs of small subapical setae; basal membrane with coarse spines. Three oval spermathecae, broadest near base, pointed apically. Length of body 7·2–7·5 mm (♂) or 8·7–9·3 mm (♀), of wing 5·8–6·0 mm (♂) or 6·7–7·0 mm (♀).

Distribution

Singapore, north-west Western Australia and eastern Queensland as far south as Mackay.

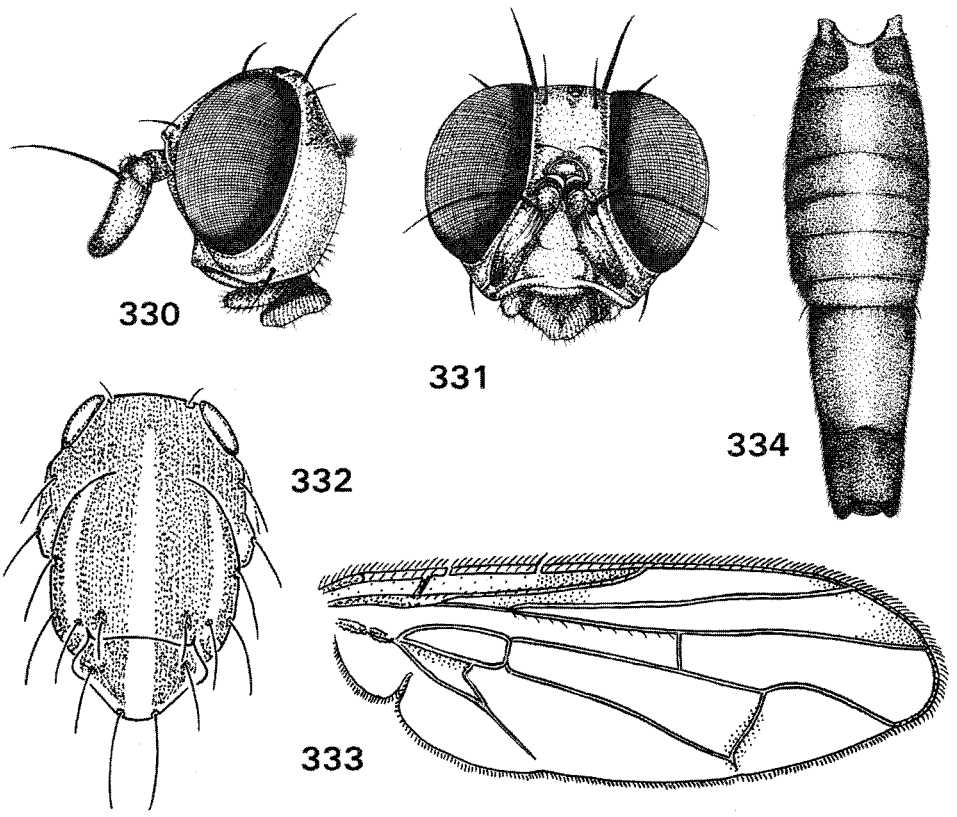
Biology

Larvae feed on the developing seeds of the mangrove *Excoecaria agallocha* (Euphorbiaceae) (Lee 1991).

Comments

This species differs from *H. magister* in having only one *fr.* bristle, black areas on the scutum and a different wing pattern. From *H. alyta* and *H. presignis* it differs in having ventral spines on the mid and hind femora and lacking *kepst.* bristles.

Lee (1991) noted the presence of *pprn.* bristles in specimens from Singapore; these are absent in Australian specimens but this difference is not considered significant.



Figs 330–334. *Hardyadrama excoecariae*: *330–331*, head; *332*, scutum; *333*, wing; *334*, ♀ abdomen.

Hardyadrama magister (Lee), comb. nov.

(Figs 335–342)

Adrama magister Lee, 1991: 111. Type locality Lim Chu Kang, Singapore. Holotype ♂ in BMNH [not examined].

Material Examined

Queensland: 1♂, Sth Johnstone, 5.iv.1957, A. W. S. May (QDPI); 1♂, 3♀, Rockhampton, 13.i.1956, A. W. S. May (QM and UQIC).

Diagnosis

Head fulvous. Antenna yellow, tinged with brown, longer than face; arista short-pubescent. Frons with 2 pairs of *fr.* bristles, well separated from single pair of *or.* bristles. Thorax fulvous to red-brown, with longitudinal yellow-white vittae on scutum and anepisternum, the former indistinct and continued onto scutellum; scutum also with submedian stripes of silvery pubescence extending to level of *sa.* bristles; with a full complement of thoracic bristles except *pprn., prst., dc., acr.* and *kepst.* Legs fulvous, mid tibia with 1 black apical spine; mid and hind femora with 2 rows of short ventral spines. Wing hyaline except cell sc subhyaline and a brown transverse band from costa in cell r_1 to r-m crossvein and apex of cell r_{2+3} brown, extending transversely from base as a narrow band to end of dm-cu crossvein; apex of cell r_{4+5} indistinctly whitish. Veins R_1 and R_{4+5} setose; r-m crossvein placed near apical $\frac{3}{5}$ of cell dm, well beyond end of cell sc. Abdomen fulvous. Oviscape almost as long as terga I–III combined, fulvous except apical $\frac{1}{3}$ black. Male genitalia with surstyli elongate. Aculeus long, needle-like, with weak preapical serrations and 3 pairs of short preapical setae; basal membrane with coarse spines. Three short but oval spermathecae, broadest near base, pointed apically. Length of body 5·8–6·3 mm (♂) or 6·8–7·5 mm (♀), of wing 5·4–5·7 mm (♂) or 5·3–5·8 mm (♀).

Distribution

Singapore and eastern Queensland, as far south as Rockhampton.

Biology

Larvae feed on the developing seeds of the mangrove *Excoecaria agallocha* (Euphorbiaceae) (Lee 1991).

Comments

This species differs from *H. excoecariae* in having two *fr.* bristles, no black areas on the scutum and a different wing pattern. From the other species in the genus it differs in having ventral spines on the mid and hind femora.

This species was included in *Adrama* by Lee (1991), but the metathoracic area is not broadly sclerotised; this and other characters suggest that it belongs in *Hardyadrama.*

Hardyadrama presignis (Hardy), comb. nov.

(Figs 343–345)

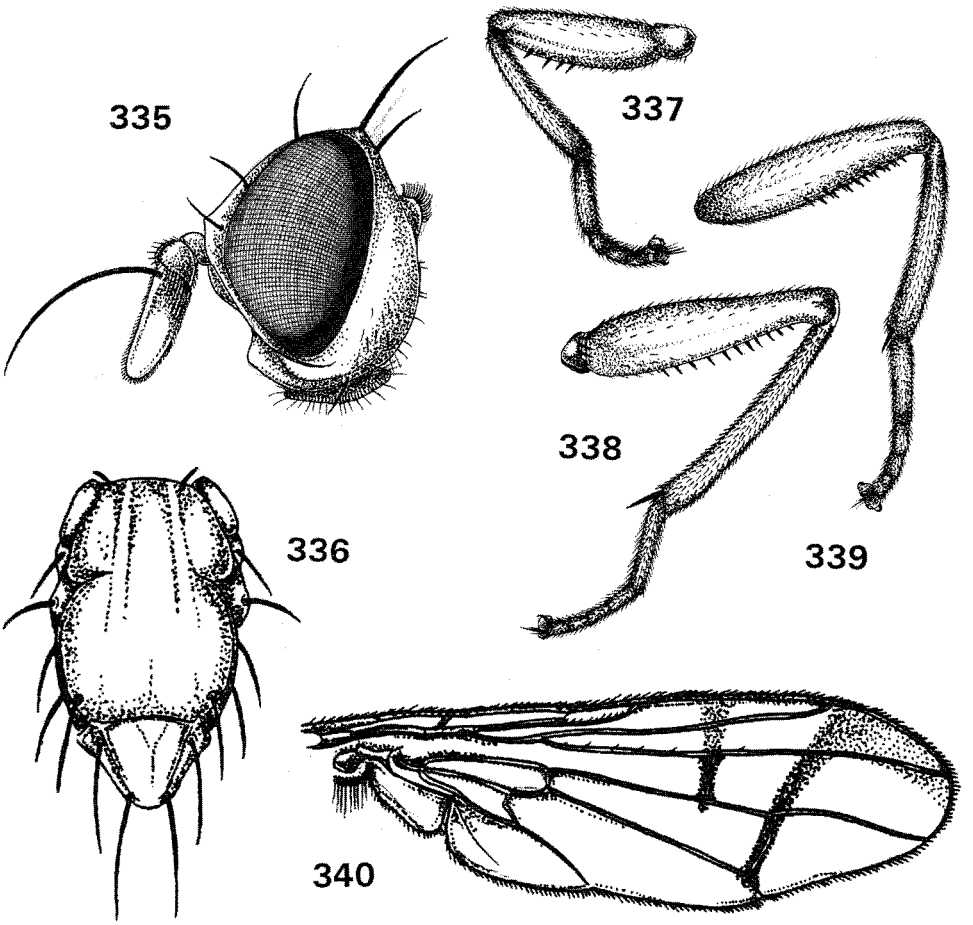
Euphranta (Euphranta) presignis Hardy, 1973: 147. Type locality Songkhla, Thailand. Holotype ♂ in BPBM [not examined]. — Hardy, 1974: 123.

Material Examined

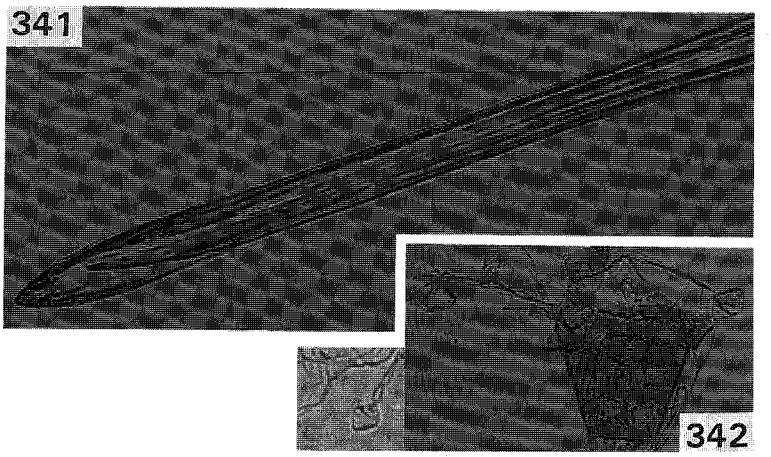
Queensland: 1♀, Warraber (Sue) I., Torres Strait, 10°23′S, 142°49′E, 4.xii.1978, E. D. Edwards (ANIC).

Diagnosis

Head fulvous. Antenna yellow, as long as face; arista pubescent. Frons with 2 pairs of well-spaced *fr.* and 1 pair *or.* bristles. Occiput black. Thorax mostly shining black; postpronotal lobe



Figs 335–340. *Hardyadrama magister*: *335*, head; *336*, scutum; *337*, fore leg; *338*, mid leg; *339*, hind leg; *340*, wing.



Figs 341–342. *Hardyadrama magister*: *341*, aculeus (100×); *342*, spermathecae (40×).

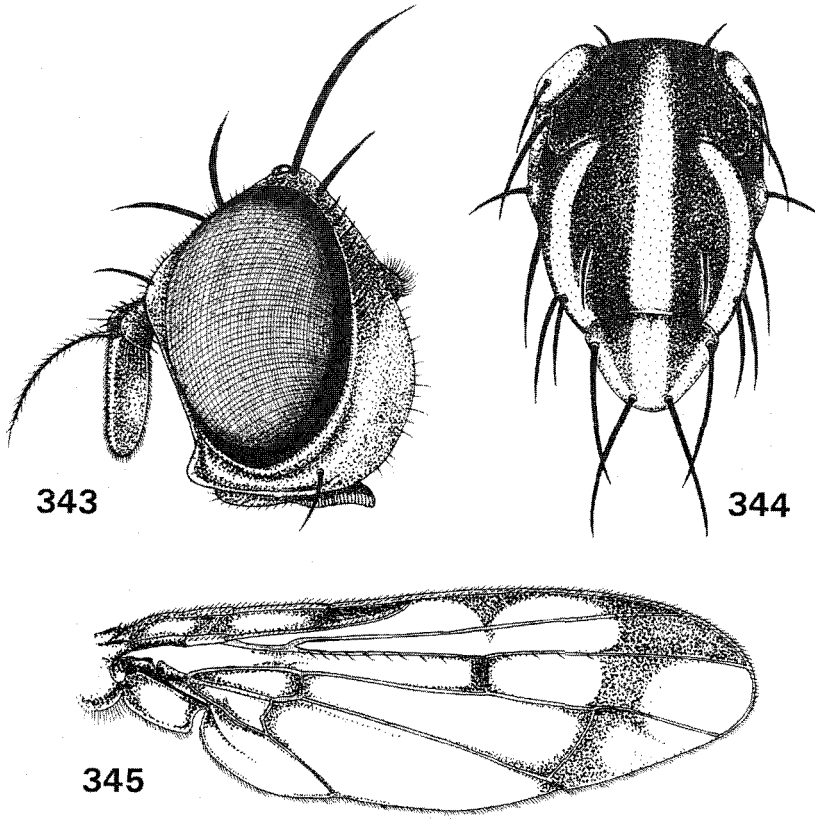
yellow; anepisternum black with a yellow band along upper margin from postpronotal lobe to wing base; 3 yellow vittae on scutum, 1 medial, 2 dorsolateral and postsutural, all extending onto scutellum; with a full complement of thoracic bristles except *prst.* and *acr.* Legs yellow to rufous; mid tibia with 1 black apical spine. Wing hyaline except cell sc brown, a short brown transverse bar from costa to r-m crossvein, sometimes interrupted, and a large brown preapical band from end of cells r_1 and r_{2+3}, extending across dm-cu crossvein to wing margin; apical portions of cells r_{4+5} and m hyaline; apex of cell r_{4+5} whitish. Veins R_1 and R_{4+5} setose; r-m crossvein placed near apical $\frac{3}{5}$ of cell dm, well beyond end of cell sc. Abdomen fulvous to red-brown; tergite VI short, about $\frac{1}{2}$ length of tergite V. Oviscape black, as long as terga IV–VI combined. Male genitalia with surstyli elongate (Hardy 1974). Length of body 7·3 mm (♂), of wing 4·8 mm (♀).

Distribution

Southern Thailand, Busuanga Island (Philippines) and Torres Strait, north Queensland.

Comments

This species differs from the similar *H. alyta* in the shining black thorax, including pleura and sterna; these are mostly red-brown in *H. alyta*. As noted under *H. alyta*, both species differ from other *Hardyadrama* species in lacking spines on the mid and hind femora.



Figs 343–345. *Hardyadrama presignis*: *343*, head; *344*, scutum; *345*, wing.

Tribe **PHYTALMIINI** Bigot

Two genera, each with a single species, occur in Australia. *Phytalmia* breeds in the decaying sapwood of *Dysoxylum* (Meliaceae); the host of *Diplochorda* Osten Sacken is unknown.

The relationships of this tribe have been controversial. Bigot (1892) and Hendel (1914) regarded it as a subfamily allied to Pyrgotidae or Micropezidae. Hendel (1916), Enderlein (1936) and Malloch (1939*b*) placed it as a separate family; Hering (1941*a*) considered it a tribe of the Dacinae. Prior to McAlpine and Schneider (1978) it was again usually given family status, the latter authors placing it as a tribe within the Tephritidae. Hancock (1986) considered it a tribe of the Trypetinae. Perkins (1939) and Hardy (1974) included species of *Nesadrama* Perkins (= *Diplochorda*) in the Adraminae. The limits of the tribe are still uncertain (Hardy 1983a), but biological and morphological characters suggest a relationship with tribe Acanthonevrini. It is linked to this tribe by genera such as *Terastiomyia* Bigot, which has the metathoracic postcoxal area partly sclerotised (Hardy 1986*a*), and these two tribes eventually may be combined. The name Phytalmiini Bigot (1892) has nomenclatural precedence over Acanthonevrini Hering (1941*a*). Pending a phylogenetic analysis, a separate, narrowly defined tribe Phytalmiini is provisionally retained, distinguished by the sclerotised metathoracic postcoxal bridge, lack of long hairs on the laterotergite, reduced chaetotaxy and absence of an apical lobe to the cell cup.

Key to Genera of Australian Phytalmiini

1. Veins R_1, R_{4+5} and M approximate along almost their entire length; cell sc much longer than cell c and broadened distally ..... *Diplochorda*
   Veins R_1, R_{4+5} and M widely separated; cell sc shorter than cell c, sharply pointed distally ... *Phytalmia*

Genus ***Diplochorda*** Osten Sacken

Diplochorda Osten Sacken, 1881: 484. Type species: *Dacus turgidus* Walker, by subsequent designation of Hendel (1908: 4).

Nesadrama Perkins, 1939: 2. Type species: *N. longistigma* Perkins (= *Dacus turgidus* Walker), by monotypy.

Diagnosis

Head higher than long. Antenna shorter than face, third segment apically rounded; arista plumose. Male cheek processes short or absent. Face concave. Frons with 1 pair each of weak *fr.* and *or.* bristles; *oc.* vestigial; *pocl.* thin and dark. Gena with 1 strong *gn.* Thorax with the following bristles: 4 *scp.*, 2 *npl.*, the anterior weak, *sa.*, *ia.* weak, *p.sa.* Scutellum wth 2 *sc.* bristles near apex. Scutum with black and yellow markings. Laterotergite with microscopic pubescence. Metathoracic postcoxal bridge broadly sclerotised. Mid tibia with 1 black apical spine. Veins R_1, R_{2+3} and R_{4+5} close together, bare; vein M strongly arcuate; cell sc elongate, longer than cell c; r-m crossvein placed well beyond middle of cell dm; cell cup without an apical lobe. Abdomen petiolate, black and yellow. Male genitalia with surstyli elongate. Female oviscape elongate.

Comments

The characters of the wing venation readily differentiate this genus. In the petiolate abdomen, weak or absent anterior *npl.* bristle and the presence of male cheek protuberances, *Diplochorda* appears most closely related to *Phytalmia.*

The genus is restricted to the New Guinea region, with one species recorded from the southern Philippines (Mindanao: Hardy 1974). McAlpine and Schneider (1978) noted that the Philippine record may be erroneous and placed *Nesadrama* as a synonym of *Diplochorda*, noting that *Dacus turgidus* Walker was the type-species of the latter, based on the subsequent designation of Hendel (1908). Hardy and Foote (1989) incorrectly regarded *D. myrmex* Osten Sacken as the type species, by designation of McAlpine and Schneider, but the latter authors made no such designation.

Diplochorda australis, sp. nov.

(Figs 346–353)

Material Examined

Holotype. ♂, Claudie R., 5 mi W Mt Lamond, Qld, 2.i.1972, D. K. McAlpine and G. A. Holloway (AM).

Paratype. ♀, same data as holotype except 31.xii.1971 (AM).

Description

Male

Length of body 7·4 mm, of wing 6·9 mm.

Head (Figs 346, 347). Anteroposteriorly flattened, widely expanded in frontal view. Face concave, with a transverse black medial band. Antennae with bases widely separated; extending $\frac{3}{4}$ length of face; third segment apically rounded; arista plumose. Frons mostly black, yellow laterally and before ocellar triangle; with 1 pair each of small black hair-like *fr.* and *or.* bristles; *oc.* weak. Gena yellow anteriorly, brown posteriorly, with 1 black *gn.* bristle. Occiput dark brown. Cheeks with short, broad processes.

Thorax. Predominantly dark brown to black with yellow scutal and pleural markings. Scutum (Fig. 348) with a yellow medial spot between line of sutures and two broadly oval yellow submedial patches covering most of scutum behind level of *sa.* bristles; notopleuron tinged yellowish. Bristles as for genus; anterior *npl.* and *ia.* weak, hair-like; *pprn., prst., dc., acr., anepst., kepst., anepm.* all absent. Scutellum brown, inflated and covered with fine brown setae, especially on sides; with 1 pair of apical *sc.* bristles. Pleura mostly black except for yellow markings. Postnotum rufous to black. Legs (Fig. 349) mostly rufous, tinged yellow on basal $\frac{1}{4}$ of mid and hind femur. Fore femur with 1 posteroventral spine. Mid tibia with 1 black apical spine. Wing (Fig. 350) with subapical portion of costal margin strongly convex; mostly hyaline, brown along costal margin to vein R_{4+5} and in cell cua_1, palest marginally. Cell sc elongate, nearly 3 × length of cell c; veins R_1, R_{2+3} and R_{4+5} close together except R_{4+5} diverging at apex; all veins bare; r-m crossvein placed at apical $\frac{4}{5}$ of cell dm; vein M strongly arcuate, concave before r-m crossvein, convex after it, straightening apically; cell cup apically acute but without an apical lobe; dm-cu crossvein strongly oblique.

Abdomen (Fig. 351). Wasp-like. Terga I+II petiolate at base, expanding markedly apically, black with yellow anterolateral spots and transverse medial band; terga III to V black, narrowly yellow at apices of terga IV and V. Male genitalia not relaxed for study but inner surstylus rufous and elongate.

Female

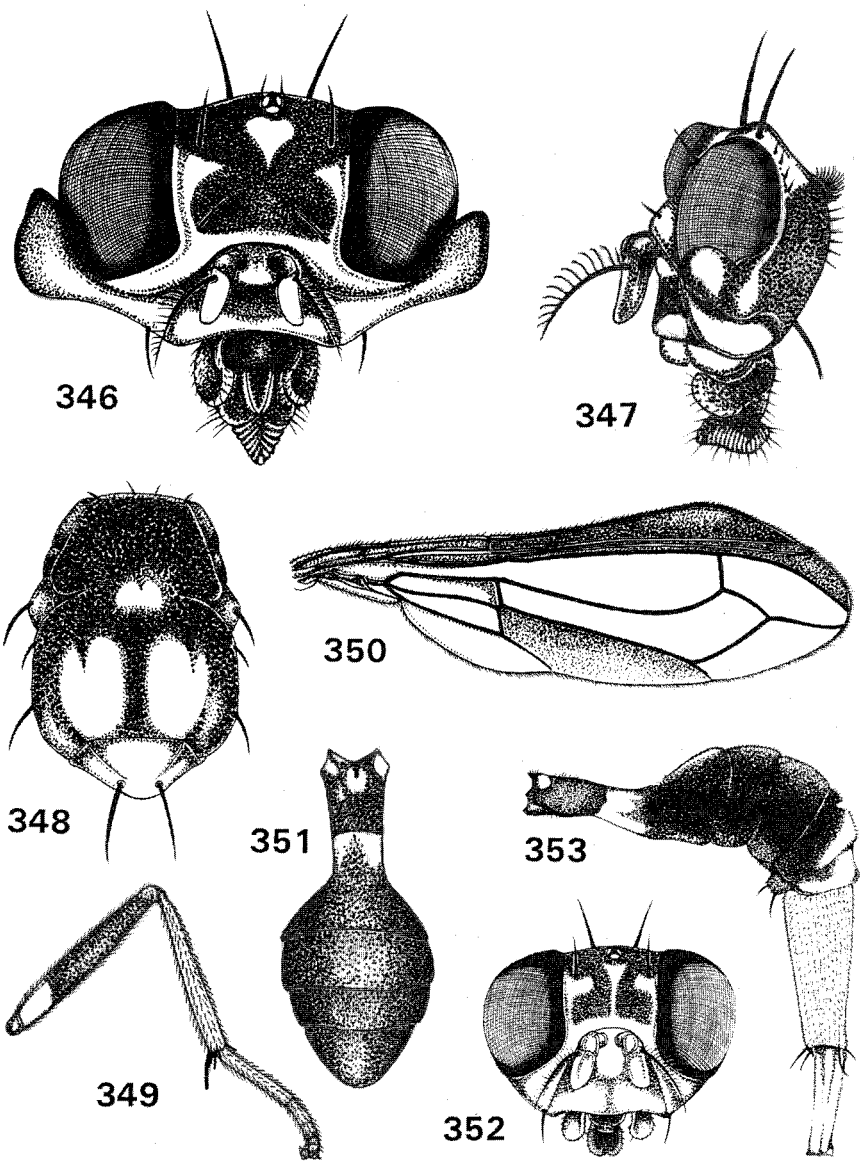
Length of body 8·0 mm, of wing 7·0 mm. As for male except cheek processes lacking (Fig. 352) and lower posterior portion of eye sinuous. Wing not strongly convex at costa. Abdominal tergite V black with a yellow triangular posterior mark; tergite VI $\frac{2}{3}$ length of tergite V, yellow tinged black basomedially and basolaterally; oviscape red-brown, as long as segments IV-VI combined (Fig. 353). Aculeus not exposed.

Distribution

Known only from Iron Range, Cape York Peninsula, Queensland. This species also occurs in Papua New Guinea (specimens in AM).

Comments

The wing markings, male cheek processes and pattern of scutal markings distinguish this species. It is closest to *D. brevicornis* (Saunders) and *D. minor* Malloch, differing in the more extensive black scutal markings and broader costal band on the wing.



Figs 346–353. *Diplochorda australis*: *346–347*, ♂ head; *348*, scutum; *349*, mid leg; *350*, ♂ wing; *351*, ♂ abdomen; *352*, ♀ head; *353*, ♀ abdomen.

Etymology

The specific name is derived from the Latin *australis*, southern, referring both to the country of origin and to its distribution relative to other species in the genus.

Genus ***Phytalmia*** Gerstaecker

Phytalmia Gerstaecker, 1860: 169. Type species: *P. cervicornis* Gerstaecker, by subsequent designation of Enderlein (1936: 229).

Elaphomyia Saunders, 1861: 413. Type species: *E. alcicornis* Saunders, by subsequent designation of Enderlein (1936: 230).

Archiphytalmia Enderlein, 1936: 230. Type species: *A. prisca* Enderlein (= *Phytalmia cervicornis* Gerstaecker), by original designation.

Diagnosis

Head longer than high. Antenna shorter than face, third segment apically rounded; arista plumose. Male cheek processes normally prominent, elongate. Face concave. Frons with 1 pair each of very weak *fr.* and *or.* bristles; *oc.* vestigial; *pocl.* thin and dark. Gena with 1 strong *gn.* Thorax with the following bristles: 2 npl., the anterior weak, *sa.* Scutellum with 2 *sc.* bristles near apex. Scutum mostly blackish brown. Laterotergite with microscopic pubescence. Metathoracic postcoxal bridge broadly sclerotised. Mid tibia with 1 black apical spine. Vein R_1 setose, vein R_{4+5} bare; cell sc narrow and elongate but shorter than cell c; r-m crossvein placed a little beyond middle of cell dm; cell cup without an apical lobe. Abdomen petiolate. Male genitalia with surstyli short and broad. Female aculeus broad, blunt at apex, with 4 pairs of short preapical setae. Three rounded spermathecae.

Comments

This genus was revised by McAlpine and Schneider (1978) and a further species described by Schneider (1993). It is readily distinguished by the wing venation, petiolate abdomen and male cheek processes.

The genus is restricted to New Guinea and north-east Queensland. Larvae develop in logs of *Dysoxylum* (Meliaceae). Adult behaviour has been studied by Moulds (1977) and Dodson (1989).

Phytalmia mouldsi McAlpine & Schneider

(Figs 354–361)

Phytalmia sp. near *megalotis* Gerstaecker. — Moulds, 1977: 347 (Iron Ra., Qld).

Phytalmia mouldsi McAlpine and Schneider, 1978: 166. Type locality West Claudie R., Iron Ra., Qld. Holotype ♂ in AM [not examined]. — Dodson and Daniels, 1988: 77; Dodson, 1989: 607; Hardy and Foote, 1989: 523; Schneider, 1993: 8.

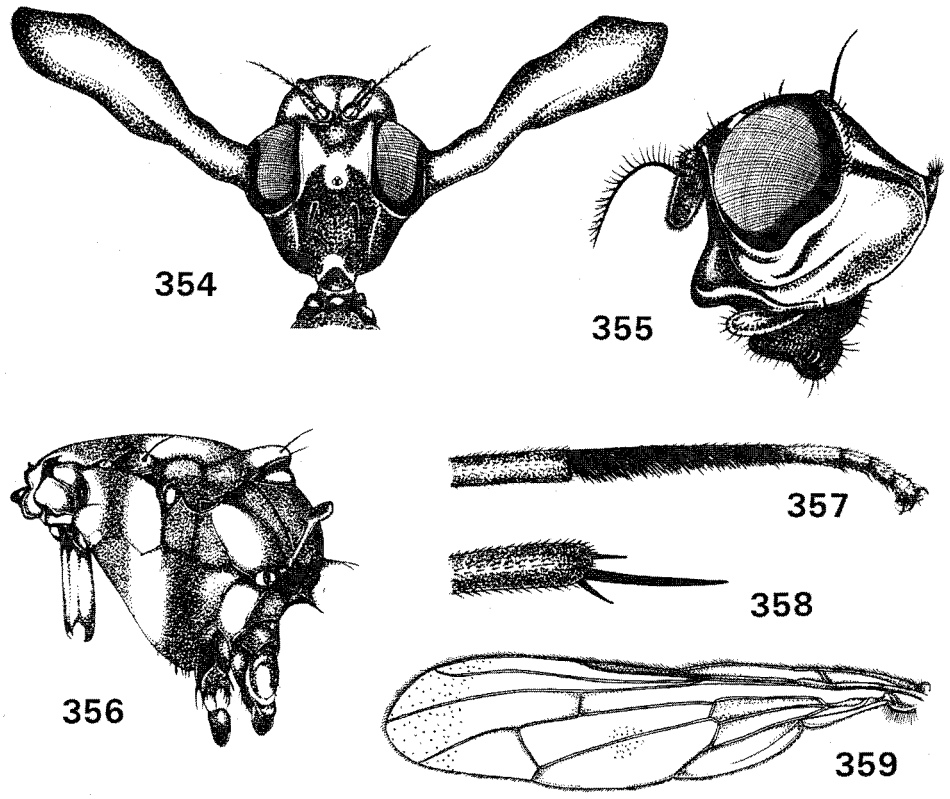
Material Examined

Paratypes. **Queensland**: 1♂, Claudie R., 5 mi W Mt Lamond, 2.i.1972, D. K. McAlpine and G. A. Holloway (UQIC); 1♀, West Claudie R., Iron Ra., 13.ix.1974, G. Daniels (UQIC); 1♀, Middle Claudie R., Iron Ra., 29.viii.1974, G. Daniels (UQIC).

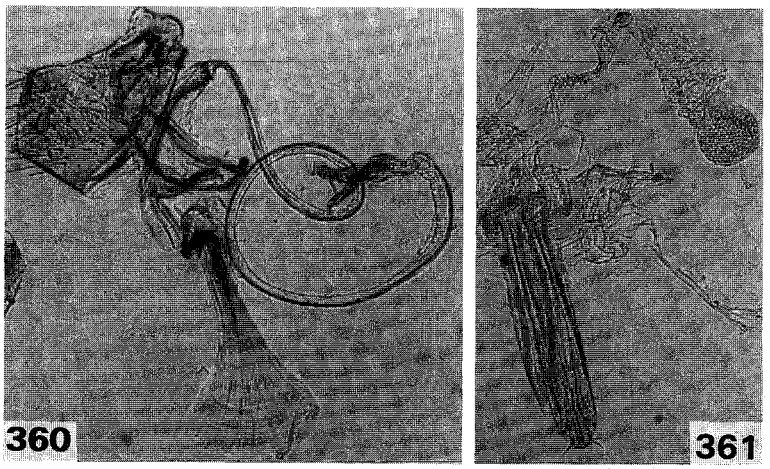
Other material examined. **Queensland**: 23♂, 8♀, Gordon Ck, Claudie R., Iron Ra., 12°42′S, 143°17′E, 9–10.xii.1986, G. Daniels and M. A. Schneider (UQIC); 1♀, 3 km ENE Mt Tozer, 12°44′S, 143°14′E, 28.vi.–4.vii.1986, D. H. Colless (ANIC); 1♀, Iron Ra., 4.xii.1985, D. Yeates (UQIC).

Diagnosis

As for genus. Head largely reddish purple, with a pair of prominent, unbranched, leaf-like cheek processes just below posterior eye margin in males. Face concave with epistomal margin produced into a broad, rounded, lip-like process with anterior margin curving ventrally, the lower part reddish purple. Antenna extending $\frac{1}{2}$ length of face, dark brown tinged with yellow. Frons yellow with 2 prominent black markings. Thorax narrow, anteriorly with a prominent median tubercle; predominantly dark brown; bristles as for genus. Pleura with 2 dull yellow transverse stripes, 1 on either side of wing base. Legs largely dark brown to black. Fore femur with 5 black posteroventral spines plus a series of smaller posteroventral spines distally. Mid and hind femora with basal $\frac{1}{4}$ whitish yellow. Mid tibia with 1 large apical spine. Wing narrowed basally, predominantly hyaline, tinged brown in cell sc and apically. Cell cup apically acute but without an apical lobe. Vein R_1 with a few weak setulae, other veins bare. Cell sc very narrow, apically acute. Abdomen petiolate; terga I+II narrowed basally, with 2 basal yellow spots and a yellow transverse band near apex. Male genitalia with surstylus slightly longer than wide, bilobed distally; inner surstylus curved and with 2 large black apical teeth. Female without cheek processes, only a small rudimentary ridge and black marking present; fore femur without posteroventral apical bristles; abdominal tergite VI $\frac{1}{2}$ length of tergite V; oviscape brown basally, yellowish brown on apical half; aculeus and spermathecae as for genus. Length of body 9·5–13·6 mm (♂) or 9·5–11·5 mm (♀), wing 7·5–10·0 mm (♂) or 6·0–7·3 mm (♀).



Figs 354–359. *Phytalmia mouldsi*: *354–355*, ♂ head; *356*, lateral view of thorax; *357*, ♂ fore tarsi; *358*, apex of mid tibia; *359*, wing.



Figs 360–361. *Phytalmia mouldsi*: *360*, ♂ genitalia (40×); *361*, aculeus (40×).

Distribution

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

Biology

Larvae develop in the decaying sapwood of fallen trees of *Dysoxylum gaudichaudianum* (Meliaceae) (Dodson and Daniels 1988; Dodson 1989). This is a rainforest species. The male cheek processes are used in territorial combat displays (Moulds 1977; Dodson 1989).

Comments

This species differs from the related *P. megalotis* Gerstaecker in the broadly expanded cheek processes, presence of a yellow pleural stripe before the wing base and spines, rather than bristles, on the male fore femur.

Tribe **RIVELLIOMIMINI** Hancock

This is a small tribe of three genera, two Afrotropical, one Indo-Australian (Hancock 1986). Two species occur in Australia. The tribe is differentiated by the presence of raised, shiny black bullae on the last visible abdominal tergite in both sexes and a vestigial tergite VI in females, not visible from above. The wing has the cell cup with the apex acute but not lobed and the aculeus is serrate, non-setulose. The laterotergite is covered with microscopic pubescence, the metathoracic postcoxal area is not sclerotised to form a bridge, the thoracic chaetotaxy is complete and there are four scutellar bristles.

Ornithoschema de Meijere (as *Cycasia oculata* Malloch) has been collected 'ex *Cycas*' (Cycadaceae) in Guam (Malloch 1942), interpreted as bred from *Cycas circinalis* by Hardy (1973), but this requires confirmation. The original record may refer to site of capture rather than an actual rearing record.

Genus ***Ornithoschema*** de Meijere

Ornithoschema de Meijere, 1914: 221. Type species: *O. oculatum* de Meijere, by original designation.
Cycasia Malloch, 1942: 202. Type species: *C. oculata* Malloch (= *Ornithoschema mallochi* Hardy), by original designation.

Diagnosis

Head higher than long. Antenna extending $\frac{2}{3}$ length of face, third segment apically rounded; arista short-pubescent. Face concave. Frons with 3 pairs *fr.* and 2 pairs *or.* bristles; *oc.* vestigial or absent; *pocl.* thin and fulvous. Gena with 1 strong *gn.* Thorax with the following bristles: 4 *scp., pprn.*, 2 *npl., prst., sa., ia., p.sa., dc.*, placed behind the line of *sa., acr.*, 2 *anepst., anepm., kepst.* Scutellum flat, triangular, with 4 *sc.* and a few pale lateral setae. Laterotergite with microscopic pubescence. Mid tibia with 1 long and 1 shorter apical spine. Wing hyaline with yellow-brown bands; veins R_1 and base of R_{4+5} setulose; r-m crossvein beyond middle of cell dm; cell sc short; cell cup apically acute but without an apical lobe. Abdomen oval; female with 5 or 6 visible tergites; last tergites of both sexes with a pair of shiny black lateral bullae; true tergite VI in female vestigial, not visible from above. Male genitalia with surstyli short, thick, broad apically. Female aculeus apically pointed, serrate laterally, without preapical setae. Three oval spermathecae with long necks.

Comments

This is a very distinctive genus, characterised by the tribal characters and wing pattern. *Cycasia* was placed as a synonym of *Ornithoschema* by Hancock (1991) and the resulting homonomy of their type species was discussed by Hardy (1992) and Hancock and Drew (1994*a*). *Cycas* (Cycadaceae) has been reported as a host for this genus but, as noted above, this is doubtful and requires confirmation. Two species occur in Australia.

Key to Australian Species of *Ornithoschema*

1. Transverse wing bands not joined below vein CuA_1, reaching hind margin as separate bands ..... *O. oculatum*
   Transverse wing bands united below vein CuA_1, cell cua_1 mostly yellow with a hyaline band above vein CuP + A_1 ..... *O. queenslandense*

Ornithoschema oculatum de Meijere

(Figs 362–366)

Ornithoschema oculatum de Meijere, 1914: 221. Type locality Batavia (Jakarta), Java. Holotype ♀ in ZMUA [not examined]. — Hardy, 1987: 340; Hardy and Foote, 1989: 525; Hancock and Drew, 1994*a*: 24.

Material Examined

Northern Territory: 1♂, Black Pt, Cobourg Pen., 11°09′S, 132°09′E, 31.i.1977, E. D. Edwards (ANIC); 1♀, Fanny Bay, Darwin, 3.iii.1967, M. S. Upton (ANIC).

Diagnosis

As for genus. Thorax with scutum fulvous to red-brown, grey-pollinose anteriorly; postpronotal lobe yellow. Anepisternum with a yellow-white band along upper margin from postpronotal lobe to wing base, remainder fulvous. Wing with a yellow-brown band along humeral vein and 3 narrow transverse bands across wing, from base of cell sc, middle of cell r_1 and end of cell r_1, the latter continued along costa to wing apex; also a yellow-brown marginal band in cells r_{4+5} and m, broadest anteriorly. Vein R_{4+5} with a few setae only at extreme base; cell cup apically acute. Abdomen fulvous to red-brown, extensively brown in some specimens. Female with 6 visible tergites plus a vestigial seventh; last visible tergite in both sexes with a pair of shiny black lateral bullae. Oviscape cylindrical, as long as apparent 6th tergite. Length of body 3·5–4·7 mm (♂) or 4·2–4·4 mm (♀), of wing 3·7–4·3 mm (♂) or 3·8–4·0 mm (♀).

Distribution

Java (Indonesia), Sabah (Malaysia), New Britain (Papua New Guinea), the Solomon Islands and the Northern Territory.

Comments

This species differs from *O. queenslandense*, sp. nov., in wing pattern details, the transverse bands remaining separated below cell dm. It is very similar to *O. flavum* (Hardy) from Thailand, differing in the additional abdominal tergite in females; from *O. mallochi* Hardy (= *O. pacifica* Hancock and Drew) it differs in this character and in wing pattern. For a discussion of the female abdomen see *O. queenslandense*.

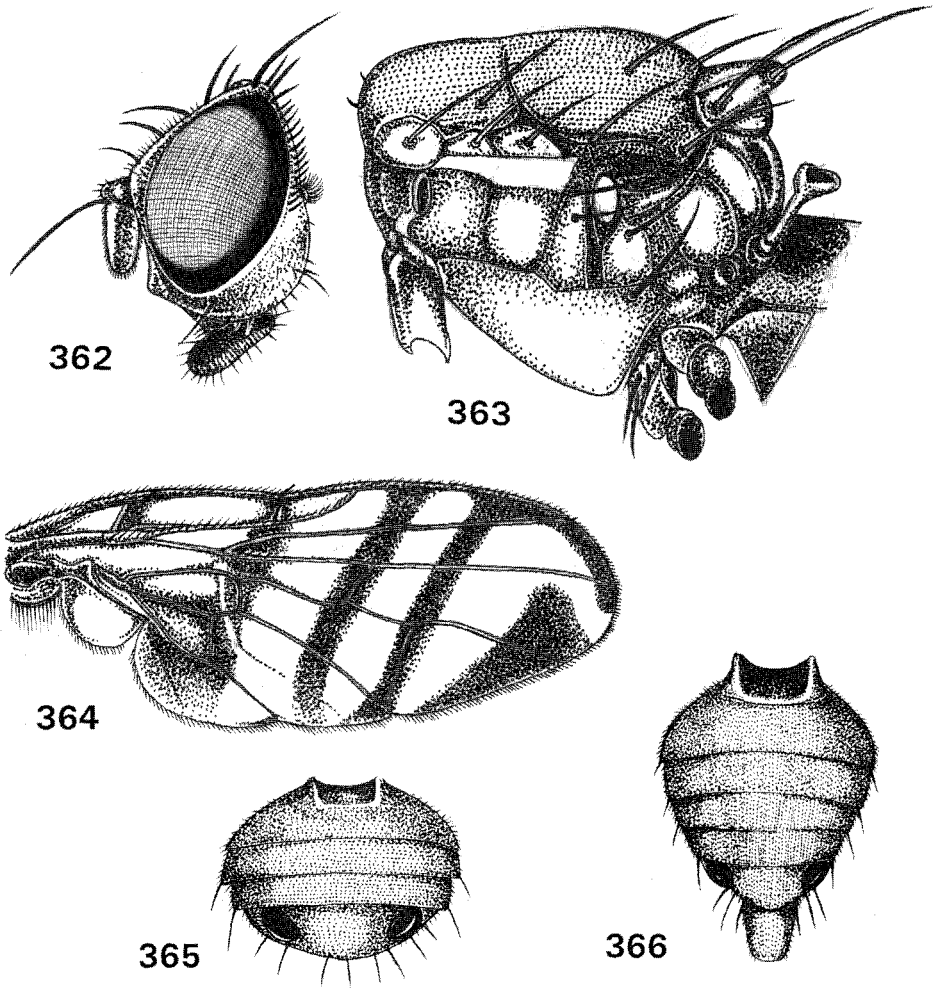
Ornithoschema queenslandense, sp. nov.

(Figs 367–370)

Material Examined

Holotype. ♂, Claudie R., 5 mi W Mt Lamond, Qld, 30.xii.1971, D. K. McAlpine and G. A. Holloway (AM).

Paratypes. **Queensland**: 1♂, 1♀, same data as holotype except 26 and 31.xii.1971 (AM); 1♂, 1 mi NE Mt Lamond, Iron Ra., 12.i.1972 (AM); 1♀, mid Claudie R., Iron Ra., 2.x.1974, G. Daniels, mv lamp (AM); 1♂, 11 km ENE of Mt Tozer, 12°43′S, 143°18′E, 11–16.vii.1986, D. H. Colless (ANIC); 1♀, Mulgrave R., 4 mi W of Gordonvale, 4.i.1959, D. K. McAlpine (AM).



Figs 362–366. *Ornithoschema oculatum*: *362*, head; *363*, lateral view of thorax; *364*, wing; *365*, ♂ abdomen; *366*, ♀ abdomen.

Description

Male

Length of body 4·0–4·5 mm, of wing 4·0–4·5 mm.

Head. As for genus, fulvous; bristles fulvous; upper *or.* bristle weak; *oc.* bristles present or absent.

Thorax. Fulvous; bristles as for genus, fulvous. Anepisternum with a whitish yellow band along upper margin from postpronotal lobe to wing base, including lower portion of postpronotal lobe. Postnotum with a pair of oval, blackish markings laterally. Legs fulvous; mid tibia with 1 long and 1 shorter fulvous apical spine. Wing (Fig. 367) hyaline with yellow-brown cell sc and bands as follows: along humeral vein; 3 narrow transverse bands across wing, from base of cell sc, middle of cell r_1 and end of cell r_1, the latter continued along costa to wing apex; the first almost as wide as cell sc; the 3 bands united along posterior margin of cell dm and below, except a hyaline band along vein $CuP+A_1$ in cell cua_1; also a marginal band in cells r_{4+5}

and m_1, broadest anteriorly. Veins R_1 and R_{4+5} setose, the latter to beyond level of dm-cu crossvein; vein M sinuous; cell cup apically acute but without an apical lobe. Costa with a distinct bristle at base of cell sc.

Abdomen. Fulvous; tergite V with a pair of black lateral bullae. Male genitalia as for genus.

Female

Length of body 4·3-4·5 mm, of wing 4·1–4·3 mm. As for male except abdomen (Fig. 368) with 6 visible tergites plus a vestigial true tergite VI, not visible from above. Last 2 visible abdominal tergites (apparent 5th and 6th) each with a pair of black lateral bullae. Oviscape fulvous, a little longer than apparent 6th tergite. Aculeus (Fig. 369) apically serrate and acute, without preapical setae. Three weakly sclerotised spermathecae (Fig. 370).

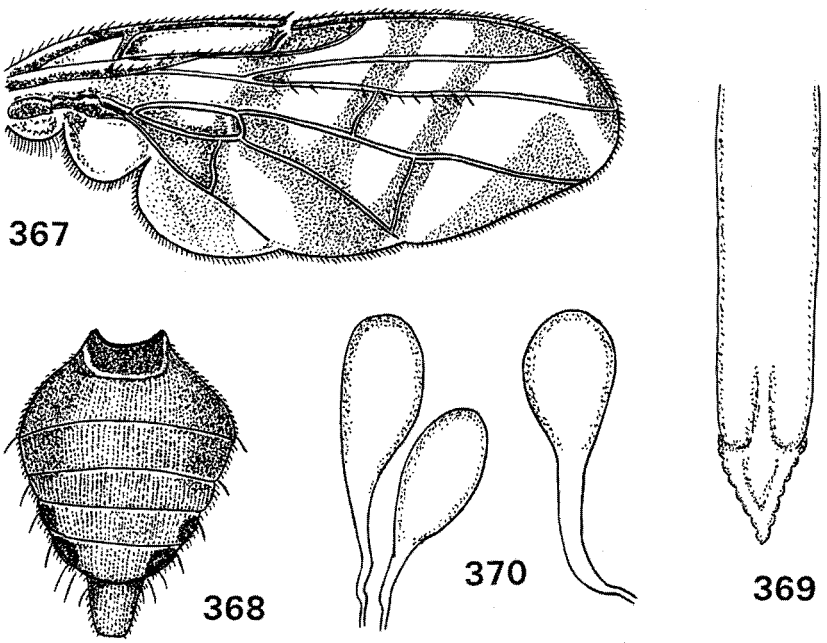
Distribution

North-east Queensland, from Iron Range, Cape York Peninsula, to the Cairns district.

Comments

This species resembles *O. oculatum* in having an additional abdominal tergite in females. It differs in having vein R_{4+5} setose to beyond level of dm-cu crossvein and in wing pattern details, the transverse band from cell sc is broader and united below cell dm with the other transverse bands. The abdomen and wing pattern separate it from *O. flavum* and *O. mallochi.*

The additional tergite in females is an unusual character, possibly resulting from a doubling of one of the other tergites. A vestigial true tergite VI is present, as a small medial sclerite above the base of the oviscape. Tergite V projects well beyond the base of the oviscape, shielding it and tergite VI. There are six sternites; sternite VI is well developed and covers the base of the oviscape.



Figs 367–370. *Ornithoschema queenslandense*: *367*, wing; *368*, ♀ abdomen; *369*, aculeus; *370*, spermathecae.

Apart from *O. oculatum* and *O. queenslandense*, all other members of the tribe Rivelliomimini have only five tergites visible from above in females (Hardy 1973; Hancock 1986).

Etymology

The specific name is derived from Queensland, its area of distribution.

Tribe **TRYPETINI** Loew

Six genera and nine species of Trypetini Loew (1862) occur in Australia. This tribe is well represented in temperate areas where many species are leaf-miners. This host category has not been recorded in Australia, although *Fusciludia unicuneata* (Hardy) may occupy this niche. Where known, Australian species of Trypetini utilise fruits of Verbenaceae, Rutaceae, Agavaceae and probably Araliaceae.

Five of the species recorded here have been included previously in genera *Myoleja* Rondani or *Anomoia* Walker. Han (1992) has shown that they do not belong there and we follow his arrangement in referring them to the genera *Fusciludia* Ito and *Philophylla* Rondani. These plus *Vidalia* Robineau-Desvoidy and *Hemiristina*, gen. nov., are referrable to subtribe Trypetina, as defined by Han (1992); the other two genera are unplaced.

Females in this tribe have a distinct abdominal tergite VI and an aculeus that is often serrate but lacks preapical setae. The wing cell cup in both sexes has a well-developed apical lobe and there are no shiny black bullae on abdominal tergite V.

Key to Genera of Australian Trypetini

1. *Acr.* and *oc.* bristles normally absent; *prepm.* bristles well developed; apical halves of mid and hind femora with 2 ventral rows of short black spines ..... *Callistomyia*
   Acr. and *oc.* bristles present; *prepm.* bristles absent; femora without spines 2
2. 1 pair of *fr.* bristles; scutellum swollen, densely covered with black setae; last section of vein M strongly curved ..... *Epinettyra*
   3–4 pairs of *fr.* bristles; scutellum flat, bare or with few setae; last section of vein M straight 3
3. Wing largely brown with distinct or diffuse hyaline indentations, apex largely brown, without a distinct costal band; mesonotum largely red-brown; scutellum yellow 4
   Wing not as above, the apex largely hyaline with a brown costal band; mesonotum black or dark brown; scutellum black or yellow/white 5
4. Cell c hyaline; cell dm entirely brown; both sexes with 3 pairs of *fr.* bristles, not on tubercles ..... *Hemiristina*
   Cell c with a brown band medially; cell dm with hyaline indentations; male with 3 pairs of *fr.* bristles placed on tubercles, female with 4 pairs of *fr.* bristles, not on tubercles ..... *Vidalia*
5. Scutellum and a large quadrate patch on anepisternum yellow or white; costal band not joined to brown band over dm-cu crossvein ..... *Fusciludia*
   Scutellum and anepisternum black; costal band joined to brown band over dm-cu crossvein, forming a C-shaped band ..... *Philophylla*

Genus ***Callistomyia*** Bezzi

Callistomyia Bezzi, 1913: 124. Type species: *C. pavonina* Bezzi, by original designation.

Diagnosis

Head higher than long. Antenna shorter than face, third segment apically rounded; arista with microscopic pubescence. Face concave. Frons with 3 pairs *fr.* and 2 pairs *or.* bristles; *oc.* absent; *pocl.* thin and dark. Gena with 1 strong *gn.* Thorax with the following bristles: 4 *scp., pprn.*, 2 *npl., prst., sa., ia., p.sa., dc.* placed just before line of *ia.*, 2 *anepst., anepm., kepst.*; *acr.* normally absent. Scutellum flat, triangular, with 4 *sc.* Mid tibia with 2 strong but unequal apical spines. Mid and hind femora with 2 rows of short black ventral spines on apical halves. Veins

R_1 and R_{4+5} setose; r-m crossvein near middle of cell dm; cell cup with apical lobe broad and elongate. Abdomen oval; male genitalia with surstyli short and broad, as long as epandrium. Female aculeus elongate, apically pointed, without preapical setae. Three oval spermathecae.

Comments

This genus has previously been referred to tribe Acanthonevrini (subtribe Gastrozonina) by Hardy (1973, 1974, 1988) and Hardy and Foote (1989) but appears to be better placed in the Trypetini (Hancock 1986). True members of the Gastrozonini are bamboo-feeders with two spermathecae, referrable to the subfamily Ceratitinae. *Callistomyia* differs from all species of Acanthonevrini in lacking preapical setae on the aculeus. It is here considered an isolated genus within the Trypetini.

Five species are known, with the genus occurring throughout the Indo-Australian Region. Known hosts are the fruit of *Glycosmis, Clausena* and *Micromelum* (Rutaceae). One species occurs in Australia.

Callistomyia horni Hendel

(Figs 371–378)

Callistomyia horni Hendel, 1928: 361. Type locality Palmerston, WA (= Darwin, Northern Territory). Holotype ♂ in NHMV [not examined]. — Malloch, 1939*d*: 447; Hardy, 1951: 173; Hardy, 1988: 87; Allwood and Angeles, 1979: 107; Hardy, 1988: 87; Smith *et al.*, 1988: 20, 26; Hardy and Foote, 1989: 517.

Material Examined

24♂, 30♀, from the following localities. **Queensland**: Lockhardt R. [Iron Ra.], Peach Crk nr Coen, Wenlock R. at Moreton, Cairns, Ayr. **Northern Territory**: South Alligator R., Melville I., Darwin, Elcho I., Barralba Ck Springs nr Mt Cahill, Rimbija I., Wessel I., Daly R., Smith Point, Gunn Point. (In QDPI and UQIC.)

Diagnosis

As for genus. Face with a prominent median black spot near lower margin. Scutum red-brown with 3–5 longitudinal narrow blackish stripes, the outer pair not extending before suture or absent. Postpronotal lobe yellow. Anepisternum with a yellow band along upper margin from postpronotal lobe to wing base; proepimeron with a prominent bristle just below postpronotal lobe. Postnotum black. Wing with a distinctive pattern: cell sc brown; a curved transverse brown band from apex of cell r_1 to wing margin in cell cua_1, joined in cell dm with a large, ovate brown apical patch. Abdomen red-brown, tinged with black at base or sides of each segment but without distinct black transverse bands. Length of body 8·6–9·2 mm (♂ and ♀), of wing 7·2–8·2 mm (♂ and ♀).

Distribution

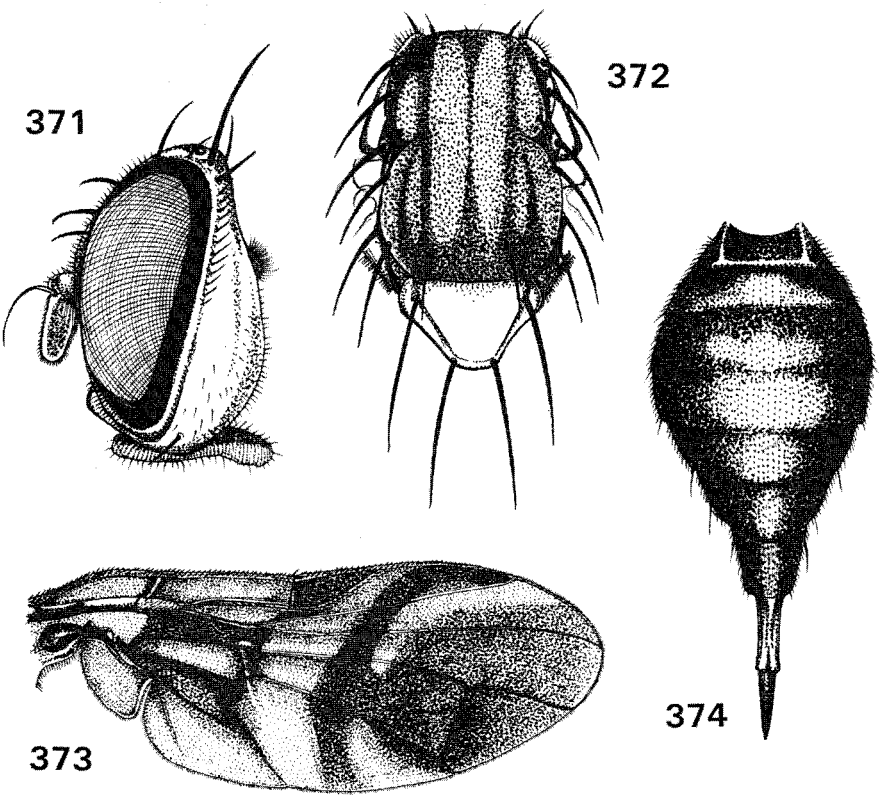
Papua New Guinea, the Northern Territory and north-east Queensland.

Biology

Larvae develop in the fruit (berries) of *Glycosmis* sp., *G. pentaphylla, G. trifoliata, Micromelum minutum* and *Clausena brevistylus* (all Rutaceae) (Hardy 1951; Allwood and Angeles 1979; Smith *et al.* 1988; label data). A record from *Barringtonia acutangula* (Allwood and Angeles 1979) is an error (Smith *et al.* 1988).

Comments

This is a distinctive species readily identifiable by the wing pattern and diagnostic characters. Although the species breeds in native Rutaceae, it has not been recorded from any cultivated or economic host.



Figs 371–374. *Callistomyia horni*: *371*, head; *372*, scutum; *373*, wing; *374*, ♀ abdomen.

Genus ***Epinettyra***, gen. nov.

Type species: *Epinettyra setosa*, sp. nov.

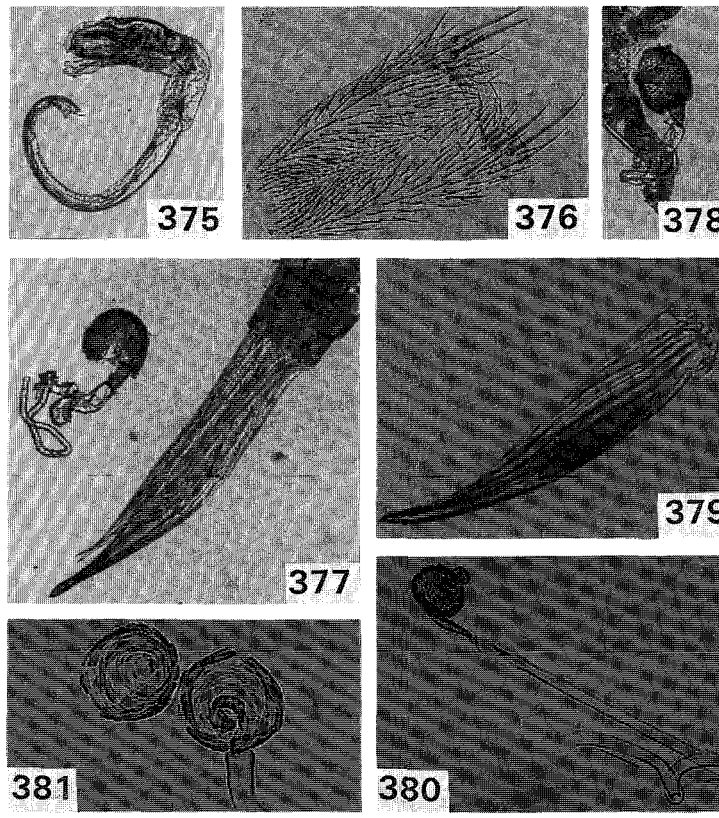
Diagnosis

Head slightly higher than long. Antenna shorter than face, third segment broad, rounded apically; arista bare. Face slightly concave. Frons with 1 pair each of *fr.* and *or.* bristles; interfrontal area finely setose; *oc.* moderately developed; *pocl.* thin and dark. Gena with 1 strong *gn.* Thorax with the following bristles: 4 *scp.*, *pprn.*, 2 *npl.*, *prst.*, *sa.*, *ia.*, *p.sa.*, *dc.* placed a little before *ia.*, *acr.*, *anepst.*, *anepm.*, *kepst.* Scutellum swollen, covered with fine dark setae; 4 *sc.* Mid tibia with 1 strong black apical spine. Veins R_1 and R_{4+5} setose; r-m crossvein just before middle of cell dm; vein M curved upwards beyond dm-cu crossvein; cell cup with apical lobe short and broad. Abdomen oval. Male genitalia with surstyli elongate, tapered posteriorly; inner surstyli short, $\frac{2}{3}$ length of surstyli, curved, with 2 black apical teeth. Female aculeus sharply pointed, without preapical setae. Three mushroom-shaped spermathecae.

Comments

This is a distinctive genus not clearly related to any other Indo-Australian genus of Trypetini. Like *Callistomyia*, which has a similar aculeus, *Epinettyra* appears to occupy an isolated position within the tribe.

The genus is monotypic. Nothing is known of its biology. The generic name is an anagram of Trypetinae, signifying the obscure nature of this taxon within the subfamily.



Figs 375–378. *Callistomyia horni*: *375*, aedeagus (40×); *376*, 5th abdominal sternite; *377*, aculeus and 1 of 3 spermathecae (40×); *378*, spermatheca (40×). **Figs 379–381.** *Epinettyra setosa*: *379*, aculeus (40×); *380*, 1 of 3 spermathecae (100×); *381*, 2 of 3 spermathecae (400×).

Epinettyra setosa, sp. nov.

(Figs 379–384)

Material Examined

Holotype. ♂, Atherton, Qld, 9.iv.1961, A. W. S. May (QM - T12212).

Paratypes. **Queensland:** 2♂, Atherton, 20.i. and 16.iv.1956, A. W. S. May (QDPI); 1♂, 1♀, 11 km ENE of Mt Tozer, 12°43′S, 143°18′E, 11–16.vii.1986, D. H. Colless (ANIC).

Description

Male

Length of body 4·0–4·3 mm, of wing 3·6–4·0 mm.

Head (Fig. 382). As for genus; fulvous; ocellar triangle black.

Thorax (Fig. 383). Fulvous except for a pair of lateral black spots on scutum behind wing base and on postnotum. Scutum densely covered with yellow-brown setae. With a complete series of thoracic bristles. Scutellum fulvous, swollen, covered with fine dark setae, 4 strong *sc.* bristles. Pleura entirely fulvous. Legs fulvous. Fore femur with a row of 4–5 black subapical posteroventral bristles. Mid and hind femora each with a row of anteroventral and posteroventral black bristles. Mid tibia with 1 strong black apical spine. Hind tibia with a row of 6–7 anterodorsal setae medially. Fore and hind tibiae with a small apicoventral spine. Wing

(Fig. 384) hyaline except cell sc brown and 2 yellow-brown bands, one from base of cell r_1 and along costa from cell sc to wing apex, leaving a small hyaline indentation along costa beyond end of cell sc, one transverse from below the hyaline indentation to apex below vein M, extending basally in cell r_{2+3} to base of that cell; also a pale yellowish suffusion over humeral vein and base of cell br. Veins R_1 and R_{4+5} setose; vein M distinctly convex beyond dm-cu crossvein. Cell cup with apical lobe short and broad.

Abdomen. Fulvous, densely covered with yellow-brown setae. Anal lobe dark brown, well developed; epandrium yellow to red-brown, covered with yellow bristles dorsally. Surstyli as for genus.

Female

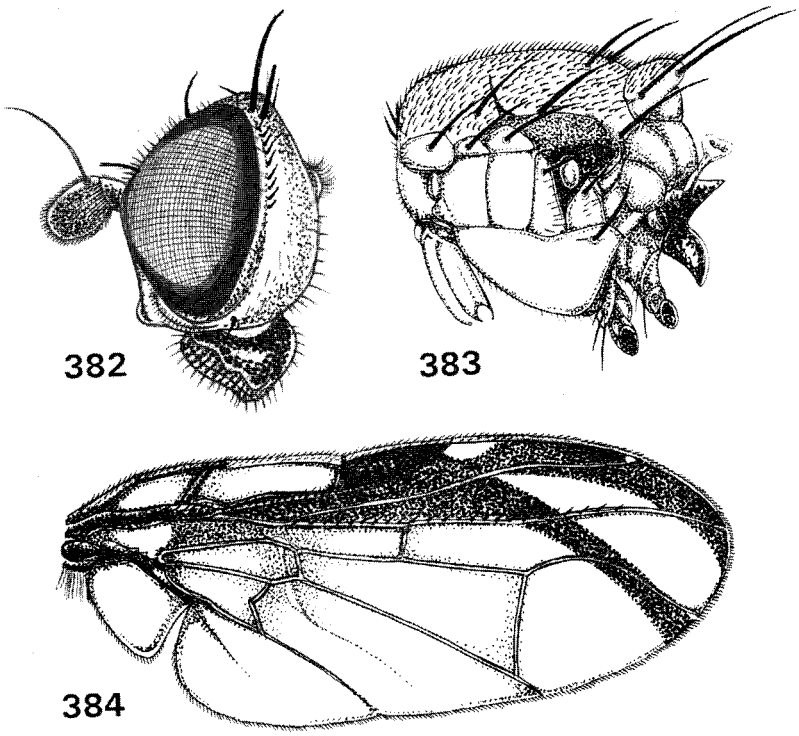
Length of body 4·9 mm, of wing 4·7 mm. Similar to male except with well-developed abdominal tergite VI. Oviscape fulvous, as long as terga IV–VI combined. Aculeus (Fig. 379) as for genus. Three mushroom-shaped spermathecae (Figs 380, 381) with rough surfaces.

Distribution

North-east Queensland, from Iron Range to the Atherton Tableland.

Comments

The generic and other characters noted above readily identify this species. The Atherton specimens were collected in lure (orange-ammonia) traps in citrus.



Figs 382–384. *Epinettyra setosa*: *382*, head; *383*, lateral view of thorax; *384*, wing.

Etymology

The specific name is derived from the Latin *setosus*, referring to the dense covering of setae on the mesonotum, scutellum and abdomen.

Genus *Fusciludia* Ito

Fusciludia Ito, 1984: 182. Type species: *F. aliquantula* Ito, by original designation.

Diagnosis

Head higher than long. Antenna shorter than face, third segment apically rounded; arista short-pubescent. Face concave. Frons with 3 pairs *fr.* and 2 pairs *or.* bristles; *oc.* well developed; *pocl.* thin and dark. Gena with 1 strong *gn.* Thorax with the following bristles: 4 *scp., pprn.*, 2 *npl., prst., sa., ia., p.sa., acr., dc.* placed a little closer to *sa.* than *ia.*, 1 *anepst., anepm., kepst.* Scutellum flat, triangular, yellow to white, with 4 *sc.* Anepisternum with a large quadrate yellow to white patch. Mid tibia with 1 strong apical spine. Veins R_1 and R_{4+5} setose; r-m crossvein well beyond middle of cell dm, close to dm-cu crossvein; cell cup with apical lobe short and narrow. Abdomen oval. Male genitalia with surstyli short and narrow, with distinct apical lobes. Female aculeus broad, apically serrate and pointed. Three oval spermathecae.

Comments

This is an Asian-Pacific genus with one species known in Australia. Han (1992) included six species, all with the large quadrate anepisternal patch and scutellum yellow-white. Hosts are unknown.

Fusciludia unicuneata (Hardy)

(Figs 385–389)

Myoleja unicuneata Hardy, 1987: 338. Type locality Kurubaka, Papua New Guinea. Holotype ♂ in BPBM [not examined]. — Hardy and Foote, 1989: 525.
Fusciludia unicuneata. — Hancock and Drew, 1994*a*: 26.

Material Examined

Queensland: 2♀, Cooktown, 18.viii.1983, N. W. Rodd (AM); 1-, The Intake nr Cairns, 30.xii.1966 (ANIC); 1♂, Wallaman Falls area, W Ingham, 31.i.1975, B. K. Cantrell (QDPI); 1♀, Tamborine Mtn, 21.ii.1921, H. Hacker (QM); 1♂, Lever's Plateau, 18.iv.1964, M. Smith (UQIC). **New South Wales**: 2♂, Upper Allyn nr Eccleston, 16.xi.1965, D. K. McAlpine (AM).

Diagnosis

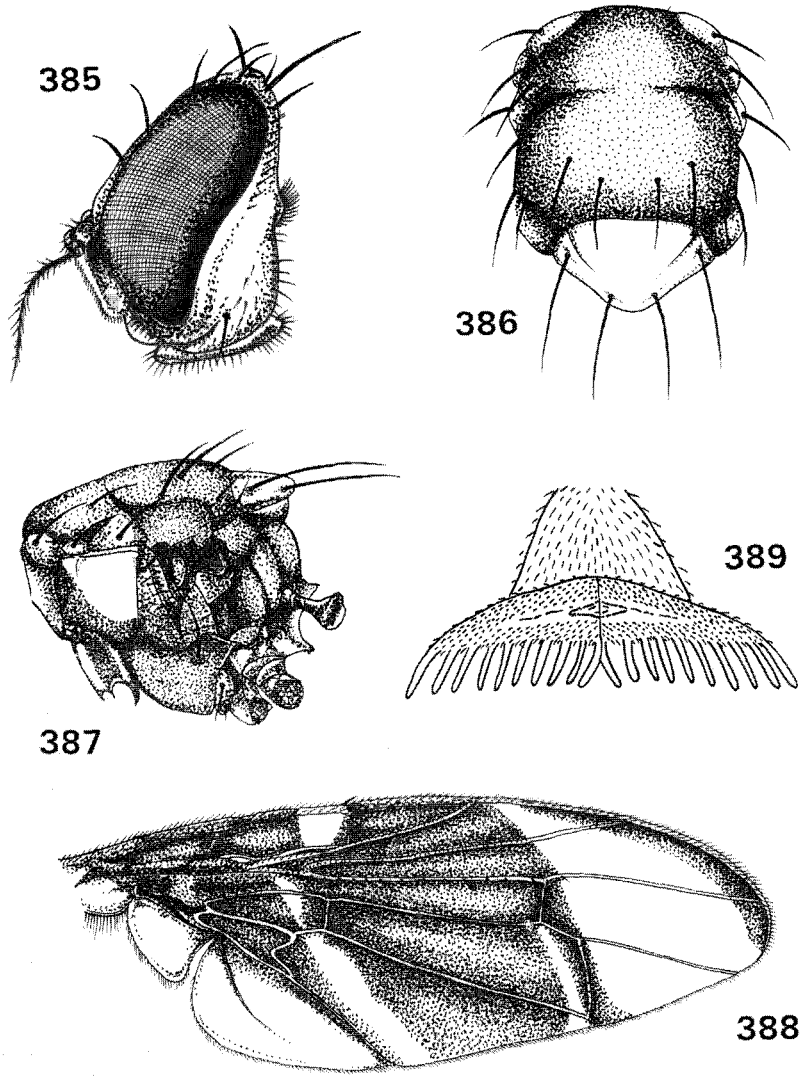
As for genus. Head fulvous, face yellowish in male, rufous in female. Thorax and abdomen blackish brown except for yellow-white anepisternum and scutellum. Haltere yellow. Legs fulvous except coxae and apex of hind femur brown. Wing largely brown on basal $\frac{2}{3}$, with hyaline indentations at distal end of cell c and in cell cua_1, extending into apex of cell dm and cell br; hyaline below vein $CuP+A_1$; a narrow costal band from middle of cell r_1 to wing apex. Male abdomen with pleural membrane of segments III–IV expanded into a pair of large swellings and cerci greatly modified, comb-like. Female oviscape blackish brown, as long as tergites V–VI combined. Aculeus as for genus. Length of body 3·6–4·0 mm (♂) or 5·5–6·0 mm (♀), of wing 3·8–4·2 mm (♂) or 4·4–4·8 mm (♀).

Distribution

Papua New Guinea and eastern Australia, from north Queensland to central New South Wales.

Comments

The wing pattern and male abdominal modifications readily distinguish this species.



Figs 385–389. *Fusciludia unicuneata*: *385*, head; *386*, scutum; *387*, lateral view of thorax; *388*, wing; *389*, ♂ cerci.

Genus ***Hemiristina***, gen. nov.

Type species: *Hemiristina pleomeles*, sp. nov.

Diagnosis

Head higher than long. Antenna extending almost full length of face, third segment apically rounded; arista bare except microscopic pubescence at base. Face vertical. Frons with 3 pairs *fr.* and 1 or 2 pairs *or.* bristles; interfrontal area finely setose; *oc.* weak; *pocl.* thin and dark; *poc.* and *pavt.* fulvous. Gena with 1 strong *gn.*; fine vibrissal setae present. Thorax with the following bristles: 4 *scp.*, *pprn.*, 2 *npl.*, *prst.*, *sa.*, *ia.*, *p.sa.*, *dc.* placed a little before line of *ia.*, *acr.*, 1–2 *anepst.*, *anepm.*, *kepst.* Scutellum flat, with fine dorsolateral setae and 4 *sc.* Mid tibia with 1 strong and several short black apical spines. Veins R_1 and R_{4+5} setose; r-m crossvein beyond middle of cell dm; cell cup with apical lobe short and broad. Abdomen oval. Aculeus short, broad, slightly tapered, apically serrate and pointed, without preapical setae.

Comments

This genus appears similar to *Hemilea* Loew, differing in the fulvous *poc.* and *pavt.* bristles, hyaline cells bc and c, broader wing and r-m crossvein not as close to the dm-cu crossvein. Larval hosts also differ; *Hemilea* species are leaf-miners in Araliaceae, *Hemiristina* breeds in the fruit of Agavaceae. The wing pattern is very similar to that of *Agaristina* Hering, but the arista is bare, the *oc.* bristles weak and the antenna longer relative to the face. The generic name is derived from a combination of *Hemilea* and *Agaristina*.

Only a single species is known.

Hemiristina pleomeles, sp. nov.

(Figs 390–394)

Material Examined

Holotype. ♂, Melville I., NT, 13.xi.1979, G. Fitt, ex *Pleomeles angustifolia* (ANIC).

Paratype. ♀, Stephens I. [Torres Strait], N Qld, 9°30′S, 143°33′E, 25–27.xi.1986, K. Houston and K. Sadler, at light (QDPI).

Description

Male

Length of body 4·8 mm, of wing 6·5 mm.

Head (Fig. 390). As for genus. Fulvous except ocellar triangle brown. Face shorter than frons, vertical with oral margin slightly projecting. Dark setae present along vibrissal margin. Frons with 3 pairs *fr.* and 1 pair *or.* bristles; *oc.* bristles no longer than ocellar triangle.

Thorax (Figs 391, 392). Fulvous except for a narrow, whitish band along upper margin of anepisternum, from postpronotal lobe to wing base. Bristles as for genus; a row of fine, fulvous setae present on prothorax. Scutellum fulvous. Legs fulvous. Fore femur with a row of posteroventral bristles and numerous black setae dorsally. Mid femur with a row of 6 posteroventral setae medially. Mid tibia with 1 prominent black apical spine. Hind tibia with a row of dorsolateral bristles. Wing (Fig. 393) mostly dark brown, with hyaline cells bc and c and indentation in cell r_1 just beyond cell sc; posterior margin of wing, including lower half of cell cua_1 and much of cell m hyaline; hyaline indentations also present in outer part of cell r_1 and apices of cells r_{2+3} and r_{4+5} (these possibly a result of tenerality). Veins R_1 and R_{4+5} setose, the latter with 14 setae between node and r-m crossvein and 2 beyond it; r-m crossvein placed at outer 3/5 of cell dm.

Abdomen. Fulvous, dark brown to black along lateral edges of terga and on pleura. Male genitalia not studied.

Female

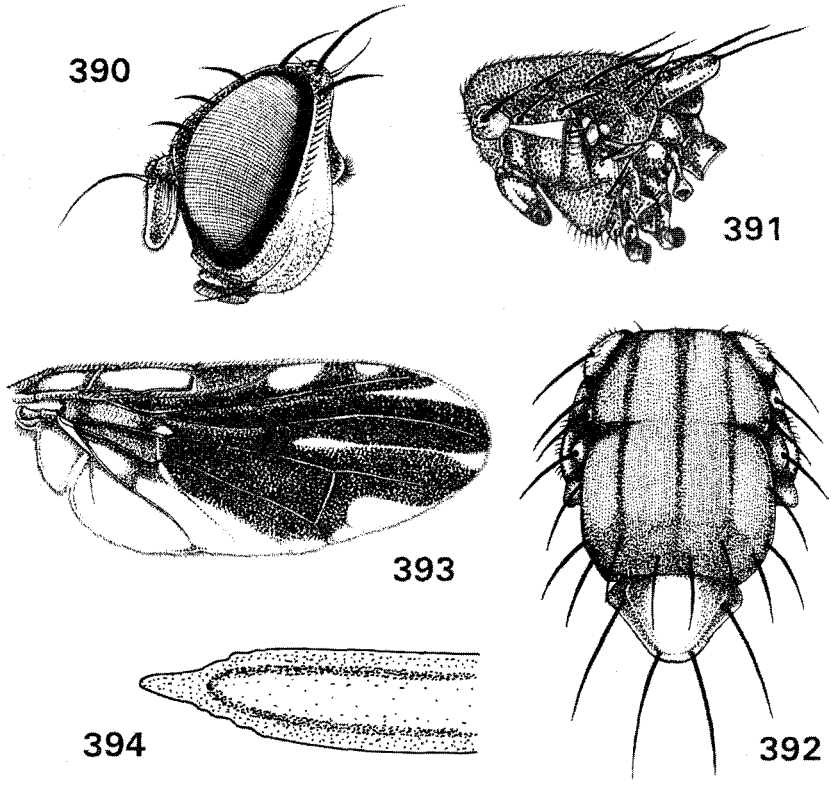
Length of body 7·4 mm, of wing 8·0 mm. Similar to male but frons with 2 pairs of *or.* bristles and abdominal tergite VI well developed, almost as long as tergite V. Oviscape short, a little longer than tergite VI; aculeus (Fig. 394) as for genus.

Distribution

Islands of the Northern Territory and north Queensland (Torres Strait).

Biology

The holotype was reared from the fruit of *Pleomeles angustifolia* (Agavaceae).



Figs 390–394. *Hemiristina pleomeles*: *390*, head; *391*, lateral view of thorax; *392*, scutum; *393*, wing; *394*, aculeus.

Comments

This is a distinctive species readily identified by the wing pattern.

Etymology

The specific name is derived from its host plant.

Genus ***Philophylla*** Rondani

Philophylla Rondani, 1870: 9. Type species: *Musca caesio* Harris, by original designation.
Hendelina Hardy, 1951: 179. Type species: *Pseudopheniscus angulatus* Hendel, by original designation.

Diagnosis

Head higher than long. Antenna shorter than face, third segment apically rounded; arista short-pubescent. Face concave. Frons with 3 pairs *fr.* and 2 pairs *or.* bristles; *oc.* well developed; *pocl.* thin and dark. Gena with 1 strong *gn.* Thorax black, with the following bristles: 4 *scp., pprn.*, 2 *npl., prst., sa., ia., p.sa., acr., dc.* placed on or behind line of *sa.*, 2 *anepst., anepm., kepst.* Scutellum flat, triangular, black, with 4 *sc.* Pleura black. Mid tibia with 1 strong apical spine. Veins R_1 and R_{4+5} setose; r-m crossvein well beyond middle of cell dm; cell cup with apical lobe short and narrow. Abdomen oval. Male genitalia with surstyli elongate. Female aculeus apically pointed and often serrate, without preapical setae. Three rounded spermathecae.

Comments

This is a widespread genus well represented in the Asian-Pacific Region and also occurring in the Palaearctic and Afrotropical Regions. Han (1992) included over 50 species in *Philophylla*. The genus differs from *Fusciludia* in lacking the yellow or white anepisternal patch and in the black scutellum. Known hosts are the fruit of Verbenaceae and leaf petioles of Urticaeae; a record from Caricaceae is considered an error (Hancock and Drew 1994*a*). Four species are known in Australia.

Key to Australian Species of *Philophylla*

1. Wing with a subapical oblique brown band in outer part of cell r_{4+5}, below the costal band 2
   Wing without a subapical brown band below the costal band 3
2. Cells bc and c brown, paler centrally; brown band through dm-cu crossvein joined with discal patch in cell dm ..... *P. australina*
   Cells bc and c mostly hyaline; brown band through dm-cu crossvein normally free from discal patch, rarely joined below cell dm ..... *P. fossata*
3. Cell bc brown; cell c with a medial quadrate hyaline band; brown bands in cell dm and below diverging ..... *P. quadrata*
   Cell bc hyaline; cell c with a medial elliptical hyaline band; brown bands in cell dm and below parallel or slightly converging ..... *P. erebia*

Philophylla australina (Hardy), comb. nov.

(Figs 395–399)

Hendelina australina Hardy, 1951: 180. Type locality Hartley's Ck, Qld. Holotype ♂ in USNM [not examined].

Myoleja australina. — Daniels, 1978: 432; Hardy and Foote, 1989: 524.

Material Examined

Paratypes. 1♂, 1♀, Hartley's Ck, Qld, 2.viii.1950, N. L. H. Krauss (AM).

Other material examined. **Queensland**: 1♂, Lake Placid nr Cairns, 1.i.1959, D. K. McAlpine (AM); 1♀, Mossman R., Mossman, 16°28′S, 145°24′E, 16.vii.1989, P. Surakrai (UQIC); 8♂, 5♀, Surum, Saibai I., Torres Strait, 12.v.1992, E. Hamacek *et al.*, bred from *Premna obtusifolia* (QDPI); 11♂, 13♀, Dauan I., Torres Strait, 14.ii.1994, B. Sabine, bred from *Premna obtusifolia* (QDPI).

Diagnosis

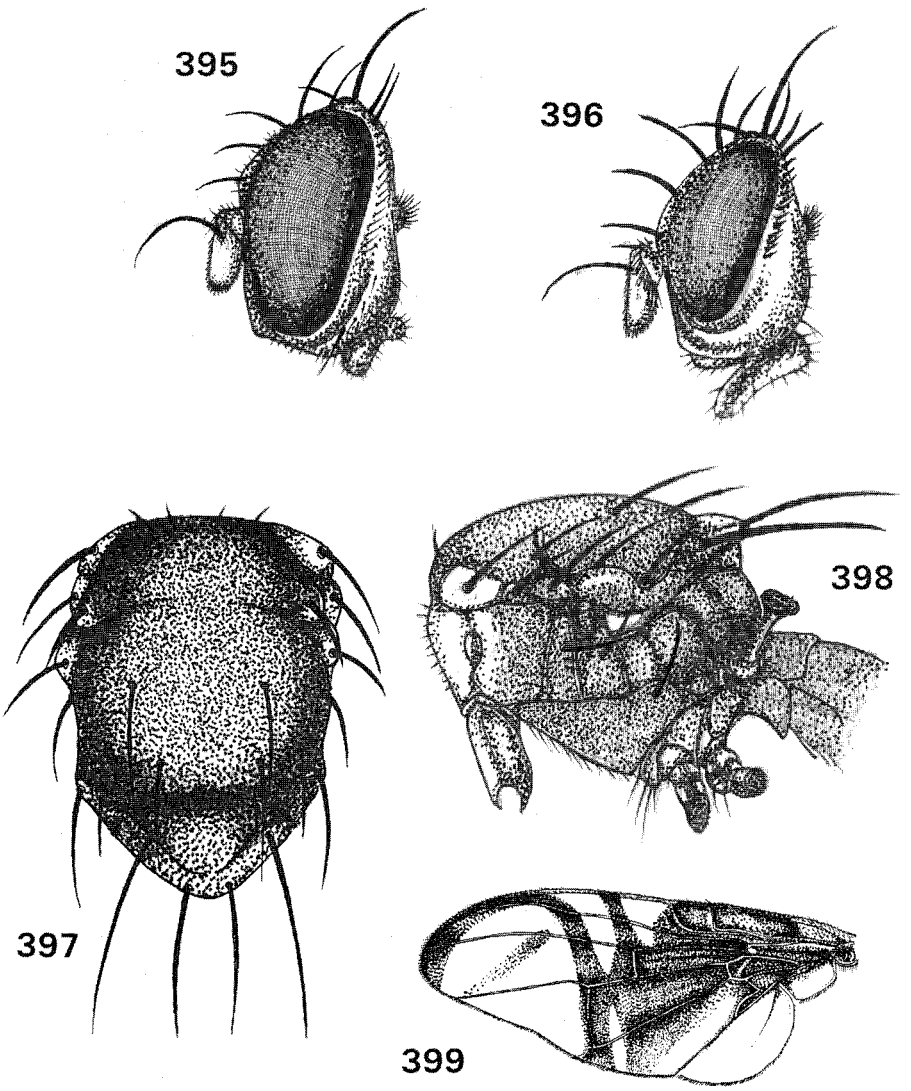
As for genus. Thorax with *dc.* bristles placed midway between *sa.* and *ia.* bristles. Postpronotal lobe and proepimeron red-brown to black, remainder of thorax black; scutum with longitudinal bands of grey pollinosity. Wing markings dark brown basad of r-m crossvein, including cells bc and c, except hyaline below vein $CuP+A_1$ and a triangular hyaline indentation in cell r_1 beyond cell sc, reaching vein R_{4+5}; apical part hyaline except brown C-shaped band from apex, along costa and through dm-cu crossvein, joined to discal brown area in cell dm, plus an oblique brown band across outer part of cell r_{4+5}. Outer edge of C-shaped band bordered with a band of white microtrichia. Haltere black. Female with abdominal tergite VI well developed; aculeus broad, apically pointed, without serrations. Length of body 4·0–4·2 mm (♂) or 4·8–5·2 mm (♀), of wing 3·4–4·0 mm (♂ and ♀).

Distribution

North-east Queensland, from Torres Strait to Cairns.

Biology

Larvae develop in the fruit of *Premna nauseosa* and *Premna obtusifolia* (Hardy 1951, above records), both Verbenaceae.



Figs 395–399. *Philophylla australina*: *395*, ♂ head; *396*, ♀ head; *397*, scutum; *398*, lateral view of thorax; *399*, wing.

Comments

This species is closely related to *P. conjuncta* (de Meijere) from Irian Jaya to the Solomon Islands and *P. connexa* (Hendel) from South-east Asia, differing in minor details of the wing pattern, particularly the shape of the hyaline indentation in cell r_1 beyond cell sc. From *P. fossata* (Fabricius) it differs in the dark costal cells and other wing pattern details, and in the non-serrate aculeus. Hardy (1951) illustrated the aculeus.

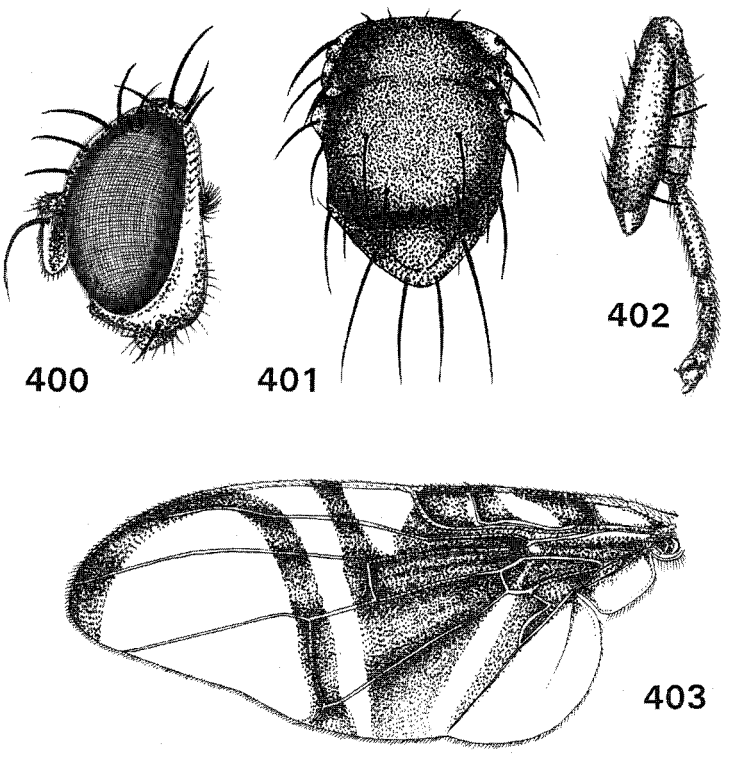
Philophylla erebia (Hering)

(Figs 400–404)

Pseudospheniscus erebia Hering, 1941*b*: 62. Type locality Astrolabe Bay, Papua New Guinea. Holotype ♂ in TMB [not examined].

Myoleja erebia. — Hardy, 1987: 321; Hardy and Foote, 1989: 524.

Philophylla erebia. — Hancock and Drew, 1994*b*: 582.



Figs 400–403. *Philophylla erebia*: *400*, head; *401*, scutum; *402*, ♂ fore leg; *403*, wing.

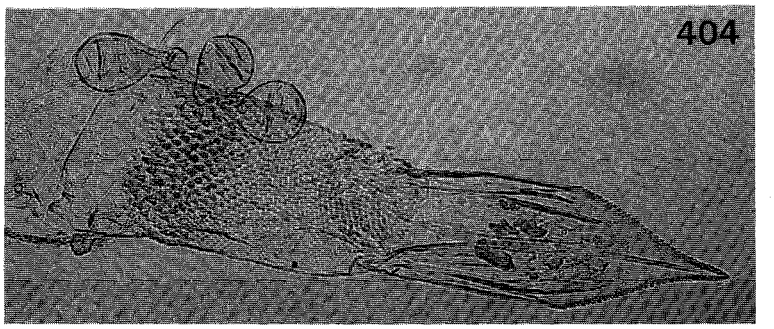


Fig. 404. *Philophylla erebia*, ovipositor and spermathecae (100×).

Material Examined

Queensland: 1♀, Mulgrave R. [nr Gordonvale], 4.i.1959, D. K. McAlpine (AM); 1♂, Mt Glorious [nr Brisbane], 8–15.v.1986, Y. Basset (QDPI). **New South Wales**: 2♂, Upper Allyn, nr Eccleston, 17.xi.1965, D. K. McAlpine (AM); 1♂, 1♀, Mooney Mooney Ck, nr Gosford, 18.i.1980, D. K. McAlpine and B. J. Day (AM); 1♂, Wingham Brush, 13 km W of Taree, 20.iii.1981, B. J. Loudon (NSWA).

Diagnosis

As for genus. Thorax with *dc.* bristles placed on line of *sa.* bristles. Postpronotal lobe fulvous, remainder of thorax black; scutum covered in grey pollinosity. Wing markings dark brown basad of r-m crossvein, except hyaline in cell bc and medial part of cell c, below vein

$CuP+A_1$, a triangular indentation in cell r_1 beyond cell sc, reaching vein R_{4+5}, and a narrow elongate streak in cell cua_1; apical part hyaline except brown C-shaped band from apex, along costa and through dm-cu crossvein, separated from discal brown area by a complete hyaline band. Outer edge of C-shaped band bordered by a band of white microtrichia. Haltere black. Female with abdominal tergite VI well developed; aculeus broad, apically pointed, with minute serrations. Spermathecae pear-shaped. Length of body 4·0–4·5 mm (♂ and ♀), of wing 3·5–4·2 mm (♂ and ♀).

Distribution

Sabah (Malaysia), Papua New Guinea and eastern Australia, as far south as central New South Wales.

Comments

This species differs from other Australian *Philophylla* in wing pattern, having a hyaline cell bc, elliptical hyaline patch in cell c and no subapical brown streak in cell r_{4+5}. Differences from other, non-Australian species were noted by Hardy (1987).

Philophylla fossata (Fabricius)

(Figs 405-409)

Tephritis fossata Fabricius, 1805: 320. Type locality Tranquebar [India]. Syntypes (2) in ZMUC [not examined].
Trypeta fossata. — Wiedemann, 1830: 503; Bigot, 1892: 224.
Anomoia elimia Walker, 1849: 1033. Type locality Philippines. Holotype ♀ in BMNH [not examined].
Ortalis regularis Doleschall, 1858: 119. Type locality Amboina. Holotype believed lost.
Anomoea fossata. — van der Wulp, 1898: 216.
Acidia fossata. — Bezzi, 1913: 144.
Pseudospheniscus fossatus Shiraki, 1933: 169.
Neanomoea lieftincki Hering, 1952: 286. Type locality Mt Semeru, Java. Holotype ♀ in RNHL [not examined]. — Hardy, 1987: 322 (syn.)
Hendelina fossata. — Shiraki, 1968: 37.
Myoleja fossata. — Hardy, 1973: 255; Hardy, 1974: 199; Hardy, 1987: 322; Hardy and Foote, 1989: 524.
Philophylla fossata. — Hancock and Drew, 1994*b*: 580.

Material Examined

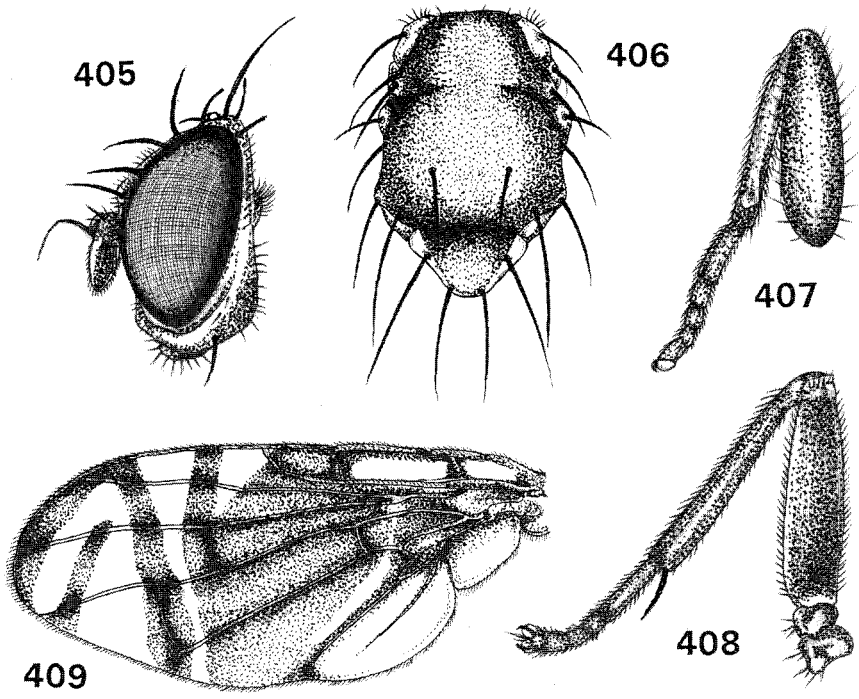
Queensland: 1♂, 1♀, 11 km ENE of Mt Tozer, 12°43′S, 143°18′E, 11–16.vii.1986, D. H. Colless (ANIC); 1♂, Lake Placid nr Cairns, 24.v.1958, D. K. McAlpine (AM).

Diagnosis

As for genus. Thorax with *dc.* bristles placed closer to line of *sa.* than *ia.* bristles. Postpronotal lobe and proepimeron red-brown, remainder of thorax black; scutum with grey pollinosity. Wing markings dark brown basad of r-m crossvein except hyaline cells bc and c (cell c usually with a distinct brown costal band), below vein $CuP+A_1$, a narrow, elongate streak in cell cua_1 and a triangular indentation in cell r_1 beyond cell sc, reaching vein r_{4+5}; apical part hyaline except brown C-shaped band from apex, along costa and through dm-cu crossvein, normally free from discal brown area, sometimes joined below cell dm; also a brown subapical oblique band in cell r_{4+5}, reaching wing margin. Outer edge of C-shaped band bordered by a band of white microtrichia. Haltere black. Female with abdominal tergite VI well developed; aculeus broad, apically pointed, with minute serrations. Spermathecae oval, with spine-like processes around middle. Length of body 3·4–4·0 mm (♂ and ♀), of wing 3·5–3·8 mm (♂ and ♀).

Distribution

Japan and India to the Solomon Islands and north-east Queensland, as far south as Cairns.



Figs 405–409. *Philophylla fossata*: *405*, head, *406*, scutum; *407*, fore leg; *408*, mid leg; *409*, wing.

Biology

Larvae develop in the fruit of *Callicarpa* and *Clerodendrum* species (Verbenaceae) in South-east Asia (Hancock and Drew 1994*b*), but there are no Australian records.

Comments

This widespread species differs from other Australian *Philophylla* in wing pattern details. It differs from *P. australina*, which also has a subapical brown band on the wing, in the hyaline cells bc and c and serrate aculeus. It appears most closely related to *P. humeralis* (Hardy) from Papua New Guinea and *P. nummi* (Munro) from Taiwan, differing in cell c, which has a usually well-defined brown costal bar in *P. fossata* and a medial hyaline patch in the other two species. Some specimens have the brown band over dm-cu crossvein connected with the discal brown area below cell dm (e.g. Hardy 1974); this appears to be no more than variation since both wing types occur in material bred from the same host samples in South-east Asia.

Philophylla quadrata (Malloch)

(Figs 410–415)

Anomoia quadrata Malloch, 1939*a*: 275. Type locality Tulagi, Solomon Is. Holotype ♂ in BMNH [not examined]. — Hardy, 1987: 285; Hardy and Foote, 1989: 523.

Myoleja shirakii Hardy, 1987: 335. Type locality Kolombangara, Solomon Is. Holotype ♂ in BPBM [not examined]. — Hardy and Foote, 1989: 525; Hancock and Drew, 1994*a*: 27 (syn.).

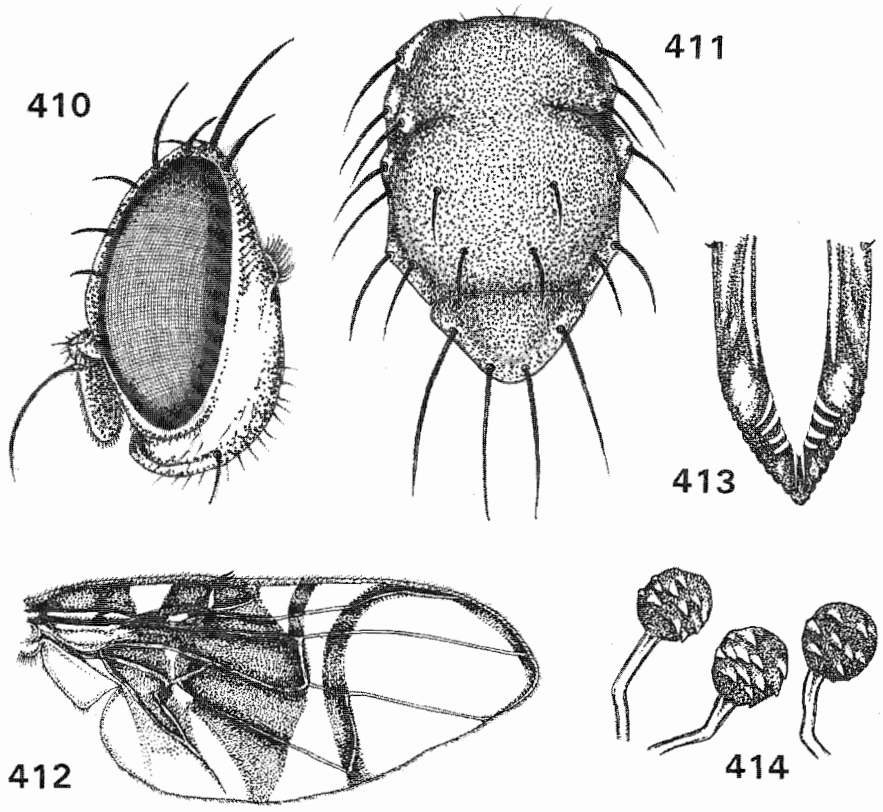
Philophylla quadrata. — Hancock and Drew, 1994*a*: 27.

Material Examined

Queensland: 1♂, Claudie R., nr Mt Lamond, 8.i.1972, D. K. McAlpine and G. A. Holloway (AM). **Northern Territory:** 1♂, Melville I., 12.x.1978 (BARS); 1♂, 3♀, 16 km E by N of Mt Cahill, 12°50′S, 132°51′E, T. Weir and A. Allwood (ANIC).

Diagnosis

As for genus. Thorax with *dc.* bristles placed midway between lines of *sa.* and *ia.* bristles. Postpronotal lobe and proepimeron brown to blackish brown, remainder of thorax black; scutum with fine pale pubescence but without grey pollinosity. Wing markings dark brown basad of r-m crossvein except hyaline quadrate medial indentation in cell c, triangular indentation in cell r_1 beyond cell sc, reaching vein R_{4+5}, below vein $CuP+A_1$, except for an infuscation below cell cup, and a narrow elongate streak in cell cua_1; apical part hyaline except brown C-shaped band from apex, along costa and through dm-cu crossvein, separated from discal brown area by a complete hyaline band. Outer edge of C-shaped band bordered by a narrow, indistinct band of



Figs 410–414. *Philophylla quadrata*: *410*, head; *411*, scutum; *412*, wing; *413*, tip of aculeus; *414*, spermathecae.

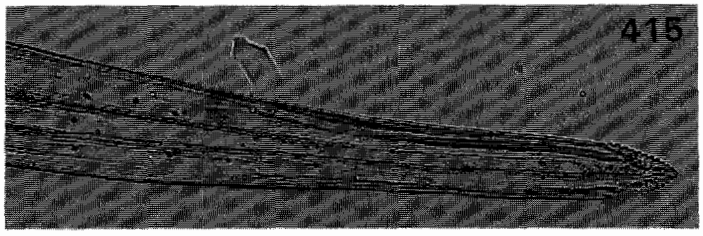


Fig. 415. *Philophylla quadrata*, aculeus (100×).

white microtrichia. Vein M strongly concave before r-m crossvein. Haltere black with yellow base. Female with abdominal tergite VI about half length of tergite V; aculeus elongate, apically pointed, with minute serrations. Spermathecae rounded, with spine-like processes. Length of body 4·8–5·2 mm (♂ and ♀), of wing 4·8–5·8 mm (♂ and ♀).

Distribution

The Solomon Islands, Papua New Guinea, north Queensland and the Northern Territory.

Biology

Adults have been collected on *Premna obtusifolia* (Verbenaceae) in the Solomon Islands (Malloch 1939*a*) and, although yet to be confirmed by rearing, fruit of this is likely to be a host.

Comments

The wing pattern details and concave vein M before the r-m crossvein readily distinguish this species from other Australian *Philophylla*. It is superficially similar to *Anomoia nigrithorax* Malloch, from Papua New Guinea, but the haltere in *P. quadrata* is black, not yellow.

Hardy (1987) retained *P. quadrata* in *Anomoia* and placed *M. shirakii* in *Myoleja*. Han (1992) did not examine *P. quadrata* and left it in *Anomoia*, referring *M. shirakii* to a new genus close to *Philophylla*. Synonymy was discussed by Hancock and Drew (1994*a*) who referred the species to *Philophylla*. It is related to *P. kraussi* (Hardy) from South-east Asia (Han 1992), itself also originally placed in *Anomoia* (Hancock and Drew 1994*b*).

Genus ***Vidalia*** Robineau-Desvoidy

Vidalia Robineau-Desvoidy, 1830: 719. Type species: *V. impressifrons* Robineau-Desvoidy, by monotypy.

Pseudina Malloch, 1939*d*: 446. Type species: *P. buloloae* Malloch, by original designation.

Diagnosis

Head higher than long. Antenna a little shorter than face, third segment apically rounded; arista with microscopic pubescence. Face concave. Frons with 4 pairs *fr.* and 1 pair *or.* bristles; *oc.* weak; *pocl.* thin and dark. Gena with 1 strong *gn.* Male with 2 lower pairs of *fr.* bristles enlarged and situated on prominent tubercles; upper pair vestigial. Thorax with the following bristles: 4 *scp., pprn.*, 2 *npl., prst., sa., ia., p.sa., dc.* placed a little behind line of *sa., acr.*, 2 *anepst., anepm., kepst.* Scutellum flat, triangular, yellow, with 4 *sc.* Anepisternum with a yellow stripe along upper margin from postpronotal lobe to wing base. Mid tibia with 1 strong apical spine. Veins R_1 and R_{4+5} setose; r-m crossvein well beyond middle of cell dm; cell cup with apical lobe narrow and elongate. Abdomen oval. Male genitalia with surstyli slender, distally bilobed. Female aculeus broad, apically pointed and serrate, without preapical setae. Three oval spermathecae with rough surfaces.

Comments

This genus is poorly defined at present, due to lack of any known extant material of the type-species, *V. impressifrons* from Indonesia, although *V. quadricornis* de Meijere appears to be a synonym. Current interpretations of the genus are based on the study by Munro (1938); its relationship with *Hoplandromyia* Bezzi was discussed by Hancock and Drew (1994*b*).

Approximately 15 species are currently known (Han 1992; Hancock and Drew 1994*b*), distributed from the Eastern Palaearctic to India and Papua New Guinea. A further species is described from Australia. Hosts, where known, are the fruit of *Schefflera* spp. (Araliaceae).

Vidalia dualis, sp. nov.

(Figs 416–421)

Material Examined

Holotype. ♂, West Claudie R., Iron Ra., N Qld, 29–30.ix.1974, G. B. Monteith, rainforest (QM - T12225).

Paratypes. **Queensland:** 4♂, 4♀, 11 km ENE of Mt Tozer, 12°43′S, 143°18′E, 11–16.vii.1986, D. H. Colless, at light (ANIC); 1♀, Leo Ck track, *c.* 300 m, McIlwraith Ra., 10.i.1990, M. S. and B. J. Moulds (AM); 1♂, Atherton, 9.i.1956, A. W. S. May (QM).

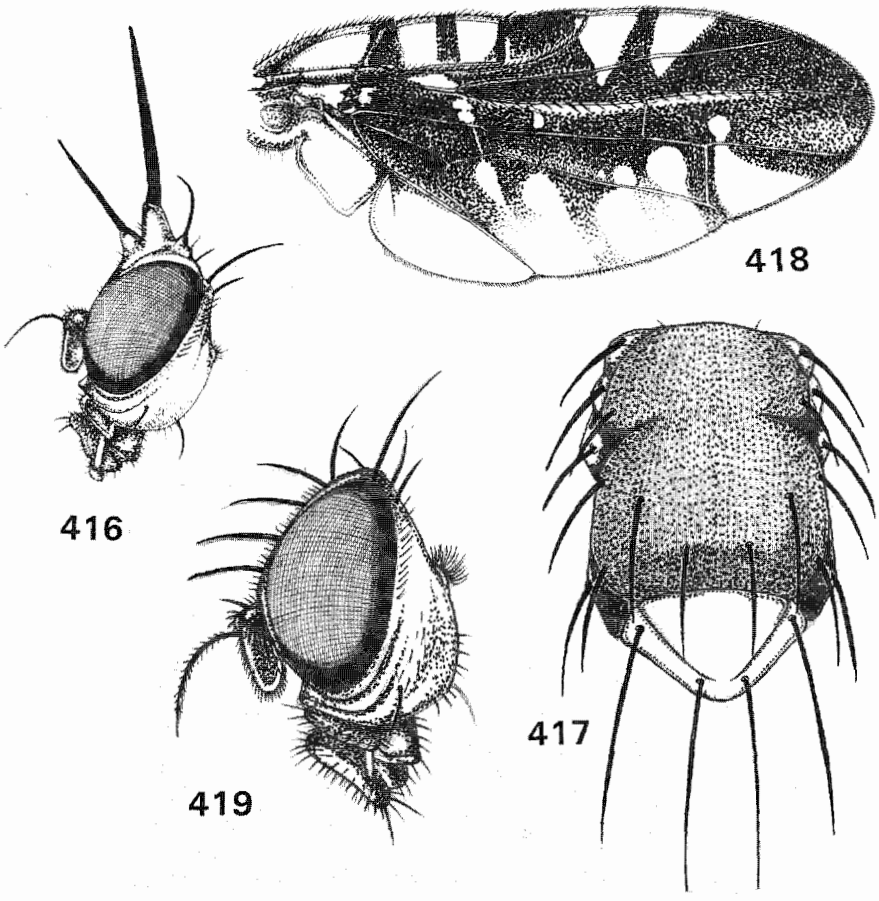
Description

Male

Length of body 3·6–3·9 mm, of wing 4·1–4·2 mm.

Head (Fig. 416). As for genus; fulvous. Frons with 2 lower pairs of *fr.* bristles enlarged and incrassate, situated on prominent adjacent tubercles, third pair of *fr.* normal, on small tubercles, fourth pair weak, hair-like; single pair of *or.* bristles at about same level as upper *fr.*

Thorax. Predominantly red-brown; scutum (Fig. 417) tinged dark brown to blackish, particularly on posterior portion; anepisternum with a narrow yellow band along upper margin,



Figs 416–419. *Vidalia dualis*: *416*, ♂ head; *417*, scutum; *418*, wing; *419*, ♀ head.

broadening a little posteriorly, from postpronotal lobe to wing base; postpronotal lobe yellow. Bristles as for genus. Scutellum yellow to creamy yellow, with 4 *sc.* bristles. Postnotum dark brown to black. Legs red-brown. Fore femur with 6–7 brown posteroventral bristles and scattered dorsal setae. Mid tibia with 1 black apical spine and 3–4 smaller spinules. Hind tibia with a row of strong anterodorsal setae. Wing (Fig. 418) predominantly dark brown, with hyaline spots and indentations as follows: cell bc; 2 indentations in cell c, separated by a narrow transverse band; 2 indentations in cell r_1, triangular, extending below vein R_{2+3}; 1 spot in cell br, below cell sc; 1 spot in cell r_{4+5}, near apex of cell dm, joined to 1 broad indentation in cell m; 2 spots, 1 large, 1 small, in apical part of cell dm; most of cell cua_1, with diffuse brown markings; below vein $CuP+A_1$. Venation as for genus. Haltere yellow.

Abdomen. Tergites I+II red-brown, III brown, IV and V black. Male genitalia (Fig. 420) with epandrium subshining black, covered dorsally with fine, pale setae. Surstylus slender, as long as anal lobe, less than half width of epandrium, apically bilobed. Inner surstylus short, with a prominent black apical tooth.

Female

Length of body 4·5–4·8 mm; of wing 4·4–4·6 mm. As for male except head (Fig. 419) with 4 pairs *fr.* bristles not modified or on tubercles, of equal size. Abdominal tergite VI a little shorter than tergite V. Oviscape black, as long as tergites V and VI combined. Aculeus (Fig. 421) broad, sharply pointed with coarse apical serrations. Spermathecae oval, roughly surfaced.

Distribution

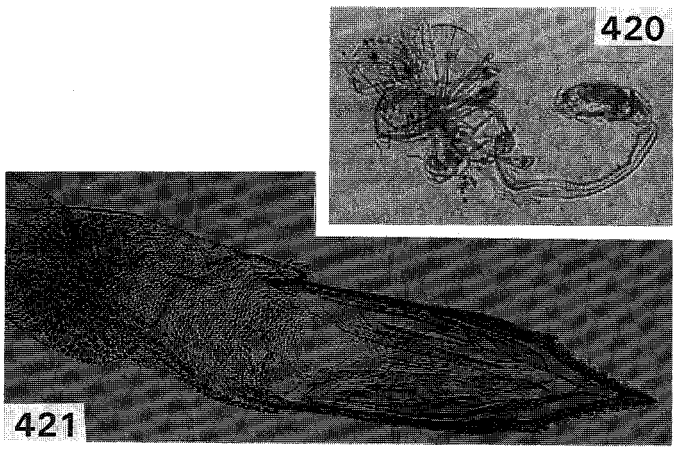
North-east Queensland, from Iron Range to the Atherton Tableland.

Biology

Unknown. Related species breed in the fruit of *Schefflera* spp. (Araliaceae) in South-east Asia (Hancock and Drew 1994*b*).

Comments

The Atherton specimen has the scutum brownish yellow rather than blackish brown; this is probably no more than individual variation. *V. dualis* belongs in the *bidens*-group as defined by Han (1992); it differs from other species in the group in wing pattern details, particularly the distinct brown bar in cell c. In related species this bar is incomplete or absent.



Figs 420–421. *Vidalia dualis*: *420*, ♂ genitalia (40×); *421*, aculeus (100×).

Table 1. Recorded hosts of Australian Trypetinae

Plant	Part affected	Fly species
Agavaceae		
Pleomeles angustifolius	Fruit	*Hemiristina pleomeles*
Dracaena sp.[A]	Fruit	*Hemiristina pleomeles*
Anacardiaceae		
Mangifera indica	Damaged fruit	*Dirioxa pornia*
Annonaceae		
Rauwenhoffia leichhardtiae	Fruit	*Euphranta leichhardtiae*
Araucariaceae		
Araucaria cunninghamii	Beneath bark	*Lumirioxa araucariae*
Araucaria cunninghamii	Fallen cones	*Dirioxa pornia*
Capparaceae		
Capparis lucida	Damaged fruit	*Dirioxa pornia*
Convolvulaceae		
Ipomoea abrupta	Flower bud	*Coelotrypes circumscriptus*
Stictocardia tiliifolia[A]	Fruit	*Euphranta lemniscata*
Euphorbiaceae		
Excoecaria agallocha	Developing cotyledon	*Elleipsa quadrifasciata*
Excoecaria agallocha[A]	Developing cotyledon	*Hardyadrama excoecariae*
Excoecaria agallocha[A]	Developing cotyledon	*Hardyadrama magister*
Lauraceae		
Endiandra compressa	Damaged fruit	*Dirioxa pornia*
Endiandra sankoyana	Damaged fruit	*Dirioxa pornia*
Persea americana	Damaged fruit	*Dirioxa pornia*
Lecythidaceae		
Barringtonia acutangula	Developing cotyledons	*Adrama biseta*
Barringtonia acutangula	Developing cotyledons	*Adrama selecta*
Leguminosae		
Castanospermum australe	Damaged fruit	*Dirioxa pornia*
Delonix regia	Beneath bark (oviposition record)	*Termitorioxa termitoxena*
Meliaceae		
Dysoxylum guadichaudianum	Beneath bark of fallen logs	*Austronevra australina*
Dysoxylum guadichaudianum	Beneath bark of fallen logs	*Austronevra bimaculata*
Dysoxylum guadichaudianum	Beneath bark of fallen logs	*Dacopsis flava*
Moraceae		
Ficus hispida	Fruit	*Clusiosoma semifuscum*
Ficus microcarpa	Fruit	*Clusiosoma semifuscum*
Ficus stephanocarpa	Fruit	*Clusiosomina puncticeps*
Ficus spp.[A]	Fruit	*Rabaulia fascifacies*
Musaceae		
Musa x *paradisiaca*	Damaged fruit	*Dirioxa pornia*
Myrtaceae		
Acmena smithii	Damaged fruit	*Dirioxa pornia*
Eugenia uniflora	Damaged fruit	*Dirioxa pornia*
Feijoa sellowiana	Damaged fruit	*Dirioxa pornia*
Psidium guajava	Damaged fruit	*Dirioxa pornia*
Psidium littorale	Damaged fruit	*Dirioxa pornia*
Oleaceae		
Chionanthus ramiflorus	Fruit (seeds)	*Euphranta linocierae*
Passifloraceae		
Passiflora alba	Damaged fruit	*Dirioxa pornia*
Proteaceae		
Macadamia sp.	Damaged fruit	*Dirioxa pornia*
Rosaceae		
Cydonia oblonga	Damaged fruit	*Dirioxa pornia*
Malus domestica	Damaged fruit	*Dirioxa pornia*
Prunus persica	Damaged fruit	*Dirioxa pornia*
Pyrus communis	Damaged fruit	*Dirioxa pornia*
Rutaceae		
Casimiroa edulis	Damaged fruit	*Dirioxa pornia*
x *Citroncirus webberi*	Damaged fruit	*Dirioxa pornia*
Citrus limon	Damaged fruit	*Dirioxa pornia*
Citrus maxima	Damaged fruit	*Dirioxa pornia*

Table 1. continued

Plant	Part affected	Fly species
Citrus x *paradisi*	Damaged fruit	*Dirioxa pornia*
Citrus reticulata	Damaged fruit	*Dirioxa pornia*
Citrus sinensis	Damaged fruit	*Dirioxa pornia*
Clausena brevistylus	Fruit	*Callistomyia horni*
Fortunella sp.	Damaged fruit	*Dirioxa pornia*
Glycosmis pentaphylla	Fruit	*Callistomyia horni*
Glycosmis trifoliata	Fruit	*Callistomyia horni*
Micromelum minutum	Fruit	*Callistomyia horni*
Poncirus trifoliata	Damaged fruit	*Dirioxa pornia*
Sapotaceae		
Amorphospermum antilogum	Damaged fruit	*Dirioxa pornia*
Chrysophyllum cainito	Damaged fruit	*Dirioxa pornia*
Niemeyera prunifera	Damaged fruit	*Dirioxa pornia*
Planchonella australis	Damaged fruit	*Dirioxa pornia*
Pouteria castanospermum	Damaged fruit	*Dirioxa pornia*
Sideroxylon sp.	Damaged fruit	*Dirioxa pornia*
Theaceae		
Camellia sinensis	Developing cotyledons	*Adrama selecta*
Verbenaceae		
Avicennia marina	Developing cotyledons	*Euphranta marina*
Callicarpa arborea[A]	Fruit	*Philophylla fossata*
Callicarpa longifolia[A]	Fruit	*Philophylla fossata*
Clerodendrum glandulosum[A]	Fruit	*Philophylla fossata*
Clerodendrum venosum[A]	Fruit	*Philophylla fossata*
Clerodendrum wallichii[A]	Fruit	*Philophylla fossata*
Faradaya splendida	Fruit	*Euphranta mediofusca*
Premna nauseosa	Fruit	*Philophylla australina*
Premna obtusifolia	Fruit	*Philophylla australina*
Unidentified tree	Beneath bark (in termite galleries)	*Termitorioxa termitoxena*

[A]Non-Australian record: see Lee (1991); Hancock and Drew (1994*a*, 1994*b*, unpublished data).

Etymology

The specific name is derived from the Latin *dualis*, of two, referring to the two hyaline indentations in cell c.

Host Plants

Host plant data are available for 25 trypetine species recorded from Australia. These are listed in Table 1. Hosts for *Dirioxa pornia* include those listed by White and Elson-Harris (1992).

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