

New Species and New Records of Tephritidae (Diptera) from New Caledonia

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Abstract

Tephritidae collected from New Caledonia by M.E. Irwin, E.I. Schlinger, and D.W. Webb were studied and identified. The 18 species represented include 3 new species, *Austronevra irwini*, *Ceratitella schlingeri*, and *Euphranta hardyi*, and 6 species reported from New Caledonia for the first time. The total number of Tephritidae from the island is increased from 16 to 25.

Introduction

D. Elmo Hardy was one of the most prolific taxonomists to study the family Tephritidae. He proposed more than 460 tephritid species names, second only to E.M. Hering in this regard, and he named the most valid species (Norrbon *et al.*, 1999a). His large monographic works and cataloging efforts on the Oriental and Australasian faunas have paved the way for continued progress by his successors. Therefore we are honored to dedicate this paper to his memory.

The fruit fly (Diptera: Tephritidae) fauna of New Caledonia is poorly known. Only 15 species were recorded by Norrbom *et al.* (1999b), 11 belonging to the genus *Bactrocera*. *Euphranta lemniscata* (Enderlein) was also recently recorded by Hancock & Drew (2003). Thanks to the efforts of M.E. Irwin, E.I. Schlinger, and D.W. Webb, we examined a small but interesting collection of tephritids from the island, mainly collected by Malaise traps. We also examined a few additional specimens from the Queensland Museum. Of the 18 species we examined, 3 are described as new species and 6 others are new records for New Caledonia, increasing the total number of tephritid species now known from the island to 25. Additional collecting focused on fruit flies will undoubtedly increase this number. The examined specimens are deposited in the collections of the Illinois Natural History Survey (INHS), the Museum National d'Histoire Naturelle, Paris (MNHN) (the depository for the holotypes of the new species), the National Museum of Natural History, Smithsonian Institution (USNM), or the Queensland Museum (QM).

Tephritidae from New Caledonia

Tephritidae previously recorded from New Caledonia but not present in the examined material include: *Bactrocera curvipennis* (Froggatt), *B. grandistylus* Drew & Hancock, *B. mucronis* (Drew), *B. paraxanthodes* Drew & Hancock, *B. perpusilla* (Drew), *B. tryoni* (Froggatt), and *Dacus aneuvitatus* Drew. Except for the new species, the species listed below were previously known from New Caledonia unless otherwise indicated.

Anastrephoides sp.

Comments. This new species is being described by Ho-Yeon Han (in prep.). This genus was previously known only from the eastern Palaearctic Region.

Austronevra irwini Norrbom & Hancock, **new species**

(Fig. 1A)

Diagnosis. This species belongs in *Austronevra* based on its long oviscape and similarity with the previously known species (from Australia) in chaetotaxy (except for lacking medial scutellar seta), thorax color, and wing pattern. It keys to *Micronevrina* in Permkam & Hancock (1995), but the female terminalia are longer and the aculeus is simple. The arista also is haired only dorsally as in *Austronevra bimaculata*. *Austronevra irwini* differs from the other species of *Austronevra* in having no distal hyaline mark in cell r1 and only 2 pairs of scutellar setae. *Dirioxa*, *Lumirioxa*, and some *Termitorioxa* species are also similar in wing pattern and arista vestiture, but they lack subapical hyaline spots in cells r2+3 and r4+5 and have 3 pairs of scutellar setae.

Description. Body 6 mm long, mostly yellow to orange. Wing 5.8 mm long, 2.3 mm wide. Mesonotum 1.98–2.28 mm long. Setae dark brown.

Head. Entirely yellow to orange except brown ocellar tubercle and paler brown, sometimes diffusely margined spots on medial occipital sclerite and dorsally on lateral occipital sclerite. Frons with 1–2 frontal setae near anterior margin and 2 well-developed orbital setae; ocellar seta weak, slightly longer than ocellar tubercle; postocellar setae well developed. Genal height ca. 1/3 longest diameter of eye. First flagellomere orange brown to brown, ca. 2 × as long as wide. Arista plumose, with dorsal hairs long and in 2 diverging rows, ventrally bare or at most with 3 small hairs.

Thorax. Mostly orange. Mesonotum with dark brown lateral vitta from anterior margin along margins of postpronotal lobe and scutum, across notopleuron, to slightly beyond transverse suture. Posterior margin of scutum, between acrostichal and dorsocentral lines, with moderate brown, diffuse spots. Extreme basoventral corner of side of scutellum, most or all of anatergite and lateral third of mediotergite also dark brown. Extreme apex of scutellum yellow. Thorax entirely evenly microtrichose. Scutellum without setulae. Following setae well developed: postpronotal, 2 notopleural, presutural supra-alar, postsutural supra-alar, intra-alar, postalar, dorsocentral (aligned midway between postsutural supra-alar and intra-alar setae or slightly closer to the latter), acrostichal, basal and apical scutellar, 1–2 anepisternal, and katepisternal; anepimeral seta undifferentiated from setulae; intra-postalar and medial scutellar setae absent.

Legs. Entirely yellow. Ventral setae of femora slender, not spinelike. Mid tibia with 1 ventro-apical spinelike seta.

Wing (Fig. 1A). Mostly brown with following hyaline areas: anteromedial spot in cell bc; middle half of cell c and slightly narrower area in cell r1 posterior to it; large, subquadrate spot extending across cell br in distal half; large marginal triangular mark at apex of vein R₁, extending to or almost to vein R₄₊₅, its apex distal to R-M; small ovoid isolated subapical spot in cell r2+3; large ovoid spot anterior to DM-Cu and small ovoid isolated subapical spot in cell r4+5; large isolated ovoid spot in cell m; large ovoid subapical spot in cell dm; small spot in middle of cell cu1 bordering vein Cu1; and main part of cell bcu except extreme base and apex. Remainder of cell bc and area posterior to it in cell br, alula, anal lobe, and most of posterior half of cell cu1 faint brown to subhyaline. Cell bm and posterobasal third of cell dm pale brown. Vein R₄₊₅ densely setulose dorsally almost to apex. Veins M, Cu, and Cu₁ nonsetulose.

Abdomen. Yellow medially. Syntergite 1+2 yellow except narrow dark brown lateral margin on distal 2/3. Other tergites with lateral 1/4–1/3 dark brown.

Female terminalia. Oviscape entirely dark brown, cylindrical, 1.75–1.81 mm long, longer than preabdomen, 0.80–0.92 × as long as mesonotum; apically with small medial indentation instead of lobe. Aculeus tip simple, with distinct basal and medial sutures, and 2 pairs of large setulae, almost as long as width of tip. Three spermathecae, spherical, with slender sclerotized neck.

Type Specimens. Holotype ♂ (Museum National d'Histoire Naturelle, Paris; USNM00214887), **NEW CALEDONIA**: Mt. Pinae Trail, 200m, MT, 11–25 Nov 1992, E. & M. Schlinger & D.W. Webb. Paratypes: **NEW CALEDONIA**: Mt. Khogis, 17 km NNE Nouméa, 500 m, 24–26 Dec 1991, M.E. Irwin & D.W. Webb, Malaise trap across forest stream, 1 ♀ (INHS; USNM00214886). Mt. Pinae Trail, 200 m, MT, 11–25 Nov 1992, E. & M. Schlinger & D.W. Webb, 1 ♀ (USNM; USNM00214888).

Etymology. This species is named for Mike Irwin, one of the collectors of the type series.

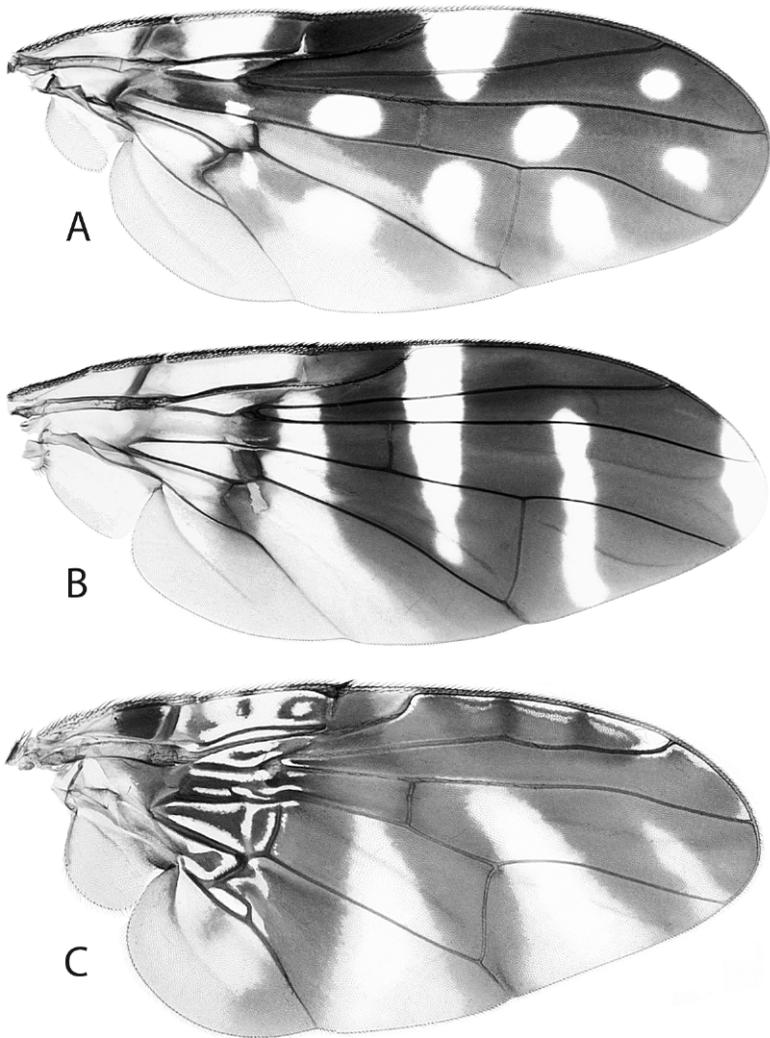


Figure 1. Wings. **A.** *Austronevra irwini*; **B.** *Ceratitella schlingeri*; **C.** *Euphranta hardyi*.

Bactrocera caledoniensis Drew

Bactrocera caledoniensis Drew, 1989: 76.

Specimens Examined. NEW CALEDONIA : Prov. Sud, 9.1 km NW Sarraméa, 21°35'07"S 165°47'24"E, 425 m, Malaise trap on forested hillside, 14 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♂ (USNM; USNM00214154).

Bactrocera ebenea (Drew)

Dacus ebeneus Drew, 1971: 65.

Specimens Examined. NEW CALEDONIA : Rivière Bleue Prov. Pk., 213 m, Malaise trap across forest path, 19–20 Nov 1992, D.W. Webb & E. & M. Schlinger, 1♂ (INHS; USNM00214163).

Bactrocera fulvifacies (Perkins)

Zeugodacus fulvifacies Perkins, 1939: 32.

Specimens Examined. NEW CALEDONIA : Rivière Bleue Prov. Pk. 28 km N Yaté, Malaise trap across running stream, 23–27 Dec 1991, M.E. Irwin & D.W. Webb, 1♀ (INHS; USNM00214155). Rivière Bleue Prov. Pk., km 21.9 Riv. Bleue road, Malaise trap in Maquis de Crête, 30 Oct–3 Nov 1992, 320 m, M.E. Irwin, D.W. Webb, E. & M. Schlinger, 1♀ (USNM; USNM00214160). Lucky Creek, 0.5 km N Plum, 19 Dec 1991, D.W. Webb, 1♂ (USNM; USNM00214159). North side of Mont. Dore 4 km NW Plum, Malaise trap in dry wash, 24–27 Dec 1991, M.E. Irwin & D.W. Webb, 1♂ 2♀ (INHS; USNM00214156–58).

Bactrocera psidii (Froggatt)

Tephritis psidii Froggatt, 1899: 500.

Specimens Examined. NEW CALEDONIA : Prov. Sud, Mt. Khogis, 17 km NE Nouméa, 22°10'34"S 166°30'17"E, 425 m, Malaise trap across path in rainforest, 29 Jan 1996, M.E. Irwin D.W. Webb & E.I. Schlinger, 1♀ (INHS; USNM00214143).

Bactrocera umbrosa (Fabricius)

Dacus umbrosus Fabricius, 1805: 274.

Specimens Examined. NEW CALEDONIA : Prov. Sud, 1 km N Sarraméa, 21°38'14"S, 165°51'35"E, Malaise trap on forest hillside, 10 Jan 1996 M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♂ 1♀ (INHS; USNM00214161–62).

Ceratitella schlingeri Norrbom & Hancock, **new species**
(Figs. 1B, 2A–E)

Diagnosis. This species is similar to *C. bifasciata* Hardy, *C. recondita* Permkam & Hancock, and *C. solomonensis* Hancock & Drew, but differs from all 3 species in the color of the postpronotal lobe (brown surrounding postpronotal seta), the scutal microtrichial pattern (postsutural silvery microtrichial area extending anteriorly beyond level of dorsocentral seta and with deep medial notch, but not connected to presutural microtrichose band or spots), and leg color (entirely yellow).

Description. Body 4.0–6.5 mm long, dark brown and yellow. Wing 4.2–5.0 mm long, 1.8–2.3 mm wide. Mesonotum 1.95–2.60 mm long. Setae dark red brown to black.

Head. Yellow, with ocellar tubercle and most of occiput, but not bordering eye, brown. Ventral 2/3 of face and parafacial, most of gena and postgena white. Face dorsomedially, and gena sometimes with reddish brown spot. Frons with 2 frontal setae (3 on 1 side in 2 specimens) and 2 orbital setae (3 on 1 side in 1 specimen). Ocellar, postocellar, and genal setae moderately well developed. Facial ridge with row of 4–6 moderately well-developed setae. First flagellomere ca. 1.5 × as long as wide (on medial side). Arista pubescent.

Thorax. Dorsum entirely dark brown except margin of postpronotal lobe bordering scutum yellow; postpronotal seta on brown area. Scutum shiny, nonmicrotrichose except for 3 densely microtrichose areas: narrow band of silvery white microtrichia on posterior part of presutural scutum, with 3 constrictions or sometimes divided into 3–4 spots; large, somewhat ovoid, postsutural area of microtrichia, most-

ly silvery white but narrowly brown medially along posterior margin, extending laterally almost to level of intra-alar seta, extending anteriorly beyond dorsocentral seta, with deep medial notch in anterior margin, extending posteriorly to or beyond level of dorsocentral seta; and lateral bimodal ovoid area of blackish microtrichia, extending from transverse suture to posterior corner lateral to supra-alar seta, nearly divided by narrow bare area extending to postalar seta. Scutal setulae pale brown to brown on nonmicrotrichose areas, larger, slightly stouter, and yellow on and bordering silvery white microtrichose areas. Scutellum strongly convex, largely shiny, nonmicrotrichose except for semicircular basomedial area of brown microtrichia, its medial margin extending slightly posterior to level of basal scutellar seta, but not extending to it laterally; with numerous acuminate, brown setulae on nonmicrotrichose area. Pleura white microtrichose except small bare spot ventral to katapisternal seta; mostly yellow to pale brown. Anepisternum usually with narrow white band on dorsal margin and another medially. Katapisternum brown except dorsal margin. Subscutellum and mediotergite brown; subscutellum with brown microtrichia; mediotergite with dense white microtrichia. Setulae on propleuron, anepisternum, anepimeron and dorsal margin of katapisternum moderately long, white or pale yellow. Following setae well developed: postpronotal, 2 notopleural, presutural and postsutural supra-alar, intra-alar, postalar, dorsocentral (aligned slightly posterior to postsutural supra-alar seta), acrostichal, 2 scutellar, anepisternal, katapisternal and anepimeral.

Legs. Entirely yellow.

Wing (Fig. 1B). Base mostly brown, cell c and basal cells with hyaline spots or streaks. With 4 brown bands: First band extending from base of pterostigma to apex of cell a1+cu2; second band broadly connected to first band from pterostigma to vein M, covering crossveins R-M and DM-Cu; third and fourth bands fused basally and broadly connected to second band from costa to vein R₂₊₃, separated distally by hyaline area extending to or almost to vein R₂₊₃; fourth band separated from costa by narrow, irregular hyaline markings. Distal third of pterostigma and often area posterodistal to it in cell r1 paler than base of pterostigma.

Abdomen. Mostly brown. Base of syntergite 1+2 usually yellow. Syntergite 1+2 and tergite 4 with broad apical bands of silvery white microtrichia.

Male terminalia. Similar to *C. loranthi* (see Hardy, 1967, fig. 3). Surstyli short, together with epandrium nearly circular in outline in posterior view, anterior and posterior lobes barely differentiated. Glans without membranous basal lobe; subapical lobe long and rodlike, trumpet shaped apically.

Female terminalia (Fig. 2A). Oviscape 1.7 mm long, mostly pale brown, distal fourth dark brown. Eversible membrane (Fig. 2B) dorsally and ventrally with short taeniae on basal 0.16, remaining part evenly covered by short, triangular denticles, gradually decreasing in size distally. Aculeus (Figs. 2C–D) 1.7 mm long, slender, mostly parallel-sided; tip 0.40 mm long, 0.09 mm wide, nonserrate, elongate triangular, gradually tapered. Two spermathecae (Fig. 2E) tear-drop shaped.

Type specimens. Holotype ♀ (Museum National d'Histoire Naturelle, Paris; USNM00214093), **NEW CALEDONIA:** Rivière Bleue Prov. Pk., km 25.8 Riv. Bleue road, 22°10'34"S 166°30'17"E, 213 m, Malaise trap across forest path, 5–16 Nov 1992, D.W. Webb & E. & M. Schlinger. Paratypes: **NEW CALEDONIA:** Rivière Bleue Prov. Pk., 213 m, Malaise trap across forest path, 20–28 Nov 1992, E. & M. Schlinger & D.W. Webb, 2♂ (INHS USNM00214095–96); Rivière Bleue Prov. Pk., km 21.9 Riv. Bleue road, 290 m, Malaise trap in Maquis, 18–20 Nov 1992, D.W. Webb, 1♂ (QM USNM00214094); Rivière Bleue Prov. Pk., Trail to Upper Riv. Bleue, 290 m, Malaise trap across forest path, 16–19 Nov 1992, D.W. Webb, 1♂ (USNM USNM00214097); same, 5–16 Nov 1992, 1♂ (MNHN USNM00214098); Rivière Bleue Pr. Pk., 30 km NW Yaté, 21 Dec 1991, M.E. Irwin, 1♂ (USNM USNM00214099). Prov. Sud, Mt. Khogis, 17 km NNE Nouméa, 425 m, Malaise trap across path in rainforest, 24–28 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♂ (INHS USNM 00214092).

Etymology. This species is named for Ev Schlinger, one of the collectors of the type series.

Dioxya conflicta (Curran)

Ensina conflicta Curran, 1929: 11.

Specimens Examined. **NEW CALEDONIA:** Poindimie beach area, 12 Nov 1992, E. & M. Schlinger, 1♂ 1♀ (INHS; USNM00214244–45).

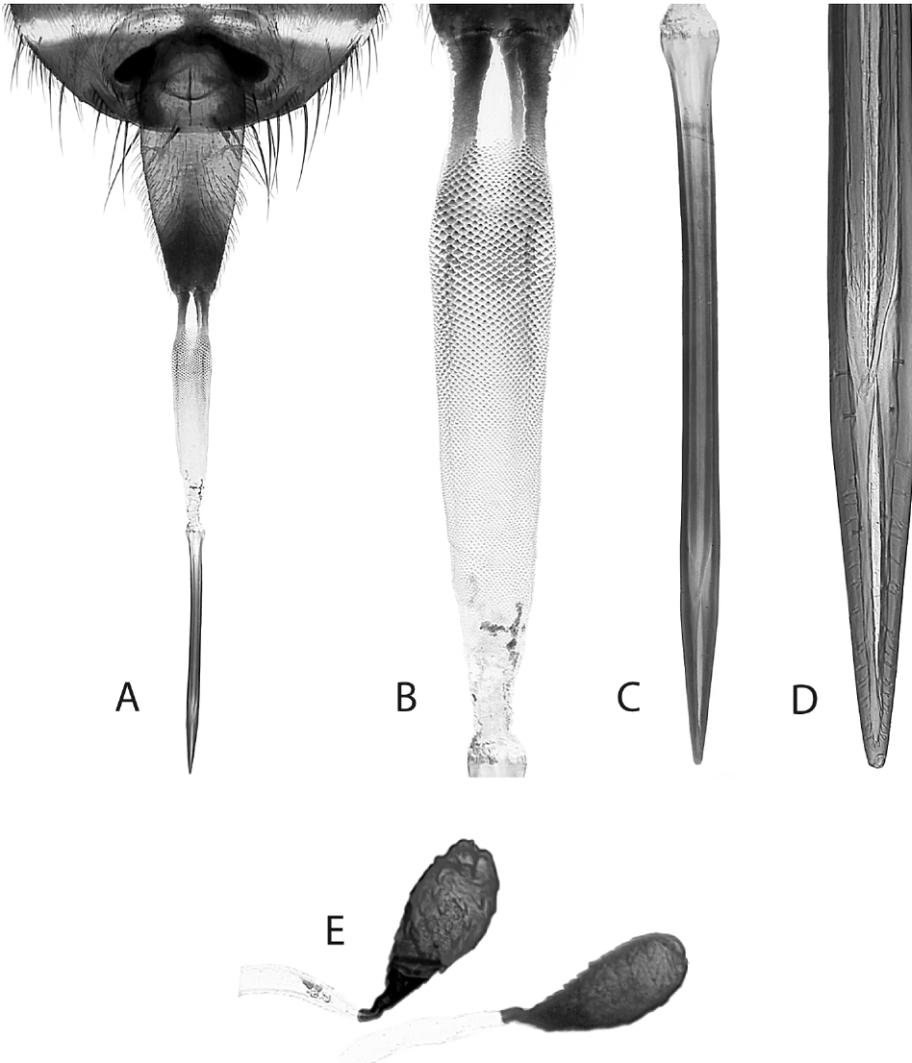


Figure 2. *Ceratitella schlingeri*. A. female terminalia; B. eversible membrane; C. aculeus; D. aculeus tip; E. spermathecae.

Dioxyna sororcula (Wiedemann)

Trypeta sororcula Wiedemann, 1830: 509.

Comments. This species is widespread in the palaeotropics, but this is the first record for New Caledonia.

Specimens Examined. NEW CALEDONIA: Mt. Do, 14 km NE Bouloupari, 950 m, 31 Oct 1992, D.W. Webb, 1 ♀ (INHS; USNM00214242). Mt. Khogis, 500 m, 1 Nov 1992, E. & M. Schlinger, 1♂ (INHS; USNM 00214243). Rivière Bleue Prov. Park, 290 m, Malaise trap across forest pass, 3 Nov 1992, M.E. Irwin & D.W. Webb, 2♂ 2 ♀ (INHS; USNM00214238-41).

Dirioxa pornia (Walker)

Trypeta pornia Walker, 1849: 1039.

Specimens Examined. NEW CALEDONIA: Mt. Pinae Trail, 200 m, MT, 11–25 Nov 1992, E. & M. Schlinger & D.W. Webb, 1 ♀ (USNM; USNM00214232). Prov. Sud, Camp Brun, 15 km WNW Bouloupari, 100 m, Malaise trap across stream, 16–22 Jan 1996, M.E. Irwin & D.W. Webb, 1 ♂ (USNM; USNM00214231). Prov. Sud, Mt. Khogis, 17 km NE Nouméa, 22°10'34"S 166°30'17"E, Malaise trap across path in rainforest, 425 m, 24–28 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 3 ♀ (INHS; USNM00214234–36). Prov. Sud, 9.7 km NW Sarraméa, 21°35'12"S, 165°46'53"E, 500 m, Malaise trap along *Melaluca* path, 22–24 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 1 ♀ (USNM; USNM00214233).

Euphranta hardyi Norrbom & Hancock, new species

(Figs. 1C, 3A–E)

Diagnosis. This species is similar in wing pattern to *E. hainanensis* (Zia), *E. mikado* (Matsumura), *E. oshimensis* (Shiraki), and *E. perkinsi* Hardy, but in those species the band crossing DM-Cu is either separated posteriorly from the band over R-M, or separated anteriorly from the subapical band, or both. *Euphranta hainanensis* also has the face entirely brown and the band crossing the pterostigma and R-M broader anteriorly, *E. mikado* lacks the white area on the anepisternum (USNM specimen examined), and *E. perkinsi* is mostly yellow or rufous (Hardy, 1983). *Euphranta ternaria* Permkam & Hancock is also similar in wing pattern but all of the bands are separated and the pterostigma has a large medial hyaline area. The aculeus of *E. hardyi* resembles those of *E. athertonia* Permkam & Hancock, *E. linocierae* Hardy, and *E. songkhla* Hancock & Drew, but the tip is more elongate and tapered than in *E. athertonia* and the base of the tip is more rounded than in *E. linocierae* and *E. songkhla*. *Euphranta hardyi* further differs from *E. athertonia* by the white area on the anepisternum, and its male fore basitarsus is not flattened as in *E. linocierae* and *E. songkhla*.

Description. Body 7–9 mm long, mostly dark brown to black. Wing 7.1–7.7 mm long, 2.8–3.3 mm wide. Mesonotum 3.4–3.8 mm long. Setae black.

Head. Face yellow, with medial and lateral brown spots or brown band on ventral margin, ventral part of antennal grooves sometimes also brown (face entirely yellow in male, in which color may not be fully developed). Parafacial ventrally, and large area bordering eye on gena brown. Frons brown except orbital plate, vertex, and narrowly anterolaterally. Occiput and postgena yellow, sometimes whitish bordering eye. Frons with 2 large frontal setae and 1 large orbital seta. Ocellar seta absent. Postocellar seta slightly larger than largest postocular setae. First flagellomere 3.2 × as long as wide. Arista long plumose, longest rays as long as width of first flagellomere.

Thorax. Mostly dark brown to black. Anepisternum (Fig. 3A) with posterodorsal corner bright white, not extending posterior to phragma. Postpronotal lobe, propleuron, posterior half of notopleuron, medial postsutural ovoid spot on scutum, extending to or almost to acrostichal seta posteriorly and almost to dorsocentral seta laterally, yellow. Scutum sometimes also with diffuse orange medial vitta. Scutellum with margin of disk and sides yellow, sometimes fading to white apically. Thorax entirely microtrichose except large anteroventral area on anepisternum, small spot on katapisternum ventral to katapisternal seta, and small medial areas on katatergite, meron, and mediotergite. Scutum with broad medial stripe of denser microtrichia extending laterally to level of acrostichal seta, sometimes slightly broader and denser anteriorly. Following setae well developed: lateral scapular, postpronotal, 2 notopleural, postsutural supra-alar, intra-alar, postalar, dorsocentral (aligned 0.57–0.67 distance from postsutural supra-alar seta to intra-alar seta), acrostichal, basal and apical scutellar, 2 anepisternal (more ventral seta much shorter and weaker), katapisternal, and anepimeral; presutural supra-alar seta absent. Anatergite with numerous long fine yellowish hairs.

Legs. Coxae and trochanters yellow; femora brown medially, most extensively on fore femur, hind femur usually with only anteromedial brown spot; tibiae and tarsi brown. Femora ventral setae not spinelike. Male fore basitarsus not swollen or flattened.

Wing (Fig. 1C). Hyaline with 4 dark brown bands. Area bordering crossvein H and posterior to

it in cell br, narrow anterior margin of cell c, and anterior margin of cell bcu faint brown to yellow. Basal dark brown band narrow, covering node of Rs, BM-Cu, and Cu₂, extending from vein R₁ to slightly into cell cu1. Second dark brown band broad, covering all of pterostigma and R-M, broadly connected to third band on posterior wing margin. Hyaline area between second and third bands at most 2/3 width of bands (measured along vein R₄₊₅), extended from costa almost to vein Cu₁. Third dark brown band covering DM-Cu, broadly connected to fourth band anteriorly. Hyaline area between third and fourth bands at most 0.4 × as wide as third band (measured along vein M), extended from posterior margin to vein R₄₊₅ or vein R₂₊₃. Fourth dark brown band entirely brown (without hyaline markings within it), very broad, apical hyaline spot extended broadly into apical part of cell r4+5 but not extended to apex of vein M.

Abdomen. Mostly brown, with medial yellow vitta from base of sytergite 1+2 to apex of tergite 4. Apex of male tergite 5, and lateral and apical margins of female tergite 6 also yellow.

Male terminalia. Surstyli elongate, 1.5 × height of epandrium.

Female terminalia. Oviscape (Fig. 3B) 1.8 mm long, basal half yellow, distal half brown. Eversible membrane with 2 dorsal and 2 ventral taeniae on basal half, ventral pair much closer together; distal half (Fig. 3C) evenly covered with short, stout, almost conical denticles, gradually shorter posteriorly. Aculeus (Fig. 3D) 0.57 mm long, 0.20 mm wide; tip nonserrate, without teeth or strong steps, nearly parallel-sided on basal fourth, then rapidly tapered (lateral margin concave), distal half slender. Three spermathecae (Fig. 3E) ovoid, tapered basally.

Type Specimens. Holotype ♀ (Museum National d'Histoire Naturelle, Paris; USNM00214890), **NEW CALEDONIA:** Prov. Sud, 9.1 km NW Sarraméa, 21°35'07"S, 165°47'24"E, 425 m, Malaise trap on forested hillside, 14 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger. Paratypes: **NEW CALEDONIA:** Mt. Mandjanie, 5.3 km WSW Puébo, 550 m, Malaise trap in tropical forest, 9–26 Nov 1992, D.W. Webb, 1♂ (INHS; USNM00214892). Prov. Sud, 9.1 km NW Sarraméa, 21°35'07"S, 165°47'24"E, 425 m, Malaise trap on forested hillside, 14 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♀ (USNM; USNM00214889); 9.1 km NW Sarraméa, 21°35'07"S, 165°48'55"E, 305 m, Malaise trap on forest hillside, 10 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♀ (INHS; USNM00214891).

Etymology. This species is named in honor of D. Elmo Hardy, in recognition of his many contributions to the taxonomy of the genus *Euphranta*.

Euphranta leichhardtiae Permkam & Hancock

Euphranta leichhardtiae Permkam & Hancock, 1995: 1151.

Comments. This species was previously known only from Australia (northern Qld. to northeastern NSW). In Australia it breeds in fruit of *Melodorum leichhardtii* (F. Muell.) Benth. (Annonaceae) (Permkam & Hancock, 1995; host as *Rauwenhoffia leichhardtiae*).

Specimens Examined. **NEW CALEDONIA:** Rivière Bleue Prov. Pk., 213 m, Malaise trap across forest path, 20–28 Nov 1992, E. & M. Schlinger & D.W. Webb, 1♀ (USNM; USNM00214230).

Euphranta lemniscata (Enderlein)

Trypeta lemniscata Enderlein, 1911: 426.

Comments. The 2 males from north of Sarraméa have the discal band narrowly interrupted along vein R₄₊₅, but otherwise resemble specimens of *E. lemniscata* from other areas. This species was recently recorded from New Caledonia by Hancock & Drew (2003).

Specimens Examined. **NEW CALEDONIA:** Tiea Reserve, 21°07'S 164°57'E, 30 m, at UV light, 4–5 Nov 2001, G. Monteith, 1♂ (QM); Prov. Sud, 1 km N Sarraméa, 21°38'14"S, 165°51'35"E, Malaise trap on forest hillside, 11 Jan 1996 M.E. Irwin, D.W. Webb & E.I. Schlinger, 2♂ (INHS; USNM00214228-29).

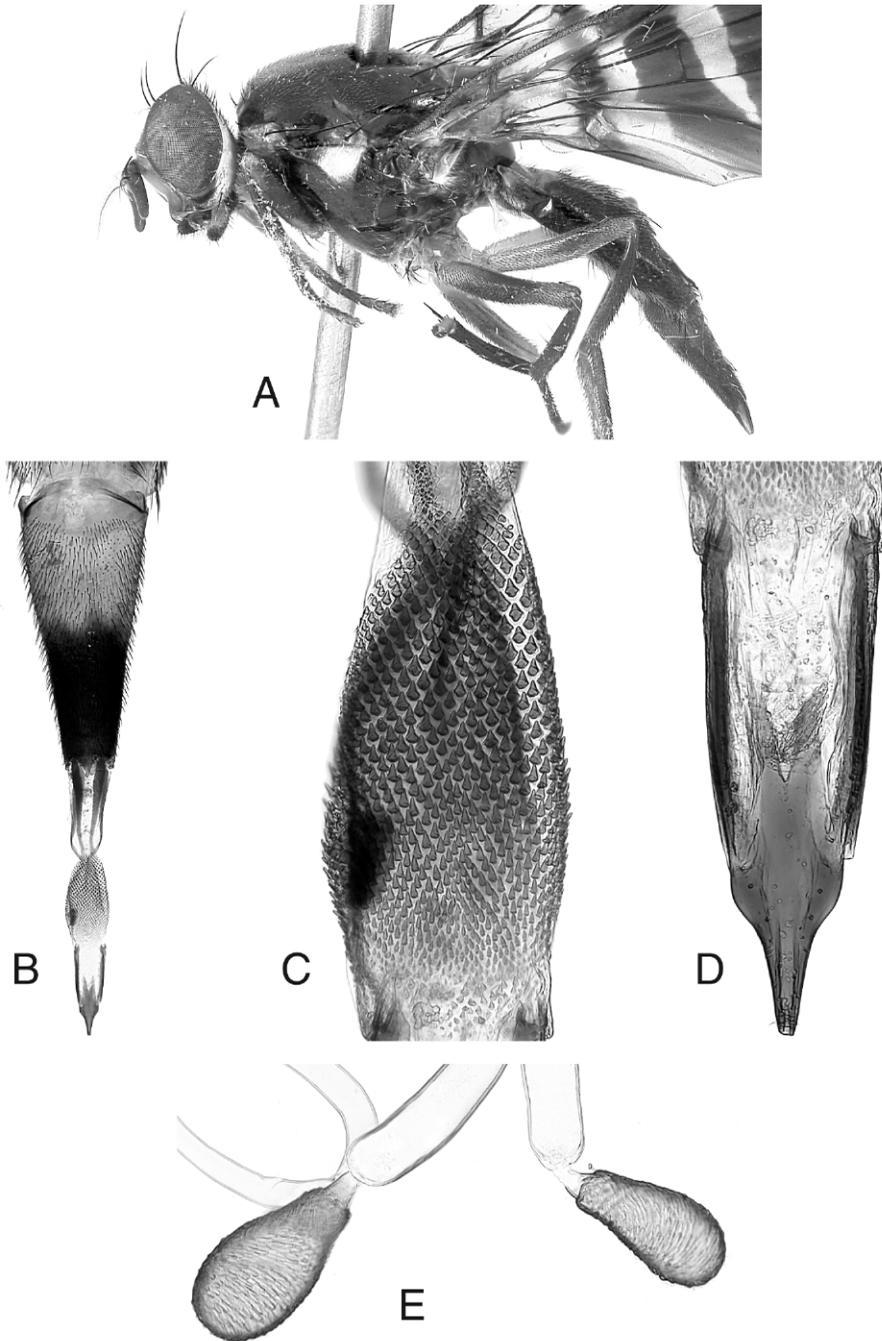


Figure 3. *Euphranta hardyi*. **A.** Lateral habitus; **B.** female terminalia; **C.** distal half of eversible membrane; **D.** aculeus; **E.** spermathecae (2 of 3).

Soita sp.

Comments. The single male, which is lacking mid and hind legs, is the first record of this genus from New Caledonia. It differs from Hardy's (1983) redescription of *Soita psiloides* Walker, currently known only from New Guinea and Australia (Permkam & Hancock, 1995), in having a medial brown mark on the frons and the apices of the radial cells faintly infuscated. Its status needs further study.

Specimens Examined. NEW CALEDONIA: Prov. Sud, 9.3 km NW Sarraméa, 21°35'04"S, 165°47'18"E, 445 m, Malaise trap along forest path, 23 Jan 1996 M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♂ (INHS).

Sphaeniscus atilius (Walker)

Trypeta atilia Walker, 1849: 1021.

Comments. This species is widespread in the palaeotropics but this is the first record for New Caledonia.

Specimens Examined. NEW CALEDONIA: Prov. Sud, 7.5 km NW Sarraméa, 355 m, Malaise trap in opening in forest, 13 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♀ (USNM; USNM00214237).

Sphenella ruficeps (Macquart)

Urophora ruficeps Macquart, 1851: 261.

Specimens Examined. NEW CALEDONIA: Mt. Khogis, 17 km NE Nouméa, 500 m, Malaise trap across forest pass, 30 Oct 1992, M.E. Irwin & D.W. Webb, 1♀ (INHS; USNM00052395).

Tetreuaresta obscuriventris (Loew)

Trypeta obscuriventris Loew, 1873: 313.

Comments. This Neotropical species was introduced to Hawai'i and Fiji for biological control of the weed *Elephantopus mollis* (Asteraceae). It also occurs on Tonga (see Specimens Examined) and is here reported for New Caledonia.

Specimens Examined. FIJI: Viti Levu, Korotongo, 0–100 m, Mar 1974, N.L.H. Krauss, 10♂ 15♀ (USNM); Nandariatu, 850–950 m, 2 Mar 1973, N. L. H. Krauss, 1♀ (USNM); Nandi, 0–100 m, 5 Jun 1973, N.L.H. Krauss, 1♂ (USNM); same, Apr 1974, 8♂ 5♀ (USNM). NEW CALEDONIA: Mandjelia Forest, 600–700 m, 9 Nov 1992, E. & M. Schlinger, 1♂ (INHS; USNM00214250). Mt. Khogis, 17 km NNE Nouméa, 500 m, Malaise trap in tropical forest, 15–20 Nov 1992, D.W. Webb, 1♀ (INHS; USNM00052396). Mt. Pinae Trail, 200 m, 11–25 Nov 1992, E. & M. Schlinger & D.W. Webb, 2♂ 7♀ (INHS) 1♀ (USNM; USNM00214248). Mt. Pinae Trail, below 200 m, MT, 25 Nov 1992, E. & M. Schlinger, 1♂ (USNM; USNM00214247). Prov. Nord, Mt. Mandjélie, 6 km WSW Puébo, 20°24'09"S 164°30'54"E, 545 m, Malaise trap in rain forest, 17 Jan 1996, M.E. Irwin & D.W. Webb, 1♂ (USNM; USNM00214246). Table Unio Road, 21°34'S 165°46'E, 500 m, rainforest, sweeping, 14 Nov 2000, C.J. Burwell, 1♂ 1♀ (QM). Prov. Sud, 7.5 km NW Sarraméa, 355 m, Malaise trap in opening in forest, 11 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♀ (USNM; USNM00214249). 9.1 km NW Sarraméa, 21°35'07"S 165°47'24"E, 425 m, Malaise trap on forested hillside, 18–19 Jan 1996, M.E. Irwin, D.W. Webb & E.I. Schlinger, 1♂ (INHS; USNM00214251). TONGA: Tongatapu, Faheta, 0–100 m, 27 Nov 1969, N.L.H. Krauss, 2♂ (USNM); Nuku'alofa, 0–50 m, Oct 1969, N.L.H. Krauss, 2♂ 3♀ (USNM); same, 0–20 m, Mar 1971, 10♂ (USNM); same, 0–100 m, Mar 1974, 5♂ 5♀ (USNM).

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