

**SYSTEMATIC NOTES ON THE GENERA OF AUSTRALIAN
AND SOME NON-AUSTRALIAN TEPHRITINAE
(DIPTERA: TEPHRITIDAE)**

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Abstract

The Australian genera of Tephritinae are assigned to tribes, subtribes and genus-groups. The *Platensina* group is redefined to contain 6 genera: *Australasina* gen. nov., *Bezzina* Munro, *Collessomyia* Hardy & Drew, *Euthauma* Munro, *Malaisinia* Hering and *Platensina* Enderlein. It is placed with the *Oedaspis* group in subtribe Platensina (= Oedaspidina), the larvae of which form stem galls on Asteraceae, Goodeniaceae and Onagraceae. The African *Chippingomyia nigrapex* (Munro), comb. nov. is transferred from *Bezzina*. The following 14 new combinations for Indo-Australian species are proposed: *Australasina sexincisa* (Malloch), comb. nov., *Collessomyia heringi* (Hardy), comb. nov., *C. trimaculata* (Hardy), comb. nov., *Malaisinia variegata* (Radhakrishnan), comb. nov. and *Oedaspis australis* (Malloch), comb. nov. (all transferred from *Hendrella* Munro); *Bezzina assimilis* (Shiraki), comb. nov., *B. shirouzui* (Ito), comb. nov. and *Malaisinia biseta* (Wang), comb. nov. (transferred from *Pliomelaena* Bezzi); *Bezzina quadrula* (Hardy), comb. nov., *B. trimaculata* (Hardy & Drew), comb. nov. and *Pseudafreutreta nigrifacies* (Wang), comb. nov. (transferred from *Platensina*); *Liepana apiciclara* (Hardy & Drew), comb. nov. (transferred from *Oedaspis* Loew); *Scedella infrequens* (Hardy & Drew), comb. nov. and *S. orientalis* (de Meijere), comb. nov. (transferred from *Campiglossa* Rondani [= *Paroxyna* Hendel]). Previous Australian records of *Trupanea amoena* (Frauenfeld) are referred to *T. opprimata* Hering and the introduced *Procecidochares alani* Steyskal is added to the Australian list.

Introduction

With the exception of two introduced species of *Procecidochares* Hendel, all Australian tephritines belong in the 'higher Tephritinae' as diagnosed by Korneyev (1999), characterised by the short, usually white lateral vertical setae on the head (long and black in 'lower Tephritinae'). When Hardy and Drew (1996) revised the Australian fauna, the higher classification of the Tephritinae was largely unresolved. This is still the case, but a recent review of overall relationships (Korneyev 1999) and a detailed study of the *Tephritis* group in Europe and Africa (Merz 1999) make it possible to assign the Australian genera to tribes, subtribes and genus-groups.

Tribe Cecidocharini

This is a Nearctic and Neotropical tribe. Two introduced species of *Procecidochares* occur in Australia, both forming stem galls on *Ageratina* (Asteraceae). The only confirmed host plant for *P. utilis* Stone is crofton weed, *Ageratina adenophora*; the record listed by Hancock *et al.* (2000) from *Senecio madagascariensis* requires confirmation.

Procecidochares alani Steyskal

Inadvertently omitted by Hardy and Drew (1996) and Hancock *et al.* (2000), this Mexican species was introduced to southeastern Queensland during the 1980s for the biological control of fireweed, *Ageratina riparia* and is now established (R. McFadyen, pers. comm.).

Tribe Dithrycini

Subtribe Platensina (= Oedaspina)

All genera in this subtribe lack the bare (non-setose) area on the upperside of vein R_1 below the end of vein Sc, characteristic of all other tephritines found in Australia (secondarily lost or reduced in some species of *Campiglossa* Rondani). The proboscis is short and capitate (sometimes vestigial), the lateral vertical seta white, the upper orbital seta white, yellow or brown, the scutum usually with numerous flattened yellow-white setulae and the oviscap short. Two Australian species placed by Hardy and Drew (1996) in *Hendrella* Munro (a genus referred to subtribe Dithrycina by Korneyev 1999), are transferred to genera of Platensina, together with several Southeast Asian species. Where known, larvae form stem galls on Asteraceae, Goodeniaceae or Onagraceae. This subtribe is primarily Indo-Australian. The African *Oedoncus taenipalpis* Speiser, usually referred to the *Oedaspis* group, may not belong here and further study may show it to be a member of the *Sphaeniscus* group in tribe Tephrellini.

Oedaspis group of genera

Three genera occur in Australia: the endemic *Hyalopeza* Hardy & Drew and *Liepana* Hardy & Drew and the widespread *Oedaspis* Loew. *Oedaspis hardyi* Norrbom was proposed as a replacement name for *O. serrata* Hardy & Drew, 1996, a junior homonym of *O. serrata* Freidberg & Kaplan, 1992 (Norrbom *et al.* 1998).

Liepana apiciclara (Hardy & Drew); comb. nov.

This species was described in *Oedaspis* by Hardy and Drew (1996) but has an apically rounded third antennal segment, a flat, grey scutellum and wing markings with a dark medial band in cell c and hyaline posterior spots, suggesting that it is better placed in *Liepana*.

Oedaspis australis (Malloch); comb. nov.

This species was placed in *Hendrella* by Hardy and Drew (1996) but has 3 pairs of frontal setae, 2 pairs of dark orbital setae and no bare area on vein R_1 opposite the end of vein Sc. It appears to be an aberrant species of *Oedaspis*.

Platensina group of genera

The name Platensina has formerly been used for the mostly African group of Acanthaceae-feeding genera but it is clear, from an examination of several Indo-Australian species of *Platensina* Enderlein (material listed in Hancock and McGuire 2001), that the African species are not congeneric. Differences were also noted by Munro (1947). The Acanthaceae-feeding genera (*Pliomelaena* Bezzi and allies) lack the flattened yellow-white scutal setulae seen in *Platensina* and allied genera and the bare area on vein R_1 is usually present. African species included in *Platensina* by Munro (1947) have long apical scutellar setae and are better placed in *Pseudafreutreta* Hering, together with the Southeast Asian *Ps. nigrifacies* (Wang), comb. nov.

Six genera are included: the Australasian *Australasinia* gen. nov. and *Collessomyia* Hardy & Drew, the widespread *Bezzina* Munro, the African *Euthauma* Munro, the Southeast Asian *Malaisinia* Hering and the Indo-Australian *Platensina*.

Euthauma includes a single species, *E. ghentianum* Munro, which forms stem galls on *Schistostephium heptolobium* (Asteraceae) in South Africa (Munro 1949). Three species are included in *Malaisinia*: *M. pulcherrima* Hering from Myanmar and W China, *M. biseta* (Wang), comb. nov. from SW China (transferred from *Pliomelaena*) and *M. variegata* (Radhakrishnan), comb. nov. from NE India (transferred from *Hendrella*); all lack a hyaline apical wing spot and subhyaline spots and have 2 scutellar setae, 3 pairs of frontal setae, 2 pairs of dark orbital setae and an unusually angled inner hyaline indentation in cell m. A small subapical hyaline spot is sometimes present in *M. variegata*, which forms stem galls on *Inula cappa* (Asteraceae) in India (Radhakrishnan 1984). The remaining genera occur in Australia.

Australasinia gen. nov.

Type-species: *Tephrella sexincisa* Malloch.

This genus is proposed for one species of Platensina that cannot be placed elsewhere. Head with 2 pairs of frontal and 2 pairs of orbital setae, the upper orbitals yellowish; postocular and lateral vertical setae yellowish-white; frons weakly pubescent; arista pubescent; thorax with dorsocentral setae placed slightly in front of line of supra-alar setae; 2 scutellar setae, the apical pair absent; wing broad, with 2 distinct costal setae; no bare (non-setose) area on vein R₁ below end of vein Sc; cell c with subbasal and broad submedial brown bands; cell r₄₊₅ with a large hyaline spot slightly beyond crossvein DM-Cu; no hyaline or subhyaline apical or subapical spots; abdomen shining black, lightly grey microtrichose; oviscap short, about as long as terga V+VI; aculeus slender, narrowing before apex; distiphallus moderately sclerotized and without a long, setose apical protuberance.

Australasinia resembles *Malaisinia* in the entirely dark apical part of the wing and 2 scutellar setae; it differs from this and other platensines in having only 2 pairs of frontal setae and the broadly oval wing, the shape unlike that seen in *Platensina*.

Australasinia sexincisa (Malloch); comb. nov.

This species is transferred from *Hendrella*. For description and illustrations see Malloch (1939), Hardy (1988) and Hardy and Drew (1996). It is known from Australia, Solomon Islands and Indonesia (Flores, Sumbawa).

Bezzina Munro

Bezziella Munro, 1937: 19. Type-species *Oxya margaritifera* Bezzi. Homonym of *Bezziella* Enderlein, 1937.

Bezzina Munro, 1957: 893. Replacement name for *Bezziella* Munro.

Bezzina was defined by Munro (1937, 1947). It has 3 pairs of frontal and 2 pairs of orbital setae, all brown; 4 scutellar setae, the apical pair short; wing cell r_{4+5} with a distinct hyaline apical spot and a small posterior hyaline subapical spot (often with a small subhyaline spot above it); distiphallus moderately sclerotized and without a long, setose apical protuberance. Five species are included, one Australian. *B. margaritifera* (Bezzi) is widespread in Africa and Madagascar. *B. assimilis* (Shiraki), comb. nov. and *B. shirouzui* (Ito), comb. nov. occur in China, Taiwan and Ryukyu Is [Japan] (both transferred from *Pliomelaena*) and *B. quadrula* (Hardy), comb. nov. occurs in Thailand, Cambodia and Vietnam (transferred from *Platensina*). In addition, Hardy's (1988) '*Pliomelaena* sp. A' from Irian Jaya is very similar to *B. shirouzui*. The South African *Bezzina nigrapex* (Munro) does not belong here and is relocated as *Chippingomyia nigrapex* (Munro), comb. nov. *Chippingomyia* Hancock is currently placed with the *Pliomelaena* group but has short apical scutellar setae and white anepimeral setae and may be better placed in tribe Tephritini, possibly in the *Campiglossa* group.

Bezzina trimaculata (Hardy & Drew); comb. nov.

This species was described in *Platensina* by Hardy and Drew (1996) but has relatively narrow wings, three marginal spots in cell m (1-2 [rarely 0] in *Platensina*) and fits the diagnosis of *Bezzina*.

Collessomyia Hardy & Drew

Collessomyia Hardy & Drew, 1996: 231. Type-species *C. setiger* Hardy & Drew.

This genus was defined by Hardy and Drew (1996). It has 3 pairs of frontal and 2 pairs of orbital setae, the upper orbitals brown or yellowish; 2 or 4 scutellar setae, the apical pair short or absent; wing cell r_{4+5} with or without a narrow hyaline apical spot and with 1 or 2 small subhyaline spots; cell r_{2+3} also with a subhyaline spot; distiphallus modified, elongate with a long, setose apical protuberance. Three species: *C. setiger* from Australia, *C. heringi* (Hardy), comb. nov. from New Ireland [Papua New Guinea] and *C. trimaculata* (Hardy), comb. nov. from Java [Indonesia] (both transferred from *Hendrella*).

Platensina Enderlein

Platensina Enderlein, 1911: 454. Type-species *P. sumbana* Enderlein.

Tephrostola Bezzi, 1913: 153. Type-species *Trypeta acrostacta* Wiedemann.

This genus was defined by Enderlein (1911) and Bezzi (1913). The wings are distinctly broadened. It has 3 pairs of frontal and 2 pairs of orbital setae, the upper orbitals brown or pale; 2 or 4 scutellar setae, the apical pair short or absent; wing cell r_{4+5} with a hyaline apical spot and usually with 1 or 2 small subhyaline spots; cell r_{2+3} also usually with one or more subhyaline spots; distiphallus moderately sclerotized and without a long, setose apical protuberance. Mostly Oriental, with 3 species in Australia (Hardy and Drew 1996). Hardy's (1988) '*Pliomelaena* sp. B' from Papua New Guinea is a

specimen of *Platensina amplipennis* (Walker). *P. acrostacta* (Wiedemann) forms galls on *Ludwigia* (= *Jussiaea*) (Onagraceae) in India (Hardy 1988).

Tribe Schistopterini

Rhabdochaeta group of genera

Two widespread genera occur in Australia: *Rhabdochaeta* de Meijere and *Rhochmopterum* Speiser. Larvae develop in the flowers of Asteraceae.

Tribe Tephrellini

Sphaeniscus group of genera

One widespread genus occurs in Australia: *Sphaeniscus* Becker. Larvae develop in the flowers of Lamiaceae (= Labiatae).

Tribe Tephritini

Campiglossa group of genera

Six genera occur in Australia: the endemic *Cooronga* Hardy & Drew and *Quasicooronga* Hardy & Drew, the widespread *Campiglossa* Rondani, *Dioxya* Frey and *Scedella* Munro and the introduced *Mesoclanis* Munro. Larvae develop in the flowers of Asteraceae. The only confirmed host plant for *Dioxya sororcula* (Wiedemann) in Australia is *Bidens pilosa* (Asteraceae); others listed by Hancock *et al.* (2000) are likely to be sweeping, rather than rearing records and require confirmation. The species placed in *Paroxyna* Hendel (a synonym of *Campiglossa*) by Hardy and Drew (1996) were transferred to the latter genus by Norrbom *et al.* (1998) but are referred here to *Scedella*.

Scedella infrequens (Hardy & Drew); comb. nov.

Described in *Paroxyna* by Hardy and Drew (1996) but the long apical scutellar setae, densely spinose basiphallus and wing markings show that it belongs in *Scedella*.

Scedella orientalis (de Meijere); comb. nov.

Placed in *Paroxyna* by Hardy and Drew (1996) but the long apical scutellar setae, densely spinose basiphallus and wing markings show that it belongs in *Scedella*. Its distribution within Australia is extended south from Coen to Cairns (9 ♂, 4 ♀, Manoora, 31.vii.-5.viii.2001, D. L. Hancock). All Cairns specimens were swept from flowers of *Wedelia trilobata* (Singapore daisy: Asteraceae) and this is a probable host.

Dyseuaresta group of genera

One genus of this Nearctic and Neotropical group occurs in Australia: the introduced *Euaresta* Loew. Larvae feed on seeds of *Xanthium* (Asteraceae).

Spathulina group of genera

Two genera occur in Australia: the endemic *Paraspathulina* Hardy & Drew and the widespread *Spathulina* Rondani. Larvae develop in the flowers of Asteraceae.

Sphenella group of genera

One widespread genus occurs in Australia: *Sphenella* Robineau-Desvoidy. Larvae develop in the flowers of *Senecio* and related genera (Asteraceae).

Tephritis group of genera

Five genera occur in Australia: the endemic *Paraactinoptera* Hardy & Drew, *Parahyalopeza* Hardy & Drew and *Peneparoxyna* Hardy & Drew, plus the widespread *Tephritis* Latreille and *Trupanea* Schrank.

Trupanea opprimata Hering

Specimens that appear to belong here were incorrectly recorded as *Trupanea amoena* (Frauenfeld) by Hardy and Drew (1996) and Hancock *et al.* (2000). *T. opprimata* was described from Endeh, Flores I. [Indonesia].

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