A REVISED CHECKLIST OF AUSTRALIAN FRUIT FLIES (DIPTERA: TEPHRITIDAE)

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Abstract

A revised list and classification is provided for the 301 species of Tephritidae recorded from Australia. *Platensina ampla* de Meijere is newly recorded and *Scedella vaga* (Hardy & Drew, 1996) is placed as a new synonym of *S. infrequens* (Hardy & Drew, 1996).

Introduction

The dipteran family Tephritidae contains more than 300 species in Australia. The main taxonomic and faunistic works for the family are: Drew (1989) for tribe Dacini; Permkam and Hancock (1995a, b) for subfamilies Phytalmiinae, Trypetinae and Dacinae except Dacini; and Hardy and Drew (1996) for subfamily Tephritinae. Additional species were recorded or described by Hancock (1995, 1996) and Drew *et al.* (1999), while Hancock *et al.* (2000) provided a host plant listing for the 278 species then recorded.

Further investigation since the review by Hancock *et al.* (2000) has refined the classification and added further taxa to the Australian fauna. Tribe Callistomyiini was proposed by Hancock (2007b), tribe Phascini recorded by Hancock (2011) and subfamily Tachiniscinae recorded by Korneyev (2012). The presence of tribe Myopitini has been confirmed (Julien *et al.* 2012).

Ten names have been removed from the Hancock *et al.* (2000) list: one eradicated (*Bactrocera philippinensis* Drew & Hancock), one homonym (*Oedaspis serrata* Hardy & Drew), three junior synonyms (*Bactrocera neotigrina* Drew & Hancock, '*Campiglossa*' *turneri* Hardy & Drew and *Dacus concolor* Drew: see Drew and Hancock 2000, Hancock 2006, 2009a), one new synonym ('*Campiglossa*' *vaga* Hardy & Drew: see below) and four misidentifications (*Bactrocera pseudodistincta* (Drew), *Bactrocera redunca* (Drew), *Trupanea amoena* (Frauenfeld) and *Platensina amplipennis* (Walker): see Huxham and Hancock 2002, Hancock 2001, 2009b, 2012c).

Additions to the Hancock *et al.* (2000) list result from previous omissions, reinstated or replacement names, newly described species and newly recorded species. Six overlooked, reinstated or replacement names were noted by Drew and Hancock (2000), Hancock (2001), Huxham and Hancock (2002) and Julien *et al.* (2012). Eight new species were described by Hancock and Drew (2003c), Huxham *et al.* (2006), Royer and Hancock (2012) and Korneyev (2012). Sixteen newly recorded species were noted by Hancock (2001, 2006, 2012c), Huxham and Hancock (2002), Hancock and Drew (2003b, c), Huxham *et al.* (2006) and Julien *et al.* (2012). An additional new record is noted below. As a result, 290 described species (plus 11 apparently undescribed: Hardy and Drew 1996, Hancock 2012a, Royer and Hancock 2012) are now known from Australia. These are listed in Table 1.

Table 1. List of Australian Tephritidae. Distribution codes: W = Western Australia; N = Northern Territory; S = South Australia; Q = Queensland; E = New South Wales (including ACT); V = Victoria; T = Tasmania. Comments: * = deliberately introduced for weed biocontrol; D&H = Drew & Hancock; H&D = Hardy & Drew; R&H = Royer & Hancock; auct. = misidentified names used by various authors.

Recorded species	Distribn	Comments
Subfamily TACHINISCINAE		
Tribe Tachiniscini		
Aliasutra australica Korneyev	QE	
Subfamily PHYTALMIINAE		
Tribe Acanthonevrini		
Acanthonevra group (*Dacopsis* complex)		
Austronevra australina (Hendel)	Q	
Austronevra bimaculata Permkam & Hancock	Q	
Austrorioxa acidiomorpha (Hendel)	QE	
Copiolepis colpopteris Permkam & Hancock	Q	
Dacopsis flava (Edwards)	Q	
Dirioxa group of genera		
Dirioxa pornia (Walker)	WSQE	= *confusa* Hardy
Lumirioxa araucariae (Tryon)	QE	
Micronevrina apicalis Permkam & Hancock	QE	
Micronevrina breviseta Permkam & Hancock	Q	
Micronevrina gloriosa Permkam & Hancock	Q	
Micronevrina hyalina Permkam & Hancock	QEV	
Micronevrina mediivitta Permkam & Hancock	QE	
Micronevrina montana Permkam & Hancock	QE	
Micronevrina setosa Permkam & Hancock	QE	
Themaroides group of genera		
(*Clusiosoma* subgroup)		
Clusiosoma (Clusiosoma) laterale (Walker)	Q	
C. (C.) macalpinei Permkam & Hancock	Q	
Clusiosoma (C.) semifuscum Malloch	NQ	
Clusiosoma (Paraclusiosoma) papuaense Hardy	Q	
Clusiosomina puncticeps Malloch	QE	
Paedohexacinia clusiosomopsis Hardy	Q	
Paedohexacinia flavithorax Hardy	Q	
Rabaulia nigrotibia Hering	Q	= *fascifacies* auct.
Trypanocentra nigrithorax Malloch	Q	
(*Neothemara* subgroup)		
Neothemara formosipennis (Walker)	Q	
Pseudacanthoneura sexguttata (de Meijere)	Q	

(*Themaroides* subgroup)		
Acanthonevroides basalis (Walker)	S	= *bicolor* Macquart
Acanthonevroides jarvisi (Tryon)	Q	
Acanthonevroides mayi Permkam & Hancock	Q	
Acanthonevroides nigriventris (Malloch)	QEV	
A. variegatus Permkam & Hancock	WNQ	
Aridonevra cunnamullae Permkam & Hancock	Q	
Taeniorioxa quinaria Permkam & Hancock	Q	
Termitorioxa bicalcarata (Hering)	Q	
Termitorioxa cobourgensis Hancock	N	
Termitorioxa exleyae Permkam & Hancock	WNQ	
Termitorioxa inconnexa Permkam & Hancock	N	
Termitorioxa laurae Permkam & Hancock	WNQ	
Termitorioxa termitoxena (Bezzi)	WNQ	
Termitorioxa testacea (Hendel)	Q	
Tribe Phascini		
Epinettyra setosa Permkam & Hancock	Q	
Tribe Phytalmiini		
Diplochorda australis Permkam & Hancock	Q	
Phytalmia mouldsi McAlpine & Schneider	Q	
Subfamily TRYPETINAE		
Tribe Acidoxanthini		
Acidoxantha quinaria Permkam & Hancock	W	
Tribe Adramini		
Adrama biseta Malloch	NQ	
Adrama selecta Walker	NQ	
Coelotrypes circumscriptus (Hering)	NQ	
Euphranta athertonia Permkam & Hancock	Q	
Euphranta leichhardtiae Permkam & Hancock	QE	
Euphranta lemniscata (Enderlein)	Q	
Euphranta linocierae Hardy	Q	
Euphranta marina Permkam & Hancock	NQ	
Euphranta mediofusca (Hering)	Q	
Euphranta meringae Permkam & Hancock	Q	
Euphranta minor Hendel	NQ	
Euphranta mulgravea Permkam & Hancock	Q	
Euphranta numeralis Permkam & Hancock	QE	
Euphranta ternaria Permkam & Hancock	Q	
Euphranta variabilis (Kertész)	Q	
Hardyadrama alyta Permkam & Hancock	Q	
Hardyadrama excoecariae Lee	WQ	

Hardyadrama magister (Lee)	Q	
Hardyadrama presignis (Hardy)	Q	Torres Strait only
Ichneumonosoma consors (Walker)	Q	Torres Strait only
Piestometopon distinctum (Permkam&Hancock)	Q	
Piestometopon luteiceps de Meijere	Q	Torres Strait only
Soita psiloides Walker	Q	
Tribe Callistomyiini		
Callistomyia horni Hendel	WNQ	
Tribe Rivelliomimini		
Ornithoschema oculatum de Meijere	N	
O. queenslandense Permkam & Hancock	Q	
Tribe Trypetini		
Aciuropsis pusio Hardy	Q	
Calosphenisca unicuneata (Hardy)	QE	
Hemiristina pleomeles Permkam & Hancock	NQ	
Philophylla australina (Hardy)	Q	
Philophylla erebia (Hering)	QE	
Philophylla fossata (Fabricius)	Q	
Philophylla humeralis (Hardy)	Q	
Philophylla quadrata (Malloch)	NQ	
Vidalia dualis Permkam & Hancock	Q	
Tribe Xarnutini		
Xarnuta confusa Malloch	Q	
Xarnuta cribralis Hering	Q	
Subfamily DACINAE		
Tribe Ceratitidini		
Ceratitella amyemae Permkam & Hancock	NQ	
Ceratitella bifasciata Hardy	Q	
Ceratitella loranthi (Froggatt)	WNSEV	
Ceratitella recondita Permkam & Hancock	QE	
Ceratitella unifasciata Hardy	QE	
Ceratitis (Ceratitis) capitata (Wiedemann)	W	Introduced
Paraceratitella compta Hardy	Q	
Paraceratitella eurycephala Hardy	WNQE	
Paraceratitella oblonga Hardy	Q	
Tribe Dacini		
Bactrocera (Apodacus) cheesmanae (Perkins)	Q	Torres Strait only
Bactrocera (Apodacus) visenda (Hardy)	Q	
Bactrocera (Austrodacus) cucumis (French)	NQE	
Bactrocera (Bactrocera) abdonigella (Drew)	Q	Torres Strait only
Bactrocera (B.) abscondita (Drew & Hancock)	Q	

Bactrocera (B.) abundans Drew	Q	Torres Strait only
Bactrocera (B.) aeroginosa (Drew & Hancock)	Q	
Bactrocera (B.) allwoodi (Drew)	N	
Bactrocera (B.) alyxiae (May)	Q	
Bactrocera (B.) amplexiseta (May)	Q	
Bactrocera (B.) anfracta Drew	Q	Torres Strait only
Bactrocera (B.) antigone (Drew & Hancock)	Q	
Bactrocera (B.) aquilonis (May)	WN	
Bactrocera (B.) aurantiaca (Drew & Hancock)	Q	
Bactrocera (B.) bancroftii (Tryon)	QE	
Bactrocera (B.) barringtoniae (Tryon)	Q	
Bactrocera (B.) batemani Drew	QE	
Bactrocera (B.) bidentata (May)	Q	
Bactrocera (B.) breviaculeus (Hardy)	Q	
Bactrocera (B.) brunnea (Perkins & May)	Q	
Bactrocera (B.) bryoniae (Tryon)	WNQE	
Bactrocera (B.) cacuminata (Hering)	QEV	
Bactrocera (B.) curreyi Drew	Q	Torres Strait only
Bactrocera (B.) daruensis Drew	Q	Torres Strait only
Bactrocera (B.) decurtans (May)	WNQ	
Bactrocera (B.) diospyri Drew	NQ	
Bactrocera (B.) endiandrae (Perkins & May)	QE	
Bactrocera (B.) erubescentis (Drew & Hancock)	Q	
Bactrocera (B.) fagraea (Tryon)	Q	
Bactrocera (B.) frauenfeldi (Schiner)	Q	
Bactrocera (B.) fuliginus (Drew & Hancock)	Q	
Bactrocera (B.) furvilineatta Drew	Q	Torres Strait only
Bactrocera (B.) halfordiae (Tryon)	QE	
Bactrocera (B.) hispidula (May)	Q	
Bactrocera (B.) humilis (Drew & Hancock)	Q	
Bactrocera (B.) jarvisi (Tryon)	WNQE	
Bactrocera (B.) kraussi (Hardy)	Q	
Bactrocera (B.) laticaudus (Hardy)	Q	
Bactrocera (B.) lineata (Perkins)	Q	Torres Strait only
Bactrocera (B.) manskii (Perkins & May)	Q	
Bactrocera (B.) mayi (Hardy)	QE	
Bactrocera (B.) melas (Perkins & May)	Q	Probable hybrid
Bactrocera (B.) mendosa (May)	NQ	
Bactrocera (B.) moluccensis (Perkins)	Q	Torres Strait only
Bactrocera (B.) murrayi (Perkins)	Q	
Bactrocera (B.) musae (Tryon)	Q	

Bactrocera (B.) mutabilis (May)	Q	
Bactrocera (B.) neohumeralis (Hardy)	QE	
Bactrocera (B.) nigrovittata Drew	Q	
Bactrocera (B.) notatagena (May)	Q	
Bactrocera (B.) opiliae (Drew & Hardy)	WNQ	
Bactrocera (B.) pallida (Perkins & May)	NQ	
Bactrocera (B.) papayae Drew & Hancock	Q	Torres Strait only
B. (B.) parabarringtoniae Drew & Hancock	Q	Torres Strait only
Bactrocera (B.) parafrauenfeldi Drew	N	
Bactrocera (B.) peninsularis (Drew & Hancock)	Q	
Bactrocera (B.) perkinsi (Drew & Hancock)	Q	
Bactrocera (B.) phaleriae (May)	Q	
Bactrocera (B.) pulchra Tryon	Q	
Bactrocera (B.) quadrata (May)	Q	
Bactrocera (B.) recurrens (Hering)	Q	Torres Strait only
Bactrocera (B.) repanda Drew	Q	Torres Strait only
Bactrocera (B.) resima (Drew)	Q	Torres Strait only
Bactrocera (B.) robiginosa (May)	Q	
Bactrocera (B.) romigae (Drew & Hancock)	Q	
Bactrocera (B.) rufescens (May)	Q	
Bactrocera (B.) rufofuscula (Drew & Hancock)	Q	
Bactrocera (B.) russeola (Drew & Hancock)	Q	
Bactrocera (B.) silvicola (May)	Q	
Bactrocera (B.) speewahensis Fay & Hancock	Q	
Bactrocera (B.) strigata (Perkins)	QEV	
Bactrocera (B.) tenuifascia (May)	WN	
Bactrocera (B.) torresiae Huxham & Hancock	Q	Torres Strait only
Bactrocera (B.) trifaria (Drew)	Q	Torres Strait only
Bactrocera (B.) trivialis (Drew)	Q	Torres Strait only
Bactrocera (B.) tryoni (Froggatt)	NQEV	
Bactrocera (B.) turneri Drew	Q	Torres Strait only
Bactrocera (B.) umbrosa (Fabricius)	Q	Torres Strait only
Bactrocera (B.) vulgaris (Drew)	Q	Torres Strait only
Bactrocera (B.) yorkensis Drew & Hancock	Q	
Bactrocera (B.) sp. near *barringtoniae*	Q	R&H 2012
Bactrocera (Bulladacus) flavinotus (May)	Q	= *neotigrina* D&H
Bactrocera (Bulladacus) tigrina (May)	Q	
Bactrocera (Diplodacus) signatifera (Tryon)	Q	
B. (Gymnodacus) calophylli (Perkins & May)	Q	
Bactrocera (Hemizeugodacus) aglaiae (Hardy)	Q	
Bactrocera (Hemizeugodacus) aurea (May)	Q	

Bactrocera (H.) ektoalangiae Drew & Hancock	Q	
Bactrocera (Javadacus) aberrans (Hardy)	Q	
Bactrocera (Javadacus) melanothoracica Drew	Q	
Bactrocera (Javadacus) unirufa Drew	Q	
Bactrocera (Melanodacus) nigra (Tryon)	Q	
Bactrocera (Paratridacus) expandens (Walker)	Q	
Bactrocera (Queenslandacus) exigua (May)	Q	
Bactrocera (Sinodacus) strigifinis (Walker)	Q	
Bactrocera (Zeugodacus) chorista (May)	QE	
Bactrocera (Zeugodacus) cucurbitae (Coquillett)	Q	Torres Strait only
Bactrocera (Zeugodacus) fallacis (Drew)	Q	
Bactrocera (Zeugodacus) macrovittata Drew	Q	Torres Strait only
Dacus (Callantra) axanus (Hering)	Q	
Dacus (Mellesis) petioliforma (May)	Q	
Dacus (Mellesis) pusillus (May)	Q	
Dacus (Neodacus) absonifacies (May)	QEV	
Dacus (Neodacus) aequalis Coquillett	QE	
Dacus (Neodacus) bellulus Drew & Hancock	NQ	
Dacus (Neodacus) coenensis Royer & Hancock	Q	
Dacus (Neodacus) hardyi Drew	NQ	
Dacus (Neodacus) newmani (Perkins)	WNSQE	
Dacus (Neodacus) palmerensis Drew	Q	
Dacus (Neodacus) salamander Drew & Hancock	Q	= *concolor* Drew
Dacus (Neodacus) secamoneae Drew	NQ	
Dacus (Neodacus) signatifrons (May)	QE	
Tribe Gastrozonini		
Carpophthorella nigrifascia (Walker)	Q	
Subfamily TEPHRITINAE		
Tribe Cecidocharini		
Procecidochares alani Steyskal	QE	Introduced*
Procecidochares utilis Stone	SQEV	Introduced*
Tribe Dithrycini (Subtribe Platensinina)		
Oedaspis group of genera		
Hyalopeza aristae Hancock & Drew	Q	
Hyalopeza schneiderae Hardy & Drew	SQEV	
Liepana apiciclara (Hardy & Drew)	E	
Liepana helichrysii Hardy & Drew	E	
Liepana latifrons Hardy & Drew	V	
Liepana lugubris (Macquart)	ET	
Oedaspis apicalis Hardy & Drew	E	
Oedaspis australis (Malloch)	WQE	

Oedaspis austrina Hardy & Drew	WS	
Oedaspis continua Hardy & Drew	W	
Oedaspis escheri (Bezzi)	WNQE	
Oedaspis gallicola Hardy & Drew	EV	
Oedaspis goodenia Hardy & Drew	QEV	
Oedaspis hardyi Norrbom	E	= *serrata* H&D
Oedaspis mouldsi Hardy & Drew	Q	
Oedaspis olearia Hardy & Drew	EVT	
Oedaspis perkinsi Hardy & Drew	QV	
Oedaspis semihyalina Hardy & Drew	W	
Oedaspis trifasciata (Malloch)	V	
Oedaspis trimaculata Hardy & Drew	WN	
Oedaspis whitei Hardy & Drew	WNV	
Oedaspis sp. A near *mouldsi*	E	H&D 1996
Oedaspis sp. B near *mouldsi*	T	H&D 1996
Oedaspis sp. C	EV	H&D 1996
Oedaspis sp. D near *continua*	V	H&D 1996
Oedaspis sp. E near *apicalis*	E	H&D 1996
Platensina group of genera		
Australasinia sexincisa (Malloch)	SQE	
Collessomyia setiger Hardy & Drew	WNQ	
Platensina ampla de Meijere	Q	Newly recorded
Platensina parvipuncta Malloch	Q	
Platensina platyptera Hendel	Q	= *amplipennis* auct.
Platensina trimaculata Hardy & Drew	Q	
Platensina zodiacalis (Bezzi)	NQ	
Tribe Myopitini		
Urophora solstitialis (Linnaeus)	E	Introduced*
Urophora stylata (Fabricius)	SEVT	Introduced*
Urophora terebrans (Loew)	E	Introduced*
Tribe Schistopterini		
Calloptera queenslandica (Hardy & Drew)	Q	
Calloptera wedelia (Hardy & Drew)	Q	
Rhabdochaeta pulchella de Meijere	Q	
Rhochmopterum venustum (de Meijere)	QE	
Tribe Tephrellini		
Sphaeniscus group of genera		
Dicheniotes ternarius (Loew)	Q	Introduced
Sphaeniscus atilius (Walker)	NQE	
Tribe Tephritini		
Campiglossa group of genera		

Dioxyna brachybasis Hardy	Q	
Dioxyna hyalina Hardy & Drew	WSQEV	
Dioxyna sororcula (Wiedemann)	all	
Mesoclanis magnipalpis (Bezzi)	SV	Introduced*
Mesoclanis polana (Munro)	QE	Introduced*
Peneparoxyna minuta Hardy & Drew	NE	
Scedella infrequens (Hardy & Drew)	QE	= *vaga* H&D
Scedella orientalis (de Meijere)	Q	
Euaresta group of genera		
Euaresta aequalis (Loew)	QE	Introduced*
Euaresta bullans (Wiedemann)	QEV	Introduced
Spathulina group of genera		
Paraspathulina apicomaculata Hardy & Drew	WNSQEV	
Paraspathulina eremostigma Hardy & Drew	WNSQEV	
Paraspathulina trimacula Hancock & Drew	Q	
Spathulina acroleuca (Schiner)	all	
Sphenella group of genera		
Sphenella ruficeps (Macquart)	all	
Tephritis group of genera		
Austrotephritis brunnea (Hardy & Drew)	EVT	
Austrotephritis bushi (Hardy & Drew)	EVT	
Austrotephritis campiglossina (Hering)	W	= *turneri* H&D
Austrotephritis distigmata (Hardy & Drew)	W	
Austrotephritis fuscata (Macquart)	QEVT	
Austrotephritis hesperia (Hardy & Drew)	W	
Austrotephritis pelia (Schiner)	all	
Austrotephritis phaeostigma (Hardy & Drew)	WSV	
Austrotephritis poenia (Walker)	all	
Austrotephritis protrusa (Hardy & Drew)	QE	
Austrotephritis pumila (Hardy & Drew)	WSQEV	
Austrotephritis quasiprolixa (Hardy & Drew)	SE	
Austrotephritis tasmaniae (Hardy & Drew)	T	
Austrotephritis transversa (Hardy & Drew)	EV	
Austrotephritis trupanea (Hardy & Drew)	WSQE	
Austrotephritis whitei (Hardy & Drew)	T	
Austrotephritis sp. A near *bushi*	V	H&D *Tephritis* sp.
Austrotephritis sp. B near *phaeostigma*	Q	Hancock 2012a
Cooronga mcalpinei Hardy & Drew	S	
Paraactinoptera collessi Hardy & Drew	W	
Paraactinoptera danielsi Hancock & Drew	Q	
Paraactinoptera prolixa (Hardy & Drew)	WNS	

Parahyalopeza bushi Hardy & Drew	V	
Parahyalopeza multipunctata Hancock & Drew	E	Lord Howe I. only
Parahyalopeza pantosticta (Hardy & Drew)	QEVT	
Quasicooronga connecta Hardy & Drew	V	
Quasicooronga disconnecta Hardy & Drew	E	
Tephritis furcata Hardy & Drew	Q	
Trupanea bifida Hardy & Drew	E	
Trupanea glauca (Thomson)	WSQEV	
Trupanea heronensis Hardy & Drew	Q	
Trupanea notata Hardy & Drew	QE	
Trupanea opprimata Hering	NQ	= *amoena* auct.
Trupanea prolata Hardy & Drew	WSQEV	
Trupanea pusilla Hardy & Drew	WQ	
Trupanea queenslandensis Hardy & Drew	Q	
Trupanea sp. A near *terryi*	W	H&D 1996
Trupanea sp. B near *terryi*	Q	H&D 1996
Trupanea sp. C near *mutabilis*	V	H&D 1996

Composition of generic groups in subfamily Tephritinae was discussed by Hancock (2001, 2007c, 2010a) and Hancock and Drew (2003c), while that of generic groups and subgroups in tribe Acanthonevrini was discussed by Korneyev (1999) and Hancock and Drew (2003a). Three new Tephritinae genera were proposed by Hancock (2001: *Australasinia*), Freidberg (2002: *Calloptera*) and Hancock and Drew (2003c: *Austrotephritis*). Subgeneric nomenclature in *Dacus* Fabricius was revised by Hancock and Drew (2006).

Additional new distribution records were noted by Gillespie (2003) and Hancock (2010b, 2012b). Many of the *Bactrocera* Macquart species recorded only from Torres Strait, including the pest species *B. papayae* Drew & Hancock, *B. trivialis* (Drew) and *B. cucurbitae* (Coquillett), are vagrants from Papua New Guinea and are not permanently established there.

Indian Ocean Territories

Five primarily SE Asian species of *Bactrocera* are known from the Australian Territory of Christmas Island in the Indian Ocean (Bellis *et al.* 2004): *B. (B.) albistrigata* (de Meijere), *B. (B.) arecae* (Hardy & Adachi), *B. (B.) papayae* Drew & Hancock, *B. (B.) umbrosa* (Fabricius) and *B. (Zeugodacus) cucurbitae* (Coquillett). The last three also occur as vagrants in Torres Strait but none occurs on mainland Australia.

Host plants

Table 2 lists host plants recorded since the listing of Hancock *et al.* (2000), including those for six subsequently described or recorded species. Records of Phytalmiinae, Trypetinae and Dacinae are from fruit unless otherwise

indicated. Thirteen additional host plants for *Ceratitis capitata* in Western Australia were reported by Woods *et al.* (2005) and are not repeated here.

Table 2. Host plants recorded since Hancock *et al.* (2000). * = introduced; PNG = Papua New Guinea. Sources: 1 = Hancock and Drew 2003a; 2 = Hancock 2002, in oozing resin beneath damaged bark; 3 = Hancock and Drew 2003b; 4 = Leblanc *et al.* 2012; 5 = Julien *et al.* 2012; 6 = Hancock and Drew 2003c; 7 = Hancock 2001 and reared specimens in Department of Agriculture, Forestry and Fisheries, Brisbane; 8 = Hancock and Drew 2003c, collected on but not reared.

Fly species	Host plant family / species	Comments
Subfamily Phytalmiinae		
Clusiosoma semifuscum	MORACEAE: *Ficus nodosa*	1
Clusiosomina puncticeps	MORACEAE: *Ficus coronata*	confirmed:1
	MORACEAE: *Ficus fraseri*	1
Termitorioxa termitoxena	COMBRETACEAE: *Terminalia* sp. bark	2
Subfamily Trypetinae		
Euphranta numeralis	MORACEAE: *Maclura cochinchinensis*	3
Subfamily Dacinae		
Bactrocera cheesmanae	CLUSIACEAE: *Garcinia* cf. *hollrungii*	in PNG: 4
Bactrocera lineata	APOCYNACEAE: *Tabernaemontana aurantiaca*	in PNG: 4
	SAPINDACEAE: *Pometia pinnata*	in PNG: 4
Bactrocera strigifinis	CUCURBITACEAE: *Cucurbita* flowers	in PNG: 4
Subfamily Tephritinae		
Procecidochares alani *	ASTERACEAE: *Ageratina riparia*	5
Urophora solstitialis *	ASTERACEAE: *Carduus nutans*	5
Urophora stylata *	ASTERACEAE: *Cirsium vulgare*	5
Urophora terebrans *	ASTERACEAE: *Onopordum acanthium*	5
	ASTERACEAE: *Onopordum illyricum*	5
Rhabdochaeta pulchella	ASTERACEAE: *Blumea lacera*	SE Asia: 6
Scedella orientalis	ASTERACEAE: *Wedelia trilobata*	7
Paraactinoptera danielsi	ASTERACEAE: *Pluchea baccharoides*	not reared:8

Introduced species

Eleven species have been introduced into Australia, eight deliberately for the biological control of weeds and three accidentally (see Table 1). The former includes three species of *Urophora* Robineau-Desvoidy: *U. solstitialis* (L.), *U. stylata* (Fabricius) and *U. terebrans* (Loew), all released between 1992 and 2000 for the control of *Carduus*, *Cirsium* and *Onopordum* thistles respectively (Julien *et al.* 2012, Morley 2012). The latter includes the pest

species *Ceratitis capitata* (Wiedemann) [Mediterranean fruit fly or Medfly], introduced into the Perth and Sydney districts during the 1890s. Still present in Western Australia, this species disappeared from the eastern States by the 1940s, possibly as a result of improved control techniques and competition from the endemic *Bactrocera tryoni* (Froggatt). Interestingly, reports of *C. capitata* from India almost certainly refer to Australian specimens donated by Walter Froggatt during his visit in 1908 (Hancock 2007a).

Two further species, *Eutreta xanthochaeta* Aldrich (Tephritinae: Eutretini) and *Tephritis postica* (Loew) (Tephritinae: Tephritini), were released for the biological control of lantana and *Onopordum* thistles respectively but failed to establish. *Mesoclanis magnipalpis* (Bezzi) also appears not to have established but releases are ongoing (Adair *et al.* 2012). *Bactrocera papayae* and *B. philippinensis* were present in northern mainland Australia during the mid-late 1990s but were eradicated. I find no evidence of the release of *Urophora quadrifasciata* (Meigen) in Australia (or of *U. stylata* prior to 1993), with records (1 ♀ of each) from 'Narabeen West, NSW' [no such place] (White and Korneyev 1989) ('NT' [error] in Hardy and Foote 1989) regarded as mislabelled specimens of European origin. For identification of the relevant *Urophora* species, see White and Korneyev (1989).

Cecidochares connexa (Macquart) (Tephritinae: Cecidocharini), has been released in Papua New Guinea and several other countries for the biological control of *Chromolaena odorata* (Asteraceae) and is a potential candidate for controlling this weed in northern Queensland.

Additional notes

The following morphological and distributional notes are based on specimens in the Department of Agriculture (Northern Australia Quarantine Strategy), Cairns (NAQS) and the Queensland Museum, Brisbane (QMB). One species is newly recorded from Australia and one new synonym is proposed.

Subfamily Phytalmiinae

Acanthonevroides nigriventris (Malloch)

QUEENSLAND: 1 ♀, Bribie Is, 0.85 km NE of NPHQ, 27.018°S 153.122°E, 10 m, 24.ix.-9.x.2010, G. Monteith, Malaise, wallum (QMB).

This is a widespread species known from SE Queensland to Victoria (Permkam and Hancock 1995b). Collected in a Malaise trap baited with sawn saplings (G.B. Monteith pers. comm.).

Austronevra australina (Hendel, 1928)

QUEENSLAND: 1 ♂, 60 Silver Ash Rd, Cow Bay, 16°14'7"S 145°27'36"E, 16.xi.2011, A.D. Rice, J.A. Walker (NAQS); 2 ♂♂, 2 ♀♀, Minbin, Mahony Rd, 17°27'13"S 145°35'26"E, 30.x.2011, S. Cowan, from underside of *Acronychia acidula* leaves (NAQS); 1 ♀, Polly Creek, Garradunga, 17.456°S 146.02°E, 2.52 m, 13.i.-4.ii.2010, J. Hasenpusch, Malaise (QMB).

The above records include the most northerly locality now known for this NE Queensland rainforest species, previously known from Daintree to Tully (Permkam and Hancock 1995b).

Austrorioxa acidiomorpha (Hendel)

QUEENSLAND: 1 ♀, Blackbutt Range, top, 26.8676°S 152.192°E, 28.iii.-10.iv.2010, Monteith, RF Malaise; 9 ♀♀, 25.757°S 152.697°E, Tallegalla Weir Junction, 35 m, 7.xi.2011-5.i.2012, G. Monteith, Malaise, RF [except 1 OF] (QMB).

These are additional locality records from SE Queensland for this eastern Australian species (Permkam and Hancock 1995b). Collected in Malaise traps baited with sawn saplings (G.B. Monteith pers. comm.).

Copiolepis colpopteris Permkam & Hancock, 1995 (Fig. 1)

QUEENSLAND: 2 ♂♂, Gordon's Creek, 12.713°S 143.320°E, 15 m, 9.xii.2010, Escalona & Will, MV light; 1 ♂, 2 ♀♀, East Claudie River, 12.714°S 143.287°E, 15 m, 8-16.xii.2010, Monteith & Escalona, MV light, rainforest (QMB).

The above females (Fig. 1) are the first recorded for this species. They are similar to males but the wing is normal in shape and not modified posteriorly, the stigma is a little shorter and veins R_{2+3} and R_{4+5} are less strongly curved anteriorly. The pattern is dark brown with paler costal cells and stigma, a subhyaline to pale brown semicircular marginal spot filling apex of cell r_{4+5}, a broad, subhyaline marginal indentation in cell m and a subhyaline to hyaline posterior margin covering cell bm, anal lobe and posterior two-thirds of cell cu_1. The black medial vitta on the abdomen is thin and indistinct. The oviscape is black and about as long as terga IV-VI. The species is known only from Iron Range, Cape York Peninsula.

Figs 1-2. Two species of Phytalmiinae and Dacinae known only from Iron Range: (1) *Copiolepis colpopteris*, female; (2) *Paraceratitella oblonga*, male. Photographs by Federica Turco (Queensland Museum, Brisbane).

Lumirioxa araucariae (Tryon, 1927)

QUEENSLAND: 1 ♂, Yarraman, 2.9 km SSE, 26.865°S 152.995°E, 12-28.iii.2010, Monteith, RF Malaise; 1 ♂, Blackbutt Range, top, 26.8676°S 152.192°E, 12-28.iii.2010, Monteith, RF Malaise (QMB).

The above specimens add two more localities to those recorded from SE Queensland by Permkam and Hancock (1995b). In the Blackbutt Range male the fore femora and tibiae are extensively blackened. Collected in Malaise traps baited with sawn saplings (G.B. Monteith pers. comm.).

Micronevrina hyalina Permkam & Hancock, 1995

QUEENSLAND: 1 ♀, Mt Mee, 27.077°S 152.686°E, 530 m, 28.viii.-10.ix.2010, G. Monteith, Malaise, wet sclerophyll (QMB).

This is the third (and most northern) known locality for this species in SE Queensland, recorded previously from Mt Glorious and near Caloundra. Collected in a Malaise trap baited with sawn saplings (G.B. Monteith pers. comm.).

Micronevrina montana Permkam & Hancock, 1995

QUEENSLAND: 1 ♀, Yarraman, 2.2 km SE, 26.857°S 152.994°E, 12-28.iii.2010, Monteith, RF Malaise; 2 ♀♀, same data except 2.9 km SSE, 26.865°S 152.995°E, 12-28.iii.2010 or 28.iii.-10.iv.2010; 7 ♂♂, 1 ♀, 25.757°S 152.697°E, Tallegalla Weir Junction, 35 m, 7.xi.2011-5.i.2012, G. Monteith, Malaise, RF (QMB).

One of the above specimens differs from those recorded by Permkam and Hancock (1995b) in having tergite III fulvous medially and all have terga V-VI wholly black but this species is known to be variable. The outer hyaline streak in cell r_{4+5} is small, very faint or absent. All three Yarraman specimens have a pair of thin, secondary (middle) scutellar setae present. Collected in Malaise traps baited with sawn saplings (G.B. Monteith pers. comm.).

Subfamily Trypetinae

Adrama selecta Walker, 1859

QUEENSLAND (Torres Strait): 1 ♂, Lala Hill, Moa Island, 10.10.2°S 142.18.1°E, 80 m, 1-2.iv.2008, K. Aland, dung/mushroom pitfall; 1 ♂, Prince of Wales Island, camp, 10.42.3°S 142.13.5°E, 10 m, 3-7.i.2008, G. Monteith & K. Aland (QMB).

The above records are the first from Torres Strait for this northern species.

Euphranta leichhardtiae Permkam & Hancock, 1995

QUEENSLAND: 1 ♂, East Claudie River, 12.714°S 143.287°E, 15 m, 8-16.xii.2010, Monteith & Escalona, MV light, rainforest (QMB).

The above male has the abdomen mostly fulvous with terga IV-V darker, tending brownish, similar to that of females and not as black as in other males recorded by Permkam and Hancock (1995b).

Subfamily Dacinae

Paraceratitella oblonga Hardy, 1967 (Fig. 2)

QUEENSLAND: 4 ♂♂, East Claudie River, 12.714°S 143.287°E, 15 m, 8-16.xii.2010, Monteith & Escalona, MV light, rainforest (QMB).

The above males (Fig. 2) are the first recorded for this species, known only from Iron Range, Cape York Peninsula. They are similar to females but the grey-pollinose area on the scutum is more extensive.

Subfamily Tephritinae

Platensina ampla de Meijere, 1914

QUEENSLAND: 1 ♀, Ina Ct, Rocky Point, Weipa, 12°37'44"S 141°52'40"E, 3.vi.2013, net, A.D. Rice (NAQS).

This distinctive species is now known from Indonesia, Papua New Guinea, Solomon Islands and northern Australia (**new country record**). For diagnosis and illustrations see Hancock (2012c).

Scedella infrequens (Hardy & Drew, 1996) (Fig. 3)

QUEENSLAND: 1 ♂, Gatton, 6.xi.1933, F.A. Perkins; 1 ♀, Stanthorpe, 19.x.1925 (QMB).

Previously known only from males, the female (Fig. 3) oviscape is red-brown and about as long as terga IV-VI. Variation in the wing pattern in this species is such that *Campiglossa vaga* Hardy & Drew, 1996, **new synonym** cannot be separated and is here considered to be conspecific with *Paroxyna infrequens* Hardy & Drew, 1996 (placed in *Scedella* Munro by Hancock 2001), the latter name given nomenclatural priority under the Principle of First Reviser (ICZN 1999: Article 24.2).

Figs 3-4. Tephritinae: (3) *Scedella infrequens*, female; (4) *Austrotephritis* sp. nr *phaeostigma*, male. Photographs by Federica Turco (Queensland Museum, Brisbane).

Paraspathulina trimacula Hancock & Drew, 2003

QUEENSLAND: 1 ♂, 1 ♀, Caloundra, 17.viii.1934, F.A. Perkins; 1 ♂, Brisbane, 28.x.1964, H.A. Rose; 1 ♀, Inglewood, 1.ix.1925 (QMB).

Previously known from a single male from Mt Cootha, Brisbane (Hancock and Drew 2003c), the female oviscape is black. In one specimen, the outer marginal hyaline spot in cell cu_1 is absent.

Spathulina acroleuca (Schiner, 1868)

NEW SOUTH WALES: 1 ♀, Lord Howe Is., Macleay (QMB).

This widespread species is newly recorded fom Lord Howe Island.

Austrotephritis protrusa (Hardy & Drew, 1996)

QUEENSLAND: 1 ♂, 20.101°S 147.757°E, Mt Abbot camp, 800 m, 22-28.ix.2011, Monteith, MV light, 34971 (QMB).

There are few records of this distinctive eastern species known from Mt Finnigan near Cooktown to northern New South Wales.

Austrotephritis sp. nr *phaeostigma* (Hardy & Drew, 1996) (Fig. 4)

QUEENSLAND: 2 ♂♂, Eidsvold, 17.viii.1923, Bancroft (QMB).

The above specimens appear to represent an undescribed species close to *A. phaeostigma* (Hardy & Drew) (Hancock 2012a). Hyaline subapical spots in cell dm are small and a single spot in cell r_{2+3} forms a triangle with the pair in cell r_1. A second undescribed species, near *A. bushi* (Hardy & Drew), was reported from Victoria by Hardy and Drew (1996, as '*Tephritis* sp. A').

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