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Revision of the Scelioninae (Hymenoptera : Scelionidae) in Australia

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Dedicated to
Alan Parkhurst Dodd
(1896–1981)
who pioneered scelionid
research in Australia

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Abstract

Forty-eight genera of Australian Scelioninae are recognized, of which the following are described as new: *Crama*, *Genatropis*, *Lispoteleia*, *Neoparidris* and *Yunkara*. *Fusicornia* Risbec and *Ladora* Masner & Huggert are recorded from Australia for the first time, and *Anteris* Foerster, *Apegus* Foerster and *Oxyteleia* Kieffer are no longer considered to occur in Australia. *Platyteleia* Dodd and *Austroskelio* Dodd are regarded as synonyms of *Gryon* Haliday. A key to genera is presented and a checklist of species and references to original descriptions are provided. Wing reduction in the subfamily is discussed. Twenty-two species are redescribed and 11 new species described.

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Introduction

The first suprageneric groups in the family Scelionidae were recognized by Ashmead (1893) who divided the family into four tribes which he later (1903) elevated to subfamily rank, *viz* Scelioninae, Baeinae, Telenominae and Teleasinae. Since 1903, several different suprageneric classifications have been adopted, e.g. Kieffer (1926), Masner (1956), Muesebeck and Masner (1967), Masner and Muesebeck (1968), Szabo (1966*a*), Kozlov (1970*a*, 1981), Hellen (1971) and Masner (1976). This study follows Masner's 1976 classification but in addition recognizes the tribe Neoscelionini (Kozlov 1981).

The Scelioninae is a most diverse and thriving group of parasitic wasps (Masner 1976). In Australia, this is reflected in the large number of genera and species that comprise the fauna. Fossil records and the plesiomorphic characters displayed in certain living genera confirm that the Scelioninae is certainly the oldest subfamily within the Scelionidae.

The first Australian species of the Scelioninae was described by Walker in 1839 from material collected by Charles Darwin. Since that time, Kieffer, Crawford, Froggatt, Girault, Dodd, Szabo, Hickman, Galloway and Austin have all described species in this subfamily, with most being described by A. P. Dodd from 1913 to 1939.

From an economic point of view, the Scelioninae has great significance as many are egg-parasites of grasshoppers, locusts, crickets, bugs and spiders.

A more complete bibliographic treatment of the species can be found in Galloway (1976) and Austin (1981*a*). In the present work, for each genus a comment on distribution is made only when information additional to that provided by Masner (1976) is available. The tribes Baeini, Embidobiini and Idrini have been revised by Austin and the remaining tribes are the responsibility of Galloway. Masner's (1976) key to subfamilies of Scelionidae appears to work well for all Australian genera so far encountered. No attempt has been made to construct a key to tribes as it appears that a number of the larger tribes, e.g. Calliscelionini, may be further divided as generic relationships become clearer.

Institutions and Collections

The following abbreviations are used for museums and other institutions holding specimens examined or mentioned in this study.

AM	Australian Museum, Sydney (Mr G. Holloway)
ANIC	Australian National Insect Collection, Canberra (Dr I. Naumann, Ms J. Cardale)
BMNH	British Museum (Natural History), London (Mr N. D. M. Fergusson)
HNSM	Hungarian Natural History Museum, Budapest
CIE	Commonwealth Institute of Entomology, London (Dr Z. Bouček)
CNC	Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa (Dr L. Masner)
NMV	National Museum of Victoria, Melbourne (Dr A. Neboiss)
NSWDA	New South Wales Department of Agriculture, Rydalmere (Dr E. Schicha)
QDPI	Queensland Department of Primary Industries, Brisbane (Dr I. D. Galloway)
QM	Queensland Museum, Brisbane (Mr E. Dahms, Dr G. Monteith)
SAM	South Australian Museum, Adelaide (Dr G. Gross)
UQ	University of Queensland, Department of Entomology (Miss M. Schneider)
USNM	United States National Museum, Washington

Terminology and Measurements

The morphological terms used throughout this work are principally those used by Masner (1980). The following terms and abbreviations require further explanation (see Figs 1-10).

Head

antennal scape — length does not include radicle

f1-f10 — funicle segments of antenna

LOL — lateral ocellar line

OD — ocellar diameter: longest axis of lateral ocellus

OOL — ocular ocellar line

POL — posterior ocellar line

tyloid — longitudinal carina or keel found on certain flagellar segments of male antenna

Mesosoma

lateral lobe of scutum — area between lateral margin of scutum and notauli

medial lobe of scutum — central area defined laterally by notauli

scutum — abbreviated term for mesoscutum

Metasoma

horn — forward prolongation of first tergite, found only in some females

impressed submarginal ridge — ridge formed by narrow laterotergites attached to laterosternites

S — abbreviation for sternites

T — abbreviation for tergites

Table 1. Host groups of the Australian tribes comprising the subfamily Scelioninae
Compiled mainly from Kozlov (1970a) and Masner (1976)

Tribe	Host group
Scelionini	Acrididae
Baryconini	Phaneropterinae (Tettigoniidae)
Calliscelionini	Tettigoniidae, Gryllidae
Psilanteridini	Unknown
Aradophagini	Aradidae
Neoscelionini	Unknown
Cremastobaeini	Unknown
Mantibariini	Mantidae
Platyscelionini	Phaneropterinae (Tettigoniidae)
Doddiellini	Unknown
Gryonini	Coreidae, Pentatomidae, Scutelleridae, Lygaeidae, Reduviidae, Phymatidae, Mantidae
Embiobiini	Embioptera, Araneae
Baeini	Araneae
Idrini	Araneae

Host Relationships

Scelionids display a remarkable diversity in the host groups that they attack, as well as showing a high degree of host partitioning, i.e. there is little overlap in the host groups used by different taxa within the family. This partitioning occurs at the subfamily and tribe levels, and probably also occurs at the genus and species levels. The main host groups of the Scelioninae are Orthoptera and Heteroptera, although members of this subfamily also exploit the eggs of Mantidae, Embioptera and Araneae. Lepidoptera and Heteroptera are the main host groups of the subfamily Telenominae, although some use the eggs of Diptera and Neuroptera; carabid beetles are the only known hosts of the subfamily Teleasinae. The various tribes of the Scelioninae have further partitioned their main host groups by specializing in particular families or subfamilies within the Orthoptera and Heteroptera (Table 1).

Differences between the host associations of tribes and genera often complement morphological differences. In some cases, a direct link between morphological characters and host habitats or host groups is evident, e.g. brachypterous and apterous forms are usually associated with soil or leaf litter, and the elongated ovipositor and associated modifications of the metasoma found in many genera undoubtedly represent adaptations to reach and oviposit into particular hosts.

Wing Reduction

Prevalence

Of the Australian representatives of the Scelioninae, there are only nine genera in which wing reduction has been recorded, viz *Mirotelenomus* Dodd, *Jarabambius* Galloway, *Duarina* Dodd, *Lidgbirdius* Galloway, *Ceratobaeus* Ashmead, *Idris* Foerster, *Baeus* Haliday, *Mirobaeoides* Dodd and *Mirobaeus* Dodd. Wing reduction can occur in either both sexes, e.g. *Lidgbirdius terrestris* (Dodd), or only one sex, e.g. *Baeus* spp. De-alation occurs only in the genus *Mantibaria*.

Effect on Non-alary Characters

Wing reduction in the Scelioninae is accompanied by a number of associated morphological changes. However, it is only when the wings are reduced, i.e. wings not extending farther than the posterior margin of the propodeum [micropterous forms of Naumann (1982)], that these changes are manifested. In *Duarina venustella*, the wings can extend as far as the posterior margin of T4 and morphological changes normally associated with wing reduction are not evident.

Mesosomatic Characters

In the Scelioninae, there is a tendency for the pronotum to remain unchanged in shape and size in the reduced-wing forms, cf. the Ambositrinae (Diapriidae), in which the length of the pronotal collar is longer in apterous forms than in macropterous forms (Naumann 1982). The mesosoma tends to become shorter and broader in micropterous forms and invariably the notauli are absent. The foveae, normally present between the scutum and scutellum in winged forms, are reduced in micropterous forms. No doubt these mesosomatic changes are associated with the loss of indirect flight muscles. Structures that would give the mesosoma greater strength and flexibility required in flight, are not present in reduced-wing forms.

Non-mesosomatic Characters

Also associated with a reduction in the wings is a reduction in the size of the compound eyes and the ocelli. Although there is a tendency for paler-coloured bodies in reduced-wing forms, e.g. *Lidgbirdius terrestris*, there are several examples of dark-coloured micropterous forms, e.g. *Mirotelenomus abnormis* Dodd is entirely black.

Microptery as a Taxonomic Character

Galloway (1978a) found wing length to be a reliable character in distinguishing species of *Duarina*. However, in other genera the value of microptery as a taxonomic character is open to question, e.g. Huggert (1979) has recognized both macropterous and micropterous morphs in European species of *Idris*. Such intraspecific differences have not yet been recorded from Australia.

Advantages of Reduced Wings

Most micropterous forms collected on the mainland of Australia have been found either on the floor or low vegetation of rainforests and moist gullies. One species of *Mirotelenomus*, viz *M. armatus* Dodd, was collected in moss. In habitats such as these, reduced wings would be a positive advantage in moving through the substrate. Not only would fully developed wings tend to hinder progress, but they would rapidly become stuck together by the water present and be rendered non-functional. Observations by Chambers (1976) of micropters of *Belyta depressa* Thoms. (Diapriidae) suggest that reduced wings permit limited dispersal through a feeding action. Aptery in females of species in the tribe Baeini is strongly correlated with the thick, dense eggsac surrounding the eggs of spiders. The body of species in this tribe is squat, compact and moderately streamlined. This, in conjunction with the absence of wings, probably allows these parasites to penetrate the eggsac wall to reach their host eggs.

Key to Australian Genera of Scelioninae

1. Wings completely absent 2
- Wings present, but may be reduced to small narrow flaps in which venation is obscure 4
- 2(1). Metasoma subsessile; T3 usually largest tergite, sometimes T3 and T2 subequal (Fig. 212) *Mirobaeus* Dodd ♀
- Metasoma sessile; T2 much larger than T3 3
- 3(2). Antennae 7-segmented with 4 funicle segments and unsegmented club (Fig. 201) *Baeus* Haliday ♀
- Antennae 11-segmented with 5 funicle segments and 4-segmented club (Fig. 203) *Mirobaeoides* Dodd ♀
- 4(1). Submarginal vein in hindwing absent or incomplete, short, stump-like, not attaining fore margin of wing at frenal hooks (does not include reduced-wing forms, but note *Mantibaria* wings often torn off after basal $\frac{1}{2}$) 5
- Submarginal vein in hindwing complete, reaching anterior margin at frenal hooks, at this point vein often thickened (include here all forms in which wings are very reduced and venation is obscure) 9
- 5(4). Metasoma with T2 largest tergite (Fig. 193); frons with transverse ledge (Fig. 195); forewing circular in shape with serrated distal margin and long dense cilia (Fig. 196) *Encyrtoscelio* Dodd
- Metasoma with T2 shorter than T3; frons and forewings not as above 6
- 6(5). Metasoma with suture between T2 and T3 arched forwards (Fig. 182); netrion absent *Doddiella* Kieffer
- Metasoma with suture between T2 and T3 almost straight; netrion usually well developed 7
- 7(6). Metasoma with T3 as long as T1 and T2 combined, distinctly longest of all tergites (Fig. 87); forewing venation absent or reduced to mere traces (Fig. 88); antennae 12-segmented in both sexes *Mallateleia* Dodd
- Metasoma with T3 not as long as T1 and T2 combined; forewing either veinless, or with submarginal vein present and marginal vein dilated to form pterostigma; antennae 10- or 11-segmented in ♂, 10- or 12-segmented in ♀ 8
- 8(7). Female antennae 12-segmented, ♂ antennae 10-segmented (Fig. 11); forewing with submarginal and marginal veins present, marginal vein dilated to form pseudostigma, venation sometimes very pale and indistinct (Fig. 12) *Scelio* Latreille
- Female antennae 10-segmented (Fig. 178), ♂ antennae 11-segmented; forewing veinless (Fig. 177), often torn off after basal $\frac{1}{2}$ *Mantibaria* Kirby
- 9(4). Metasoma with T2 usually distinctly longer than T3, if T2 only slightly longer than T3 then metasoma short and stocky 10
- Metasoma with T3 longer than T2, if T2 longer than T3 then metasoma distinctly elongate 17
- 10(9). Lateral ocelli with either OOL = or < OD, or OOL < LOL 11
- Lateral ocelli with either OOL > OD, or OOL = or > LOL 15

- 11(10). Scutellum deeply bidentate, projecting back over metanotum and propodeum (Fig. 187) .
 Hadronotoides Dodd
- Scutellum rounded posteriorly, neither bidentate nor projecting over propodeum 12
- 12(11). Postmarginal vein present (Fig. 184) *Gryon* Haliday
- Postmarginal vein absent 13
- 13(12). Metanotum with distinct medial prominence; eyes with dense hairs (Fig. 186)
 Gryon Haliday (*insularis* species group)
- Metanotum without medial prominence; eyes bare or with very sparse hairs 14
- 14(13). Cheeks striate; netrion carinate and closed; forewing normal with margins not parallel,
 basal vein strongly indicated (Fig. 210) *Mirobaeoides* Dodd ♂
- Cheeks without striae; netrion absent or at most indicated anteriorly by very fine line of
 foveolae; forewing margins narrow, almost parallel, basal vein absent or only lightly
 indicated (Fig. 211) *Baeus* Haliday ♂
- 15(10). OOL > LOL; submarginal vein of forewing without distinct downward curve just before
 marginal vein; basal, medial and radial veins indicated, propodeum with medial tubercle
 Neuroscelio Dodd
- OOL = LOL; submarginal vein of forewing with distinct downward curve just before
 marginal vein; basal, medial and radial veins not indicated; propodeum without medial
 tubercle 16
- 16(15). Scutellum flattened in lateral view, not overhanging metanotum which is armed with medial
 spine; body short and flattened; eyes small (Fig. 192) *Mirotelenomus* Dodd
- Scutellum convex in lateral view, overhanging metanotum which is unarmed; body cylindri-
 cal but not elongate; eyes not particularly small (Fig. 185)
 Gryon Haliday (*festivus* species group)
- 17(19). Female antennae 7- or 8-segmented with club-shaped terminal segment [unsegmented (Fig.
 201) or with 3 weakly marked sutures (Fig. 205)]; ♂ antennae 12-segmented, rarely 8-,
 9-, 10- or 11-segmented; marginal vein punctiform, postmarginal vein usually absent;
 skaphion never developed 18
- Female antennae usually 12-segmented [11-segmented in *Embidobia* (Fig. 199)], with
 6-segmented club [4-segmented in *Cremastobaeus* (Fig. 173) and *Embidobia* and
 5-segmented in *Doddiella* (Fig. 183) and *Palpoteleia* (Fig. 59), club not differentiated in
Ladora (Fig. 120)]; ♂ antennae 12-segmented; marginal vein frequently long,
 postmarginal vein often present; skaphion sometimes well developed 23
- 18(17). Head elongate in anterior aspect, long in buccal region (Fig. 209); propodeum with 2 long
 posteriorly directed spines (Fig. 222); ♀ T1 with horn compressed from sides (Fig. 221)
 Odontacolus Kieffer
- Head not elongate in anterior aspect, not long in buccal region (Fig. 207); propodeum with-
 out long spines though sometimes with small teeth; if ♀ T1 with horn, then cylindrical
 in shape, rarely flattened apically 19
- 19(18). Frons with expanded keel-like carina reaching median ocellus; distal venation of forewings
 blurred *Hickmanella* Austin
- Frons with small carina, rarely reaching median ocellus; distal venation of forewings clearly
 delineated 20
- 20(19). Propodeum posteriorly either flattened, indented, or excavated to form cavity, with near
 vertical or diverging laminae, often with small dorsal teeth; ♀ T1 expanded into dorsal
 hump or cylindrical horn (Figs 223, 224; ♂ T1 anterodorsally inflected
 Ceratobaeus Ashmead
- Propodeum posteriorly neither flattened, indented, nor excavated, horizontal surface com-
 plete, dorsally with lateral and medial teeth; T1 flat, rarely anterodorsally inflected 21
- 21(20). Antennae 7-segmented with large unsegmented club (Fig. 201) *Idris* Foerster ♀
- Antennae 10- to 12-segmented without club 22
- 22(21). Antennae 11- or 12-segmented, rarely 10-segmented; f9 and f10 nearly always approximated
 (Fig. 206) *Idris* Foerster ♂
- Antennae 12-segmented; f9 and f10 not approximated but freely articulated (Fig. 202) ..
 Mirobaeus Dodd ♂
- 23(17). Frons with depression margined at least dorsally by sharp carina 24
- Frons flat or convex, rarely with shallow unmargined depression 26
- 24(23). Antennae with f1-f3 dorsally serrate, f2 and f3 separated only by oblique suture (Figs. 173,
 174); ♀ antennae with abrupt compact 4-segmented club (Fig. 173); frons with transverse
 carina; metasomal segments constricted at sutures (Figs 175-176)

		<i>Cremastobaeus</i> Ashmead	
	Antennae with f1-f3 not serrate, f2 and f3 separated by constriction; ♀ antennae with 5- or 6-segmented club; frons without transverse carina; metasoma not constricted at sutures		25
25(24).	Postmarginal vein of forewing present (Fig. 17); vertex cut off posteriorly, joining occiput abruptly; apex of metasoma often with 2 spikes	<i>Baryconus</i> Foerster	
	Postmarginal vein of forewing absent (Fig. 14); vertex curving smoothly to join occiput; apex of metasoma without spikes	<i>Oxyscelio</i> Foerster	
26(23).	Metanotum medially produced, propodeum armed		27
	Either metanotum medially produced or armed and propodeum unarmed, or metanotum not expanded or armed and propodeum armed		28
	Both metanotum and propodeum unarmed, appearing as 2 simple strips not enlarged or medially produced		51
27(26).	Skaphion present (Fig. 92)	<i>Opisthacantha</i> Ashmead	
	Skaphion absent (Fig. 44)	<i>Crama</i> Galloway, gen. nov. ♀	
28(26).	Propodeum medially armed or produced; metanotum unarmed		29
	Propodeum unarmed, simple; metanotum medially armed or produced		34
29(28).	Propodeum medially produced to form leaf-like triangular plate overlapping T1		
		<i>Phoenoteleia</i> Kieffer ♂ *	
	Propodeum either medially or laterally bispinose		30
30(29).	Skaphion present (Fig. 93)	<i>Styloteleia</i> Kieffer ♂	
	Skaphion absent		31
31(30).	Forewing fully developed with marginal vein as long as stigmal vein, if shorter then body over 5 mm; apex of metasoma in ♂ bispinose or deeply emarginate with posterolateral corners acute	<i>Triteleia</i> Kieffer ♂	
	Forewing either reduced (i.e. extending no further than posterior margin of T2) or fully developed with marginal vein shorter than stigmal vein, if approximately equal then body less than 4 mm; apex of metasoma in ♂ not bispinose or deeply emarginate		32
32(31).	Head, scutum and scutellum smooth and shining; notauli present		
		<i>Lispoteleia</i> Galloway, gen. nov. ♀	
	Head, scutum and scutellum densely punctate; notauli absent		33
33(32).	Propodeum usually medially contiguous, bispinose (Fig. 32); if divided then anterodorsal corners of medial excavation bispinose (♀ only) (Fig. 26); ♀ T1 with well-developed horn	<i>Probaryconus</i> Kieffer	
	Propodeum medially divided with spine on each dorsal, posterolateral corner; ♀ T1 with inconspicuous prominence	<i>Jarabambius</i> Galloway ♀	
34(28).	Metanotum with 2 teeth or spines		35
	Metanotum with 1 or 3 spines, or medially produced to form plate		39
35(34).	Skaphion present (note, in some species of <i>Calotelea</i> rim of skaphion weak, and visible only in lateral aspect)		36
	Skaphion absent		37
36(35).	Forewing often with dark bands, marginal vein elongate, almost as long as stigmal vein (Fig. 91)	<i>Calotelea</i> Westwood	
	Forewing clear, marginal vein short, much shorter than stigmal vein (Fig. 96)	<i>Nyleta</i> Dodd	
37(35).	Eyes bare; submarginal vein of forewing well removed from anterior margin, postmarginal vein absent (Fig. 14)	<i>Oxyscelio</i> Kieffer	
	Eyes hairy; submarginal vein of forewing not remote from anterior margin, postmarginal vein usually present		38
38(37).	Eyes small, temples and cheeks very large (Fig. 33); OOL ≥ OD; notauli absent or only indicated posteriorly	<i>Paridris</i> Kieffer†	
	Eyes moderately large, temples and cheeks broad (Fig. 43); OOL < OD; notauli complete (Fig. 43)	<i>Neoparidris</i> Galloway, gen. nov.	
39(34).	Scutellum bispinose, 2 teeth laterally situated		40
	Scutellum unarmed		41
40(39).	Eyes bare; postmarginal vein of forewing well developed (Fig. 20) ..	<i>Dichoteleas</i> Kieffer	
	Eyes with long scattered hairs; postmarginal vein of forewing absent (Figs 154, 155)		
		<i>Neoscelio</i> Dodd	

* Only female recorded from Australia; see couplet 65.

† Species of *Paridris* with armed metanotum not yet recorded from Australia.

41(39).	Postmarginal vein of forewing absent or reduced to stump	42
	Postmarginal vein of forewing well developed	44
42(41).	Metanotum medially expanded to form almost square process, usually dorsally excavate with raised lateral margins and emarginate posterior margin (Fig. 14) <i>Oxyscelio</i> Kieffer	
	Metanotum medially with sharp spine or blunt tubercle	43
43(42).	Metanotum with short sharp medial spine (Fig. 95); marginal vein of forewing often thickened, clearly shorter than stigmal vein	<i>Psilanteris</i> Kieffer
	Metanotum with small blunt medial tubercle; marginal vein of forewing not thickened, usually as long as or longer than stigmal vein	<i>Duarina</i> Dodd
44(41).	Metanotum medially expanded, without spines	45
	Metanotum not medially expanded, but with 1-3 spines	49
45(44).	Metanotum with transparent almost vertical medial scale which in ♀ usually medially emarginate to contain horn of T1 (Fig. 91)	<i>Calotelea</i> Westwood
	Metanotum with different non-transparent medial structure	46
46(45).	Metanotum medially expanded to form thin rectangular plate almost as wide in middle as at corners	47
	Metanotum medially expanded to form semicircular or triangular plate	48
47(46).	Antennae either 6-segmented club (♀) or club absent and funicle segments submoniliform, f5 usually 0.5 × length of scape	<i>Calliscelio</i> Ashmead
	Antennae without club, funicle segments long and slender, f5 longer than scape (Figs 48, 52)	<i>Crama</i> Galloway, gen. nov. ♂
48(46).	Postmarginal vein of forewing at least 2 × length of stigmal vein (Fig. 16); metasoma subequally segmented; ♀ with 7-segmented club (Fig. 15)	<i>Bracalba</i> Dodd
	Postmarginal vein of forewing at most only slightly longer than stigmal vein (Figs 21, 24); metasoma with T3 longer than T1 and T2 combined; ♀ with 6-segmented club (Fig. 23)	<i>Anteromorpha</i> Dodd
49(45).	Metanotum with 3 spines, medial spine usually largest (Fig. 89); marginal vein of forewing longer than stigmal vein	<i>Fusicornia</i> Risbec
	Metanotum with single spine; marginal vein of forewing as long as or shorter than stigmal vein	50
50(49).	Female T1 with well-developed horn; forewing often with dark bands (Fig. 91); sexes dichromatic, ♀ metasoma yellow, often with paired dark lateral patches on each segment, ♂ light brown to black	<i>Calotelea</i> Westwood
	Female T1 without horn but sometimes with small hump; forewing usually without bands (Fig. 92); sexes not dichromatic; ♀ metasomal colour pattern not as above	<i>Opisthacantha</i> Ashmead
51(26).	Antennae 11-segmented (Figs 198, 199)	<i>Embidobia</i> Ashmead ♀
	Antennae 12-segmented	52
52(51).	Skaphion well developed	53
	Skaphion absent	58
53(52).	Laterotergites very wide, submarginal ridge not well impressed; hind margin of forewing with angular process in basal 1/3; ♀ antennae with abrupt compact 4-segmented club, segments of club often poorly separated	<i>Tiphodytes</i> Bradley *
	Laterotergites narrow, submarginal ridge well impressed; hind margin of forewing straight; ♀ antennae with clearly segmented club	54
54(53).	Skaphion posteriorly margined by weak rim; sexes dichromatic, ♀ metasoma often yellow with paired dark lateral patches on each segment (Fig. 91), ♂ light brown to black ..	<i>Calotelea</i> Westwood
	Skaphion posteriorly margined by sharp rim; sexes not dichromatic, ♀ metasomal colour pattern not as above	55
55(54).	Female with large horn on T1, reaching to scutellum; antennae with 5-segmented club; submarginal vein of forewing with distinct downward curve before reaching anterior margin	<i>Styloteleia</i> Kieffer ♀
	Female T1 with distinct bulge or flat; ♀ antennae with 6-segmented club; if visible, submarginal vein of forewing without downward curve before reaching anterior margin	56

* Recently recorded from Australia (Masner, personal communication) but specimens not yet examined by authors.

- 353.** Cheeks and frons above malar groove without fan-like striae *Duta* Nixon
 Cheeks and/or lower frons above malar groove with fan-like striae, sometimes partly
 obscured by background sculpture 57
- 354.** Metasomal tergites all with reticulate sculpturing, none with longitudinal striae; ♀ wings
 reduced to small narrow flaps with no visible venation *Lidgbirdius* Galloway
 Metasoma T1 and T2 with longitudinal striae (Figs 112, 114, 117); ♀ wings either fully
 developed or reduced (Figs 112, 115), if reduced then not forming small narrow flaps,
 venation always evident *Genatropis* Galloway, gen. nov.
- 355.** Postmarginal vein of forewing either absent or reduced to stump 59
 Postmarginal vein of forewing well developed, as long as marginal vein or longer 60
- 356.** Eyes bare (Fig. 179); body strongly flattened dorsoventrally; scape of ♀ antennae expanded
 to be almost triangular in shape, produced to form spine (Fig. 180) *Platyscelio* Kieffer
 Eyes hairy (Fig. 33); body not dorsoventrally flattened; scape of ♀ antennae not expanded
 (Fig. 35) *Paridris* Kieffer
- 357.** Forewing with marginal vein elongate, as long as stigmal vein or longer 61
 Forewing with marginal vein shorter than stigmal vein 63
- 358.** Body dorsoventrally flattened; metasoma moderately elongate (Fig. 118); ♀ antennae with-
 out club (Fig. 120) *Ladora* Masner & Huggert ♀
 Body not dorsoventrally flattened; metasoma elongate (Fig. 18); ♀ antennae with well-
 defined 6-segmented club (Fig. 19) 62
- 359.** Female T6 triangular (Fig. 18), often pointed at apex, not compressed laterally; ♂ metasoma
 apically bispinose, or at least with pointed corners *Triteleia* Kieffer
 Female T6 wedge-shaped, laterally compressed, ♂ metasoma with apical segment mitre-
 shaped or with 1 medial spine, never bispinose *Macroteleia* Westwood
- 360.** Eyes bare 64
 Eyes hairy 66
- 361.** T2 and T3 subequal; mesosoma with scutum and scutellum smooth and shining
 Lispoteleia Galloway, gen. nov. ♂
 T2 clearly longer than T3; mesosoma with at least anterior $\frac{1}{2}$ of scutum densely sculptured
 65
- 362.** Female T1 with long horn fitting into furrow extending to scutum (Fig. 25)
 Phoenoteleia Kieffer ♀
 Female with no indication of horn or protuberance on T1 (Fig. 62)
 Yunkara Galloway, gen. nov. ♀
- 363.** Cheeks with convex white blister between lower margin of eyes and base of mandibles (Fig.
 58) *Palpoteleia* Kieffer
 Cheeks without blister *Embidobia* Ashmead ♂

Tribes, Genera and Species of Australian Scelioninae

Tribe SCELIONINI Foerster

Scelionini Foerster, 1856, p. 27; Ashmead, 1893, p. 208; Masner, 1956, p. 107; Kozlov, 1970a,
 p. 119; Hellen, 1971, p. 16; Masner, 1976, p. 14.

Type-genus *Scelio* Latreille, 1805.

Diagnosis

Frons rarely with depression, margined by carina; palpal formula 3-2; antennae
 12-segmented in ♀, 10-segmented in ♂ with tyloid on f3; submarginal vein in
 forewing remote from anterior margin; marginal vein often dilated into
 pterostigma; hindwing with incomplete submarginal vein not reaching frenal
 hooks; tibial spur formula 1-1-1; metasoma elongate, subequally segmented; ♀
 with 6 tergites and 6 sternites; ♂ with 8 tergites and 7 sternites.

In Australia, the only representative of the tribe Scelionini is *Scelio* Latreille.

Genus *Scelio* Latreille
(Figs 11-13)

Scelio Latreille, 1805, p. 226.

Aleria Marshall, 1874, p. 208. Synonymy: Kieffer, 1926, p. 308.

Caloptenobia Riley, 1878, p. 306. Synonymy: Kieffer, 1926, p. 308.

Discelio Kieffer, 1908a, pp. 116, 124. Synonymy: Muesebeck and Walkley, 1956, p. 347.

Dichancantha Kieffer, 1908a, pp. 118, 147; Dodd, 1920, p. 348. Synonymy: Muesebeck and Walkley, 1956, p. 346.

Enneascelio Kieffer, 1910b, p. 293; Kieffer, 1926, p. 347. Synonymy: Masner, 1965, p. 92.

Type-species *Scelio rugulosus* Latreille, 1805.

Discussion

The genus *Scelio* is distinguished from all other genera of Australian Scelioninae by features of the antennae and wings. The antennae are 12-segmented in the female and 10-segmented in the male. The submarginal vein of the forewing does not attain the anterior margin but terminates in a more or less circular pterostigma. Usually there is a short stigmal vein but sometimes this is absent. Frequently the venation is very pale and almost indistinct. These antennal and venational characteristics are also found in *Synoditella* Muesebeck and *Sceliocerdo* Muesebeck, but neither of these genera has been recorded from Australia. Muesebeck (1972) provides a key that will separate *Scelio* from these genera. Further characteristics that define *Scelio* are given by Masner (1976) and Muesebeck (1972). The genus *Scelio* is known to occur throughout the world in a wide range of climatic zones. Numerous host records indicate that species of *Scelio* are all egg-parasites of acridid grasshoppers and as such are probably an important factor in the regulation of grasshopper and locust populations. From the point of view of number of species, *Scelio* is considered to be one of the largest and most successful groups within the Scelioninae. Individuals within a species are frequently abundant and there are many records of *Scelio* parasites being observed in large numbers on locust egg beds (e.g. Dodd 1927b; Vinokurov 1927).

Species of Scelio Described from Australia

1. *S. amoenus* Dodd, 1927b, p. 159
2. *S. asperatus* Dodd, 1927b, p. 167
3. *S. australiensis* Kieffer, 1905a, p. 100
4. *S. bipartitus* Kieffer, 1907a, p. 206
5. *S. chortoicetes* Froggatt, 1910, p. 35
6. *S. concinnus* Dodd, 1927b, p. 145
7. *S. contractus* Dodd, 1927b, p. 154
8. *S. cruentatus* Dodd, 1914c, p. 112
9. *S. diemenensis* Dodd, 1914c, p. 114
10. *S. erythropus* Dodd, 1920, p. 345
11. *S. flavicornis* Dodd, 1913a, p. 136
12. *S. fulgidus* Crawford, 1911, p. 269
13. *S. fulvithorax* Dodd, 1927b, p. 149
14. *S. gobar* Walker, 1839, p. 61
15. *S. ignobilis* Dodd, 1927b, p. 172
16. *S. improcerus* Dodd, 1927b, p. 155
17. *S. nigricornis* Dodd, 1913a, p. 136

10. *S. nigriscutellum* Dodd, 1913a, p. 137
11. *S. nigriscutellum pretiosus* Dodd, 1927b, p. 149
12. *S. nigrobrunneus* Dodd, 1927b, p. 156
13. *S. notabilis* Dodd, 1927b, p. 158
14. *S. orientalis* Dodd, 1915a, p. 29
15. *S. parvicornis* Dodd, 1914c, p. 113
16. *S. perspicuus* Dodd, 1927b, p. 140
17. *S. perspicuus littoralis* Dodd, 1927b, p. 141
18. *S. perspicuus affrons* Dodd, 1927b, p. 152
19. *S. planithorax* Dodd, 1927b, p. 174
20. *S. punctaticeps* Dodd, 1914a, p. 77
21. *S. striatifacies* Dodd, 1914c, p. 115
22. *S. sulcaticeps* Dodd, 1927b, p. 137
23. *S. varipunctatus* Dodd, 1915a, p. 29
24. *S. varipunctatus claripes* Dodd, 1927b, p. 140

Tribe BARYCONINI Kozlov

Baryconini Kozlov, 1970a, p. 118; Masner, 1976, p. 20.

Type-genus *Baryconus* Foerster, 1856.

Diagnosis

Frons usually with depression margined by carina; palpal formula 4-2; antennae 12-segmented in both sexes; ♂ with tyloid on f3; marginal vein of forewing not dilated; hindwing with complete submarginal vein reaching frenal hooks; tibial spur formula 1-1-1; metasoma elongate, subequally segmented, T2 or T3 largest metasomal tergites; ♀ with 6 tergites and 6 sternites, T7 internal; ♂ with 8 tergites and 7 sternites.

Discussion

Only in the genus *Baryconus* Foerster is the frons developed as described by Kozlov (1970a), and so a depression on the frons can no longer be considered of critical importance in defining this tribe. Species of *Bracalba* Dodd possess an unmargined depression, and in Australian species of *Oxyscelio* Kieffer the development of the frontal impression and of its associated carina are quite variable. In Australia, the tribe Baryconini is represented by three genera, viz *Baryconus* Foerster, *Bracalba* Dodd and *Oxyscelio* Kieffer.

Genus *Baryconus* Foerster

(Fig. 17)

Baryconus Foerster, 1856, pp. 101, 104.

Hoploteleia Ashmead, 1893, pp. 210, 211, 227. Synonymy: Muesebeck and Walkley, 1956, p. 360.

Rhacoteleia Cameron, 1905, p. 73. Synonymy: Muesebeck and Walkley, 1956, p. 395.

Trichanteris Kieffer, 1910a, p. 88. Synonymy: Masner, 1976, p. 21.

Apegusoneura Cameron, 1912, pp. 15, 69. Synonymy: Muesebeck and Walkley, 1956, p. 331.

Ivondrella Risbec, 1956a, p. 257. Synonymy: Masner, 1976, p. 21.

Type-species *Baryconus floridanus* Ashmead, 1887.

Discussion

Despite the world-wide distribution of *Baryconus* and the many described species, very little is known about their hosts. Before Bin (1976) presented biologi-

cal data, only two brief records were available. Mani (1937) recorded the breeding of *B. gravelyi* (Mani) from long-horned grasshopper eggs laid in sugar cane in Madras, and Dodd (1920) stated that *B. orthopterae* (Dodd) was bred from the eggs of an orthopteran on a leaf in Sierra Leone. Bin (1976) presented host data for two species of *Baryconus*, viz *B. montanus* (Szabo) and *B. europaeus* (Kieffer). In these records, the eggs of the host were laid between the two faces of a leaf. The flattened disc-shaped eggs and the manner in which they were laid strongly suggests that they belong to a species of *Phaneroptera* (Tettigoniidae, Orthoptera). However, it seems most unlikely that all species of *Baryconus* are restricted to this tettigoniid genus.

In Australia, *Baryconus* is commonly collected and comparatively rich in species (10 described species), yet only two species of *Phaneroptera* have been described from Australia, viz *P. gracilis* Burmeister and *P. brevis* Serville (Ragge 1956). However, the phytophagous Phaneropterinae is the largest subfamily of the Tettigoniidae in Australia and accounts for nearly half the Australian tettigoniid fauna, which consists of approximately 300 species (Key 1970, p. 335). Bin (1976) points out that apart from *Phaneroptera* there are other genera of Phaneropterinae that are known to oviposit between the surface of leaves. Most phaneropterines, however, oviposit on twigs or leaves, laying their eggs in a serial sequence (Rentz, personal communication). There also appear to be no obvious morphological adaptations in species of *Baryconus* that would suggest that they are restricted to the very flattened eggs of *Phaneroptera*. It appears likely, therefore, that species of *Baryconus* will also parasitize those eggs laid on the surface of a leaf or twig. Dodd's record for *B. orthopterae* states that the eggs are laid on the leaf and not in the leaf. It may be that *Baryconus* is restricted to an egg of a particular shape or appearance whether it be laid on the surface of or inside the leaf (morphotypical specialization — Kozlov 1970b).

The Australian species of *Baryconus* were previously recorded in the genus *Hoploteleia*, which is now considered to be a synonym of *Baryconus* (Muesebeck and Walkley 1956). Dodd interpreted *Baryconus* in a very broad sense and included in the genus species that are now placed in the genera *Calliscelio* Ashmead, *Calotelea* Westwood, *Probaryconus* Kieffer, *Palpoteleia* Kieffer, *Paridris* Kieffer, *Opisthacantha* Ashmead and *Duta* Nixon (Galloway 1976).

Species of Baryconus Described from Australia

1. *B. amicus* (Dodd), 1928, p. 49
2. *B. atricornis* (Dodd), 1913a, p. 134
3. *B. australicus* (Dodd), 1913a, p. 133
4. *B. australicus occidentalis* (Dodd), 1914c, p. 96
5. *B. elevatus* (Dodd), 1928, p. 46
6. *B. foederatus* (Dodd), 1928, p. 48
7. *B. gracilicornis* (Dodd), 1914c, p. 97
8. *B. persimilis* (Dodd), 1914c, p. 96
9. *B. pulchricornis* (Dodd), 1913a, p. 134
10. *B. sculpturatus* (Dodd), 1914c, p. 95

Genus *Bracalba* Dodd
(Figs 15, 16)

Bracalba Dodd, 1930c, p. 78.

Type-species *Bracalba laminata* Dodd, 1930c.

Discussion

The genus *Bracalba* was erected by Dodd (1930c) to accommodate stout-bodied, heavily sculptured scelionids with the habitus of *Baryconus* Foerster, *Oxyscelio* and *Scelio* Latreille. In addition to the generic characters described by Dodd (1930c), the following will serve to define the genus further and confirm its position in the tribe Baryconini: palpal formula 4-2; mandibles bidentate; tyloid in ♂ located on f3; skaphion absent; netrion well developed; hindwing with complete submarginal vein reaching to frenal hooks; 6 tergites and 6 sternites in ♀; 8 tergites (only 7 tergites dorsally visible) and 7 sternites in ♂.

Bracalba closely resembles Australian species of *Oxyscelio* from which it may be distinguished by the long postmarginal vein in the forewing, very hairy eyes, the poorly differentiated antennal club in the female, and shape of the metanotal plate. From *Baryconus*, *Bracalba* differs in the form of the metanotum, propodeum and shape of the metasoma and the relative development of the depression on the frons. *Scelio* has no more than a superficial resemblance to *Bracalba* and may be distinguished on a variety of criteria including venation of the fore- and hindwings, pubescence of eyes, and antennae.

Species of *Bracalba* Described from Australia

1. *B. cuneata* Dodd, 1930c, p. 80
2. *B. laminata* Dodd, 1930c, p. 79
3. *B. nigrescens* (Dodd), 1920, p. 329

Genus *Oxyscelio* Kieffer
(Fig. 14)

Oxyscelio Kieffer, 1907b, p. 310.

Dicroteleia Kieffer, 1908b, p. 92. Synonymy: Dodd, 1930c, p. 72.

Camptoteleia Kieffer, 1913c, p. 387. Synonymy: Dodd, 1930c, p. 72.

Xenoteleia Kieffer, 1913c, p. 390. Synonymy: Dodd, 1930c, p. 72.

Type-species *Oxyscelio foveatus* Kieffer, 1907b.

Discussion

Of the 14 Australian species described in the genus *Oxyscelio*, 10 were first described in the genus *Sceliomorpha* Ashmead (Dodd 1907, 1913a, 1913c, 1914c, 1920), two in *Dicroteleia* Kieffer (Dodd 1914c) and one in *Hoploteleia* Ashmead (Dodd 1913a). Girault (1926b) described one species in the genus *Scelio* Latreille. These were first shown to be an homogeneous group by Dodd (1930c). After examining long series of Australian specimens of *Oxyscelio*, Dodd (1930c) was also able to show the variability of characters that had previously been thought to be of value for generic distinctions (e.g. the presence or absence of a medial carina on the mesoscutum). A generic diagnosis for *Oxyscelio* is presented by Masner (1976, p. 22).

Species of Oxyscelio Described from Australia

1. *O. atricoxa* (Dodd), 1914c, p. 104
2. *O. concoloripes* (Dodd), 1914c, p. 104
3. *O. flavipes* (Kieffer), 1907a, p. 296
4. *O. glabriscutellum* (Dodd), 1914c, p. 106
5. *O. grandis* (Dodd), 1913a, p. 176
6. *O. hyalinipennis* (Dodd), 1913c, p. 165
7. *O. magniclavus* (Dodd), 1914c, p. 103
8. *O. mirellus* (Dodd), 1920, p. 340
9. *O. montanus* (Dodd), 1913c, p. 165
10. *O. nigriclavus* (Dodd), 1914c, p. 104
11. *O. nigricoxa* (Dodd), 1913c, p. 165
12. *O. rugulosus* (Dodd), 1913a, p. 139
13. *O. shakespearei* (Girault), 1926b
14. *O. solitarius* (Dodd), 1914c, p. 105

Tribe **CALLISCELIONINI** Masner

Caloteleini Kozlov, 1970a, p. 118.

Calliscelionini Masner, 1976, p. 25.

Type-genus *Calliscelio* Ashmead, 1893.

Diagnosis

Frons without depression, if shallow depression present then not margined by carina; palpal formula 4-2 but reduced in some genera (e.g. 2-1 in *Palpoteleia*); antennae 12-segmented in both sexes, ♂ with tyloid on f3; marginal vein of forewing not expanded to form stigma; hindwing with complete submarginal vein reaching frenal hooks; skaphion not developed; netrion well developed; tibial spur formula 1-1-1; metasoma elongate, T3 usually longest metasomal tergite; ♀ with 6 tergites and 6 sternites, T7 internal and exerted with ovipositor; ♂ with 8 tergites and 7 sternites.

Discussion

In Australia, the Calliscelionini is the largest tribe of the Scelioninae and is represented by 14 genera.

Genus **Macroteleia** Westwood

Macroteleia Westwood, 1835, p. 70.

Baeoneura Foerster, 1856, pp. 100, 102. Synonymy: Muesebeck and Walkley, 1956, p. 335.

Parapegus Kieffer, 1908a, p. 148. Synonymy: Masner, 1976, p. 27.

Prosapegus Kieffer, 1908a, pp. 121, 147. Synonymy: Masner, 1964, p. 137.

Stictoteleia Kieffer, 1926, pp. 272, 546. Synonymy: Masner, 1964, p. 137.

Type-species *Macroteleia cleonymoides* Westwood, 1835.

Discussion

A revision of the Australian species of *Macroteleia* is given by Galloway (1978b).

Species of Macroteleia Described from Australia

1. *M. arctica* Galloway, 1978b, p. 298
2. *M. donaldsoni* Galloway, 1978b, p. 304
3. *M. magna* Dodd, 1913a, p. 149
4. *M. torresia* Dodd, 1913a, p. 150

Genus *Triteleia* Kieffer

(Figs 18, 19)

Triteleia Kieffer, 1906, p. 264.

Cacellus sensu Dodd, 1915a, p. 27; Dodd, 1915b, p. 445; Dodd, 1916, p. 22. Synonymy: Masner, 1976, p. 28.

Macroteleia sensu Dodd, 1915a, p. 13; Dodd, 1915b, p. 445; Dodd, 1914c, p. 100. Synonymy: Dodd, 1933, pp. 84, 98.

Prosapegus sensu Dodd, 1933, p. 75. Synonymy: Masner, 1976, p. 28.

Discogeriscelio Szabo, 1956, p. 151. Synonymy: Masner, 1976, p. 28.

Type-species *Triteleia punctaticeps* Kieffer, 1906.

Discussion

All Australian species of *Triteleia* were originally classified by Dodd (1933) in the genus *Prosapegus* Kieffer. Masner (1964) determined that characters used to distinguish *Prosapegus* and *Macroteleia* Westwood were insufficient, and after examining the type of species of *Prosapegus* (viz, *P. elongatus* Ashmead) concluded that *Prosapegus* was a synonym of *Macroteleia*. In so doing, he suggested that perhaps the Australian species of *Prosapegus* constituted a new genus. The Australian species subsequently proved to belong to *Triteleia* Kieffer (Masner 1976).

Triteleia is characterized by robust, elongate species that closely resemble species of *Macroteleia*. The New Guinea species *T. violacea* (Dodd) is the largest recorded scelionid and *T. gigantea* (7.5 mm) and *T. insignis* (up to 7.00 mm) are the largest representatives of the Scelioninae in Australia. Specimens are frequently encountered along the eastern coast of Australia, especially in the warmer parts of Queensland and also west of the Great Dividing Range, particularly along banks of rivers and creeks. The genus is well represented in Australia, where 16 species have already been described.

Species of Triteleia Described from Australia

1. *T. acculta* (Dodd), 1933, p. 102
2. *T. augusta* (Dodd), 1915a, p. 27
3. *T. discissa* (Dodd), 1933, p. 86
4. *T. distincta* (Dodd), 1914c, p. 100
5. *T. duris* (Walker), 1839, p. 61
6. *T. extensa* (Dodd), 1933, p. 93
7. *T. fissilis* (Dodd), 1933, p. 100
8. *T. fuscicarpa* (Dodd), 1916, p. 24
9. *T. gigantea* (Dodd), 1915a, p. 28
10. *T. illustris* (Dodd), 1933, p. 94
11. *T. infusa* (Dodd), 1933, p. 91
12. *T. insignis* (Dodd), 1933, p. 87
13. *T. nigriscapa* (Dodd), 1915a, p. 13
14. *T. regalis* (Dodd), 1915b, p. 445
15. *T. solita* (Dodd), 1933, p. 101
16. *T. valida* (Dodd), 1933, p. 89

Genus *Dichoteleas* Kieffer
(Fig. 20)

Dichoteleas Kieffer, 1907a, p. 297; Dodd, 1926b, p. 369.

Type-species *Dichoteleas rugosus* Kieffer, 1907a.

Distribution

In Australia, *Dichoteleas* is an infrequently collected genus that appears to be restricted to the tropical areas of northern Queensland.

Discussion

Dichoteleas is characterized by large bare eyes, which leave the head with almost no temples. The genus may also be recognized by the presence of two teeth on the lateral scutellum, a smaller medial tooth on the metanotum, a short marginal vein and a well-developed postmarginal vein in the forewing. It bears a superficial resemblance to *Neoscelio* Dodd.

Three species of *Dichoteleas* have been recorded from Australia. Dodd (1926b) distinguished *D. rugosus* Kieffer and *D. subcoeruleus* Dodd by colour, length of fl in the female antenna, sculpturing of both median lobe of scutum and T2-T4. Applying these criteria to Szabo's (1971) description of *D. pappi* and especially his illustration of the female antenna, it would appear that *D. pappi* is a female of *D. rugosus*. The holotype female of *D. pappi* and the holotype male of *D. rugosus* were both collected from Mackay, Queensland. This synonymy, however, cannot be confirmed until the type of *D. pappi* is examined.

Species of *Dichoteleas* Described from Australia

1. *D. pappi* Szabo, 1971, p. 319
2. *D. rugosus* Kieffer, 1907a, p. 297
3. *D. subcoeruleus* Dodd, 1926b, p. 371

Genus *Anteromorpha* Dodd
(Figs 21-24)

Anteromorpha Dodd, 1913a, p. 145.

Govinda Nixon, 1933, p. 465. Synonymy: Kozlov, 1971, p. 54; Masner, 1976, p. 31.

Aegyptoscelio Priesner, 1951, p. 133. Synonymy: Kozlov, 1971, p. 54; Masner, 1976, p. 31.

Afroscelio Risbec, 1956b, p. 827. Synonymy: Kozlov, 1971, p. 54; Masner, 1976, p. 31.

Type-species *Anteromorpha australica* Dodd, 1913a.

Discussion

The genus *Anteromorpha* was erected by Dodd (1913a) to accommodate *A. australica* Dodd. An examination by Galloway of paratypes of the South African species *Govinda mila* Nixon, *G. incerta* Nixon and *G. nona* Nixon has confirmed that all three species also belong to the genus *Anteromorpha*. No host records are available for any Australian species of *Anteromorpha*, but an undescribed species from Uganda was reared from the eggs of a pentatomid bug *Antestia lineaticollis* Stal (Masner 1976). *Antestia* spp. are also known to occur in Australia (QDPI records) and may well be the host for Australian species of *Anteromorpha*.

Generic Description (based on Australian species)

Head in dorsal view transverse, approximately $2 \times$ as wide as long; occipital margin concave; frons evenly convex; clypeus wide with pointed corners; mandibles large, bidentate; palpal formula 4-2; distance between inner orbital margins greater than $0.5 \times$ head width; eyes slightly pubescent; lateral ocelli either touching eye margins or $OOL < OD$; antennae 12-segmented in both sexes with 6-segmented club in ♀, submoniliform in ♂.

Mesosoma in dorsal view slightly longer than greatest width, in lateral view longer than high, dorsally almost flat; pronotum laterally narrowly visible; scutum with anterior margin broadly rounded; skaphion and notauli absent; scutellum rather large, approximately rectangular in shape with posterior margin slightly shorter than anterior margin; metanotum medially expanded to form triangular or spine-like process shorter than scutellum, projecting over propodeum as far as or just beyond posterior margin; propodeum short, posterior margin almost straight formed by transverse carina, which frequently fails medially, angled at posterolateral corners to form short teeth; mesopleura with large impression; metapleura with transverse furrow at $0.5 \times$ length; legs slender; hind basitarsi in ♂ not swollen.

Forewings extending to at least posterior margin of T3, marginal cilia moderately short, discal cilia fine and dense; submarginal vein in its distal $\frac{1}{3}$ curving away before joining costa, marginal vein shorter than stigmal vein which is long and very oblique, postmarginal vein present, basal and medial veins absent.

Metasoma slightly longer than head and mesosoma combined, $2 \times$ as long as greatest width, only slightly narrowed at base; T1 subsessile, transverse without prominence in ♀; T2 transverse longer than T1; T3 also transverse longer than T1-T2 or T4-T6 combined.

Key to Australian Species of *Anteromorpha*

- T1 without lateral depressions; forewings extending almost to apex of metasoma; metanotal plate broadly triangular in shape (Fig. 24) *australica* Dodd
 T1 with lateral depressions; forewings extending just beyond posterior margin of T3; metanotal plate acutely triangular, almost spine-like in shape (Fig. 21) *depressa* Galloway, sp. nov.

***Anteromorpha australica* Dodd**

(Figs 22-24)

Anteromorpha australica Dodd, 1913a, p. 146; Dodd, 1915a, p. 24; Kieffer, 1926, p. 445; Dodd, 1928, p. 38; Galloway, 1976, p. 85.

Anteromorpha assimilis Dodd, 1913a, p. 146; Kieffer, 1926, p. 446; Dodd, 1928, p. 38.

Govinda mila Nixon, 1933, p. 472; syn. nov. Galloway.

Types

Holotype ♀ of *A. australica* could not be located; allotype of *A. australica* (slide of head, antennae and forewings missing), Cooktown, Queensland, A. P. Dodd, 11383, SAM. Holotype ♂ of *A. assimilis*, only metasoma present on tag (slide of antennae and forewings missing), Gordonvale, Queensland, A. P. Dodd, 11384, SAM.

Paratype ♂ of *G. mila* Nixon, Mossel Bay, Cape Province, Feb. 1922, R. E. Turner, ANIC.

Female

Length 1.5–1.9 mm.

Coloration. Head and mesosoma usually black, rarely with mesosoma yellowish brown; metasoma dark reddish brown to black; legs including coxae golden yellow with tendency in some specimens for coxae to be slightly darker than rest of legs; antennae with scape yellow becoming darker at apex, funicle joints dark brown, club black; wings subhyaline to distinctly brown, venation fuscous.

Head with covering of fine pale decumbent hairs; vertex and upper portion of frons with fine dense reticulation; frons immediately above antennal insertions shining with fine transverse striae; areas to side of antennal insertions shining with fine longitudinal striae; mandibles large, bidentate; width of clypeus approximately equal to length of antennal scape; genae with fine longitudinal striae with small setigerous punctures between striae; lateral ocelli touching orbital margins.

Mesosoma. Scutum and scutellum with close reticulate-punctate sculpture and covering of fine pale decumbent hairs, scutellum medially with finer sculpturing than scutum, metanotum rugose, medially expanded to form triangular plate, bluntly pointed at apex, not as long as basal width, shorter than scutellum, not projecting beyond posterior margin of propodeum.

Forewings extending almost to apex of metasoma; submarginal vein attaining wing margin beyond $0.5 \times$ wing length; stigmal vein long, oblique and knobbed; postmarginal vein somewhat longer than stigmal vein.

Metasoma. T1 subsessile, without any hump or horn, without lateral depressions, transverse, with well-defined longitudinal striae; T2 with well-defined longitudinal striae; T3 with fine, somewhat irregular longitudinal striae that fail medially, small shallow punctures between striae and in medial area; metasoma with fine pale decumbent setae along lateral margins, T2 and T3 with row of setae along posterior margins, T4–T6 transverse, covered with numerous setigerous pin punctures; T7 only slightly extruded, articulating with ovipositor.

Male

As for female except as follows:

Length 1.7–2.0 mm.

Antennae with scape brown and tinge of yellow basally; metasoma more slender than female; T7 extruded.

Comments

An examination of paratypes revealed that *Anteromorpha australica* Dodd is morphologically identical to *Govinda mila* Nixon. Though *A. australica* and *A. incerta* (Nixon) are very similar in size and sculpturing, the evenly semicircular metanotal plate of *A. incerta* distinguishes it from all Australian species of *Anteromorpha*. *A. nona* (Nixon) is distinguished from *A. australica* by the striate-reticulate sculpturing of the posterior surface of its scutum, its shining appearance, and the presence of lateral depressions on T1.

Dodd (1928) referred to a single female specimen labelled 'Queensland, A. A. Girault' with yellowish brown mesosoma, which, in his opinion, probably represented a distinct species. Examination of this specimen has shown it to be morphologically identical with *A. australica*. The coloration of the mesosoma is certainly unique in the Australian fauna, but the specimen is considered to be an unusual colour variant of *A. australica*. *A. australica* is evidently a very widely

distributed species capable of existing over a wide temperature range. In eastern Australia, it has been collected from north of Cairns (Queensland) to Shepparton (Victoria).

Non-type Material Examined

Queensland: Daintree Junction, near Cairns, 2 ♀, QDPI; Pebbly Beach, near Cairns, 1 ♀, QDPI; 5 km N. Mt Molloy, 4 ♂, 1 ♀, QDPI; 10 km SW. Mareeba, 2 ♀, QDPI; South Johnstone, 1 ♂, QDPI; Six Mile Creek, 18 km N. Proserpine, 3 ♂, QDPI; Pentland, near Charters Towers, 1 ♂, ANIC; 3 km N. Marlborough, 3 ♂, QDPI; 7 km S. Rockhampton, 3 ♂, 2 ♀, QDPI; Gogango, near Rockhampton, 1 ♂, 1 ♀, ANIC; Westwood, near Rockhampton, 1 ♂, 2 ♀, ANIC; Emerald, 12 ♂, QDPI; Chinchilla, 1 ♂, ANIC; Tchanning Creek, 18 km E. Yuleba, 1 ♀, QDPI; 10 km S. Miriamvale, 1 ♂, QDPI; Forest Station, 600 m, Bulburin State Forest via Many Peaks, 2 ♀, QDPI; Byron State Forest, 1 ♂, QDPI; St George, 2 ♀, QDPI; Toowoomba, 2 ♂, ANIC; Redland Bay, 1 ♀, ANIC; Sunnybank, Brisbane, 1 ♀, QDPI; Brisbane, 1 ♂, ANIC; no locality, A. A. Girault, 1 ♀, ANIC. **New South Wales:** Gundabluie, 1 ♀, ANIC; Warrumbungles National Park, via Coonabarabran, 2 ♀, QDPI; Maitland, 1 ♀, ANIC; Moonie Creek, 2 ♀, ANIC; Pittwater, 1 ♀, ANIC. **Victoria:** Shepparton, 2 ♂, QDPI.

Anteromorpha depressa Galloway, sp. nov.

(Fig. 21)

Type

Holotype ♀, 4 km E. Duaringa, Queensland, 14.xi.1974, R. Wicks and A. Waite, QM.

Etymology

From the latin 'depressus', 'depressed', referring to the lateral depressions on T1.

Female

Length 2.0 mm.

Coloration. Head and mesosoma black; metasoma dark reddish brown to black; legs reddish yellow, coxae slightly darker reddish yellow; antennae reddish brown; wings subhyaline, venation fuscous.

Head covered with fine pale decumbent setae; lower portion of frons smooth and shining with tendency to fine transverse striae immediately above antennal insertions, patch of rugosity to sides of antennal insertions; upper frons and vertex with dense reticulation becoming more irregular towards occipital margin; lateral ocelli not touching orbital margins, OOL < OD.

Mesosoma. Scutum and scutellum with sculpturing as for *A. australica*; metanotum laterally with series of transverse ridges, medially expanded into acutely triangular plate, as long as width of scutellum, projecting beyond posterior margin of propodeum.

Forewings extending to just beyond posterior margin of T3; submarginal vein attaining wing margin beyond 0.5 × wing length; stigmal vein long, oblique and knobbed; postmarginal vein as long as stigmal vein.

Metasoma. Sculpturing as in *A. australica*; T1 subsessile, transverse without hump or horn but with deep lateral depressions; T4–T6 transverse; T7 only partially extruded, articulating with ovipositor.

Male

Unknown.

Comments

A. depressa can be separated from *A. nona* (Nixon) by the sculpturing of the scutum and the shape of the metanotal plate, and from *A. incerta* (Nixon) by the presence of lateral depressions on T1 and the shape of the metanotal plate.

Genus *Phoenoteleia* Kieffer
(Fig. 25)

Phoenoteleia Kieffer, 1916, p. 62.

Plagioscelio Kieffer, 1916, p. 185. Synonymy: Masner, 1976, p. 32.

Type-species *Phoenoteleia rufa* Kieffer, 1916.

Distribution

In Australia, the genus is known only from the type of *P. canalis* Dodd, which was collected on Dunk Island, 4 km off the coast of northern Queensland.

Discussion

This peculiar genus was erected for *P. rufa* Kieffer from the Philippine Islands (Kieffer 1916). It is very sexually dimorphic due to the considerable development of the horn on T1 of the female. This horn is enclosed in a deep medial cavity that extends well into the scutum. Hence, the scutellum, metanotum and propodeum are only visible as lateral sclerites. The males are superficially similar to *Anteromorpha* Dodd (Masner 1976).

Species of Phoenoteleia Described from Australia

1. *P. canalis* Dodd, 1928, p. 35

Genus *Probaryconus* Kieffer
(Figs 26–32)

Probaryconus Kieffer, 1908a, pp. 118, 165, 168.

Procacus Kieffer, 1910c, p. 319. Synonymy: Masner, 1976, p. 33.

Amblyconus Kieffer, 1913a, p. 221. Synonymy: Masner, 1965, p. 90.

Baryconus auctorum nec Foerster. Synonymy: Masner, 1965, p. 90.

Neurocacus Kieffer, 1913c, p. 428. Synonymy: Masner, 1976, p. 34.

Urundia Risbec, 1957, p. 142. Synonymy: Masner, 1976, p. 34.

Type-species *Baryconus spinosus* Kieffer, 1908a.

Distribution

Probaryconus is well represented in Australia but appears to be more common and diverse in tropical regions.

Discussion

Taxonomically, *Probaryconus* presents a complicated picture. It appears to intergrade on the one side with *Calliscelio* Ashmead and on the other with *Paridris*

Kieffer. In the Australian fauna, the limits of *Probaryconus* and *Paridris* are more sharply in focus.

Key to Separate *Probaryconus* and *Paridris*

Propodeum medially contiguous, and anterodorsally bispinose; OOL < OD .. *Probaryconus* Kieffer
 Propodeum medially excavate, anterodorsally unarmed; OOL > OD *Paridris* Kieffer

Separation from *Calliscelio* is more difficult and in the past this has been personified by *Baryconus albicoxa* Dodd, a species that combines the characteristics of both genera and is now the type of *Crama* Galloway, gen. nov. Australian species of *Probaryconus* and *Calliscelio* may now be satisfactorily separated by the sculpturing of the cheek and the key given by Masner (1976, p. 34). In *Probaryconus* the cheeks are longitudinally striate, whereas in *Calliscelio* they are smooth.

Galloway (1976) listed *Baryconus discolor* Dodd and *B. vestigialis* Dodd in 'Species incertae sedis'. Both species were collected from Lord Howe Island and have females with reduced wings. Because both species exhibit the following characteristics they are now included in *Probaryconus*: frons without depression; OOL < OD; antennae 12-segmented in both sexes; marginal vein of forewing not dilated, shorter than stigmal vein; hindwing with complete submarginal vein; skaphion not developed; netrion present; tibial spur formula 1-1-1; metasoma elongate in ♀, with horn on T1; propodeum medially excavated in *discolor*, anterodorsally armed with 2 small spines.

Specimens of *Probaryconus* have been reared from the eggs of *Teleogryllus commodus* (Walker) in South Australia. This confirms Masner's statement (1976, p. 25) that the smaller members of the Calliscelionini parasitize the eggs of Gryllidae.

Probaryconus discolor (Dodd) Galloway, comb. nov. (Figs. 29-32)

Baryconus discolor Dodd, 1924, p. 177; Galloway, 1976, p. 112.

Types

Holotype ♀, allotype, Lord Howe Island, A. M. Lea, SAM.

Paratype ♀, Lord Howe Island, A. M. Lea, ANIC.

Female

Length 4.0 mm.

Coloration. Head pale yellow, smooth area of frons above antennal insertion dark reddish brown; eyes and ocelli black; mandibles pale yellow, teeth black, antennae yellow-brown; scutum pale yellow, dark brown in region of tegulae, with medial brown suffusion towards anterior $\frac{1}{2}$ of scutum, scutellum yellow, propodeum reddish yellow, pleural regions dark brown, mesosternum pale yellow, legs including coxae yellow, tarsal segments light brown, venation of wings light brown; metasoma with T1 dorsally yellow, laterally reddish brown, T2 reddish brown, T3 with posterior $\frac{1}{2}$ and median portion of anterior $\frac{1}{2}$ reddish brown, remainder of anterior $\frac{1}{2}$ yellow, T4 light reddish brown except for irregular yellow band on anterior $\frac{1}{3}$, T5-T6 yellow.

Head in dorsal view transverse but less than $2 \times$ as long as wide; frons with medial posterior $\frac{2}{3}$ immediately above antennal insertions smooth and shining; frontal carina almost reaching median ocellus; remainder of frons punctate-reticulate with fine short pubescence, tendency for punctures to coalesce and become almost strigose along orbital margins; fine converging striae at points of articulation of mandibles; vertex, genae and occiput punctate-reticulate with short, fine setae; genae with punctures tending to form parallel horizontal rows giving almost strigose pattern; antennae with scape about as long as pedicel + f1; pedicel approximately $2.5 \times$ as long as greatest width; f1 slightly longer than pedicel; f2 not as long as pedicel; f3 as long as wide, slightly longer than $0.5 \times$ f2; f4 wider than long; club compact, joints 1-5 wider than long.

Mesosoma. Scutum and scutellum punctate-reticulate with fine pubescence; metanotum and posterior margin of horizontal surface of propodeum deeply excavate to accommodate projection on T1, anterodorsal corners of medial excavation bispinose; lateral subtriangular areas of propodeum with medial posterior area with pin punctures and fine dense setae separated by ridge from smooth and shining anterolateral area.

Forewings reduced, narrow, extending just beyond midpoint of T2; marginal vein as long as stigmal vein; stigmal vein short and oblique.

Metasoma $2 \times$ as long as head and mesosoma combined, slightly longer than $3 \times$ greatest width; T1 almost $2 \times$ as long as posterior margin, well-developed horn extending as far as posterior margin of scutellum, horn dorsally longitudinally striate, with apex smooth and sides very narrowly punctate-reticulate; T2 not as long as greatest width or as long as T1, longitudinally striate, striae failing just short of posterior margin; T3 longest metasomal tergite but not as long as greatest width, with fine close punctate-reticulate sculpturing, medially smooth and shining; T4-T5 not as long as greatest width; T6 slightly longer than greatest width; T3-T6 with dense short fine silvery pubescence.

Male

As for female except as follows:

Length 3.5 mm.

Antennal scape as long as pedicel + f1, pedicel $2 \times$ as long as greatest width; f1 $1.5 \times$ length of pedicel, slightly longer than f2; f2 slightly longer than f3; remaining segments subequal.

Mesosoma. In dorsal view, metanotum narrowly present; medial area of horizontal surface of propodeum contiguous, anterodorsally bispinose.

Forewings fully developed, extending to apex of metasoma; stigmal vein about $2 \times$ as long as marginal vein; postmarginal vein a little longer than stigmal vein.

Metasoma longer than head and mesosoma combined, slightly less than $2.5 \times$ greatest width; T1 without horn, entirely longitudinally striate; T2 longest metasomal tergite; T3 transverse, slightly longer than T1 but clearly shorter than T2; T3-T7 transverse.

Probaryconus vestigialis (Dodd) Galloway, comb. nov.
(Figs. 27, 28)

Baryconus vestigialis Dodd, 1924, p. 179; Galloway, 1976, p. 112.

Types

Holotype ♀, Lord Howe Island, A. M. Lea, SAM.

Paratypes: Lord Howe Island, A. M. Lea, 1 ♀, SAM, 2 ♀, ANIC.

Female

Length 3.0 mm.

Coloration. Head uniformly light reddish brown, eyes and ocelli black, antennae reddish brown with scape yellow; scutum reddish yellow with medial reddish brown suffusion towards anterior margin, scutellum, metanotum and propodeum reddish brown, pleural areas dark reddish brown, fore and mid legs including coxae yellow, hind legs including coxae reddish yellow; metasoma with T1 and T2 dark reddish brown, T3 reddish brown for anterior $\frac{1}{2}$, dark reddish brown for posterior $\frac{1}{2}$, T4–T7 reddish brown.

Head in dorsal view transverse but less than $2 \times$ as long as wide; frons with lower $\frac{2}{3}$ immediately above antennal insertions smooth and shining, with frontal carina, remainder of frons punctate-reticulate with fine short pubescence, tendency for punctures to coalesce along orbital margins giving almost strigose effect; fine converging striae at points of articulation of mandibles, genae otherwise smooth and shining with scattered setigerous pin punctures; occiput and vertex punctate-reticulate with fine setae; antennae with scape about as long as pedicel + f1; f1 slightly longer than pedicel; f2 not as long as pedicel; f3 as wide as long; f4 slightly wider than long.

Mesosoma. Scutum punctate-reticulate with fine pubescence; metanotum dorsally narrowly visible; medial area of horizontal surface of propodeum contiguous, not medially divided or hidden by metasomal projection, anterodorsally bispinose; each lateral subtriangular area of propodeum divided by transverse ridge, posterodorsal area with pin punctures and fine dense setae, anterolateral area smooth and shining.

Forewings narrow and reduced, extending to about midpoint of T2; venation obscure, appearing limited to submarginal and marginal veins.

Metasoma $3 \times$ as long as greatest width; T1 transverse, with basal horn projecting only very short distance into mesosoma, apex of horn smooth and shining, remainder striate; T2 transverse, slightly longer than T1, laterally and posteriorly longitudinally striate, with scattered setigerous pin punctures; T2 and T3 subequal; T4 about $0.5 \times$ as long as T3; T3–T4 transverse with fine long pubescence and close punctate sculpturing.

Male

Unknown.

Other species of Probaryconus Described from Australia

1. *P. exertus* (Dodd), 1914e, p. 253
2. *P. fuscus* (Dodd), 1913a, p. 176
3. *P. gloriosus* (Dodd), 1913a, p. 174
4. *P. magnificus* (Dodd), 1913a, p. 142

5. *P. pulcher* (Dodd), 1913a, p. 142
6. *P. splendidus* (Dodd), 1913a, p. 140
7. *P. substriaticiceps* (Dodd), 1915b, p. 446
8. *P. superbus* (Dodd), 1913a, p. 174

Genus *Paridris* Kieffer
(Figs 33–42)

Paridris Kieffer, 1908a, p. 122.

Paranteris Kieffer, 1910b, p. 292. Synonymy: Masner, 1965, p. 88.

Aellenia Masner, 1958, pp. 47, 48. Synonymy: Masner, 1976, p. 35.

Type-species *Idris laeviceps* Ashmead, 1893.

Discussion

Dodd (1913a, 1913c, 1914b, 1914e) originally described seven species in *Paridris* but later (1915a) transferred all seven to *Anteris* Foerster. These species were subsequently placed in *Psilanteris* Kieffer (Galloway 1976). At this point, therefore, no species of *Paridris* were recorded from Australia.

Paridris parvocolatus Galloway, sp. nov.
(Figs 33–38)

Types

Holotype ♀, allotype, Emerald, Queensland, 2.xi.1974, I. D. Galloway, QM.

Paratypes: **Queensland:** Normanton, 4.xi.1974, I. D. Galloway, 1 ♂, QDPI; 10 km SW. Mareeba, 26.iv.1974, J. F. Donaldson, 1 ♀, QDPI; Westwood, 1.xi.1927, A. P. Dodd, 1 ♂, ANIC; Gogango, Mar. 1925, A. P. Dodd, 1 ♂, ANIC; same data as holotype, 3 ♀, QDPI; Toowoomba, no date, A. P. Dodd, 1 ♀, ANIC. **New South Wales:** Moonie River, Oct. 1926, A. P. Dodd, 1 ♀, ANIC.

Etymology

From the latin 'parvus', 'little', and 'oculus', 'eye', a manuscript name first proposed by Dodd.

Female

Length 1.6–2.0 mm.

Coloration. Head black, antennae with scape and pedicel brown suffused with yellow, funicle segments dark brown, club black; mesosoma black, coxae dark reddish brown to black, remainder of legs light brown with yellow suffusion, wings evenly infuscated, venation brown; metasoma dark reddish brown to black.

Head 2 × as wide as long (16 : 32); lower $\frac{2}{3}$ of frons smooth and shining except for several striae along orbital margins; upper $\frac{1}{3}$ of frons, vertex and occipital regions with fine scaly reticulation and scattered light-coloured setae; occipital carina absent; genae smooth and shining; fine striae converging at points of mandibular articulation; eyes small with long setae, OOL > LOL.

Forewing, at rest, extending to just beyond posterior margin of T4; submarginal vein attaining anterior margin just beyond midpoint of wing, marginal vein shorter than either stigmal or postmarginal veins, stigmal vein equal to or only slightly longer than postmarginal vein.

Mesosoma longer than greatest width measured across tegulae; notauli present, anteriorly abbreviated; medial area of scutum enclosed by notauli, largely smooth and shining with few setigerous punctures, remainder of scutum with fine scaly reticulation and scattered setae; scutellum rectangular in shape, smooth and shining with scattered setigerous pin punctures; metanotum in dorsal view narrow and unarmed; propodeum in dorsal view medially excavated up to posterior margin of metanotum.

Metasoma clearly longer than head and mesosoma combined; T1 with well-developed medial horn extending within excavation of propodeum to posterior margin of metanotum, horn predominantly smooth and shining, base of horn with scaly reticulation, remainder of T1 with well-defined longitudinal striae; T2 with medial longitudinal ridge, either side of ridge narrowly smooth and shining, remainder of tergite longitudinally striate; T3 medially smooth and shining, laterally with numerous fine longitudinal striae; T4 and T5 smooth and shining with numerous scattered setigerous punctures; T6 anteriorly narrowly smooth and shining, remainder finely rugose with long setae; T1 longer than wide; T2 transverse, approximately as long as T1; T3 transverse, longer than all other tergites; T4-T7 transverse.

Male

As for female except as follows:

Length 1.6-1.7 mm.

Antennae with base of scape suffused with yellow, remainder dark brown to black; propodeum in dorsal view medially excavated almost to posterior margin of metanotum, excavation not as pronounced as in female; T1-T3 entirely longitudinally striate.

Comments

A paratype female of *P. tenuis* (Nixon) (South Africa) and a female specimen of *P. brevipennis* Fouts (determined by Gahan) (South Dakota, U.S.A.) were examined. Females of both *P. tenuis* and *P. brevipennis* have a distinct occipital carina whereas none is evident on the head of *P. parvoculatus*. The horn on T1 is different in all three species. In *P. parvoculatus*, at least, the apex of the horn is entirely smooth and shining; in *P. tenuis* the horn is entirely smooth and shining and has a sharp tooth, which is directed towards the apex of the metasoma; and in *P. brevipennis* the horn is entirely covered with scaly reticulation. In addition, T3 of *P. brevipennis* is smooth and shining whereas in both other species T3 is striate over the greater part of its surface.

Non-type Material Examined

No collection data, 1 ♀, ANIC.

Genus *Neoparidris* Galloway, gen. nov.

(Fig. 43)

Type-species *Oxyteleia bifurcata* Dodd, 1927a.

Etymology

The name emphasizes the close relationship with the genus *Paridris* Kieffer. Masculine.

Distribution

Known only from northern Queensland.

Discussion

An examination of the types of *O. bifurcata* reveals that this species does not belong in *Oxyteleia*. The genus *Oxyteleia* is characterized by extremely large glabrous eyes and consequently narrow temples and cheeks, lateral ocelli that touch the inner margins of the eyes, and in the forewing a postmarginal vein that is clearly much longer than the stigmal vein. In contrast, *O. bifurcata* has hairy eyes, moderately broad temples and cheeks, lateral ocelli narrowly separated from orbital margins and a postmarginal vein that is approximately equal to the stigmal vein. Masner (1976, p. 36) suggested that *O. bifurcata* may belong in the genus *Paridris*, but members of this genus have small eyes, very large temples and cheeks, OOL at least equal to OD and the notauli either absent or only posteriorly indicated. The notauli in *O. bifurcata* are complete. *Paridris* is a rather heterogeneous assemblage when viewed on a world scale (Masner 1976), and when the limits of this genus become clearer *O. bifurcata* may be accommodated here. On present knowledge, however, and especially in the context of the Australian scelionid fauna, *O. bifurcata* is best treated as the type of a new genus.

Generic Description

Head transverse, almost $2 \times$ as wide as long, occipital margin concave; frons evenly convex without impression; mandibles tridentate; eyes moderately large with long scattered hairs; $OOL < OD$; cheeks with longitudinal striae converging at points of mandibular articulation.

Mesosoma, in dorsal view, $1.2 \times$ as long as greatest width measured across tegulae; pronotum dorsally narrowly visible; notauli wide apart and complete; scutellum rectangular in shape with posterior corners rounded; metanotum medially expanded to form plate with 2 stout teeth at posterior angles; propodeum sloping, short, medially excavated, excavation bordered by carinae that posteriorly converge with lateral carinae of propodeum to form blunt teeth, anterior lateral margin of propodeum with stout blunt tooth.

Forewings extending almost to apex of metasoma; submarginal vein curving away slightly before joining costa just beyond $0.5 \times$ wing length; marginal vein punctiform; postmarginal and stigmal veins subequal, stigmal vein knobbed; basal and medial veins absent.

Metasoma $2.6 \times$ as long as greatest width and $1.4 \times$ as long as head and mesosoma combined; T1 with short narrow basal horn; T3 longest tergite; T7 exerted with ovipositor.

Neoparidris bifurcatus (Dodd) Galloway, comb. nov. (Fig. 43)

Oxyteleia bifurcata Dodd, 1927a, p. 72; Galloway, 1976, p. 100.

Types

Holotype ♀, allotype on cards, Cairns, Nov. 1927, A. P. Dodd, HY3193, QM.
Paratypes: 3 ♂ ANIC; 1 ♂, USNM, same date as holotype.

Female

Length 2.5 mm.

Coloration. Mandibles, scape and pedicel of antennae, legs including coxae yellow; remainder black.

Head. Frons smooth and shining with several blunt striae along orbital margins; upper frons and vertex with scattered punctures with long setae and short blunt longitudinal striae; occipital margin foveate; antennae with scape long and slender, slightly longer than club; f1 slightly longer than pedicel and clearly longer than f2; pedicel, f1 and f2 longer than wide; f3 as wide as long; f4 wider than long.

Mesosoma. Pronotum densely punctate with long fine hairs; notauli foveate; anterior $\frac{1}{2}$ of medial lobe and lateral lobes of scutum with dense setigerous punctures, posterior $\frac{1}{2}$ of medial lobe largely smooth and shining; anterior and posterior margins of scutellum with large foveae, remainder smooth and shining with scattered setigerous pin punctures; lateral areas of metanotum foveate; lateral areas of propodeum densely punctate.

Metasoma. T1-T3 laterally carinate; T1 with 5 strong complete carinae medially and 1 abbreviated carina on either side; T2 with numerous longitudinal striae; T3 laterally with fine longitudinal striae, medially largely smooth and shining with scattered setigerous pin punctures; T4-T5 smooth and shining with scattered setigerous pin punctures; T6 densely granulate.

Male

As for female except for sexual differences and as follows:

Antennae with f2-f9 subequal; f10 slightly longer than other segments; lateral T3 with fine longitudinal striae, medially becoming finely strigose; T6 with dense setigerous pin punctures.

Genus *Calliscelio* Ashmead

(Figs 44, 45)

Calliscelio Ashmead, 1893, pp. 209, 218.

Calotelea auctorum nec Westwood. Synonymy: Masner, 1976, p. 36.

Caloteleia Ashmead, 1893, pp. 209, 210, 212. Synonymy: Masner, 1976, p. 36.

Ceratoteleia Kieffer, 1908a, p. 121. Synonymy: Masner, 1976, p. 36.

Prosanteris Kieffer, 1908a, pp. 121, 136. Synonymy: Masner, 1976, p. 36.

Uroskelio Kieffer, 1914, p. 291. Synonymy: Masner, 1976, p. 36.

Mesoteleia Kieffer, 1917a, p. 51. Synonymy: Masner, 1976, p. 36.

Glyptoteleia Kieffer, 1926, pp. 272, 487. Synonymy: Masner, 1976, p. 36.

Baryteleia Kieffer, 1926, pp. 237, 544. Synonymy: Masner, 1976, p. 36.

Type-species *Calliscelio laticinctus* Ashmead, 1893.

Generic Description (based on Australian species)

Head in dorsal view transverse; frons without depression; eyes either bare or with fine scattered hairs; OOL < OD; cheeks without striae; antennae 12-segmented in both sexes, with 6-segmented club in ♀ and submoniliform in ♂.

Mesosoma with notauli usually percurrent; metanotum medially produced to form transverse lamella; propodeum unarmed, usually medially excavate; wings banded or clear; forewings with marginal vein shorter than stigmal vein, postmarginal vein well developed, basal vein either distinct, appears as dark suffusion or absent.

Metasoma with 6 tergites and 6 sternites in ♀, T7 internal, with T6 sometimes elongate and sword-like; T1 in ♀ humped or with horn; ♂ with 8 tergites and 7 sternites.

Species of Calliscelio Described from Australia

1. *C. argentipes* (Dodd), 1914c, p. 97
2. *C. australicus* (Dodd), 1914b, p. 126
3. *C. bellus* (Dodd), 1913a, p. 142
4. *C. brunneus* (Dodd), 1913a, p. 141
5. *C. dulcis* (Dodd), 1914a, p. 82
6. *C. flavus* (Dodd), 1913a, p. 140
7. *C. niger* (Dodd), 1913a, p. 175
8. *C. perpulcher* (Dodd), 1915b, p. 447

Genus **Crama** Galloway, gen. nov.
(Figs 46–56)

Type-species *Baryconus albicoxa* Dodd, 1915b.

Etymology

From the Greek 'crama', 'mixture'. Feminine.

Distribution

Recorded along the eastern coast of Australia from Kuranda (Qld) in the north to just south of Wollongong (N.S.W.)

Discussion

The genera *Calliscelio* and *Probaryconus* pose a number of difficult taxonomic questions because of their close relationship. *Baryconus albicoxa* Dodd personifies this problem as it possesses characters considered distinctive of each genus, viz a medially expanded metanotum combined with a propodeum anterodorsally armed with two teeth.

Masner (1976) recognized the aberrant nature of *B. albicoxa* but chose to incorporate it in *Calliscelio*; however, Galloway (1976) believed its generic classification to be sufficiently in doubt to include it in his 'Species incertae sedis'. *Crama*, gen. nov. has now been erected because of the discovery of a new species clearly congeneric with *B. albicoxa* and the recognition of the following characters.

Key to Separate *Crama*, *Calliscelio* and *Probaryconus*

1.	Propodeum bispinose	2
	Propodeum unarmed	3
2(1).	Cheeks with longitudinal striae converging at points of mandibular articulation	
	<i>Probaryconus</i> Kieffer	
	Cheeks without striae	<i>Crama</i> Galloway, gen. nov. ♀
3(1).	Antennae either with 6-segmented club (♀) or club absent and funicle segments submoniliform (♂); f5 usually 0.5 × length of scape	<i>Calliscelio</i> Ashmead
	Antennae without club, funicle segments long and slender; f5 longer than scape	<i>Crama</i> Galloway, gen. nov. ♂

Generic Description

Female

Head in dorsal view transverse, slightly wider than mesosoma measured across tegulae; frons without depression; cheeks without striae; eyes bare; ocelli small, wide apart, OOL < OD; mandibles tridentate; palpal formula 4-2.

Mesosoma slightly longer than greatest width measured across tegulae; pronotum dorsally narrowly visible; notauli percurrent; scutum anteriorly rounded; scutellum semicircular, unarmed; metanotum in dorsal view medially slightly expanded; posterior margin of dorsal surface of propodeum medially excavate and anterodorsally armed with 2 teeth; mesopleural depression distinct, smooth and shining, separated from lower part of mesepisternum by carina.

Forewings long, reaching apex of metasoma; submarginal vein reaching anterior margin near midpoint of wing; marginal vein as long as or slightly shorter than stigmal vein; postmarginal vein well developed; basal vein distinct; tarsi 5-segmented, hind tarsi as long as hind tibiae; hind basitarsus longer than remaining tarsal segments combined.

Metasoma elongate, longer than head and mesosoma combined; T1 longer than wide with distinct raised area near anterior margin; T2 slightly longer than T3.

Male

As for female except as follows:

Antennae with funicle segments 3-6 $\times$ as long as wide; propodeum unarmed; T1 without raised anterior area; remainder of tergites transverse.

Key to Australian Species of *Crama*

Occipital and upper frontal regions of head, scutum and scutellum with fine dense punctate-reticulate sculpturing *reticulata* Galloway, sp. nov.
Head, scutum and scutellum smooth and shining *albicoxa* Dodd

Crama albicoxa (Dodd) Galloway, comb. nov.

(Figs 50-56)

Baryconus albicoxa Dodd, 1915b, p. 446; Galloway, 1976, p. 112.

Calliscelio albicoxa (Dodd); Masner, 1976, p. 37.

Types

Holotype ♀ and allotype, Cairns district, 336-726 m, Queensland, April-May 1915, A. P. Dodd, 15170, SAM (on single card).

Female

Length 2.4-2.6 mm.

Coloration. Head black, antennae with scape and pedicel black, f1 fuscous, remaining funicle segments yellow, club black; pronotum dorsally and laterally reddish yellow, scutum and scutellum dark reddish brown, metanotum lighter reddish brown, pleural regions dark reddish brown, legs including coxae pale yellow; metasoma dark reddish brown becoming lighter in medial region and almost black at posterior end.

Head entirely smooth and shining with few scattered pin punctures with short decumbent setae; antennae with scape slightly longer than f1-f3 combined; pedicel approximately 2 $\times$ as long as wide, not as long as f1; f1 longest funicle segment

about $3 \times$ as long as wide; f2 $2 \times$ as long as wide, slightly longer than f3; f3 slightly less than $2 \times$ as long as wide, longer than f4; f4 almost as wide as long; club longer than scape.

Mesosoma. Scutum and scutellum smooth and shining with scattered setigerous pin punctures; medial area of metanotum slightly expanded, rectangular in shape, smooth and shining; propodeum medially excavate to accommodate horn on T1, lateral subtriangular areas of propodeum smooth and shining with teeth on anterodorsal corners, propodeal teeth widely or narrowly separated depending on development of horn; forewing with postmarginal vein $3.5-4.0 \times$ as long as stigmal vein.

Metasoma. T1 with raised anterior horn, medially smooth, laterally with fine longitudinal striae; T2 with fine longitudinal striae failing medially towards posterior margin; T3 laterally with several longitudinal striae, medially smooth and shining; T4-T5 smooth and shining with setigerous pin punctures; T6 with anterior $\frac{1}{3}$ with fine longitudinal striae, remainder with dense setigerous pin punctures.

Male

As for female except as follows:

Length 2.0-2.1 mm.

Coloration. Antennae with scape reddish yellow at base, remainder black.

Antennal scape approximately as long as f1 + f2 but not as long as f5; f1 longer than pedicel or f2; f3 approximately $2 \times$ as long as f2; f4 slightly longer than f3; f5 longest antennal segment; f6-f9 gradually decreasing in length; f10 longer than f9.

Mesosoma. Medial lobe of scutum with more numerous setigerous pin punctures; horizontal dorsal surface of propodeum narrowly divided.

Metasoma. T1 approximately $2 \times$ as long as wide, entirely longitudinally striate; T2 entirely finely longitudinally striate; T3-T4 smooth and shining with scattered setigerous pin punctures; T5-T7 smooth and shining but with setigerous pin punctures becoming progressively more dense.

Comments

Females of *C. albicoxa* may be divided into two groups based on morphological characters associated with the development of the ovipositor. The two groups may be distinguished as follows:

Propodeal teeth separated by more than length of single tooth (Fig. 50); T6 almost $2 \times$ as long as wide (Fig. 54)	<i>albicoxa</i> group 1
Propodeal teeth separated by less than length of single tooth (Fig. 51); T6 only slightly longer than wide (Fig. 55)	<i>albicoxa</i> group 2

The distance between the propodeal teeth is a measure of the development of the horn of T1. The more developed the horn, the farther it protrudes into the propodeum, forcing the propodeal teeth apart. Because of the more developed horn and the longer T6 in group 1, it can be assumed the ovipositor in group 1 is longer than that in group 2. However, although these distinguishing characteristics can be observed in the females, no differences are evident in the males. As both groups appear to have a similar geographic distribution, and the host or hosts involved are unknown, they are best treated as a single species.

Non-type Material Examined

Queensland: 3 km W. Kuranda, 1 ♀, ANIC; Windsor Tableland, via Mt Carbine, 2 ♀, QDPI; Mt Lewis via Julatten, 1 ♂, 1 ♀, QDPI; Mt Edith Forest, near Danbulla, 2 ♂, 2 ♀, ANIC; Upper Mulgrave River, 1 ♀, ANIC; E. Ravenshoe, 1 ♀, QDPI.

Crama reticulata Galloway, sp. nov.
(Figs 46–49)

Types

Holotype ♀ and allotype, Mt Glorious, Queensland, July–Dec. 1977, A. Hiller, QM.

Paratypes: **Queensland:** Bulburin State Forest via Many Peaks, 12–15.iv.1974, I. Naumann, 1 ♂, QDPI; Cooran Plateau via Traveston, 30.xii.1974–28.iii.1975, G. B. and S. R. Monteith, 3 ♀, QDPI; Cold Creek via Imbil, 29.xii.1974–27.iii.1975, G. B. and S. R. Monteith, 1 ♀, QDPI; Little Yabba Creek, via Kenilworth, 28.xii.1974–26.iii.1975, G. B. and S. R. Monteith, 3 ♀, QDPI; Mt Glorious, Dec. 1976, Z. Bouček, 11 ♂, 7 ♀, QDPI; Mt Glorious, July–Dec. 1977, A. Hiller, 5 ♂, 7 ♀, QDPI, 1 ♂, 1 ♀, CNC; Mt Tamborine, 21.xii.1976, I. D. Galloway, 2 ♂, QDPI; Mt Tamborine, Oct. 1977, I. D. Galloway, 3 ♂, 6 ♀, QDPI; Dalrymple Creek, Mistake Mt, 13.xi.1977, G. B. Monteith, 1 ♀, ANIC; Cunningham's Gap, 757 m, 1–2.vi.1966, Z. Liepa, 1 ♀, ANIC; Binna Burra, Lamington National Park, 30.v.1966, Z. Liepa, 1 ♂, ANIC; Numinbah Arch, 25.xii.1974–22.iii.1975, G. B. and S. R. Monteith, 1 ♀, QDPI. **New South Wales:** Brokenhead, via Byron Bay, 16.xi.1975–6.ii.1976, G. B. and S. R. Monteith, 1 ♀, QDPI; Bruxner Park, via Coffs Harbour, 30.xi.1975, I. Naumann, 4 ♂, QDPI; Minnamurra Falls, 23.x.1962, D. K. McAlpine, 2 ♂, AM.

Etymology

Refers to the sculpturing of the head and mesosoma, which is distinctive of this species.

Female

Length 2.2–2.5 mm.

Coloration. Head black, antennae with scape yellow, pedicel and funicle segments light brownish yellow, club black; mesosoma reddish brown with dense light coloured pubescence, legs including coxae yellow, venation brown; metasoma reddish brown with T6 almost black.

Head. Upper $\frac{1}{2}$ of frons finely punctate-reticulate, lower $\frac{1}{2}$ smooth and shining; occipital region finely punctate-reticulate with short white decumbent setae; antennae with scape slightly longer than f1–f3; pedicel 2 × as long as wide, not as long as f1; f1 longest funicle segment almost 3 × as long as wide; f2 2 × as long as wide, slightly longer than f3; f3 almost 2 × as long as wide, longer than f4; f4 longer than wide; club approximately as long as scape.

Mesosoma. Scutum and scutellum with fine punctate-reticulate sculpturing and short decumbent setae; medial area of metanotum slightly expanded, rectangular in shape, smooth and shining; lateral subtriangular areas of propodeum densely punctate, tending to be rugose; propodeal teeth narrowly separated; postmarginal vein of forewing 3 × as long as stigmal vein.

Metasoma. T1 longer than wide with slightly raised area at anterior margin, smooth and shining, remainder finely longitudinally striate; T2 anteriorly and laterally finely longitudinally striate, medially largely smooth and shining; T3 laterally with 2 or 3 fine longitudinal striae, remainder smooth and shining, T4-T5 smooth and shining with scattered pin punctures and short white setae; T6 only slightly longer than greatest width, anterior $\frac{1}{2}$ with fine longitudinal striae, remainder with dense setigerous pin punctures.

Male

As for female except as follows:

Length 2.1-2.2 mm.

Coloration. Antennae with scape and pedicel yellow, remainder black; tendency in some males for mesosoma and metasoma to be darker shade of reddish brown.

Antennal scape not as long as f1 + f2, almost as long as f5; f1 longer than pedicel but not as long as f2; f3 approximately $1.5 \times$ as long as f2; f4 slightly longer than f3; f5 just longer than f4; f6-f9 gradually decreasing in length; f10 longer than f9.

Mesosoma. Horizontal dorsal surface of propodeum, narrowly divided.

Metasoma. T1 longer than $2 \times$ greatest width, finely longitudinally striate, with striae failing medially towards posterior margin; remainder of mesosomal tergites smooth and shining with scattered setigerous pin punctures becoming more dense posteriorly.

Comments

C. reticulata has a more southern distribution than *C. albicoxa*. It is known to extend from Bulburin State Forest in Queensland to Minnamurra Falls in New South Wales. The nine specimens collected in five different pitfall traps are all females, suggesting that the host of *C. reticulata* lays its eggs either on or in the rainforest floor.

Genus *Palpoteleia* Kieffer (Figs 57-60)

Palpoteleia Kieffer, 1926, p. 547; Masner, 1976, p. 39.

Type-species *Psiloteleia atra* Kieffer, 1926.

Distribution

In Australia, the genus appears to be restricted to mixed sclerophyll forests of tropical Australia. No specimens have been encountered in rainforests.

Discussion

Palpoteleia was first recorded from Australia by Kieffer (1926) who recognized four species that had previously been described by Dodd in *Baryconus* Foerster. After examining the types in the SAM, it was possible to confirm only one of the species in *Palpoteleia* (viz *P. simplex*) as the head, antennae and forewings of the other three types were missing. However, from the remains of types and specimens subsequently collected, it appears unlikely that any of the three belong in

Palpoteleia. Under these circumstances, only *simplex* is now retained in *Palpoteleia* and the other three species [viz *P. citrea* (Dodd), *P. eximia* (Dodd), and *P. speciosa* (Dodd)] are placed in Species Incertae Sedis.

A unique characteristic of *Palpoteleia* is a white blister-like structure found on the cheeks between the lower margin of the eyes and the base of the mandibles. The function of this structure is unknown. Other characteristics that define *Palpoteleia* are: hairy eyes; OOL at least as long as OD; ♀ antennae with 5-segmented club; propodeum and metanotum unarmed; forewing venation with postmarginal vein longer than marginal vein; marginal vein shorter than stigmal vein. No biological information is available for the genus.

Species of Palpoteleia Described from Australia

1. *P. simplex* (Dodd), 1914e, p. 254

Genus **Yunkara** Galloway, gen. nov. (Figs 61–63)

Type-species *Yunkara inornata* Galloway, sp. nov.

Etymology

From an aboriginal word 'yunkara', 'stranger'. Feminine.

Distribution

Yunkara is known only from Cape York Peninsula, northern Queensland, and the Sepik River, New Guinea.

Discussion

The genus *Yunkara* is based on a single female taken at Iron Range, Cape York Peninsula. The Iron Range–McIlwraith Range complex is considered to be the major refugium for immigrant rainforest insects of New Guinea origin (Kikkawa *et al.* 1981). This strong New Guinea element at Iron Range is once again reinforced by the discovery of a female specimen of *Yunkara* from Siutmeri on the Sepik River, New Guinea.

Generic Description

Female

Head transverse, slightly wider than mesosoma, posterior margin concave; frons with shallow unmargined declivity; mandibles tridentate; malar groove present; eyes bare; lateral ocelli touching orbital margins; antennae 12-segmented with 6-segmented club.

Mesosoma longer than greatest width measured across tegulae; pronotum dorsally narrowly visible; skaphion absent; notauli percurrent; netrion open and carinate; mesopleural depression distinct, distinguished anteriorly by zone of rougher sculpture; scutellum unarmed, rectangular in shape, with posterior margin shorter than anterior margin and rounded posterolateral corners; metanotum unarmed, in dorsal view narrowly visible, medially slightly expanded to form rectangular plate; horizontal surface of propodeum unarmed, posterior margin medially narrowly divided; legs with hind tarsi longer than hind tibiae; basitarsus

as long as remaining tarsal segments combined; tarsi 5-segmented; tibial spur formula 1-1-1.

Forewings extending just beyond apex of metasoma; hindwing with complete submarginal vein extending to frenal hooks; forewing with submarginal vein separated from anterior wing margin by distance equal to thickness of vein, attaining anterior wing margin beyond midpoint of wing length; marginal vein short; stigmal vein oblique and slightly knobbed; postmarginal vein well developed; basal vein present; medial vein very lightly indicated.

Metasoma clearly longer than head and mesosoma combined; $3 \times$ as long as greatest width; greatest width occurring beyond midpoint of metasoma; 6 tergites and 6 sternites; T1 without any indication of horn or protuberance; T2 longest segment of metasoma, at least $2 \times$ length of any other tergite; posterior margin of T6 deeply concave.

Male

Unknown.

Comments

The following characters suggest that *Yunkara* belongs in the tribe Calliscelionini: frons with unmargined shallow declivity; antennae in female 12-segmented, with 6-segmented club; skaphion absent; tibial spur formula 1-1-1; metasoma elongate, with visible tergites and sternites in ♀. However, within this tribe the following morphological characteristics set *Yunkara* apart from other described genera: eyes bare; lateral ocelli touching orbital margins; scutellum, metanotum and propodeum unarmed; postmarginal vein well developed; no indication of horn or hump in ♀; T2 at least $2 \times$ length of any other tergite.

The relative size of T2 as exhibited by *Yunkara* is quite unusual in the Calliscelionini, *Phoenoteleia* Kieffer and the male of *Probaryconus discolor* (Dodd) being the only other members of this tribe in which T2 is the longest metasomal tergite. *Phoenoteleia*, however, is characterized in the female by the extreme development of the horn on T1, a structure that is completely absent in *Yunkara*.

Yunkara inornata Galloway, sp. nov.

(Figs 61-63)

Type

Holotype ♀, Iron Range, Cape York Peninsula, Queensland, 1-9.vi.1971, S. R. Monteith, ANIC.

Etymology

From the Latin 'inornatus', 'unadorned'.

Female

Length 2.3 mm.

Coloration. Head black, antennae with scape yellow, pedicel and funicle segments brown, club black; mesosoma reddish yellow, legs including coxae yellow, wings subhyaline, venation light brown to yellow; metasoma reddish yellow.

Head slightly less than $2 \times$ as wide as long, rather cubical in shape; shallow declivity of frons smooth and shining with frontal carina extending from antennal insertion to just below medial ocellus; remainder of frons narrowly punctate-reticulate along orbital margins; vertex, occiput and genae punctate, each puncture bearing short pale decumbent seta; area adjacent to mandibular articulation smooth; antennae with f1 and f3 $3 \times$ longer than wide; f2 $4 \times$ longer than wide.

Mesosoma. Anterior $\frac{1}{3}$ of medial lobe of scutum with dense setigerous pin punctures, remainder of scutum and scutellum largely smooth and shining with scattered pin punctures and light coloured setae; scutellum, metanotum and propodeum unarmed; horizontal surface of propodeum longitudinally striate, striae wide apart.

Forewing with marginal vein short, almost punctiform, less than $0.5 \times$ length of stigmal vein; stigmal vein longer than $2 \times$ marginal vein, postmarginal vein almost $3 \times$ as long as stigmal vein; submarginal, marginal and postmarginal veins with long erect bristles along entire length.

Metasoma. T1 longitudinally striate, as long as basal width; T2 with longitudinal striae restricted to anterior margin, remainder smooth and shining with scattered setigerous pin punctures along lateral margins, slightly longer than $2 \times$ T1 and $3 \times$ T3, longer than basal width; T3 medially smooth and shining, laterally with dense setigerous pin punctures, less than $0.5 \times$ as long as basal width, $1.5 \times$ length of T4; T4-T6 with dense setigerous pin punctures; T4 and T5 transverse, subequal in length.

Male

Unknown.

Genus *Jarabambius* Galloway

Jarabambius Galloway, 1982, p. 189.

Type-species *Baryconus vestitus* Dodd, 1924.

Distribution

Known only from Lord Howe Island.

Discussion

See Galloway (1982).

Species of Jarabambius Described from Australia

1. *J. vestitus* (Dodd), 1924, p. 179

Genus *Lispoteleia* Galloway, gen. nov.

(Figs 64-86)

Type-species *Lispoteleia collina* Galloway, sp. nov.

Etymology

From the greek 'lispos', 'smooth' or 'polished', and referring to the characteristic sculpturing of the head, scutum and scutellum. Feminine.

Distribution

Lispoteleia has been recorded from the eastern coast of Queensland and the Laloki Central District of New Guinea. The genus is also represented in many parts of the Pacific and south-east Asia (Masner, personal communication).

Discussion

This study recognizes nine Australian species in *Lispoteleia* of which five are considered to be new. Galloway (1976) listed nine described species that were thought to belong in *Lispoteleia*. However, synonymy has now reduced this number to four. Females of all species so far described do not have a horn on T1. However, there is a group of closely related northern Queensland species in which the female has a well-developed horn on T1. This group of species, which includes *Macroteleia cornuta* Dodd (see Galloway 1978b, p. 297), may eventually be included in *Lispoteleia* or form a separate genus. Insufficient material of this group is available to permit a decision at this time.

Generic Description

Head smooth and shining, in dorsal view rounded in shape; frontal depression shallow and unmargined; temple region wide; eyes bare; OOL < OD; malar groove present; mandibles tridentate; palpal formula 4-2, 2nd labial segment very small.

Mesosoma. Pronotum narrowly visible in dorsal view; scutum and scutellum smooth, shining, sometimes with scattered setigerous pin punctures; notauli percurrent; skaphion absent; scutellum semicircular in shape; scutellum and metanotum unarmed; metanotum slightly wider medially than laterally; in dorsal view horizontal surface of propodeum medially divided; medial, posterodorsal corners of propodeal halves sometimes tooth-like; netrion well developed, open, carinate; mesopleural depression distinct.

Forewings usually extending just beyond apex of metasoma; submarginal vein curving away slightly before joining costa; marginal vein as long as or shorter than stigmal vein; stigmal vein knobbed; postmarginal vein present, variable in length; medial vein absent, basal vein sometimes indicated by brown suffusion.

Metasoma elongate, at least 3 × as long as greatest width, longer than head and mesosoma combined; ♀ with 6 tergites and 6 sternites, T7 exserted with ovipositor, T6 convex in lateral view; ♂ with 8 tergites and 7 sternites, T2 and T3 subequal.

Comments

Lispoteleia appears to be most closely related to *Probaryconus* but may be distinguished from Australian species of this genus as follows:

Head, scutum and scutellum densely punctate; notauli usually absent; propodeum medially contiguous, anterodorsally bispinose *Probaryconus* Kieffer
 Head, scutum and scutellum smooth and shining; notauli present; propodeum medially divided, anterodorsally unarmed, but posterodorsal corners of propodeal halves sometimes tooth-like
 Lispoteleia Galloway, gen. nov.

Key to Australian Species of *Lispoteleia*

1.	Fore and mid coxae reddish yellow	2 -
	Fore and mid coxae dark brown to black	6
2(1).	T1-T6 entirely longitudinally striate (Fig. 77)	<i>striata</i> Galloway, sp. nov.
	At most, T1-T4 longitudinally striate	3

- 3(2). T3 strigose-reticulate; T4 reticulate with scattered setigerous pin punctures, reticulation tending to fail posteromedially (Figs 81, 84) 4
 T3 and T4 longitudinally striate; T4 medially smooth and shining with scattered setigerous pin punctures (Figs 69, 73) 5
- 4(3). Medial lobe of scutum with numerous setigerous pin punctures anteriorly becoming more dense; ♀ antennae with pedicel longer than f1 (Fig. 85); ♂ antennae with f2 slightly longer than f10 (Fig. 86) *unicolor* (Dodd)
 Medial lobe of scutum with very few if any setigerous pin punctures; ♀ antennae with pedicel shorter than f1 (Fig. 82); ♂ antennae with f2 clearly shorter than f10 (Fig. 83) *tricolor* (Dodd)
- 5(3). Scutum with numerous setigerous pin punctures on both medial and lateral lobes; ♀ antennae (Fig. 70) with pedicel and funicle segments yellow *hirta* Galloway, sp. nov.
 Scutum with widely scattered setigerous pin punctures on medial lobe, no punctures on lateral lobe; pedicel and funicle segments dark reddish brown *inornata* (Dodd)
- 6(1). T1-T6 longitudinally striate (Figs 64, 74) 7
 Only T1-T2 longitudinally striate (Figs 76, 80) 8
- 7(6). Forewing with postmarginal vein approximately 3 × as long as marginal vein (Fig. 67) *collina* Galloway, sp. nov.
 Forewing with postmarginal vein approximately 2 × as long as marginal vein *marroo* Galloway, sp. nov.
- 8(6). T1 with smooth lateral patches on anterior ½, remainder longitudinally striate (Fig. 76); (♀ antennae with f2 slightly longer than f1; forewing with postmarginal vein only slightly longer than marginal vein) *minima* (Dodd)*
 T1 entirely longitudinally striate (Fig. 80); ♀ antennae with f1 longer than f2 (Fig. 79); forewing with postmarginal vein longer than 3 × marginal vein *tamborina* Galloway, sp. nov.

Lisposelela collina Galloway, sp. nov.

(Figs 64, 65, 67, 68)

Types

Holotype ♀ and allotype on cards, Centre Peak, Bellender Ker Range, 1500 m, Queensland, 10.iv.1979, E. C. Dahms, QM.

Paratypes: **Queensland:** Centre Peak, Bellenden Ker Range, 1500 m, 10.iv.1979, E. C. Dahms, 1♂, 1♀, ANIC, 9♂, 1♀, QDPI; Mt Spec National Park, 6.iv.1976, I. D. Galloway, 4♀, QDPI.

Etymology

From the latin 'collis', 'hill' or 'high ground'.

Female

Length 2.4-2.5 mm.

Coloration. Head black, mandibles yellow, antennae with club black, remainder dark brown, pedicel, f1 and f2 sometimes lightly suffused with yellow, f3 and f4 often darker than f1 or f2; mesosoma black, legs yellow except coxae which are dark brown to black, fore coxae slightly lighter in colour than either mid or hind coxae; metasoma black.

Head with widely scattered fine setigerous pin punctures; antennae with scape longer than f1 + f2; pedicel not as long as f1; f1 longer than f2; f2-f4 gradually becoming shorter until f4 almost as wide as long; club approximately as long as f1-f4 combined.

* Slide of antennae and forewings of holotype of *minima* missing from SAM; parts of couplet in parentheses taken from Dodd's original description.

Mesosoma. Medial lobe of scutum with scattered setigerous pin punctures becoming more dense anteriorly; lateral lobes of scutum with single row of setigerous pin punctures along anterior margins and beside notauli; scutellum with scattered setigerous pin punctures; propodeum punctate-reticulate; posterodorsal corners of propodeal halves slightly prolonged; forewings with stigmal vein longer than marginal vein; postmarginal vein slightly longer than $3 \times$ marginal vein.

Metasoma approximately as long as $4 \times$ greatest width; T1 without raised anterior horn; T1-T6 longitudinally striate; lateral margins of T2-T5 smooth and shining with scattered setigerous pin punctures; T6 only slightly convex in lateral view.

Male

As for female except as follows:

Antennae with radicle yellow, scape dark brown, pedicel brown with yellow suffusions, funicle segments dark brown; scape slightly longer than $f1 + f2$; pedicel not quite as long as $f1$; $f1$ not as long as $f2$; $f3$ slightly longer than pedicel + $f1$; $f3$ - $f5$ approximately equal in length; $f6$ - $f9$ gradually reducing in length; $f10$ approximately as long as $f3$.

Lispotelela hirta Galloway, sp. nov.

(Figs 69, 70)

Types

Holotype ♀ on card, Cooloola Forestry Area, E. Gympie, Queensland, April 1978, I. D. Galloway, QM.

Paratype: **Queensland:** Cooloola, 7.iv.1978, E. C. Dahms, 1 ♀, QDPI.

Etymology

From the latin 'hirtus', 'hairy', referring to the dense fine setae on the mesosoma.

Female

Length 2.4 mm.

Coloration. Head black, mandibles yellow, antennae with club black, remaining segments yellow, legs including coxae yellow; mesosoma black; metasoma black.

Head with very few setigerous pin punctures; antennae with scape longer than $f1 + f2$ but not as long as $f1$, $f2$ and pedicel combined; pedicel not as long as $f1$; $f1$ slightly longer than $f2$; $f2$ - $f4$ gradually becoming shorter until $f4$ almost as wide as long; club longer than $f1$ - $f4$ combined.

Mesosoma. Medial and lateral lobes of scutum and scutellum with numerous setigerous pin punctures; propodeum punctate-reticulate, posterodorsal corners of propodeal halves slightly prolonged to form short teeth; forewings with stigmal vein slightly longer than marginal vein; postmarginal vein at least $3 \times$ as long as marginal vein.

Metasoma approximately $3 \times$ as long as greatest width; T1 without raised anterior horn; T1-T2 longitudinally striate; T3 longitudinally striate but with tendency to be medially smooth and shining; T4 with fine longitudinal striae but medially smooth and shining with scattered setigerous pin punctures; lateral margins of T2-T4 smooth and shining with scattered setigerous pin punctures; T5-T6 smooth and shining with scattered setigerous pin punctures.

Male

Unknown.

Lispoteleia inornata (Dodd) Galloway, comb. nov.

(Figs 71-73)

Ceratoteleia inornata Dodd, 1913a, pp. 141, 175.

Macroteleia inornata (Dodd); Dodd, 1913c, p. 176.

Monoteleia inornata (Dodd); Kieffer, 1926, p. 346.

Baryconus inornatus (Dodd); Dodd, 1933, p. 75.

Macroteleia infuscatus Dodd, 1915a, p. 14.

Baryconus infuscatus (Dodd); Dodd, 1933, p. 75; syn. nov. Galloway.

Types

Holotype ♂ of *inornata*, I1375, on slide; allotype on tag, head and antennae on slide; Gordonvale, Queensland, 12.xi.1912, A. P. Dodd, SAM. Holotype ♀ of *infuscatus* on tag; antennae and forewings on slide; Kuranda, Queensland, 12.ix.1913, A. P. Dodd, SAM.

Female

Length 2.3 mm.

Coloration. Head black, mandibles yellow, antennae with scape yellow, pedicel and funicle segments reddish brown, club black; mesosoma dark reddish brown to almost black, legs including coxae reddish yellow; metasoma dark reddish brown.

Head almost devoid of setigerous pin punctures; antennae with scape longer than pedicel + f1; pedicel slightly longer than f2 but not as long as f1; f1 longer than f2; f2-f4 gradually becoming shorter until f4 almost as wide as long; club approximately as long as f1-f4 combined.

Mesosoma. Medial lobe of scutum with widely scattered setigerous pin punctures becoming more dense toward anterior margin; lateral lobes of scutum without setigerous pin punctures; propodeum punctate-reticulate, posterodorsal corners of propodeal halves slightly prolonged to form short teeth; forewings with stigmal vein slightly longer than marginal vein; postmarginal vein approximately 2 × as long as marginal vein.

Metasoma approximately 3.5 × greatest width; T1 without raised anterior horn; T1-T3 finely longitudinally striate; T4 with fine longitudinal striae but medially smooth and shining with scattered setigerous pin punctures; lateral margins of T2-T4 smooth and shining with scattered setigerous pin punctures; T5-T6 smooth and shining with scattered setigerous pin punctures.

Male

As for female except as follows:

Length 1.9 mm.

Antennae with scape yellow, pedicel and funicle segments dark brown to black; scape slightly longer than f1 + f2; f1 longer than pedicel but not as long as f2; f2 and f3 approximately equal in length; f4-f9 gradually reducing in length; f10 longest funicle segment.

Non-type Material Examined

Queensland: 22 km W. Gordonvale, 1 ♀, QDPI.

Lispoteleia marroo Galloway, sp. nov.

(Figs 74, 75)

Types

Holotype ♀ on card, Amberley, Queensland, 8.ii.1974, C. H. Wild, QM.

Paratype ♀ on card, Cannonvale, Queensland, 24.iv.1979, E. Dahms, QDPI.

Etymology

From the aboriginal word 'marroo', 'black'.

*Female**Length* 2.2–2.5 mm.*Coloration.* Head black, mandibles reddish yellow, antennae black; mesosoma black, legs including coxae and last tarsal segments black but with trochanter, proximal and distal margins of tibiae and remaining tarsal segments reddish yellow; metasoma black.*Head* with very widely scattered fine setigerous pin punctures; antennae with scape longer than f1 + f2 combined but not quite as long as f1, f2 and pedicel combined; pedicel not as long as f1; f1 slightly longer than f2; f2–f4 gradually becoming shorter until f4 almost as wide as long; club slightly longer than f1–f4 combined.*Mesosoma.* Scutum almost without sculpture, with very fine setigerous pin punctures beside notauli and along anterior margin; scutellum almost without sculpture, with very fine setigerous pin punctures at anterolateral corners; propodeum medially smooth, laterally longitudinally striate; posterodorsal corners of propodeal halves not prolonged; forewings with stigmal vein slightly longer than marginal vein; postmarginal vein approximately 2 × as long as marginal vein.*Metasoma* approximately as long as 3.5 × greatest width; T1 without raised anterior horn; T1–T6 longitudinally striate; lateral margins of T2–T5 smooth and shining with scattered setigerous pin punctures; T6 strongly convex in lateral view.*Male*

Unknown.

Lispoteleia minima (Dodd), Galloway, comb. nov.

(Fig. 76)

Macroteleia minima Dodd, 1913a, p. 150; Kieffer, 1926, p. 542.*Baryconus minimus* (Dodd); Dodd, 1933, p. 75.*Type*

Holotype ♀, I1392, on tag, slide of antennae and forewings missing, Gordonvale, Queensland, 13.iv.1913, A. P. Dodd, SAM.

*Female**Length* 2.6 mm.*Coloration.* Head black, mandibles reddish yellow, antennae black.*Head* with widely scattered fine setigerous pin punctures; antennae with scape no longer than pedicel + f1; pedicel 2 × as long as wide; f1 as long as pedicel

and narrower, $3 \times$ as long as wide; f2 slightly longer than f1; f3 $0.5 \times$ length of f2; f4 wider than long; club with segment 3 widest.

Mesosoma. Medial lobe of scutum with scattered setigerous pin punctures restricted to anterior $\frac{1}{3}$ of lobe; lateral lobe of scutum without punctures; scutellum with widely scattered setigerous pin punctures; propodeum longitudinally striate; posterodorsal corners of propodeal halves slightly prolonged to form short teeth.

Forewings with marginal vein scarcely longer than stigmal vein; stigmal vein very oblique, end distally slightly curved, apex distinctly knobbed; postmarginal vein slightly longer than marginal vein.

Metasoma approximately $3.4 \times$ greatest width; T1 without raised anterior horn, longitudinally striate with smooth lateral patches on anterior $\frac{1}{3}$; T2 longitudinally striate; T3–T4 longitudinally strigose; T5 with scattered setigerous pin punctures, anterior $\frac{1}{2}$ finely longitudinally strigose, posterior $\frac{1}{2}$ smooth and shining; T6 and lateral margins of T2–T5 smooth and shining, with scattered setigerous pin punctures; T6 slightly convex in lateral view.

Male

Unknown.

Comment

Since the slide of the antennae and forewings of the holotype of *minima* is missing from the SAM, their description has been taken from Dodd (1913a).

Lispoteleia striata Galloway, sp. nov. (Figs 66, 77, 78)

Types

Holotype ♀ on card, Highvale, Queensland, 19.vi.1980, B. Cantrell, QM.

Paratype ♀, Queensland, Balfour Range, via Benarkin, 2–3.ii.1974, I. Naumann, QDPI.

Etymology

From the latin 'stria', 'furrow', referring to the sculpturing of the metasoma.

Female

Length 2.5 mm.

Coloration. Head black, mandibles yellow, antennae with club black, remainder reddish yellow; mesosoma black, legs including coxae reddish yellow; metasoma black.

Head with widely scattered fine setigerous pin punctures; antennae with scape longer than f1 + f2 but not as long as f1, f2 and pedicel combined; pedicel not as long as f1; f1 longer than f2; f2–f4 gradually becoming shorter until f4 almost as wide as long; club almost as long as f1–f4 combined.

Mesosoma. Medial lobe of scutum with widely scattered punctures becoming more dense anteriorly; lateral lobes of scutum with single row of setigerous punctures beside notauli and along anterior margins; propodeum punctate-reticulate; posterodorsal corners of propodeal halves not prolonged; forewings with stigmal vein longer than marginal vein; postmarginal vein almost $3 \times$ as long as marginal vein.

Metasoma approximately as long as $3.5 \times$ greatest width; T1 without raised anterior horn; T1–T6 longitudinally striate; lateral margins of T2–T5 smooth and shining with scattered setigerous pin punctures; T6 strongly convex in lateral view.

Male

Unknown.

Lispoteleia tamborina Galloway, sp. nov.
(Figs 79, 80)

Types

Holotype ♀ on card, Mt Tamborine, Queensland, 17.iii.1981, J. F. Donaldson, QM.

Paratype ♀ on card, Mt Tamborine, Queensland, 6–17.iii.1981, ex malaise trap, QDPI.

Etymology

The name 'tamborina' refers to the type locality.

Female

Length 2.2–2.4 mm.

Coloration. Head black, mandibles reddish yellow, antennae black; mesosoma black, coxae black, remainder of legs dark reddish brown with strong black suffusions; metasoma black.

Head with very few widely scattered fine setigerous pin punctures; antennae with scape approximately as long as pedicel, f1 and f2 combined; pedicel not as long as f1; f1 longer than f2; f2–f4 gradually becoming shorter until f4 almost as wide as long; club approximately as long as f1–f4 combined.

Mesosoma with widely scattered fine setigerous pin punctures, almost entirely restricted to anterior margin and beside notauli; scutellum with very fine setigerous pin punctures mostly along outer margins; propodeum punctate-reticulate, posterodorsal corners of propodeal halves not prolonged; forewings with stigmal vein longer than marginal vein, postmarginal vein approximately $3 \times$ as long as marginal vein.

Metasoma approximately as long as $3.4 \times$ greatest width; T1 without raised anterior horn; T1–T2 longitudinally striate; T3 longitudinally strigose; T4 strigose-reticulate; T5 with scattered setigerous pin punctures, anterior $\frac{1}{2}$ finely reticulate, posterior $\frac{1}{2}$ smooth and shining; T6 and lateral margins of T2–T5 smooth and shining with scattered setigerous pin punctures; T6 strongly convex in lateral view.

Male

Unknown.

Lisποτεleia tricolor (Dodd) Galloway, comb. nov.
(Figs 81-83)

Macroteleia tricolor Dodd, 1914b, p. 128; Kieffer, 1926, p. 541.

Baryconus tricolor (Dodd); Dodd, 1933, p. 75.

Macroteleia polita Dodd, 1914a, p. 78; Kieffer, 1926, p. 542.

Baryconus politus (Dodd); Dodd, 1933, p. 75; syn. nov. Galloway.

Macroteleia varicornis Dodd, 1914b, p. 127; Kieffer, 1926, p. 540.

Baryconus varicornis (Dodd); Dodd, 1933, p. 75; syn. nov. Galloway.

Macroteleia simillima Dodd, 1915a, p. 14.

Baryconus simillimus (Dodd); Dodd, 1933, p. 75; syn. nov. Galloway.

Types

Holotype ♂ of *tricolor* on tag; head, antennae and forewings on slide; Gordonvale, Queensland, 16.vi.1913, A. P. Dodd. Holotype ♀ of *polita* on tag; antennae and forewings on slide; Gordonvale, Queensland, 2.viii.1913, A. P. Dodd. Holotype ♀ of *varicornis*, 12199, on tag; slide of antennae and forewings missing; Gordonvale, Queensland, 7.vii.1913, A. P. Dodd. Holotype ♂ of *simillima* on tag; head, antennae and forewings on slide; Kuranda, Queensland, 16.ix.1913, A. P. Dodd, SAM.

Females

Length 2.0-2.3 mm.

Coloration. Head black, mandibles yellow, antennae with scape, pedicel and funicle segments reddish yellow to reddish brown, club black; mesosoma varying from light reddish brown to dark brown, legs including coxae yellow; metasoma varying from light reddish brown to almost black, frequently with contrasting lighter shading on T3 and T4.

Head with very few setigerous pin punctures; antennae with scape longer than pedicel + f1; pedicel not as long as f1; f1 longer than f2; f2 slightly longer than f3; f3 slightly longer than f4; club approximately as long as f1-f4.

Mesosoma. Scutum with few scattered setigerous pin punctures along anterior margin, remainder entirely smooth and shining; scutellum with few scattered setigerous pin punctures; metanotum with single row of foveae; propodeum punctate-reticulate, posterodorsal corners of propodeal halves with short teeth; forewing with stigmal vein slightly longer than marginal vein; postmarginal vein approximately 3 × length of marginal vein.

Metasoma usually more than 3.5 × but less than 4.0 × longer than greatest width; T1 without raised anterior horn; T1-T2 longitudinally striate; T3 strigose-reticulate; T4 reticulate with scattered setigerous pin punctures, reticulation tending to fail posteromedially; T5-T6 and lateral margins of T2-T4 smooth and shining with scattered setigerous pin punctures.

Male

As for female except as follows:

Length 2.3 mm.

Antennae with scape more than 2 × length of f1; pedicel as long as f1; f1 shorter than f2; f2 and f3 equal in length, with exception of f10, longest funicle segments; f4-f9 gradually becoming shorter; f10 clearly longest funicle segment.

Non-type Material Examined

Queensland: Julatten, 1 ♀, QDPI; Little Mitchell River near Yalkula, 2 ♀, QDPI; Big Mitchell Creek, Mareeba-Molloy Rd, 2 ♀, ANIC; 7-14 km W. Herberton via Watsonville, 1 ♂, ANIC; Myrtle Creek, 4 km N. Proserpine, 1 ♀, QDPI; Eurimbula Creek via Round Hill Head, 1 ♀, QDPI.

Lispoteleia unicolor (Dodd) Galloway, comb. nov.

(Figs 84-86)

Macroteleia unicolor Dodd, 1914b, p. 128; Kieffer, 1926, p. 541.*Baryconus unicolor* (Dodd); Dodd, 1933, p. 75.*Macroteleia setosa* Dodd, 1914b, p. 128; Kieffer, 1926, p. 541.*Baryconus setosus* (Dodd); Dodd, 1933, p. 75; syn. nov. Galloway.*Types*

Holotype ♀ of *unicolor*, 12200, on tag; antennae and forewings on slide; Gordonvale, Queensland, 1.vii.1913, A. P. Dodd. Holotype ♂ of *setosa*, 12201, on tag; head, antennae and forewings on slide; Gordonvale, 21.vii.1913, A. P. Dodd, SAM.

*Female**Length* 2.4 mm.

Coloration. Head black, mandibles reddish yellow, antennae with scape, pedicel and funicle segments dark brown, club black (antennae on slide, difficult to determine original colour); mesosoma black, legs including coxae reddish yellow; metasoma black.

Head with widely scattered setigerous pin punctures; antennae with scape longer than f1 + f2 but shorter than f1, f2 and pedicel combined; pedicel longer than f1; f1 and f2 approximately equal in length; f3-f4 becoming shorter until f4 almost as wide as long; club approximately as long as f1-f4.

Mesosoma. Medial lobe of scutum with numerous setigerous pin punctures anteriorly becoming more dense; lateral lobe of scutum with only single row of setigerous pin punctures bordering notauli; scutellum with several setigerous pin punctures; propodeum punctate-reticulate, posterodorsal corners of propodeal halves only very slightly prolonged; forewings with stigmal vein slightly longer than marginal vein; postmarginal vein approximately 2 × as long as marginal vein.

Metasoma approximately 3 × as long as greatest width; T1 longitudinally striate without raised anterior horn; T2 longitudinally striate but with tendency to be strigose; T3 strigose-reticulate; T4 finely reticulate with scattered setigerous pin punctures, reticulation posteromedially tending to fail; lateral margins of T2-T4 smooth and shining with scattered setigerous pin punctures; T5-T6 smooth and shining with scattered setigerous pin punctures.

Male

As for female except as follows:

Length 2.2 mm.

Antennae with scape reddish yellow, pedicel and funicle segments dark brown to black; scape slightly longer than 2 × length of f1; pedicel and f1 approximately equal in length; f2 longer than f1 or f3, slightly longer than f10; f4-f9 gradually becoming shorter, f10 approximately as long as f3.

Non-type Material Examined

Queensland: 18.5 km W. Gordonvale, 1 ♂, QDPI.

Tribe **PSILANTERIDINI** Kozlov

Psilanteridini Kozlov, 1970a, p. 119; Masner, 1976, p. 39.

Type-genus *Psilanteris* Kieffer, 1916.

Diagnosis

Frons without depression, margined by carina; palpal formula 4-3 or 4-2; antennae 12-segmented in both sexes, ♂ with tyloid present on f3; marginal vein of forewing rarely dilated but never forming pterostigma; hindwing with complete submarginal vein reaching frenal hooks (almost veinless in *Mallateleia* Dodd); skaphion well developed, incomplete or even absent; netrion well developed; tibial spur formula 1-1-1; metasoma usually spoon-shaped; T3 longest metasomal tergite; ♀ with 7 visible tergites and 6 sternites; T7 partly external, extruded with ovipositor; ♂ with 8 tergites and 7 sternites.

Discussion

Kozlov (1970a) distinguished Psilanteridini from all other tribes by the presence of a skaphion. However, Masner (1972) was able to show that even in a single genus, e.g. *Opisthacantha*, a skaphion is present in some species but absent in others. It is also found in groups normally placed outside of Psilanteridini, e.g. Thoronini. Both Masner (1976) and Kozlov (1970a) suggest that Psilanteridini shows morphological affinity with Calliscelionini but in addition is also close to Cremastobaeni, Embidobiini, Thoronini, Baeini and Idrini. In Australia, the tribe Psilanteridini is represented by 11 genera, viz *Mallateleia* Dodd, *Fusicornia* Risbec, *Calotelea* Westwood, *Styloteleia* Kieffer, *Opisthacantha* Ashmead, *Nyleta* Dodd, *Psilanteris* Kieffer, *Duta* Nixon, *Genatropis* Galloway, gen nov., *Duarina* Dodd and *Lidgbirdius* Galloway.

Genus **Anteris** Foerster

Anteris Foerster, 1856, pp. 101, 103.

Paratrimorus Kieffer, 1908a, pp. 117, 146. Synonymy: Kozlov, 1971, p. 50.

Trichacolus Kieffer, 1912, pp. 87, 107. Synonymy: Muesebeck and Walkley, 1956, p. 404.

Type-species *Anteris bilineatus* Thomson, 1859.

Discussion

Ten Australian species were assigned by Dodd (1915a, 1915b) to the genus *Anteris*. However, after examining types in BMNH, Masner (1965) transferred *Anteris charmus* (Walker) to *Paratrimorus* Kieffer. Later, Masner (1976) assigned *charmus* to the genus *Psilanteris* Kieffer. Galloway (1976) examined the types of nine species deposited in SAM and transferred all species to *Psilanteris*. Hence, no species of *Anteris* is currently recorded from Australia.

Genus **Mallateleia** Dodd (Figs 87, 88)

Mallateleia Dodd, 1913a, pp. 131, 151; Dodd, 1926a, p. 303.

Mallateleoides Dodd, 1913a, pp. 131, 152. Synonymy: Dodd, 1926a, p. 304.

Type-species *Mallateleia giraulti* Dodd, 1913a.

Discussion

Mallateleia is characterized by a restricted distribution and very reduced venation in both wings. It is one of the few scelionid genera in which both wings are almost veinless. Rudiments of the subcostal vein are usually indicated in both wings, and the marginal vein of the forewing is frequently represented by a darkened spot. In his revision, Dodd (1926a) synonymized *Mallateleoides* and recognized a total of 11 species. Only two species are known from both sexes. Dodd (1926a) believed *Mallateleia* to be closely allied to *Psilanteris* (Dodd's *Anteris*). However, although both genera have antennal and metasomal characters in common, *Psilanteris* is readily distinguished by the presence of a skaphion, distinct wing venation and an acute tooth on the metanotum.

Species of *Mallateleia* Described from Australia

1. *M. collaris* Dodd, 1926a, p. 310
2. *M. crassipes* Dodd, 1926a, p. 311
3. *M. giraulti* Dodd, 1913a, p. 151
4. *M. giraulti foersteri* Dodd, 1914c, p. 91
5. *M. kiefferi* Dodd, 1913c, p. 177
6. *M. maculipennis* Dodd, 1926a, p. 307
7. *M. pilosifrons* Dodd, 1926a, p. 306
8. *M. pilosiscutum* Dodd, 1926a, p. 308
9. *M. punctatifrons* Dodd, 1926a, p. 308
10. *M. rugosiceps* Dodd, 1926a, p. 305
11. *M. splendida* (Dodd), 1913a, p. 152

Genus *Fusicornia* Risbec (Figs 89, 90)

Fusicornia Risbec, 1950, p. 606.

Type-species *Fusicornia bambeyi* Risbec, 1950.

Distribution

This is the first record of *Fusicornia* from the Australian continent. It is based on a single female collected by Galloway in the Cassowary Valley, south of Mossman, northern Queensland (specimen in QDPI).

Discussion

Fusicornia has a number of distinctive features, viz very large eyes with no temple; bidentate mandibles; cheeks without striate sculpturing; ♀ antennae without distinct club; skaphion and notauli absent; mesoscutum strongly arched; netrion present; metanotum armed with 3 spines, with middle spine longest. *Fusicornia* appears to be most closely related to *Opisthacantha* Ashmead, which may be distinguished by cheeks with striate sculpturing, single medial metanotal spine and shorter marginal vein in the forewing.

Genus *Calotelea* Westwood
(Fig. 91)

Calotelea Westwood, 1837, p. 55.

Lamproteleia Kieffer, 1910b, p. 293. Synonymy: Masner, 1965, p. 69.

Pegoteleia Kieffer, 1926, pp. 272, 510. Synonymy: Masner, 1976, p. 44.

Type-species *Calotelea aurantia* Hope, 1837.

Discussion

Calotelea contains very small slender wasps, which are sexually dimorphic and dichromatic. The females of Australian species are frequently golden yellow with paired darkened spots on the lateral margins of the metasoma. However, darker coloured species do occur, e.g. the female of *Calotelea delicatula* (Dodd) is almost entirely black. Where the female of a species is light in colour, the male is usually very much darker. Though the genus is characterized by well-developed banded wings, females with reduced wings have been collected in pitfall traps.

In Australian species of *Calotelea*, the development of the skaphion varies considerably between species. In some, the posterior rim is very evident so the skaphion is well defined. In others, the posterior margin is so difficult to see that the skaphion appears to be absent. In all species, however, the antennal radicle is relatively long, at least one-third the scape length. Masner (1980) presented a generic diagnosis for Nearctic species of *Calotelea*. Specimens of *Calotelea* are most readily obtained by using either yellow pan traps or Malaise traps. In Australia, the genus is more prevalent in warmer northern coastal areas of Queensland. It is assumed that members of *Calotelea* are parasitoids in eggs of small crickets (Masner 1980).

Calotelea is very similar in appearance to *Calliscelio* Ashmead. The two genera are morphologically convergent but may be separated readily (Masner 1976, p. 43). *Calotelea* seems most closely related to *Styloteleia* Kieffer and *Opisthacantha* Ashmead.

Species of *Calotelea* Described from Australia

1. *C. delicatula* (Dodd), 1914c, p. 107
2. *C. exilis* Galloway, Dodd, 1916, p. 26
3. *C. fasciata* (Dodd), 1913a, p. 143
4. *C. maculata* (Dodd), 1914c, p. 109

Genus *Styloteleia* Kieffer
(Fig. 93)

Styloteleia Kieffer, 1916, p. 184.

Tomoteleia Kieffer, 1917a, p. 50. Synonymy: Masner, 1976, p. 44.

Type-species *Styloteleia rufescens* Kieffer, 1916.

Distribution

In Australia, *Styloteleia* is most commonly encountered in the rainforests of northern Queensland. The most southern record for the genus is the sand-based rainforests of Coolool National Park near Gympie (specimens in QDPI).

Discussion

Styloteleia contains long slender wasps with the habitus of *Macroteleia*. However, the presence of a skaphion, an unarmed metanotum, and the downward curve of the submarginal vein in the forewing will distinguish *Styloteleia*. Females of the genus are characterized by an abrupt five-segmented antennal club and a well-developed horn on the first metasomal tergite. Males have a well-developed bidentate plate on the propodeum.

Species of *Styloteleia* Described from Australia

1. *S. acutiventris* (Dodd), 1914c, p. 98
2. *S. nigrincta* (Dodd), 1915a, p. 31
3. *S. terraereginae* (Dodd), 1915a, p. 22

Genus *Opisthacantha* Ashmead (Figs 92, 94)

Opisthacantha Ashmead, 1893, pp. 209, 211, 221.
Lapitha Ashmead, 1893, pp. 209, 211, 222. Synonymy: Masner, 1976, p. 45.
Prolapitha Kieffer, 1908a, p. 117. Synonymy: Masner, 1976, p. 45.
Protrimorus Kieffer, 1908a, p. 146. Synonymy: Masner, 1964, p. 140.
Acanthoteleia Kieffer, 1910c, p. 311. Synonymy: Masner, 1976, p. 45.
Acantholapitha Cameron, 1912, p. 70. Synonymy: Masner, 1976, p. 45.
Trissoscelio Kieffer, 1917a, p. 52. Synonymy: Masner, 1976, p. 45.
Vardhana Nixon, 1933, p. 320. Synonymy: Masner, 1976, p. 45.
Gita Nixon, 1933, p. 309. Synonymy: Masner, 1976, p. 45.
Elgonia Risbec, 1950, p. 549. Synonymy: Masner, 1976, p. 45.

Type-species *Opisthacantha mellipes* Ashmead, 1893.

Discussion

This is a very large genus in which characters that are usually of generic significance are often only of importance at the specific level, e.g. the presence or absence of a skaphion and notauli. Australian species of *Opisthacantha* may be distinguished by the following characteristics: frons without depression margined by keel; 12-segmented antennae in both sexes, with 5-segmented club in ♀; tridentate mandibles; lateral ocelli close to or touching eyes; forewing with marginal vein usually shorter than stigmal vein; postmarginal vein always present; basal vein sometimes evident; scutellum and propodeum unarmed; metanotum with single medial spine; metasoma flattened, spatulate-elongate. All Australian species of *Opisthacantha* have delicate but complete notauli.

Species of *Opisthacantha* Described from Australia

1. *O. australica* Dodd, 1913a, p. 147
2. *O. flavescens* Dodd, 1916, p. 25
3. *O. flavipes* Dodd, 1913c, p. 167
4. *O. giraulti* Dodd, 1914a, p. 78
5. *O. nigriceps* Dodd, 1913a, p. 147
6. *O. nubila* Dodd, 1930b, p. 26
7. *O. rufithorax* (Dodd), 1915a, p. 18
8. *O. unicolor* Dodd, 1913a, p. 178

Genus *Nyleta* Dodd
(Fig. 96)

Nyleta Dodd, 1926a, pp. 300-1.

Type-species *Nyleta striaticeps* Dodd, 1926a.

Distribution

Within Australia, the genus is restricted to rainforests or heavily wooded areas of the central eastern coast.

Discussion

Nyleta is distinguished from other Australian scelionid genera by the presence of a distinct skaphion, the absence of notauli, an unarmed scutellum and propodeum, a bispinose metanotum, ocelli that are large and close together, bare eyes, and a metasoma with only six visible tergites. Masner (1976) considers *Nyleta* to be closely related to *Oxyteleia* Kieffer and *Merriwa* Dodd, but contends that the differentiating characters are of problematic generic value.

Species of *Nyleta* Described from Australia

1. *N. striaticeps* Dodd, 1926a, p. 301

Genus *Oxyteleia* Kieffer

Oxyteleia Kieffer, 1908a, p. 118.

Dilapitha Kieffer, 1914, p. 293. Synonymy: Masner, 1976, p. 48.

Type-species *Caloteleia bidentata* Kieffer, 1905b.

Distribution

Oxyteleia is restricted to the Oriental-Australian region but has not yet been recorded from the Australian continent.

Discussion

Dodd (1927a) described one species of *Oxyteleia* (viz *O. bifurcata*) from Australia. After examination of the type-specimens, *Neoparidris* Galloway, gen. nov. was erected with *O. bifurcata* as the type-species.

Genus *Psilanteris* Kieffer
(Fig. 95)

Psilanteris Kieffer, 1916, p. 177.

Oxyphanurus Kieffer, 1926, p. 19. Synonymy: Masner, 1976, p. 50.

Type-species *Anteris bicolor* Kieffer, 1908a.

Distribution

In Australia, *Psilanteris* seems most prevalent in heavily forested areas along the north-eastern coast of the continent.

Discussion

Psilanteris is richly represented in Australia. Walker (1839) described one species from Western Australia, and Dodd (1913a, 1913c, 1914b, 1914e, 1915a, 1915b) recorded eight species and one variety from northern Queensland. Only *P. tridentata* (Dodd) has been described from both sexes. Morphological characteristics that appear to be important for the differentiation of species include the presence, extent of development, or absence of notauli, the colour patterns of the mesosoma, the length of the marginal vein compared to the stigmal vein, and the sculpturing of T3. *Psilanteris* appears most closely related to *Duarina* Dodd.

Species of *Psilanteris* Described from Australia

1. *P. charmus* (Walker), 1839, p. 59
2. *P. dubiosa* (Dodd), 1913c, p. 177
3. *P. grandis* (Dodd), 1915a, p. 23
4. *P. nigriscutellum* (Dodd), 1915b, p. 448
5. *P. nigrithorax* (Dodd), 1913c, p. 167
6. *P. queenslandica* (Dodd), 1913a, p. 149
7. *P. rufinotum* (Dodd), 1913a, p. 177
8. *P. rufiventris* (Dodd), 1914e, p. 253
9. *P. tridentata* (Dodd), 1913a, p. 149
10. *P. tridentata nigripes* (Dodd), 1914b, p. 125

Genus *Duta* Nixon (Figs 97–111)

Duta Nixon, 1933, p. 306.

Chaetanteris Priesner, 1951, p. 136. Synonymy: Masner, 1976, p. 51.

Type-species *Holoteleia tenuicornis* Dodd, 1920.

Discussion

The genus *Duta* was erected by Nixon (1933) for *Holoteleia tenuicornis* Dodd, described from two females and a male collected at Tjibodas, Java (Dodd 1920). Nixon reasoned that *tenuicornis* did not belong in *Holoteleia* because of its feebly developed notauli and punctiform marginal vein. Nixon (1933) also described a new subspecies *tenuicornis* subsp. *fragilis* for seven males collected at Port St John and Harrismith, South Africa.

Though Nixon clearly placed importance on the well-developed marginal vein of *tenuicornis*, Masner (1976) considered that the length of the marginal vein was not a good generic character as it varied considerably among species of *Duta*. However, *Duta* is clearly distinguished on the basis of other characters, e.g. presence of a skaphion. The genus apparently forms a link between *Holoteleia* and *Opisthacantha* (Masner 1976). The unarmed metanotum of *Duta* and the absence of striations about the mandibles separate *Duta* from *Opisthacantha*.

Galloway (1976) determined that two species described in *Leptoteleia* (viz *L. aurea* Dodd and *L. australica* Dodd) belong in *Duta*. Neither species possesses the *Leptoteleia* characteristics of a slender elongate body, a metanotal lamella, or the invariable absence of a skaphion.

Generic Description [based on an examination of Australian representatives of the genus, the type-species, and specimens of *Duta tenuicornis* (Dodd) subsp. *fragilis* (Nixon)]

Head transverse in dorsal view; frons slightly convex, without margined depression; eyes lightly pubescent; lateral ocelli either touching or almost touching orbital margins; cheeks and frons above malar groove without striae; mandibles tridentate; antennae 12-segmented with 6-segmented club in ♀.

Mesosoma slightly longer than greatest width measured across tegulae; pronotum barely visible in dorsal view; skaphion present, impunctate, smooth and shining; notauli present, percurrent; netrion present; scutellum and metanotum unarmed; metanotum medially smooth and polished, sometimes flattened but in no sense lamelliform; propodeum medially excavate.

Forewing with submarginal vein closely adjacent to anterior margin of wing, with erect bristles along its length; marginal vein either elongate or shortened to be almost punctiform; postmarginal vein present; basal and medial veins sometimes indicated.

Metasoma narrowed at base, almost petiolate; laterotergites narrow, submarginal ridge well impressed; T1 in ♀ at most with slight median bulge or flat, never with horn or distinct protuberance and without lateral pit-like impressions; T3 at least slightly longer than T2; T3 largest segment of metasoma.

Comments

Masner (1976) noted that the first two or three funicle segments of the female antennae of *Duta* are often elongate and subequal, e.g. in the genotype f1–f3 are approximately equal in length and at least 3 × as long as wide. This pattern is not evident in females of Australian species of *Duta*. In all species so far encountered, f1 is longer than f2, which is longer than f3, with f1 at most twice as long as wide, f2 only slightly longer than 1.5 times its greatest width to just longer than it is wide, and f3 frequently as long as wide. The Australian representatives of *Duta* are further characterized by variation in the length of the marginal vein.

Key to Australian Species of *Duta*

1. Marginal vein longer than stigmal vein; frons with at least lower $\frac{1}{2}$ smooth and shining ..2
Marginal vein shorter than stigmal vein (Fig. 111); frons entirely covered by fine reticulate sculpturing (Fig. 109) *reticulata* Galloway, sp. nov.
- 2(1). Frons with finely reticulate sculpturing covering upper $\frac{1}{2}$ of frons (Fig. 98); medial lobe of scutum covered with fine reticulate sculpturing over entire surface (Fig. 97); postmarginal vein only slightly longer than marginal vein *aurea* (Dodd)
Frons smooth and shining with fine reticulate sculpturing extending no farther than just below median ocellus (Figs 102, 106); medial lobe of scutum with anterior $\frac{2}{3}$ with fine reticulate sculpturing, posterior $\frac{1}{3}$ smooth and shining (Figs 104, 105); postmarginal vein almost 2 × as long as marginal vein 3
- 3(2). Sculpturing of frons restricted to 2 small patches either side of median ocellus (Fig. 102); metasoma longer than 2 × greatest width (Fig. 104); T2 clearly much longer than T1; T3 only slightly longer than T2 *australica* (Dodd)
Sculpturing of frons extending just below median ocellus (Fig. 106); metasomal length less than or just equal to 2 × greatest width (Fig. 105); T2 only slightly longer than T1; T3 much longer than T2 *concinna* Galloway, sp. nov.

***Duta aurea* (Dodd)**
(Figs 97-100)

Leptoteleia aurea Dodd, 1914a, p. 79; Dodd, 1914d, p. 164.

Microteleia aurea (Dodd); Dodd, 1915a, p. 27.

Strictoteleia aurea (Dodd); Kieffer, 1926, p. 547.

Duta aurea (Dodd); Galloway, 1976, p. 90.

Type

Holotype ♀, on tag; antennae and forewings on slide; Gordonvale, Queensland, Aug. 1913, A. P. Dodd, SAM.

Female

Length 1.1-1.3 mm.

Coloration. Head varying in colour from entirely black to reddish yellow with suffusions of dark colour about ocelli, ocelli and eyes black, antennae dark brown with scape basally suffused with yellow; scutum reddish yellow, scutellum reddish brown, darker than scutum, propodeum reddish yellow; T1 and sometimes T3 reddish yellow, T2-T6 dark reddish brown.

Head 2 × as wide as long and slightly wider than mesosoma, weakly emarginate behind; frons with lower ½ smooth and shining, upper ½ with fine scaly reticulation and numerous setigerous pin punctures (this pattern of fine scaly reticulation and fine setae continued on vertex and occiput); genae smooth and shining with scattered setigerous pin punctures; lateral ocelli with OOL < OD; antennae with scape as long as pedicel and f1-f3 combined; pedicel 1.5-2 × as long as greatest width; f1 slightly longer than pedicel or f2, 2 × as long as wide; f2 approximately 1.5 × as long as wide; f3 longer than wide, 2 × as long as f4; f4 transverse.

Mesosoma. Scutum covered with numerous setigerous pin punctures, setae almost obscuring underlying fine reticulate sculpturing; scutellum smooth and shining with scattered setigerous pin punctures; posterior margin of horizontal surface of propodeum dorsally deeply concave; subtriangular areas of propodeum with lateral band of fine rugosity and largely smooth inner portion.

Forewings with submarginal vein meeting wing margin at point less than 0.5 × wing length; marginal vein slightly longer than stigmal vein; basal vein lightly indicated; forewings at rest extending beyond tip of metasoma.

Metasoma not as long as 2 × greatest width, slightly longer than head and mesosoma combined; T1 shorter than basal width, entirely longitudinally striate; T2 wider than long and only slightly longer than T1, longitudinally striate for anterior ½ of segment, remainder smooth and shining, medially impunctate, laterally with scattered setigerous pin punctures; T3 clearly much longer than T2, transverse, smooth and shining, largely impunctate, laterally with scattered setigerous pin punctures; T4 transverse, smooth, shining, medially narrowly impunctate, remainder with scattered setigerous pin punctures; T5-T6 smooth, shining with setigerous pin punctures more evenly distributed; T7 slightly exerted.

Male

As for female except as follows:

Antennae with scape as long as pedicel and f1-f3 combined; pedicel slightly longer than wide, approximately as long as f2; f1 1.5 × as long as wide, slightly longer than pedicel or f2; remainder of segments except for apical segment slightly

longer than wide, slightly longer than pedicel or f2 but not quite as long as f1; apical segment almost $2 \times$ as long as wide, clearly longer than f1; metasoma with 8 tergites (7 tergites visible dorsally), slightly more elongate than φ .

Comments

Duta aurea is characterized by a long marginal vein and a predominantly reddish yellow body colour. The setigerous pin punctures on the mesosoma of *D. aurea* are also much more dense than those on the mesosoma of other species of *Duta*.

Non-type Material Examined

Queensland: Pebbly Beach near Cairns, 1 φ , QDPI; 5 km N. Mt Molloy, 1 σ , QDPI; 6 km W. Mareeba, 2 φ , QDPI; Little Mitchell River near Yalkula, 3 σ , 1 φ , QDPI; Crawford's Lookout, Palmerston National Park, 1 σ , QDPI; Davies Creek, 29 km W. Mareeba, 2 φ , QDPI; Gordonvale, 1 φ , ANIC; Brisbane, 1 φ , ANIC; Mt Nebo, 1 φ , QDPI; Forest Station 600 m, Bulburin State Forest, via Many Peaks, 2 σ , QDPI.

Duta australica (Dodd)

(Figs 101–104)

Leptoteleia australica Dodd, 1913a, p. 145; Kieffer, 1926, p. 479.

Microteleia australica (Dodd); Dodd, 1915a, p. 27.

Baryconus australicus (Dodd); Dodd, 1916, p. 27.

Duta australica (Dodd); Galloway, 1976, p. 91.

Type

Holotype σ on tag; slide of antennae and forewings missing; Roma, Queensland, 5.x.1911, A. A. Girault, I1382, SAM.

Female

Length 1.4 mm.

Coloration. Head black, antennae with scape basally suffused with yellow; mesosoma varying from entirely black to scutum reddish brown, scutellum dark reddish brown, legs including coxae yellow but with tibiae, tarsi and femora suffused with dark brown; metasoma varying from black with only T1 reddish brown to entirely reddish brown.

Head in dorsal view approximately $2 \times$ as wide as long, weakly emarginate behind; frons smooth and shining with 2 small patches of reticulation in front of and to side of median ocellus; vertex to occipital margin with fine scaly reticulation and scattered setigerous pin punctures; genae smooth and shining with scattered setigerous pin punctures; OOL < OD; antennae with scape as long as pedicel and f1–f3 combined; pedicel $1.5 \times$ as long as greatest width; f1 longer than pedicel, $2 \times$ as long as wide; f2 not as long as f1 but slightly longer than f3 and f4 combined, f2 slightly longer than $1.5 \times$ greatest width; f3 slightly longer than wide; f4 transverse.

Mesosoma. Scutum covered with scattered setigerous pin punctures, anterior $\frac{2}{3}$ of medial lobe of scutum with fine scaly reticulation, posterior $\frac{1}{3}$ smooth and shining; scutellum smooth and shining with few scattered setigerous pin punctures; subtriangular areas of propodeum largely longitudinally striate, each with 2 well-defined ridges meeting anterior to midpoint of subtriangle.

Forewings with submarginal vein reaching wing margin at point less than $0.5 \times$ wing length; marginal vein longer than stigmal vein which is short, oblique and

knobbed; postmarginal vein approximately $2 \times$ as long as marginal vein; basal vein lightly indicated; forewings at rest extending beyond tip of metasoma.

Metasoma longer than $2 \times$ greatest width and clearly longer than head and mesosoma combined, narrowed at base; T1 almost as long as its basal width and entirely striate; T2 transverse, almost $2 \times$ as long as T1, longitudinally striate with striations extending almost entire length of segment, laterally smooth and shining with scattered setigerous pin punctures; T3 transverse, entirely smooth and shining, slightly longer than T2; T4 transverse, smooth and shining, laterally with scattered setigerous pin punctures; T5 transverse, smooth and shining with scattered setigerous pin punctures; T6 transverse with very light reticulation and scattered setigerous pin punctures; T7 slightly exerted.

Male

As for female except as follows:

Length 1.1–1.3 mm.

Antennae with pedicel slightly longer than greatest width; f1 longer than wide, longer than pedicel; f2 and f3 subequal, longer than wide, slightly longer than f1; remainder longer than wide, approximately as long as f1; metasoma slightly narrower and shorter than in ♀ with 8 tergites (7 tergites dorsally visible).

Comments

Duta australica tends to be much darker than either *D. aurea* or *D. concinna*. The longitudinal striations on T2 extend almost the entire length of the segment in *D. australica* but rarely beyond the midpoint of T2 in *D. aurea* and *D. concinna*. *D. australica* is distinguished from *D. reticulata* by metasomal characteristics.

Non-type Material Examined

Queensland: 4 km E. Gordonvale, 2♂, 3♀, QDPI; Mulgrave River on Goldsborough Rd, 1♀, QDPI.

Duta concinna Galloway, sp. nov.

(Figs 105–108)

Types

Holotype ♀, allotype on tags, Broken River, Eungella, near Mackay, Queensland, 8.iv.1976, I. D. Galloway, QM.

Paratypes: **Queensland:** Iron Range, Cape York Peninsula, 13–20.vi.1975, K. J. Houston, 3♂, 3♀, QDPI; Noah's Creek, 15 km N. Daintree River, 26.iii.1976, I. D. Galloway, 2♀, QDPI; Cooper's Creek Beach, 13 km N. Daintree River, 25.iii.1976, I. D. Galloway, 1♂, 2♀, QDPI; Cassowary Valley, near Mossman, 24.iii.1976, I. D. Galloway, 5♀, QDPI; Pebbly Beach, near Cairns, 27.iv.1974, J. F. Donaldson, 3♂, QDPI; Little Mitchell River, near Yalkula, 28.iii.1976, I. D. Galloway, 2♂, QDPI; Kootharinga, Julatten, 6.xi.1975, I. D. Galloway, 3♂, QDPI; 5 km N. Mt Molloy, 21.iv.1974, J. F. Donaldson, 1♂, QDPI; 6 km W. Mareeba, 26.iv.1974, J. F. Donaldson, 2♂, QDPI; Davies Creek, 29 km W. Mareeba, 25.iv.1974, J. F. Donaldson, 1♀, QDPI; Tinaroo Falls, 30.iii.1976, I. D. Galloway, 2♂, QDPI; Gordonvale, Feb. no year, A. A. Girault, 1♂, ANIC; Gordonvale, Feb. 1921, A. P. Dodd, 1♀, ANIC; 4 km E. Gordonvale, 28.iv.1974, J. F. Donaldson, 1♂, QDPI; Tully Falls Rd, 31.iii.1976, I. D. Galloway, 10♂, 4♀, QDPI; Emmett Creek, 40 km S. Townsville, 17.iv.1974, J. F. Donaldson, 2♂, 1♀, QDPI; Six Mile Creek, 18 km N. Proserpine, 8.xi.1975, I. D. Galloway, 2♂,

QDPI; Mackay, 8.xi.1975, I. D. Galloway, 2♂, QDPI; 20 km S. Ilbilbie, 15.iv.1975, J. F. Donaldson, 6♂, QDPI; Little Crystal Creek, Paluma, 6.iv.1976, I. D. Galloway, 1♂, QDPI; 10 km S. Miriam Vale, 13.iv.1974, J. F. Donaldson, 12♂, QDPI; Gin Gin, 13.iv.1974, J. F. Donaldson, 1♂, QDPI; Byron State Forest, 11.iv.1974, J. F. Donaldson, 13♂, QDPI; St George, 11.x.1974, I. D. Galloway, 1♂, QDPI; Pinklands, near Brisbane, 15.ix.1974, J. F. Donaldson, 1♂ QDPI.

Female

Length 1.1–1.3 mm.

Coloration. Head varying from entirely black to reddish brown with black suffusions on vertex, antennae with either scape and pedicel reddish yellow or only basal portion of scape reddish yellow, remainder of antennae dark reddish brown to black; mesosoma reddish brown to reddish yellow, usually with scutellum darker than scutum, legs including coxae yellow; metasoma dark reddish brown with T1 and sometimes parts of T3 reddish yellow.

Head transverse, wider than mesosoma measured across tegulae; frons smooth and shining with fine reticulate sculpturing extending to just below median ocellus; vertex and occiput with fine reticulation and scattered setigerous pin punctures; genae smooth and shining with scattered setigerous pin punctures; OOL < OD; antennae with scape as long as pedicel + funicle segments; pedicel 1.5 × as long as greatest width; f1 slightly longer than pedicel, 2 × as long as wide; f2 not as long as f1 but slightly longer than f3–f4; f3 slightly longer than wide; f4 transverse.

Mesosoma. Scutum covered with scattered setigerous pin punctures, anterior $\frac{2}{3}$ of medial lobe of scutum with fine reticulate sculpturing, posterior $\frac{1}{3}$ smooth and shining; scutellum smooth and shining with few scattered setigerous pin punctures; lateral subtriangular areas of propodeum lightly longitudinally striate.

Forewings with submarginal vein reaching anterior margin at about midpoint of wing; marginal vein longer than stigmal vein, which is short oblique and knobbed; postmarginal vein approximately 2 × as long as marginal vein; basal vein barely indicated; forewings at rest extending beyond tip of metasoma.

Metasoma shorter than 2 × greatest width, only slightly longer than head and mesosoma combined, narrowed at base; T1 not as long as basal width; T2 longer than T1 but clearly not 2 × as long as T1 (e.g. T1 : T2 = 10 : 14); T2 longitudinally striate for anterior $\frac{1}{2}$ of segment, posterior $\frac{1}{2}$ smooth and shining, laterally smooth and shining with scattered setigerous pin punctures; T3 transverse, much longer than T2 (e.g. T2 : T3 = 14 : 24), entirely smooth and shining; T4 transverse, smooth and shining, laterally with setigerous pin punctures; T5–T6 transverse, smooth and shining with scattered setigerous pin punctures; T7 slightly exerted.

Male

As for female except as follows:

Length 1.1–1.2 mm.

Coloration. Tendency to be darker even in almost entirely black individuals; pleural regions of mesosoma, propodeum, coxae, other parts of legs and T1 all light reddish brown to yellow.

Antennae with scape as long as pedicel + f1–f3; pedicel slightly shorter than f1; f1–f9 approximately equal; f10 slightly longer; metasoma slightly narrower and shorter than in ♀ with 8 tergites (7 tergites visible dorsally).

Duta reticulata Galloway, sp. nov.
(Figs. 109–111)

Types

Holotype ♀, on tag, 42 km N. Perth, Western Australia, 1–7.i.1936, R. E. Turner, BMNH.

Paratype ♀, on tag, same data as holotype.

Female

Length 1.4 mm.

Coloration. Head black except for reddish yellow mandibles, antennae entirely black except for light reddish brown radicles; mesosoma entirely black, legs including coxae dark reddish brown, wings subhyaline, venation brown; metasoma dark reddish brown to black.

Head approximately $2 \times$ as wide as long, slightly wider than mesosoma measured across tegulae, weakly emarginate behind; frons covered entirely by fine reticulation, this pattern of sculpture continued on vertex and to occipital margin; small scattered setigerous pin punctures along orbital margins of frons and on vertex and occiput; genae largely smooth and shining with few scattered setigerous punctures and small patch of scaly reticulation at posterior margins of eyes; lateral ocelli almost touching orbital margins; antennae with scape as long as pedicel + funicle segments; pedicel and f1 subequal, each slightly longer than $1.5 \times$ greatest width; f2 longer than wide, slightly longer than f3, but slightly shorter than f1; f3 as long as wide, $2 \times$ as long as f4; f4 transverse.

Mesosoma. Scutum covered with numerous setigerous pin punctures, medial lobe of scutum with anterior $\frac{2}{3}$ with fine scaly reticulation, posterior $\frac{1}{3}$ smooth and shining; lateral lobes of scutum with inner bands of scaly reticulation and outer smooth shining bands for entire length; scutellum smooth and shining with scattered setigerous pin punctures; posterior margin of horizontal surface of propodeum dorsally deeply concave, lateral subtriangular areas with longitudinal striae.

Forewing with submarginal vein reaching margin at point just beyond $0.5 \times$ wing length; marginal vein almost punctiform, approximately $0.5 \times$ length of stigmal vein which is oblique and knobbed; postmarginal vein well developed, approximately $2 \times$ as long as stigmal vein; basal vein indicated; forewings at rest extending just beyond tip of metasoma.

Metasoma almost $2 \times$ as long as greatest width, slightly longer than head and mesosoma combined; T1 not as long as basal width, with strong longitudinal striae and 3 or 4 long setae along lateral margins; T2 transverse, longitudinally striate for almost entire length of segment, largely impunctate but laterally with few scattered setigerous pin punctures; T2 very much smaller than T3 (13 : 25); T3 transverse, smooth and shining, also largely impunctate but laterally with few scattered setigerous pin punctures; T4 transverse, sculpturing as for T3; T5 and T6 both transverse, smooth and shining but with scattered setigerous pin punctures more evenly distributed; T7 slightly exserted.

Male

Unknown.

Genus *Genatropis* Galloway, gen. nov.
(Figs 112–117)

Type-species *Baryconus pretiosus* Dodd, 1914b.

Etymology

From the latin 'gena', 'cheek', and 'tropis', 'ridge' or 'keel'. Feminine.

Distribution

Genatropis has been recorded along the eastern coast of Australia from Kuranda in tropical northern Queensland to Devil's Gate in Tasmania. The genus is also represented in New Zealand, the New Hebrides and New Caledonia (Masner, personal communication).

Discussion

This study recognizes two Australian species in *Genatropis*, viz *G. pretiosa* (Dodd) and *G. curtata* (Dodd). Dodd (1914b) described *pretiosa* in the genus *Baryconus* but Kieffer (1926) later transferred it to *Ceratoteleia*. Galloway (1976) listed *Ceratoteleia pretiosa* under 'Species incertae sedis' because of the poor condition of the type-specimen. Subsequently, however, an entire female specimen identified by A. P. Dodd as *Baryconus pretiosus* was discovered in ANIC. Examination of this specimen in conjunction with the type and more recently collected material has resulted in the erection of *Genatropis*.

Baryconus curtatus Dodd was also listed by Galloway (1976) in 'Species incertae sedis'. It was indicated at that time that *B. curtatus* might belong in *Duta*. Re-examination of the type revealed facial striations that exclude it from *Duta* and confirm it to be congeneric with *pretiosus*.

Generic Description

Head transverse, about $2 \times$ as wide as long; temple region wide; eyes lightly pubescent; OOL < OD; frons in lateral view slightly convex, not depressed above antennal insertion; malar groove present; cheeks with longitudinal striae converging at points of mandibular articulation; mandibles tridentate, teeth acute; antennae 12-segmented in both sexes with 6-segmented club in ♀; ♀ with scape long and slender, longer than $4 \times$ radicle, almost as long as pedicel and funicle segments combined.

Mesosoma with pronotum dorsally barely visible; skaphion well defined; notauli delicate but percurrent; scutellum semicircular, unarmed; metanotum smooth medially, slightly expanded but not prominent; horizontal surface of propodeum dorsally concave; legs with hind basitarsus as long as segments 2–5 combined; tarsi 5-segmented.

Wings variable in length; forewing with submarginal vein close to anterior margin of wing; marginal vein short, sometimes almost punctiform, not as long as stigmal vein, which is oblique and knobbed; postmarginal vein well developed.

Metasoma elongate, longer than head and mesosoma combined, narrowed at base; T1–T6 transverse; T1 not as long as basal width, longitudinally striate; T2 longer than T1 with longitudinal striae restricted to anterior $\frac{1}{3}$ of segment; T3 longest metasomal tergite, smooth and shining; ♀ with 7 tergites, T7 external, articulating with ovipositor; ♂ with 8 tergites (7 tergites dorsally visible).

Comments

Genatropis appears to be closely related to *Duta* and *Opisthacantha*, from which it may be distinguished by a combination of facial striations and an unarmed metanotum.

Key to Australian Species of *Genatropis*

Head and mesosoma largely smooth and shining (Fig. 112); forewing extending as far as posterior margin of T3; postmarginal vein $2 \times$ length of marginal vein *curtata* (Dodd)
 Head and mesosoma mostly with scaly reticulation and numerous setigerous pin punctures (Figs 114, 117); forewing extending to, or almost to, apex of metasoma; postmarginal vein $3-4 \times$ length of marginal vein (Fig. 115) *pretiosa* (Dodd)

Genatropis curtata (Dodd) Galloway, comb. nov. (Figs 112, 113)

Baryconus curtatus, Dodd, 1930b, p. 27; Galloway, 1976, p. 112.

Type

Holotype ♀ on card, Bogong Plains, 1525–1830 m, Victoria, 1928, F. E. Wilson, NMV.

Paratype ♀, missing from card, QM.

Female

Length 1.9 mm.

Coloration. Head reddish brown, somewhat darker at vertex, lower $\frac{1}{2}$ of frons reddish yellow, antennae with scape reddish yellow basally, becoming reddish brown towards apex, pedicel and funicle segments dark brown to black, club black, eyes and ocelli black; mesosoma reddish brown, legs including coxae yellow; metasoma with T3 reddish yellow, remainder dark reddish brown to black.

Head with frons smooth and shining, with line of setigerous pin punctures along orbital margins; vertex with small patch of fine reticulate sculpturing either side of median ocellus; interocellar space smooth and shining; occiput smooth and shining except for band of reticulation extending between posterior margins of eyes; vertex and occiput also with scattered setigerous pin punctures; antennae with pedicel $2 \times$ as long as greatest width; f1 a little shorter than pedicel, about $2 \times$ as long as greatest width; f2 slightly longer than wide; f3 as wide as long; f4 small and transverse.

Mesosoma. Scutum smooth and shining with scattered setigerous pin punctures and narrow line of impressed reticulation either side of notauli; scutellum smooth and shining with scattered setigerous pin punctures; lateral subtriangular areas of propodeum with inner smooth area bordered by lateral band of irregular fine rugosity.

Forewing length approximately $4 \times$ greatest width, extending as far as posterior margin of T3; postmarginal vein about $2 \times$ length of marginal vein; stigmal vein longer than marginal vein but less than postmarginal vein.

Metasoma as long as about $2.5 \times$ greatest width; T1 longitudinally striate, with slightly raised smooth area towards anterior margin, but without distinct prominence or hump; T2 $1.5 \times$ length of T1; T3 $1.5 \times$ length of T2 and $2 \times$ length of T1; T4–T6 smooth and shining; T4 impunctate medially, remainder with scattered setigerous pin punctures.

Male

Unknown.

Genatropis pretiosa (Dodd) Galloway, comb. nov.
(Figs 114–117)

Baryconus pretiosus Dodd, 1914b, p. 126.

Ceratoteleia pretiosa (Dodd); Kieffer, 1926, p. 510; Galloway, 1976, p. 110.

Type

Holotype ♂ on tag, slide of head, antennae and forewing missing, Herbert River, Queensland, 18.ii.1913, A. A. Girault, SAM.

Female

Length 1.2–1.6 mm.

Coloration. Head reddish yellow with dark suffusions on vertex, eyes black, antennae with scape and pedicel reddish yellow, remainder dark brown to black; scutum reddish yellow, scutellum varying in colour from reddish yellow to reddish brown, metanotum medially with reddish brown suffusion, propodeum reddish yellow, legs including coxae yellow, except for narrow black band on posterior margin of hind femora, basitarsi black; metasoma light reddish brown, with T1 and large portions of T3 reddish yellow.

Head with frons largely smooth and shining but with row of fine reticulate sculpturing along orbital margins and patch of reticulation below median ocellus; vertex and occiput with fine scaly reticulation and scattered setigerous pin punctures failing just before occipital margin leaving narrow smooth band; antennae with pedicel $1.5 \times$ as long as greatest width; f1 $2 \times$ as long as wide, slightly longer than pedicel or f2; f2 slightly longer than wide, longer than f3; f3 as long as wide, longer than f4; f4 transverse.

Mesosoma. Scutum with numerous setigerous pin punctures; anterior $\frac{1}{2}$ of medial lobe of scutum with fine scaly reticulation, posterior $\frac{1}{2}$ smooth and shining, lateral lobes of scutum with fine scaly reticulation; scutellum smooth and shining with scattered setigerous pin punctures; lateral subtriangular areas of propodeum rugose.

Forewing with marginal vein short almost punctiform, almost $0.5 \times$ as long as stigmal vein; postmarginal vein $1.5\text{--}2 \times$ as long as stigmal vein, $3\text{--}4 \times$ as long as marginal vein (in smaller forms forewing extending to apex of metasoma, in larger forms not quite reaching apex).

Metasoma as long as $2 \times$ greatest width; T4 smooth and shining with setigerous pin punctures, which tend to fail medially; T5–T6 smooth and shining with setigerous pin punctures more evenly distributed.

Male

As for female except as follows:

Length 1.2–1.5 mm.

Coloration. Head black, antennae sometimes entirely black, often with scape and pedicel reddish yellow; scutum and scutellum varying from reddish yellow to black, legs including coxae from almost entirely yellow to almost black; metasoma reddish brown to black often with T1 reddish yellow.

Antennae with pedicel longer than wide; f1 and f2 longer than wide, approximately equal in length, slightly longer than pedicel; f3 longer than wide, slightly longer than either f1 or f2; remainder of segments longer than wide, about as long as pedicel, except for apical segment which is clearly longer; forewings at rest extending beyond apex of metasoma; metasoma with 8 tergites (7 tergites dorsally visible).

Comments

Southern forms of *G. pretiosa* are consistently larger (♀ 1.6 mm, ♂ 1.5 mm) and darker than the northern forms (♀ 1.2–1.3 mm, ♂ 1.2 mm).

Non-type Material Examined

Queensland: Kuranda 1 ♀, ANIC; Little Mitchell River, near Yalkula, 2 ♂, 1 ♀, QDPI; Mt Lewis via Julatten, 2 ♂, QDPI; Davies Creek, 29 km E. Mareeba, 1 ♂, QDPI; Tinaroo Falls, 1 ♂, QDPI; Bald Mt Area, 1200 m, via Emu Vale, 1 ♂, QDPI; 1.6 km S. Yarraman, 450 m, 1 ♀, QDPI; 10 km E. Queen Mary's Falls near Killarney, 3 ♂, QDPI. **New South Wales:** Mt Lindesay State Forest, 400–500 m, via Woodenbong, 1 ♂, QDPI; St Helena via Wollomombi, 1 ♀, QDPI; Brown Mt, 1 ♀, ANIC. **Australian Capital Territory:** Mt Gingera, 1 ♀, ANIC. **Victoria:** Loch Valley, 500 m, 1 ♀, ANIC. **Tasmania:** Devil's Gate, 200 m, via Barrington, 2 ♂, QDPI.

Genus *Duarina* Dodd

Duarina Dodd, 1926b, p. 377; Galloway, 1978a, p. 229.

Type-species *Duarina venustella* Dodd, 1926b.

Distribution

Recorded only from Australia in rainforests of southern Queensland and northern New South Wales.

Discussion

The genus is redescribed and discussed by Galloway (1978a).

Species of *Duarina* Described from Australia

1. *D. monteithorum* Galloway, 1978a, p. 232
2. *D. venustella* Dodd, 1926, p. 377

Genus *Lidgbirdius* Galloway

Lidgbirdius Galloway, 1982, p. 191.

Type-species *Lidgbirdius terrestris* (Dodd), 1924.

Distribution

The genus is known only from Lord Howe Island.

Discussion

A description and discussion of the genus are given by Galloway (1982).

Species of *Lidgbirdius* Described from Australia

1. *L. terrestris* (Dodd), 1924, p. 180.

Tribe ARADOPHAGINI Kozlov

Aradophagini Kozlov, 1970a, p. 121; Masner, 1976, p. 52; Masner and Huggert, 1979, p. 1090.

Type-genus *Aradophagus* Ashmead, 1893.

Diagnosis

Body dorsoventrally flattened; frons without depression, with short blunt keel above antennal insertion; palpal formula 2-1; mandibles bidentate; OOL > OD; antennae 12-segmented in both sexes, subclavate in females, radicle elongate about $0.3 \times$ scape length; netrion and skaphion absent; notauli anteriorly abbreviated, parallel posteriorly (absent in *Aradophagus* Ashmead); scutellum narrow, strongly transverse; metanotum and propodeum unarmed; forewing with 1 or 2 dark transverse bands; marginal vein at least as long as stigmal vein; postmarginal vein long; hindwing with complete submarginal vein reaching frenal hooks; metasoma longer than wide; T2 or T3 longest tergite (T2 longest in *Aradophagus* and *Abuko* Masner & Huggert and T3 longest in *Ladora* Masner & Huggert); T7 exerted with ovipositor.

Discussion

A detailed discussion of the Aradophagini is given by Masner and Huggert (1979). Three genera are classified in the tribe, viz *Aradophagus*, *Abuko* and *Ladora*. *Ladora* is the only representative of the tribe so far discovered in Australia.

Genus *Ladora* Masner & Huggert
(Figs 118-122)

Ladora Masner and Huggert, 1979, p. 1096.

Apegus sensu Dodd, 1926a, p. 302.

Apegus sensu Galloway, 1976, p. 85.

Type-species *Ladora brunnea* Masner & Huggert, 1979.

Distribution

This is the first record of *Ladora* from Australia. Previously it had been known only from semi-arid areas of Africa, Europe and Central Asia (Masner and Huggert 1979). The Australian species have been recorded from coastal tropical northern Queensland (Cairns, Gordonvale) and further south in subtropical Brisbane.

Discussion

In their description of *Ladora*, Masner and Huggert (1979) described only one dark transverse band in the forewings and used this to differentiate between *Ladora* and *Abuko*. Australian species of *Ladora* suggest this character to be of importance only at the specific level as *L. pulchricarpus* (Dodd) and *L. pulchripennis* (Dodd) have two bands whereas *L. squamosus* (Dodd) has only a single band.

Generic Description

Head transverse in dorsal view, slightly wider than mesosoma measured across tegulae; cheeks with fan-like striae converging at points of mandibular articulation;

eyes large with minute scattered hairs; ocelli in curved line, $LOL < 2 \times OOL$; antennae with indistinct clava but f6-f10 wider and longer than preceding segments; ♂ antennae filiform; forewings with marginal vein longer than stigmal vein; metasoma with T3 longest and largest segment; 8 tergites visible.

Key to Australian Species of *Ladora*

1. Forewing with 1 dark transverse band (Fig. 118) *squamosus* (Dodd)
- Forewing with 2 dark transverse bands (Fig. 119) 2
- 2(1). Scutum entirely smooth and shining; T3 medially with anterior $\frac{2}{3}$ longitudinally striate, posterior $\frac{1}{3}$ with fine impressed reticulate sculpturing, laterally smooth and shining *pulchricorpus* (Dodd)
- Scutum lateral of notauli smooth and shining, remainder with fine impressed reticulate sculpturing; T3 medially with fine impressed reticulate sculpturing, laterally smooth and shining *pulchripennis* (Dodd)

Ladora pulchricorpus (Dodd) Galloway, comb. nov. (Figs 119, 120)

Microteleia pulchricorpus Dodd, 1915b, p. 449.

Apepus pulchricorpus (Dodd); Dodd, 1926a, p. 302; Galloway, 1976, p. 85.

Type

Holotype ♀, 15173, on tag; antennae and forewings on slide; Cairns district, Queensland, on foliage of sugar cane, 29.iv.1915, A. P. Dodd, SAM.

Female

Length 1.0 mm.

Coloration. Head, mesosoma and T1 reddish yellow, remainder of metasoma black; legs golden yellow; antennae with scape dark yellow, pedicel and f1 black, f2-f5 pale yellow, f6-f10 black; forewings with 2 dark transverse bands joined in centre by narrow lighter band.

Head slightly wider than mesosoma measured across tegulae, smooth and shining with widely scattered setigerous pin punctures; antennae with scape as long as pedicel, f1 and f2 combined; pedicel almost as long as f1 + f2; f1 and f2 approximately equal in length; f3 not as long as f1 or f2 but longer than either f4 or f5; f6-f10 almost as wide as long, wider and longer than f3-f5; f10 longest funicle segment.

Mesosoma. Scutum and scutellum smooth and shining; scutellum approximately $4 \times$ wider than long; metanotum narrow, smooth; propodeum with medial dorsal surface broadly excavated; forewing with marginal vein longer than stigmal vein; postmarginal vein longer than $2 \times$ stigmal vein, not quite as long as $2 \times$ marginal vein.

Metasoma longer than wide; T1 longitudinally striate, approximately $0.5 \times$ length of T2; T2 medially longitudinally striate, laterally smooth and shining; T3 longer than T2, medially with anterior $\frac{2}{3}$ longitudinally striate, posterior $\frac{1}{3}$ with fine impressed reticulate sculpturing, laterally smooth and shining; T4 slightly longer than $0.5 \times$ length of T3, medially with fine impressed reticulate sculpturing, laterally smooth and shining; T5-T7 smooth and shining.

Male

Unknown.

Ladora pulchripennis (Dodd) Galloway, comb. nov.
(Figs 121, 122)

Microteleia pulchripennis Dodd, 1914b, p. 121; Kieffer, 1926, p. 436.

Apegus pulchripennis (Dodd); Galloway, 1976, p. 85.

Type

Holotype ♀, I2188, on tag; head, antennae and forewings on slide; Gordonvale, Queensland, 4.vi.1913, A. A. Girault, SAM.

Male

Length 1.0 mm (very approximate due to fragmented nature of holotype).

Coloration. Black; tibiae suffused with yellow; T1 and tarsi golden yellow; forewing with 2 dark transverse bands joined in centre by narrow light band.

Head. (Squashed beneath cover slip, therefore sculptural characteristics not evident.) Antennae with radicle very elongate, longer than $0.3 \times$ length of scape; pedicel and f1 approximately equal in length; f2 not as long as f1; f3 not as long as f2; f4–f9 approximately equal in length but not individually as long as f3; f10 longest funicle segment.

Mesosoma. Scutum lateral to notauli smooth and shining, remainder with fine impressed reticulate sculpturing; scutellum smooth and shining; metanotum narrow and smooth; medial dorsal surface of propodeum broadly excavated; forewing with stigmal vein slightly longer than marginal vein; postmarginal vein approximately $2 \times$ as long as stigmal vein.

Metasoma. Approximately $1.5 \times$ longer than greatest width; T1 longitudinally striate, approximately $0.5 \times$ length of T2; T2 medially longitudinally striate, laterally smooth and shining; T3 longer than T2; T3 and T4 medially with fine impressed reticulate sculpturing, laterally smooth and shining; T4 not quite as long as $0.5 \times$ T3; T5–T7 smooth and shining.

Female

Unknown.

Comment

In his description of *Microteleia pulchripennis*, Dodd (1914b) referred to the holotype as a female. However, the holotype is a male and is clearly labelled as such by Dodd. *Ladora pulchripennis* is, therefore, the first male described in this genus.

Ladora squamosus (Dodd) Galloway, comb. nov.
(Fig. 118)

Apegus squamosus Dodd, 1926a, p. 302; Galloway, 1976, p. 85.

Type

Holotype ♀, Hy. 3109, on tag; Brisbane, Queensland, A. P. Dodd, QM.

Female

Length 1.2 mm.

Coloration. Black; legs golden yellow, coxae fuscous, antennae with radicle and scape yellow, remaining segments light brown, forewing with single transverse dark band.

Head transverse, as wide as mesosoma measured across tegulae; frons and vertex smooth and shining, with delicate impressed reticulate sculpturing and scattered setigerous pin punctures, vertex with pin punctures more dense; antennae with scape slender, almost as long as pedicel and f1-f3 combined; pedicel longer than f1, approximately 3 × as long as greatest width; f2 slightly shorter than f1 but longer than f3; f3-f5 approximately equal in length; f6-f10 wider and longer than f3-f5; f10 longest funicle segment.

Mesosoma. Scutum with anterior $\frac{1}{3}$ with fine delicate impressed reticulate sculpturing and scattered setigerous pin punctures, remainder smooth and shining; scutellum smooth and shining with line of punctures along anterior margin and just before posterior margin, approximately 4 × wider than long; metanotum smooth and shining with row of punctures along anterior margin; propodeum with medial dorsal surface broadly excavated; forewing with stigmal vein slightly longer than marginal vein; postmarginal vein approximately 1.7 × length of stigmal vein.

Metasoma almost 2 × as long as greatest width; T1 transverse, with fine dense longitudinal striae; T2 at base transversely depressed, anterior $\frac{1}{3}$ with fine striae, remainder with fine strigose-reticulate sculpturing, T2 longer than T1 but not as long as T3; T3 with fine impressed reticulate sculpturing; T2-T3 laterally broadly smooth; T4-T6 with fine impressed reticulate sculpturing, T4-T6 becoming progressively shorter; T4-T5 laterally narrowly smooth.

Male

Unknown.

Non-type Material Examined

Queensland: Brisbane, Mar. 1930, A. P. Dodd, 1 ♀, ANIC.

Tribe NEOSCELIONINI Kozlov

Neoscelionini Kozlov, 1981, p. 177.

Type-genus *Neoscelio* Dodd, 1913a.

Diagnosis

Frons without depression margined by keel; palpal formula 4-2; antennae 12-segmented in both sexes, ♂ antennae with tyloid on f3; submarginal vein of forewing remote from anterior margin; marginal vein dilated; postmarginal vein absent; hindwing with complete submarginal vein reaching to frenal hooks; skaphion absent; netrion well developed; tibial spur formula 1-1-1; T3 longest metasomal tergite; ♀ with 6 tergites and 6 sternites, T7 internal and exerted with ovipositor; ♂ with 8 tergites and 7 sternites.

Discussion

This monotypic tribe is closely related to the Calliscelionini from which it differs in the venation of the forewing. Although the forewing venation of the Neoscelionini is reminiscent of that found in the Scelionini, the two tribes have no other characters in common. Masner (1976) placed *Neoscelio* in 'Genera incertae sedis' and suggested that it either represents a new tribe or is distantly related to the Calliscelionini. Kozlov (1981) adopted the former proposition and erected the tribe Neoscelionini.

Genus *Neoscelio* Dodd

(Figs 123–172)

Neoscelio Dodd, 1913a, p. 138, 1926b, p. 371; Masner, 1976, p. 68; Galloway, 1976, p. 97.

Type-species *Neoscelio gloriosus* Dodd, 1913a.

Distribution

Neoscelio has been found only on the Australian mainland where it is restricted to the heavily wooded areas along the eastern coast. It is frequently collected in rainforest. There is only one record of *Neoscelio* collected from a dry inland area, viz *N. lateralis* from Chinchilla, Queensland.

Discussion

Neoscelio was erected by Dodd (1913a) for *N. gloriosus* described from a single female collected at Mt Tamborine, Queensland. Because *Neoscelio* and *Scelio* have similar wing venation, Dodd (1913a) mistakenly inferred a relationship between the two genera. In a later revision, Dodd (1926b) suggested that its nearest ally was *Dichoteleas* from which it is readily separated (key couplet 40).

Generic Description

Head in dorsal view wider than long; vertex narrow; posterior margin of occiput margined and concave; in frontal view horizontal axis longer than vertical axis; frons with smooth medial unmargined depression; mandibles tridentate or bidentate, middle tooth when present small, lower tooth longer than upper tooth; eyes large with scattered setae; ocelli large with $OOL > LOL$; antennae 12-segmented in both sexes; ♀ with f1 longer than either pedicel or f2, well-defined 6-segmented club; ♂ flagellar segments filiform, tyloid located on f3.

Mesosoma in dorsal view slightly longer than greatest width measured across tegulae, in lateral view as high as long; lateral anterior angles of pronotum rounded or subacute; scutum clearly wider than long; notauli absent; scutellum semi-circular, laterally with pair of teeth at approximately $0.5 \times$ length; metanotum narrow with long slender medial spine, as long as scutellum; propodeum with posterior margin of horizontal surface gently concave medially, posterior lateral edges blunt; legs with tarsi 5-segmented, hind metatarsus as long as following 4 segments.

Forewings when at rest extending just beyond apex of metasoma; submarginal vein well removed from anterior margin of wing, attaining anterior margin at approximately $0.5 \times$ wing length; marginal vein thickened and quadrate in shape; stigmal vein longer than marginal vein; stigmal and marginal vein covered by darkened spot; postmarginal vein absent; basal, medial, and radial veins usually indicated.

Metasoma spoon-shaped, no longer than head and mesosoma combined; metasomal tergites all transverse; T3 longest metasomal tergite; ♀ with 6 tergites and 6 sternites, T7 internal and exerted with ovipositor; ♂ with 8 tergites and 7 sternites.

Key to Species of *Neoscelio* Dodd

1. Trochanters black; forewings with 1 or 2 hyaline bands (Figs 154, 155) ... *pulchralis* Dodd
- Trochanters not black; forewings uniformly smoky 2

- 2(1). Propodeum red 3
 Propodeum black 4
 3(2). Metasoma longer than $2 \times$ greatest width; T2 without well-defined medial carina (Fig. 140);
 occipital region of head reticulate to rugose-punctate (Fig. 138) *rubidus* Dodd
 Metasoma not as long as $2 \times$ greatest width; T2 with well-defined medial carina (Fig. 132);
 occipital region of head largely smooth with scattered setigerous pin punctures (Fig. 130)
 lateralis Dodd
 4(2). T3 much longer than T2 (Fig. 129); OOL at least equal to OD (Fig. 127); ♀ antennae with
 fl $< 2 \times$ length of pedicel (Fig. 143) *gloriosus* Dodd
 T3 hardly longer than T2 (Fig. 126); lateral ocelli with OOL $<$ OD (Fig. 123); ♀ antennae
 with fl almost $3 \times$ length of pedicel (Fig. 141) *agilis* Dodd

Neoscelio agilis Dodd

(Figs 123–126, 141, 142)

Neoscelio agilis Dodd, 1926b, p. 374; Masner, 1976, p. 68; Galloway, 1976, p. 97.

Types

Holotype ♀, Kuranda, Queensland, April 1920, A. P. Dodd, SAM.

Paratypes: **Queensland:** Kuranda, Jan. 1923, A. P. Dodd, 1 ♀, ANIC; Kuranda, no date, A. P. Dodd, 1 ♀, ANIC; Kuranda, Jan. 1923, A. P. Dodd, 1 ♂, HY3096, QM; Gordonvale, Jan. 1920, A. P. Dodd, 1 ♀, HY3096, QM; Kuranda, no date, A. P. Dodd, 1 ♂, QM; Cairns, Nov. 1919, A. P. Dodd, 1 ♂, SAM.

Female

Length 3.8–4.5 mm.

Coloration. Head black, mandibles reddish yellow, teeth reddish brown, antennae with scape reddish yellow, pedicel and funicle joints varying from reddish yellow to entirely brown, club black; mesosoma black with tegulae reddish yellow and metapleuron and mesepisternum sometimes suffused with reddish yellow, legs including coxae reddish yellow, tarsi light brown, wing venation dark brown; metasoma black.

Head wider than long; lower $\frac{3}{4}$ of frons largely smooth and shining, longitudinally striate along inner margins of orbits; remainder of frons below median ocellus rugose-striate with long fine silvery setae; OOL $<$ OD and LOL = $0.5 \times$ OD; vertex rugose-striate; occiput largely smooth with several shallow scattered punctures and 2 carinae beside orbital margins; occipital ridge well defined; genae with shallow punctures and medial carina; vertex, occiput and genae with long fine silvery setae; fan-like striae converging at points of mandibular articulation; mandibles tridentate, outer teeth long and acute; antennae with fl almost $3 \times$ as long as pedicel.

Mesosoma longer than greatest width measured across tegulae, covered with long fine setae; scutellar teeth stout and acute; horizontal surface of propodeum medially gently concave, lateral posterior angles blunt, lateral areas with dense white pubescence; forewing with submarginal vein attaining anterior margin just beyond $0.5 \times$ wing length.

Metasoma longer than greatest width, occasionally as long as $2 \times$ greatest width; T1 with strong longitudinal striae; T2 with medial carina; T1–T6 transverse.

Male

As for female except as follows:

Length 3.8–4.2 mm.

Coloration. Antennae with scape and pedicel reddish yellow, f1–f3 either suffused with yellow or dark brown, remainder of segments dark brown; antennae with f1 slightly longer than $2 \times$ length of pedicel; metasoma in lateral view slightly more compressed, punctures on dorsal surface slightly smaller.

Non-type Material Examined

Queensland: Mossman Gorge, 1 ♂, ANIC; Mission Beach, 1 ♀, QDPI; Kuranda, 5 ♂, 9 ♀, ANIC; Cairns, 1 ♀, ANIC.

Neoscelio gloriosus Dodd

(Figs 127–129, 143, 144)

Neoscelio gloriosus Dodd, 1913a, p. 138; Kieffer, 1926, p. 348; Dodd, 1926b, p. 373; Galloway, 1976, p. 97.

Type

Holotype ♀, Mt Tamborine, Queensland, no date, A. M. Lea, 11371, SAM.

Female

Length 4.3–4.5 mm.

Coloration. Head and teeth of mandibles black, remainder of mandibles dark reddish brown, antennae with first 6 segments reddish yellow, club black; mesosoma black, legs including coxae bright reddish yellow, wings stained brown, venation dark brown; metasoma black.

Head wider than long; lower $\frac{2}{3}$ of frons largely smooth and shining; longitudinally rugose-striate along inner margins of orbits; remainder of frons below median ocellus punctate-reticulate; OOL > OD; vertex rugose; occiput and genae reticulate-rugose; vertex, occiput and genae covered with long fine pubescence; occipital ridge well defined; fan-like striae converging at points of mandibular articulation; mandibles bidentate; antennae with scape slightly longer than $2 \times$ length of f1; f1 $1.6 \times$ length of pedicel and slightly longer than $2 \times$ length of f2.

Mesosoma longer than greatest width measured across tegulae; covered with scattered long fine setae; horizontal surface of propodeum medially gently concave, lateral posterior angles blunt, laterally with fine dense white setae; basitarsus of hind leg not as long as remaining tarsal segments; forewings extending to apex of metasoma; subcostal vein attaining anterior margin of forewing just beyond $0.5 \times$ wing length.

Metasoma $2 \times$ as long as greatest width; T1 with strong irregular longitudinal striae; T2 punctate-reticulate with tendency toward longitudinal arrangement and strong medial carina; T1–T6 transverse; T3 clearly longer than either T1 or T2 but shorter than T1 + T2.

Male

As for female except as follows:

Length 4.3 mm.

Coloration. Antennae with first 5 segments reddish yellow, remainder dark

brown to black; antennae with scape about $2 \times$ length of f1; $f1 < 2 \times$ length of f2.

Comments

In addition to characters detailed in the key, *N. gloriosus* may be recognized by the bidentate mandibles, the sculpturing of the occipital region of the head, and the presence of a well-defined medial carina on T2.

Non-type Material Examined

Queensland: Woombye, near Nambour, 1 ♂, ANIC; Mt Glorious, 1 ♂, QDPI; Mt Tamborine, 2 ♂, QDPI; Wilson's Peak, 700–800 m, via Teviot Gap, 1 ♀, QDPI.

Neoscelio lateralis Dodd (Figs 130–134, 145, 146)

Neoscelio lateralis Dodd, 1926b, p. 375; Masner, 1976, p. 68; Galloway, 1976, p. 97.

Type

Holotype ♀, Mt Tamborine, Queensland, no date, A. P. Dodd, SAM.

Paratypes: **Queensland:** Blackall Range, Jan. 1926, A. P. Dodd, 1 ♂, ANIC; Mt Tamborine, no date, A. P. Dodd, 1 ♂, 1 ♀, HY3098, QM; Mt Tamborine, no date, A. P. Dodd, 1 ♂, SAM.

Female

Length 3.5–4.0 mm.

Coloration. Head entirely black, antennae with scape reddish yellow, pedicel, f1, f2 and f3 varying from reddish yellow to brown, f4 brown, club black, mandibles red; mesosoma with dorsal surface black except tegulae, metanotum and propodeum red, lateral areas of mesosoma usually red with only pronotum black, rarely with netrion black, mesepisternum and mesepimeron with black suffusions; legs including coxae reddish yellow; forewings evenly smoky, venation dark brown; metasoma black.

Head $2 \times$ as wide as long; lower $\frac{2}{3}$ of frons with smooth medial area, laterally broadly separated from orbital margins, remainder of frons and lateral areas between smooth medial area and orbital margins strigose with setigerous punctures between striae; $OOL > OD$; occipital region largely smooth but with scattered small setigerous punctures; apical or anterior $\frac{1}{2}$ of genae with single longitudinal carina and rugose sculpturing, posterior or basal $\frac{1}{2}$ largely smooth; mandibles tridentate, middle tooth small, lower tooth longer than upper tooth; antennae with f1 barely $2 \times$ as long as pedicel.

Mesosoma slightly longer than greatest width measured across tegulae; sculpturing of scutum and scutellum showing punctures with tendency to longitudinal arrangement, more pronounced posteriorly; teeth on scutellum short, stout and subacute; posterior margin of horizontal surface of propodeum medially concave, laterally with blunt teeth.

Metasoma clearly not as long as $2 \times$ greatest width; medial anterior area of T1 with small faint smooth elevation, no medial carina obvious on T2; punctures of T2 and T3 not setigerous; T1–T6 transverse; T1 not as long as T2; T2 not as long as T3; T3 about $0.5 \times$ as long as greatest width.

Male

As for female except as follows:

Length 3.4–4.3 mm.

Coloration. Antennae with scape and pedicel reddish yellow, f1 and f2 either reddish yellow or brown, remainder of antennal segments brown; dorsal surface of mesosoma with variable colour patterns, laterally either with pronotum black and remainder red, or pronotum, netrion and mesepimeron black; T1 entirely longitudinally striate, medial carina sometimes obvious on T2.

Comments

In addition to characters listed in the key, *N. lateralis* may be distinguished from *N. agilis* by a shorter f1 in the female antennae and the smaller smooth frontal depression of the head. *N. lateralis* is very much smaller than *N. gloriosus*. The occipital region of the head of *N. lateralis* is largely smooth with only scattered setigerous pin punctures, whereas the corresponding region in *N. gloriosus* is reticulate-rugose.

Neoscelio lateralis Dodd has been collected as far north as Eungella (near Mackay) and as far south as Mt Tamborine, Queensland. It appears from the specimens at hand that populations from the extremes of its range exhibit a number of consistent differences. Specimens collected at Eungella are generally larger than those collected from Mt Tamborine (average length of Eungella males and females, 4.0 mm; average length of Tamborine males and females, 3.5 mm). In the males, this can be shown as a difference in metasomal index, i.e. length of metasoma divided by greatest width (average metasomal index of Eungella males, 1.98; average metasomal index of Mt Tamborine males, 1.79). There are also colour differences in males from the two localities. In Eungella males, f1 and f2 of the antennae are always reddish yellow and the mesepimeron always black; in Mt Tamborine males, f1 and f2 of the antennae are consistently brown and the mesepimeron is always red. In addition, males from Mt Tamborine show a consistent colour pattern on the dorsal surface of the mesosoma, but there appears to be some variation in the corresponding colour pattern of the Eungella specimens. However, it appears that the differences are no more than geographic variation as both populations are morphologically identical.

Non-type Material Examined

Queensland: Broken River, Eungella, near Mackay, 1♂, AM; N. Eungella Range, 1♂, QDPI; Eungella, 4♂, 1♀, QDPI; Sky Window Lookout, Eungella, 3♂, QDPI; Finch Hatton Gorge, near Mackay, 1♀, QDPI; Kenilworth State Forest, 1♀, QDPI; Blackall Range, 2♂, 1♀, ANIC; Mt Nebo, 1♂, ANIC; Chinchilla, 1♂, ANIC; Indooroopilly, 1♂, QDPI; Mt Tamborine, 8♂, 9♀, ANIC; Mt Tamborine, 6♂, QDPI.

Neoscelio pulchralis Dodd (Figs 134–137, 147, 148, 154–163)

Neoscelio pulchralis Dodd, 1926b, p. 376; Masner, 1965, p. 85; Masner, 1976, p. 68; Galloway, 1976, p. 98.

Neoscelio pulchralis medialis Dodd, 1926b, p. 376; Galloway, 1976, p. 98; syn. nov. Galloway.

Type

Holotype ♀ of *N. pulchralis* and holotype ♀ of *N. pulchralis medialis*, Mt Tamborine, Queensland, Nov. 1925, A. P. Dodd, SAM.

Paratypes: same collection data as holotypes, 1 ♂ *N. pulchralis*, SAM; 1 ♂ and 1 ♀ *N. pulchralis*, 2 ♀, *N. pulchralis medialis*, ANIC; 1 ♂, *N. pulchralis*, BMNH; 1 ♂, 1 ♀, *N. pulchralis*, QM.

Female

Length 3.3 mm.

Coloration. Head entirely black, antennae with scape either entirely reddish yellow or suffused with black, funicle segments reddish yellow, club black; mesosoma dorsally with variable colour patterns of red and black, laterally bright reddish yellow, occasionally mesepisternum with black suffusion along anterior margin, legs including coxae bright reddish yellow, rarely with mid and hind coxae suffused with black, trochanters black, forewing with basal $\frac{2}{3}$ as far as marginal vein subhyaline, remainder either entirely dusky or with 2nd hyaline band closer to wing apex, venation dark brown; metasoma black.

Head $2 \times$ as wide as long; lower $\frac{1}{2}$ of frons with smooth medial area immediately above antennal insertion, laterally with strigose sculpturing along orbital margins; remainder of frons punctate-reticulate with long fine silvery pubescence; vertex, occiput and genae rugose-punctate with long fine silvery pubescence; OOL > OD and LOL < OD; antennae with f1 slightly longer than pedicel, about $2 \times$ as long as f2.

Mesosoma longer than greatest width measured across tegulae; punctures of scutum and scutellum assuming almost longitudinal arrangement towards posterior margin of scutum; scutellar spines short and acute; posterior margin of horizontal surface of propodeum medially gently concave, laterally with blunt teeth.

Metasoma longer than greatest width but not as long as $2 \times$ greatest width; T1 longitudinally striate but with slightly raised smooth medial area toward anterior margin; T1-T6 transverse; T1 not quite as long as T2; T2 not as long as T3; T3 $2 \times$ as wide as long, longest metasomal tergite.

Male

As for female, except as follows:

Coloration. Antennae variable in colour, scape either entirely reddish yellow or suffused with black, pedicel reddish yellow, either all funicle segments black or f1-f3 reddish yellow and remainder black; mesosoma dorsally with variable colour patterns of red and black, laterally bright reddish yellow, but with lateral pronotum and mesepisternum largely black, mid and hind coxae frequently with black suffusion, trochanters black, remainder of legs bright reddish yellow, forewing with 2nd hyaline band always absent.

Antennae with f1 not quite as long as $2 \times$ pedicel, f1 longer than f2; T1 entirely longitudinally striate.

Comments

Dodd (1926b) recognized *N. pulchralis medialis* as a variety of *N. pulchralis*. This variety was recognized only in the female, and distinguished by its mesosomal colour pattern and the presence of a second hyaline band in the forewing. An examination of a long series of specimens reveals that the second hyaline band may be present, lightly indicated, or absent in females showing a variety of associated mesosomal colour patterns. Therefore, the characters used to distinguish *N. pulchralis medialis* represent only the variability present in a population of *N.*

pulchralis, hence *N. pulchralis medialis* is considered to be a synonym of *N. pulchralis*.

Non-type Material Examined

Queensland: Mt Glorious, 15 ♂, 3 ♀, QDPI; Mt Tamborine, 5 ♂, 2 ♀, ANIC; Mt Tamborine, 1 ♀, AM; Mt Tamborine, 13 ♂, 14 ♀, QDPI; Bald Mt area, 920–1200 m, via Emu Vale, 1 ♂, UQ; Mt Cainbale, 615 m, 1 ♂, 1 ♀, ANIC; Mt Lindesay, 1 ♀, ANIC; Lever's Plateau, 640–670 m, via Rathdowney, 1 ♂, QDPI; McPherson Range, 769 m, 1 ♂, ANIC. **New South Wales:** Tooloom Plateau, 708 m, via Urbenville, 1 ♀, QDPI; Pittwater, 1 ♀, ANIC.

Neoscelio rubidus Dodd
(Figs 138–140, 149, 150, 164–172)

Neoscelio rubidus Dodd, 1926b, p. 373; Galloway, 1976, p. 98.

Types

Holotype ♂, Mt Tamborine, Queensland, Dec. 1925, A. P. Dodd, SAM.
Paratypes: same data as holotype, 2 ♂, ANIC.

Female

Length 4.6–5.5 mm.

Coloration. Head entirely black, mandibles red, antennae with either scape, pedicel, f1–f4 yellow and club dark brown, or scape and pedicel dark brown lightly suffused with yellow, remainder dark brown; mesosoma with variable colour patterns on dorsal surface; propodeum always red, pleural areas red, legs including coxae reddish yellow, forewings evenly smoky, venation dark brown; metasoma black.

Head slightly wider than $2 \times$ length; lower $\frac{2}{3}$ of frons with smooth medial area and lateral margins of smooth area broadly separated from orbital margins, remainder of frons rugose-punctate with numerous pale setae; between smooth medial area and frons and orbital margins rugose-punctate sculpturing gives way to strigose sculpturing with setigerous pin punctures between striae; OOL = OD; genae with several longitudinal striae between shallow setigerous punctures; mandibles tridentate, middle tooth small, lower tooth longer than upper tooth; antennae with f1 slightly less than $2 \times$ length of pedicel.

Mesosoma slightly longer than greatest width measured across tegulae; sculpturing of scutum and scutellum not longitudinally arranged toward posterior margin of scutum; lateral teeth on scutellum short and acute; posterior margin of horizontal surface of propodeum medially gently concave, laterally with blunt teeth.

Metasoma longer than $2 \times$ greatest width; T1–T6 transverse; T1 not as long as T2; T2 not as long as T3; T3 longest metasomal tergite.

Male

As for female except as follows:

Length 4.4–5.2 mm.

Coloration. Antennae with either scape, pedicel, f1–f5 yellow, f6–f10 dark brown, or scape and pedicel dark brown, lightly suffused with yellow, remainder dark brown; dorsal surface of mesosoma with variable colour patterns; T1 always longitudinally striate; T3 without narrow smooth medial area; T1 almost as long as wide.

Comments

N. rubidus shows distinct northern and southern groups that may be distinguished by body size and antennal coloration (Table 2). Specimens of *N. rubidus* are smaller and the antennae darker as they become more southern in their distribution. This trend also exists in other species of *Neoscelio* (e.g. *N. lateralis*).

Non-type Material Examined

Queensland: Tibrogargan Creek, via Glasshouse Mts, 1 ♀, UQ; Mt Cainbale, 610 m, 1 ♀, ANIC; Lamington National Park, 1 ♀, UQ. **New South Wales:** Tooloom, 1 ♂, QM; Toolum Scrub, 701 m, via Urbenville, 1 ♀, QDPI; Nightcap National Park, near Mullumbimby, 1 ♂, AM; New England National Park, 1 ♀, UQ; New England National Park, 1 ♀, ANIC; Otford, 1 ♂, AM; 6.5 km S. Monga, 1 ♀, ANIC.

Table 2. Morphological variation occurring in different parts of the distribution of *Neoscelio rubidus*

Group	Locality	Size (mm)	Antennal coloration
Northern group	Tibrogargan (1 ♀)	5.5	Scape, pedicel and f1-f4 yellow, club dark brown
	Mt Cainbale (1 ♀)	5.3	
	Lamington National Park (1 ♀)	5.3	
	Tooloom (1 ♀)	5.1	
	Mullumbimby (1 ♀)	5.0	Scape, pedicel and f1-f5 yellow, f6-f10 dark brown
	Mt Tamborine (3 ♂)	5.2	
	Tooloom (1 ♂)	5.0	
Southern group	New England National Park (2 ♀)	4.6	Scape and pedicel dark brown, lightly suffused with yellow, remainder dark brown
	Monga (1 ♀)	4.7	
	Otford (1 ♂)	4.4	Scape and pedicel dark brown, lightly suffused with yellow, remainder dark brown

Tribe CREMASTOBAEINI Masner

Cremastobaeini Masner, 1976 p. 52.

Type-genus *Cremastobaeus* Ashmead, 1893.

Diagnosis

Frons with deep depression completely margined by carina; palpal formula 2-1; antennae 12-segmented in both sexes with pedicel, f1 and f2 dorsally serrate, f1 and f2 almost fused; ♀ with abrupt compact 4-segmented club; ♂ with no constriction between f9 and f10, tyloid present on f3; hindwing with complete submarginal vein extending to frenal hooks; skaphion absent; netrion well developed; tibial spur formula 1-1-1; metasoma elongate, subequally segmented; ♀ with 7 tergites and 6 sternites, T7 external but not exerted with ovipositor; ♂ with 8 tergites and 7 sternites.

Discussion

The tribe is monotypic and distinguished by its unique antennal characters.

Genus *Cremastobaeus* Ashmead
(Figs 173–176)

Cremastobaeus Ashmead, 1893, pp. 210, 228.

Crematoscelio Dodd, 1913a, pp. 131, 156. Synonymy: Masner, 1976, p. 52.

Argentoscelio Szabo, 1966b, p. 172. Synonymy: Masner, 1976, p. 52.

Type-species *Cremastobaeus bicolor* Ashmead, 1893.

Discussion

When Ashmead (1893) described the antennae of *Cremastobaeus*, he did not recognize the dorsal serrations or the near fusion of f1 and f2. To further complicate matters, he described the club in the female as 5-segmented. This inaccurate description led Dodd (1913a, 1914c, 1914e) to propose *Crematoscelio* for the Australian species listed below. *Cremastobaeus* may be recognized by the unusual antennal characters and the metasomal segments, which are constricted at their base.

Species of Cremastobaeus Described from Australia

1. *C. aureus* (Dodd), 1913a, p. 157
2. *C. flavipes* (Dodd), 1913a, p. 157
3. *C. flaviventris* (Dodd), 1914c, p. 110
4. *C. nigripes* (Dodd), 1914e, p. 256

Tribe **MANTIBARIINI** Kozlov

Mantibariini Kozlov, 1970a, p. 119; Masner, 1976, p. 53.

Type-genus *Mantibaria* Kirby, 1900.

Diagnosis

Frons without depression; palpal formula 2–1; ♀ antennae 10-segmented without club; ♂ antennae 11-segmented without tyloid; skaphion and netrion absent; fore- and hindwings without veins; tibial spur formula 1–1–1; inner margin of mid and hind femora with sharp blades; tarsal segments 2–4 very short, segment 5 very large and bearing large claw; metasoma equally segmented; ♀ with 7 tergites and 6 sternites, T7 external with 2 oval sensory plates, not exerted with ovipositor.

Discussion

Profound morphological adaptations associated with the specialized phoretic relationship with mantid hosts characterize this monotypic tribe. Kozlov (1970a) believed Mantibariini to be allied to Scelionini, but Masner (1976) suggested a relationship with Gryonini. The peculiar features of Mantibariini place it far from any other tribe and make it difficult to infer any relationships.

Genus **Mantibaria** Kirby
(Figs 177, 178)

Mantibaria Kirby, 1900, p. 82.

Rielia Kieffer, 1910d, p. 107. Synonymy: Muesebeck and Walkley, 1956, p. 396.

Rieliomorpha Dodd, 1913a, pp. 131, 155. Synonymy: Kieffer, 1926, p. 279.

Type-species *Mantibaria anomala* Kirby, 1900.

Distribution

Masner (1976) was unable to find satisfactory species differences between populations of *Mantibaria* from Europe and those ranging from the Old World Tropics to Australia. A comparison of an African specimen identified as *M. anomala* and Australian specimens identified as *M. mantis* (Dodd) showed them to be conspecific. Although this synonymy cannot be confirmed until the types of both species are compared, it does lend further weight to Masner's proposition that only one very widely distributed species exists.

Discussion

A satisfactory generic diagnosis is given by Masner (1976, p. 54). Kirby (1900) originally described the wings of *M. anomala* as rudimentary. Examination of the type of *M. anomala* (BMNH) by Dodd (1920) and Galloway confirmed that the wings are not rudimentary but are stumps of larger wings that have been discarded. Because of the peculiarities of the genus, Kirby (1900) referred it to the Dryininae. All subsequent authors have agreed with Kieffer (1910d) who placed it in the Scelionidae.

All described species of *Mantibaria* are recorded as egg-parasites of mantids. Both Chopard (1923) and Rabaud (1922) have reported at length on the biology of *Mantibaria*. The adult wasp behaves like an ectoparasite, gnawing the veins of the underside of the wing of the mantis and extracting the host's haemolymph. This is the only record of a proctotrupoid living ectoparasitically in the adult stage. Once attached under the wing bases of the host, females of *Mantibaria* discard most of their wings. While the host mantis is laying its eggs, parasites detach themselves, move down the abdomen, and oviposit in the mantis eggs before the sticky mass of the ootheca hardens. Once oviposition is completed, they return to the body of their host.

Species of Mantibaria Described from Australia

1. *M. mantis* (Dodd), 1913a, p. 155

Tribe **PLATYSCELIONINI** Kozlov

Platyscelionini Kozlov, 1970a, p. 119; Masner, 1976, p. 54.

Type-genus *Platyscelio* Kieffer, 1905b.

Diagnosis

Body foliaceous, strongly dorsoventrally depressed; frons without depression; palpal formula 2-1, labial palpi very short, wart-like; antennae 12-segmented in both sexes, ♀ scape almost triangular and expanded outwardly into spine; hind-wing with complete submarginal vein reaching to frenal hooks; skaphion and

netrion absent; scutellum very narrow; propodeum large; tibial spur formula 1-1-1; metasoma equally segmented; ♀ with 6 visible tergites and 6 sternites, T7 internal but not exerted with ovipositor; ♂ with 8 tergites and 7 sternites.

Discussion

In erecting the tribe Platyscelionini, Kozlov (1970a) believed it to be allied with the Scelionini. However, the complete submarginal vein in the hindwing, the absence of the netrion, and the peculiarities of the palpi and antennae clearly set this tribe apart from all others.

Genus *Platyscelio* Kieffer (Figs 179-181)

Platyscelio Kieffer, 1905b, p. 11; Brues, 1908, p. 40; Kieffer, 1926, p. 553; Masner, 1976, p. 55.

Type-species *Platyscelio pulchricornis* Kieffer, 1905b.

Discussion

From characters given by Kieffer (1926, p. 553) and from a comparison of Australian and New Guinea specimens of *Platyscelio*, it appears that *P. pulchricornis* and *P. mirabilis* Dodd might be conspecific. This, however, cannot be confirmed until the types of both species are compared.

Because of the very flattened body of *Platyscelio*, the flattened eggs of the Phaneropterinae (Tettigoniidae) have been suggested as the most likely hosts (Kozlov 1970a; Masner 1976). Though the phytophagous phaneropterines are richly represented in Australia (approximately 150 described species), only one species of *Platyscelio*, viz *P. mirabilis*, has been recorded and individual specimens of this species are relatively rare.

Generic Description

An adequate generic description is given by Masner (1976, p. 55).

Platyscelio mirabilis Dodd (Figs 179-181)

Platyscelio mirabilis Dodd, 1913a, p. 132; Dodd, 1915b, p. 444; Kieffer, 1926, p. 554; Galloway, 1976, p. 101.

Type

Holotype ♀ on tag; head, antennae and forewings on slide; Gordonvale, Queensland, 16.ii.1912, A. A. Girault, 11362, SAM.

Female

Length 4.3-4.5 mm.

Coloration. Head black, antennae with club black, either scape, pedicel and f1-f5 golden yellow or scape reddish yellow, pedicel and f1-f5 reddish brown; mesosoma black, coxae black, remainder of legs yellow, wings evenly lightly infuscated, venation brown; metasoma black.

Head. Vertex narrow in frontal view with horizontal axis longer than vertical axis; frons smooth and shining with medial longitudinal groove bifurcating just

before median ocellus and base of antennal insertion, with single line of setigerous pin punctures along orbital margins and fine longitudinal striae beside and above median ocellus; lateral ocelli well removed from orbital margins and situated on top of narrow vertex; eyes bare; antennal scape almost triangular with outer edge forming sharp point at apex.

Mesosoma clearly longer than greatest width measured across tegulae; pronotum dorsally well developed, anteriorly extended and neck-like, with fine dense setigerous punctures; scutum with well-defined notauli abbreviated just short of anterior margin; medial area enclosed by notauli with fine dense shallow setigerous punctures arranged in longitudinal rows; anterior margins of lateral areas of scutum with scattered setigerous punctures, remainder smooth and shining; scutellum narrow, rectangular in shape, medially smooth and shining, laterally with several punctures near posterior margin; metanotum narrow, smooth and shining; propodeum approximately $2 \times$ as long as scutellum, with well-defined medial longitudinal groove, laterally with small patches of coarse rugosity in vicinity of articulation with hind coxae, fine striae anterior to this rugosity, posterior margin of horizontal surface of propodeum with small bilobed medial projection, laterally concave; basitarsus slightly longer than remaining segments combined.

Forewings when at rest extending just beyond posterior margin of T4; submarginal vein attains anterior margin of forewing at point approximately $0.4 \times$ wing length; marginal vein long, $2 \times$ as long as stigmal vein; postmarginal vein absent.

Metasoma approximately $3.5 \times$ as long as greatest width; T1 with anterior margin gently convex, covered by dense shallow setigerous punctures approximately arranged in longitudinal rows, laterally with several striae; T2-T5 laterally with well-defined longitudinal ridge becoming progressively shorter from T2 to T5, medial areas enclosed by ridges with dense shallow setigerous punctures approximately arranged in longitudinal rows; area between longitudinal ridge and lateral margin of metasoma with very fine scaly reticulation and scattered setae; T6 with medial area along anterior margin largely smooth, remainder with dense setigerous punctures; all metasomal tergites transverse; T1 shorter than all other tergites; T2-T5 equal in length; T6 longer than T1 but shorter than other tergites.

Male

As for female except as follows:

Length 4.3-4.9 mm.

Antennal scape yellow, remaining segments light brown suffused with yellow, scape triangular in shape but outer edge not as broad or as pointed as in ♀, $3 \times$ as long as pedicel; f1 $2 \times$ as long as pedicel; f2 shorter than f1 or f3; metasoma laterally with well-defined longitudinal ridges on T2-T5.

Non-type Material Examined

Queensland: Pebbly Beach, near Cairns, 1♀, QDPI; Jolimont Creek, 40 km N. Mackay, 1♂, QDPI; Eurimbula Creek via Round Hill Head, 1♂, QDPI; Bundaberg, 1♀, ANIC; Tibrogargan, Glasshouse Mts, 2♂, QDPI; Indooroopilly, Brisbane, 2♀, QDPI.

Tribe DODDIELLINI Masner

Doddiellini Masner, 1976, p. 55.

Type-genus *Doddiella* Kieffer, 1913b.

Diagnosis

Frons without depression; palpal formula 4-2; antennae 12-segmented in both sexes; ♀ with abrupt 5-segmented club; ♂ with tyloid present on f3; fore- and hindwings veinless; skaphion and netrion absent; tibial spur formula 1-1-1; metasoma narrowly spatulate and elongate; T3 largest metasomal tergite, suture between T2 and T3 arched forwards; ♀ with 6 visible tergites and 6 sternites, T7 internal; ♂ with 8 tergites and 7 sternites.

Discussion

This is a most unusual monotypic tribe within the Scelioninae; the elongate shape of the body, the absence of a skaphion and netrion, and the arching of the suture between T2 and T3 are a unique combination.

Genus *Doddiella* Kieffer (Figs 182, 183)

Doddiella Kieffer, 1913b, p. 109.

Aratala Dodd, 1927a, p. 74. Synonymy: Masner, 1976, p. 56.

Type-species *Doddiella nigriceps* Kieffer, 1913b.

Discussion

Doddiella is another genus of the Scelioninae characterized by a complete lack of venation in the forewing (others include *Mallateleia* and *Mantibaria*), and only the short basal stem of the subcostal vein is present in the hindwing. The distinctive elongate body shape, with quite dense pubescence on the dorsal surface, and the very smooth and shining mesopleurae are characteristic of this genus. Most individuals of *Doddiella* are collected on the ground, in pitfall traps, or by use of a D-vac suction machine. The host or hosts of *Doddiella* are unknown.

Species of *Doddiella* Described from Australia

1. *D. globiceps* (Dodd), 1927a, p. 75.

Tribe GRYONINI Szabo

Gryonini Szabo, 1966a, p. 419; Kozlov, 1970a, p. 120; Hellen, 1971, p. 21; Masner, 1976, p. 57.

Type-genus *Gryon* Haliday, 1833.

Diagnosis (for Australian representatives)

Body usually convex (except in *Mirotelenomus* Dodd, which is more or less flattened); frons without depression bordered by carina; ♂ and ♀ antennae 12-segmented; palpal formula 2-1 or 2-2; netrion and skaphion absent; tibial spur formula 1-1-1; hindwing with complete submarginal vein extending to frenal

hooks (except in *Encyrtoscelio* Dodd); metasoma short and broad; T2 usually longest metasomal tergite (except in *Hadronotoides* Dodd); ♀ with 7 tergites and 6 sternites; ♂ with 8 tergites and 7 sternites.

Discussion

Masner (1976) described the Gryonini as a cohesive and homogeneous group comprising short and stout forms. In Australia, the tribe Gryonini is represented by four genera, viz *Gryon* Haliday, *Mirotelenomus* Dodd, *Hadronotoides* Dodd, and *Encyrtoscelio* Dodd. It is thought that all members of this tribe are confined to the eggs of Heteroptera.

Genus *Gryon* Haliday (Figs 184–186, 188–191)

Gryon Haliday, 1833, p. 271.

Acolus Foerster, 1856, pp. 100, 102. Synonymy: Masner, 1961, p. 158.

Hadronotus Foerster, 1856, pp. 101, 105. Synonymy: Masner, 1961, p. 158.

Muscidea Motschulski, 1863, pp. 70, 71. Synonymy: Masner, 1976, p. 57.

Plastogryon Kieffer, 1908a, pp. 119, 141. Synonymy: Maneval, 1940, p. 113.

Psilacolus Kieffer, 1908a, pp. 179, 180. Synonymy: Muesebeck and Masner, 1967, p. 299.

Holacolus Kieffer, 1912, pp. 89, 94, 106. Synonymy: Masner, 1961, p. 158.

Telenomoides Dodd, 1913a, pp. 158, 168. Synonymy: Muesebeck and Walkley, 1956, p. 402.

Hadronotellus Kieffer, 1917b, p. 341. Synonymy: Muesebeck and Walkley, 1956, p. 357.

Hadrophanurus Kieffer, 1926, pp. 15, 130. Synonymy: Masner, 1961, p. 158.

Heterogryon Kieffer, 1926, pp. 271, 446. Synonymy: Masner, 1961, p. 158.

Synteleia Fouts, 1927, p. 178. Synonymy: Muesebeck and Masner, 1967, p. 299.

Masneria Szabo, 1966a, p. 442. Synonymy: Masner, 1976, p. 57.

Pannongryon Szabo, 1966a, p. 435. Synonymy: Kozlov, 1971, p. 47.

Austroskelio Dodd, 1914b, p. 93; syn. nov. Galloway.

Platyteleia Dodd, 1913a, p. 153; syn. nov. Galloway.

Type-species *Gryon misellus* Haliday, 1833.

Discussion

Gryon was originally classified within the Teleasinae (Kieffer 1926; Dodd 1930a). However, through the studies of Nixon (1936), Maneval (1940) and Masner (1961), its classification in the Scelioninae was confirmed. After studying *Gryon* on a world basis, Masner (1961, 1976) considered it to be one of the largest genera of Scelioninae, displaying very wide limits and possessing numerous species groups. These wide limits have now resulted in the synonymy of two Australian genera, viz *Platyteleia* Dodd and *Austroskelio* Dodd.

When describing *Platyteleia*, Dodd (1913a) noted a naked transverse line on the forewings to which he attributed some diagnostic importance. However, he later came to realize that this line was caused by the cilia having been rubbed off (Dodd 1914a).

Examination of the allotype female and remains of the holotype male of *Platyteleia latipennis* Dodd reveals that *Platyteleia* and *Gryon* are not significantly different and share the following morphological features: absence of skaphion and netrion; T7 in female external, articulating with T6; palpal formula 2–2(?) (difficult to determine because the head is badly crushed). *Platyteleia* is, therefore, considered to be a synonym of *Gryon*.

When describing *Austroskelio*, Dodd (1914b) noted that it closely resembled *Hadronotus* [now a synonym of *Gryon* (Masner (1961))]. The distinctive character-

istics of *Austroscelio* are: hairy eyes; postmarginal vein of forewing absent; apex of scutellum bidentately emarginate; medial bidentate tooth present on metanotum. As these features are also characteristic of the *insularis* species group of *Gryon* (Masner 1975), *Austroscelio* is considered to be a synonym of *Gryon*.

The peculiar features of *Gryon festivus* Kieffer have been noted by a number of authors (Nixon 1934; Sundholm 1970; Mineo 1979; Masner, personal communication). This species apparently lies at the outer limits of *Gryon* close to *Mirotelenomus*. Features that set *G. festivus* apart from other species of *Gryon* are: bare eyes; OOL > OD; mandibles narrow and slender with 2 minute teeth apically; submarginal vein of forewing with distinct downturn before attaining anterior margin; marginal vein punctiform; postmarginal vein present. A convex scutellum, an unarmed metanotum and large eyes serve to distinguish *G. festivus* from *Mirotelenomus*. Three Australian species exhibit the same characteristics as *G. festivus* (Galloway 1976). Ultimately, these species may be recognized as a new genus with *G. festivus* as the type, however, such a decision can only be made from a world-wide study of the Gryonini. For the time being, this group of *Gryon* species is recognized as the *festivus* species group. This group is also known to occur in Africa, Malagasy Republic (Madagascar), India, Ceylon, Japan and Korea (Nixon 1934; Mineo 1979; Masner, personal communication). In Australia, it is recorded along the eastern coast of the continent.

Other Australian species of *Gryon* were previously described in either *Plastogryon* Kieffer or *Hadronotus* Foerster. *Gryon* has considerable economic importance as species are egg-parasites of a number of heteropteran pests.

Species of Gryon Described from Australia

1. *G. aureus* (Dodd), 1914e, p. 256
 2. *G. dichromos*, nom. nov. Galloway: *G. bicolor* (Dodd), 1913c, p. 171 is preoccupied by *G. bicolor* (Ashmead), 1894, p. 231
 3. *G. flavios* (Dodd), 1915a, p. 32
 4. *G. flavipes* (Dodd), 1914b, p. 125
 5. *G. flavus* (Dodd), 1913c, p. 172
 6. *G. fuscus* (Dodd), 1915a, p. 26
 7. *G. hirsutioculus* (Girault), 1925, p. 183
 8. *G. latipennis* (Dodd), 1913a, p. 154; comb. nov. Galloway
 9. *G. longicornis* (Dodd), 1915a, p. 25
 10. *G. longipennis* (Dodd), 1913b, p. 335; comb. nov. Galloway
 11. *G. magneticus* nom. nov. Galloway: *G. nigriceps* (Dodd), 1914b, p. 125 is preoccupied by *G. nigriceps* (Dodd), 1914a, p. 81
 12. *G. niger* (Dodd), 1914e, p. 257
 13. *G. niger rubrifemur* (Dodd), 1915a, p. 26
 14. *G. nigriclavatus* (Dodd), 1913a, p. 178
 15. *G. nigricornis* (Dodd), 1914a, p. 80
 16. *G. nigripes* (Dodd), 1914b, p. 129
 17. *G. rubricaput* (Dodd), 1915a, p. 21
 18. *G. rufipes* (Dodd), 1913a, p. 168
 19. *G. rufithorax* (Dodd), 1913c, p. 172
 20. *G. unicolor* (Dodd), 1914b, p. 125
- festivus* species group
21. *G. fumosus* (Dodd), 1914b, p. 130; comb. nov. Galloway
 22. *G. nigriceps* (Dodd), 1914a, p. 81; comb. nov. Galloway

23. *G. variocellus* (Girault), 1926a; comb. nov. Galloway
insularis species group
24. *G. latus* (Dodd), 1916, p. 28; comb. nov. Galloway
25. *G. nigricoxa* (Dodd), 1914b, p. 123; comb. nov. Galloway
26. *G. robustus* (Dodd), 1914c, p. 94; comb. nov. Galloway

Genus *Mirotelenomus* Dodd
(Fig. 192)

Mirotelenomus Dodd, 1913a, pp. 158, 173.

Microtelenomus Dodd; Kieffer, 1926, pp. 15, 19. Spelling error.

Type-species *Mirotelenomus abnormis* Dodd, 1913a.

Discussion

Mirotelenomus was erected by Dodd (1913a) for *M. abnormis*, an unusual species characterized by a flattened mesosoma and small wings with reduced forewing venation. *M. abnormis*, however, represents only one extreme of the range of the genus and its reduced venation is not typical of the genus as a whole. Realizing this, Dodd (1926a) widened the limits of the genus to include all the Australian species of *Hadronotus* that had a submarginal vein with a distinct downward curve just before joining the anterior margin of the forewing. Masner (1976) recognized that *Mirotelenomus* had been incorrectly interpreted by a number of authors (Kozlov 1963, 1970a; Masner and Kozlov 1965; Szabo 1966a).

In addition to the forewing venation and the flattened mesosoma, *Mirotelenomus* may be distinguished by the following characteristics: OOL = LOL; eyes small; scutellum flattened in lateral view and not overhanging metanotum, which is medially expanded to form short spine.

Dodd (1926a) speculated that species of *Mirotelenomus* may parasitize insect eggs other than those of bugs. However, Masner (1976) records that with the exception of *Eremioscelio* Priesner the tribe Gryonini is strictly confined to eggs of Heteroptera. Dodd (1926a) records *M. armatus* as having been collected in moss.

Species of Mirotelenomus Described from Australia

1. *M. abnormis* Dodd, 1913a, p. 173
2. *M. amplus* Dodd, 1914a, p. 81
3. *M. angustipennis* (Dodd), 1913a, p. 169
4. *M. aquaticus* (Dodd), 1913c, p. 173
5. *M. armatus* Dodd, 1926a, p. 313
6. *M. assimilis* (Dodd), 1913a, p. 169
7. *M. flavicornis* (Dodd), 1914b, p. 130
8. *M. fuscipes* (Dodd), 1915a, p. 32
9. *M. nigricoxella* (Dodd), 1913a, p. 170
10. *M. ocularis* (Dodd), 1915a, p. 31
11. *M. orientalis* (Dodd), 1915a, p. 21
12. *M. parvipennis* (Dodd), 1913c, p. 172
13. *M. spinosus* (Dodd), 1915a, p. 20
14. *M. splendidus* (Dodd), 1913a, p. 179

Genus *Hadronotoides* Dodd
(Fig. 187)

Hadronotoides Dodd, 1913c, p. 171.

Type-species *Hadronotus pentatomus* Dodd, 1913c.

Discussion

Hadronotoides is closely related to *Gryon* Haliday, especially the *insularis* group of species. It may be distinguished from *Gryon* by the greatly enlarged scutellum, which is posteromedially deeply bidentate. In the Australian species examined, the sculpturing is generally rugose and T2 is usually as long as T1 or T3. Specimens are frequently bred from the eggs of pentatomid bugs.

Species of Hadronotoides Described from Australia

1. *H. meridianus* Dodd, 1914c, p. 101
2. *H. pentatomus* (Dodd), 1913a, p. 154
3. *H. reticulatus* (Dodd), 1914c, p. 102

Genus *Encyrtoscelio* Dodd
(Figs 193–196)

Encyrtoscelio Dodd, 1914c, p. 119; Waterston, 1927, pp. 149–50.

Pachyscelidris Szelenyi, 1941, p. 163. Synonymy: Masner, 1957, p. 306.

Type-species *Encyrtoscelio mirissimus* Dodd, 1914c.

Distribution

Recorded from the Palaearctic region [*E. apterus* (Szelenyi): Europe (Szelenyi 1941; Masner 1956; Kozlov 1963, 1971; Bin 1979), Egypt (Priesner 1951), Korea (Yamagishi 1980)], the Ethiopian region (*E. turneri* Waterston, 1927) and the Australian region (*E. mirissimus* Dodd, 1914c).

Discussion

Encyrtoscelio is characterized by the following features: head with transverse frontal ledge creating almost triangular shape in lateral view; mandibles very elongate, armed with 3 small teeth and large falcate tooth; forewings balloon-shaped with serrated distal margins and extremely long curved cilia; hindwings with incomplete submarginal vein.

In his description of the genus, Dodd (1914c) omitted the ocelli. Waterston (1927) drew attention to this and remarked that it was unlikely that a fully alate form in the Scelionidae would be without ocelli. Re-examination of the type and other Australian material confirms that small ocelli are present.

The structure of the mesosoma and metasoma of *Encyrtoscelio* suggests a close relationship with *Gryon* (e.g. T2 the largest metasomal tergite). The genus is only rarely collected and in Australia is known only from the type and one male and two females (QDPI), recently collected in the Northern Territory and two males and five females (ANIC) from northern Queensland.

Bin (1979) records the rearing of *E. apterus* from a batch of eggs of *Cydnus aterrimus* Foerster (Heteroptera: Cydnidae) laid in a sand dune in southern France.

He suggests that the long mandibles of *E. apterus* are used for digging in sandy soils. However, from an examination of Australian specimens of *Encyrtoscelio*, it appears that the mandibles are not long enough, sufficiently mobile, or suitably orientated to assist the shovel-shaped head in a burrowing function. The interlocking of the large blade of the mandibles and their overall rigidity suggest a grasping rather than a burrowing function. Yamagishi (1980) has suggested a phoretic habit and this could be consistent with the structure of the mandibles.

All Australian specimens have been collected from rainforests. No host records are available.

Species of Encyrtoscelio Described from Australia

1. *E. mirissimus* Dodd, 1914c, p. 120

Tribe EMBIDOBIINI Kozlov

Embidobiini Kozlov, 1970a, p. 119; Masner and Dessart, 1972, p. 505; Masner, 1976, p. 60.

Type-genus *Embidobia* Ashmead, 1895.

Diagnosis

Head wider than mesosoma; frons with or without depression; mandibles tridentate; palpal formula 4-2 or 2-1; eyes large; lateral ocelli either touching eye margins or $OOL \leq OD$; ♀ antennae 11-segmented; ♂ antennae 12-segmented; skaphion absent; metanotum unarmed; netrion ecarinate, closed, indicated anteriorly by row of foveolae; hindwing with complete submarginal vein reaching to frenal hooks; tibial spur formula 1-1-1; metasoma subsessile in at least ♀; T2 or T3 largest metasomal tergite; ♀ with 7 tergites and 6 sternites; ♂ with 8 tergites and 7 sternites.

Discussion

The tribe Embidobiini was erected by Kozlov (1970a) for *Embidobia* Ashmead. Previously, Masner (1968) noted the close relationship between four genera, viz *Embidobia*, *Echthrodesis* Masner, *Mirobaeus* Dodd and *Mirobaeoides* Dodd, based on similarity in antennal segmentation. Since then the limits of the tribe have been broadened to accommodate three new non-Australian genera (Masner 1969, 1980; Masner and Dessart 1972), and *Mirobaeoides* has been transferred to Baeini (Austin 1981a). Embidobiini shows close ties to Gryonini, Psilanteridini and Idrini (Kozlov 1970a; Masner 1976), yet it forms a natural and specialized group of genera within the Scelioninae. In Australia, the tribe is represented by *Embidobia* and *Mirobaeus*.

Biologically, the tribe is polarized. Three genera have been recorded from the eggs of embiids, and two have been collected from the eggs of spiders. The production of silk by both host groups may have been important in the evolution of the tribe and perhaps provides a connection between such different hosts. Many species show a strong reduction in wing size to the point where some are wingless, e.g. *Mirobaeus* females. This may be related to particular habitat preferences, e.g. *Mirobaeus* is strongly associated with leaf litter, and so aptery may, therefore, represent an adaptation to facilitate easier movement through a restrictive environment.

Genus **Embidobia** Ashmead
(Figs 197–200)

Embidobia Ashmead, 1895, p. 264.

Efflatounina Priesner, 1951, p. 126. Synonymy: Masner, 1964, p. 142.

Type-species *Embidobia urichi* Ashmead, 1895.

Distribution

In Australia, this genus has been collected only along the south-eastern coast from Sydney south to Tasmania, inland as far as Canberra and also near Adelaide.

Discussion

This genus was erected by Ashmead for a species bred from an embiid in Trinidad. Ashmead's original description was inaccurate as he confused the number of antennal segments in the female. This error was anticipated by Dodd (1939) when he described three Australian species of *Embidobia*. Priesner (1951) was evidently misled by Ashmead when he erected *Efflatounina*. This genus was synonymized by Masner (1964).

Recently a female specimen of *E. urichi* collected from the type locality was donated to QDPI by E. McC. Callan. This is the first specimen of the species to be discovered in the type-locality since its description in 1895. Comparison of an undescribed species of *Embidobia* collected from South Africa, with *E. urichi*, leads Masner (personal communication) to suggest that there are at least two species groups in this genus. These may be separated as follows:

Group 1 (*E. urichi*): ♀ antennae with funicle segments not very transverse; metasoma with anterior margin of T1 humped; T3 almost as long as T1 and T2 combined; T7 in ♀ triangular and sharply pointed.

Group 2 (congeneric with *Efflatounia*): ♀ antennae with funicle segments very transverse; metasoma with anterior margin of T1 flat or concave; T2 slightly longer than T3; T7 broadly transverse, not pointed apically.

The Australian species do not appear to fit into either group. The female antennae and shape of T7 of the Australian species are similar to those in group 2, but they differ in the other metasomal characteristics, i.e. the anterior margin of T1 is slightly humped; T3 is longer than T2, but shorter than T1 plus T2. The development of the frontal depression also varies considerably, e.g. in *E. urichi* it is well developed though only faintly margined by a carina, whereas in *E. australica* Dodd the frontal depression is almost absent.

Embidobia needs to be revised on a world-wide rather than on a regional level if the above geographic variations and their importance at the specific level are to be fully appreciated.

Generic Description (based on examination of paratypes of Australian species, ANIC, QM; 1 ♀ of *E. urichi* Ashmead, compared with lectotype by L. Masner, QDPI; 1 ♀, undescribed species from South Australia, ANIC; 6 ♀, undescribed species from South Africa, QDPI)

Head anteriorly usually ovoid, sometimes rounded; OOL = OD; frontal depression present, shallow, narrow, with faint indication of carina around margin, often reduced to smooth shining region with faint horizontal striae, divided medially by long carina; palpal formula 4–2; ♀ antennae with 5 funicle segments,

narrow 4-segmented club, sometimes subclavate; ♂ antennae submoniliform; occiput rounded, well exposed; occipital carina sometimes indistinct, rounded at corners.

Mesosoma. Pronotum barely laterally and anteriorly visible; notauli usually absent in ♀, often well developed in ♂; scutum much wider than long measured across tegulae; scutellum much wider than long, posteriorly rounded, sometimes expanded over metanotum and propodeum; metanotum very narrow; propodeum vertical, smooth and shining; laminae on lateral propodeum sometimes extended medially and/or dorsally into blunt teeth; forewing with stigmal vein longer than marginal vein; postmarginal vein as long or longer than stigmal vein.

Metasoma subsessile, wider than mesosoma; T1 in ♀ either dorsally expanded into broad low hump that fits against propodeum, or anterior margin dorsally inflected, or T1 flat; T1 in ♂ usually flat, sometimes slightly dorsally inflected; T3 usually longer than T2, sometimes T3 and T2 subequal or T2 slightly longer than T3; T4–T6 transverse; T7 transverse or triangular in shape.

Species of Embidobia Described from Australia

1. *E. australica* Dodd, 1939, p. 340
2. *E. longipennis* Dodd, 1939, p. 342
3. *E. metoligotomae* Dodd, 1939, p. 341

Genus *Mirobaeus* Dodd (Figs 202, 203, 207, 212)

Mirobaeus Dodd, 1914b, p. 73.

Type-species *Mirobaeus bicolor* Dodd, 1914b.

Distribution

Mirobaeus is known only from south-eastern Australia, including Tasmania.

Discussion

Mirobaeus was erected by Dodd (1914b) for a female specimen collected in leaf litter near Sydney. Hickman (1967) recorded a further species from Tasmania reared from the eggs of a spider and described the male for the first time. Males of *Mirobaeus* are very similar to those of *Idris* Foerster. However, the former can be distinguished by having the last two antennal segments freely articulated and the forewing venation extending for only approximately one-third of the wing length.

There are several undescribed species belonging to this genus in Australian collections. Most female specimens come from pitfall traps or are extracted from leaf litter by using berlese funnels; males have not been collected since the work of Hickman (1967). *Mirobaeus*, like members of the Baeini, are extremely sexually dimorphic. For this reason, the following description separates characters for each sex.

Generic Description

Female

Head anteriorly ovoid or subtriangular in shape; lateral ocelli either touching eye margins or $OOL < OD$; frons sometimes slightly depressed, margin not well

defined; frontal carina usually absent; palpal formula 2-1; antennae with 5 funicle segments and 4-segmented club.

Mesosoma with notauli absent; scutellum usually much wider than long (expanded posteriorly over metanotum and anterior T1 in one undescribed species); metanotum narrow; propodeum unarmed, vertical, usually only visible at posterior lateral corners of mesosoma; wingless.

Metasoma subsessile, wider than mesosoma; T1 often transverse; T3 largest tergite, sometimes T3 and T2 subequal.

Male

As for female except as follows:

Antennae with f9 and f10 not approximated; scutellum semicircular, not strongly arched dorsally; propodeum visible throughout; propodeal keel parallel to metanotum, angled at corners; wings fully developed; marginal and stigmal veins not reaching to middle of wing foremargin; metasoma free (not subsessile) and flattened.

Species of *Mirobaeus* Described from Australia

1. *M. bicolor* Dodd, 1914b, p. 73
2. *M. pilosus* Hickman, 1967, p. 33

Tribe BAEINI Ashmead

Baeini Ashmead, 1893, p. 167; Kozlov, 1970a, p. 122; Masner, 1976, p. 67.

Type-genus *Baeus* Haliday, 1833.

Diagnosis

Head wider than mesosoma; frons without depression; mandibles tridentate; palpal formula 2-1 or 1-1; eyes large; lateral ocelli either touching eye margins or $OOL < OD$; ♀ antennae 7- or 11-segmented; ♂ antennae 12-segmented; skaphion absent; ♀ netrion usually absent, at most weakly indicated anteriorly by foveolae, closed, ecarinate; ♀ wingless; ♂ wings nearly always fully developed, hindwing with complete submarginal vein reaching frenal hooks; tibial spur formula 1-1-1; ♀ metasoma sessile, convex dorsally; ♂ metasoma free (not sessile) and flattened; laterotergites either incised or excised into sternites; T2 largest metasomal tergite; ♀ with 7 tergites and 6 sternites, T7 external; ♂ with 7 tergites and 7 sternites.

Discussion

The tribe Baeini represents a specialized offshoot of the Idrini, the former showing a high degree of sexual dimorphism (Masner 1976). In Australia, the tribe is represented by *Baeus* Haliday, *Mirobaeoides* Dodd and *Psyllobaeus* Austin*. All female members of this tribe are wingless and have a sessile metasoma, and most have a squat rounded body. Females of *Baeus* are among the smallest of all scelionids, with some having a body length of less than 0.5 mm. Males are nearly always fully winged, however, a new genus of Baeini, *Psyllobaeus* (Austin 1984)*, has recently been described from Lord Howe Island, in which both sexes are wing-

*Addition made to page proofs.

less. Apart from the relative lengths of T2 and T3, males are very similar to those in the Idrini. Kozlov (1970a) and Masner (1976) have discussed Baeini in detail, and Austin (1981a) broadened its limits to include *Microbaeoides* Dodd.

All members of the Baeini, as well as the Idrini, are considered to be egg-parasites of spiders. Species in the Baeini, however, are possibly more specialized as they appear to have a narrower host range. In Australia they have only been recorded from four spider families, viz, Araneidae, Linyphiidae, Theridiidae and Oxyopidae, whereas the Idrini have been recorded from at least eight spider families.

Genus *Baeus* Haliday
(Figs 201, 202, 208, 211, 213-215)

Baeus Haliday, 1833, p. 270.

Hyperbaeus Foerster, 1856, p. 144. Synonymy: Muesebeck, 1979, p. 1160.

Psilobaenus Kieffer, 1926, pp. 132, 151. Synonymy: Masner, 1965, p. 67.

Type-species *Baeus seminulum* Haliday, 1833.

Discussion

Since the erection of *Baeus*, only Kieffer (1926) has provided a revision of the genus. *Baeus* has two unique features, viz the metanotum is completely absent in the female, yet normally developed in the male; and the laterotergites are excised from the sternites in the female and incised in the male. This genus is, therefore, strongly sexually dimorphic (see description below). Masner (1980) presents a micrograph of a female in which T2 is labelled as T1. This was deliberately done to prevent confusion, as T1 is completely obscured by the propodeum (Masner, personal communication). *Baeus* does not seem to be strongly associated with any particular habitat, but it is often collected in pitfall traps and extracted from leaf litter by using berlese funnels.

Generic Description (based on Australian species)

Female

Body smoothly rounded, short and stocky; frontal carina small; palpal formula 1-1; eyes continuous with surface of face; occipital carina sharp; antennae 7-segmented, with 4 funicle segments and unsegmented club, sometimes with 3 faint incomplete sutures; mesosoma much wider and higher than long; notauli and metanotum absent; scutellum transverse; metasoma dorsally rounded; T1 hidden by propodeum; T2 very large, occupying most of dorsal surface of metasoma; laterotergites excised.

Male

As for female except as follows:

Body short and stocky, but not smoothly rounded, mesosoma much higher than metasoma; eyes slightly bulging from face, antennae with f9 and f10 sometimes approximated; notauli weakly indicated or absent; scutellum posteriorly rounded, dorsally arched; metanotum present; propodeum with narrow keel; forewings narrow, with margins parallel, venation not reaching middle of wing foremargin;

metasoma rounded, shorter than head and mesosoma combined; T1 transverse but dorsally visible; laterotergites incised.

Species of Baeus Described from Australia

1. *B. dux* Girault, 1933, p. 2
2. *B. leai* Dodd, 1914b, p. 73
3. *B. saliens* (Hickman), 1967, p. 16

Genus *Mirobaeoides* Dodd (Figs 202, 203, 210, 216–218)

Mirobaeoides Dodd, 1914b, p. 74.

Notoscelio Hickman, 1967, p. 35. Synonymy: Austin, 1981a, p. 90.

Type-species *Mirobaeoides tasmanicus* Dodd, 1914b.

Distribution

Mirobaeoides is known only from eastern Australia including Tasmania.

Discussion

Dodd misinterpreted this genus by describing it as similar to *Mirobaeus* Dodd. His diagnosis of *Mirobaeoides* also incorrectly described the scutellum as lacking and the third segment as being almost equal to the whole metasomal length. Later authors (Hickman 1967; Masner 1968, 1976; Masner and Dessart 1972) accepted Dodd's description. The problem surrounding this genus was not solved until Austin (1981a) re-examined the holotype and found a visible scutellum and metanotum, and T2 to be the largest metasomal tergite. Austin transferred *Mirobaeoides* to the tribe Baeini and in so doing synonymized *Notoscelio* Hickman. In his description of *Notoscelio*, Hickman (1967) recorded the male for the first time and also provided the first host record, i.e. the eggs of a spider. Though *Mirobaeoides* and *Baeus* Haliday are very similar, they can be distinguished by antennal segmentation in the female and the shape and venation of the forewing in the male. Members of *Mirobaeoides* are commonly collected in leaf litter.

Generic Description

Female

Body smoothly rounded, short and stocky; small frontal carina sometimes present; palpal formula 2-1; eyes continuous with face; occipital carina sharp; antennae 11-segmented, with 5 funicle segments and 4-segmented club; notauli absent; scutellum and metanotum narrow but dorsally visible (scutellum posteriorly expanded over metanotum and anterior T1 in one undescribed species); propodeum hidden by metasoma, only seen laterally; T1 narrow but visible throughout; T2 occupying most of dorsal surface of metasoma; laterotergites incised.

Male

As for female except as follows:

Body not smoothly rounded, mesosoma much higher than metasoma; eyes slightly bulging from face; antennae with f9 and f10 never approximated; notauli

usually present; scutellum posteriorly rounded, dorsally arched; propodeum visible, with narrow curved keel; forewing venation not reaching middle of wing foremargin, basal vein strong and curved distally; metasoma small and rounded; T2 usually largest tergite, sometimes T2 and T3 subequal.

Species of Mirobaeoides Described from Australia

1. *M. atra* (Hickman), 1967, p. 35
2. *M. tasmanicus* Dodd, 1914b, p. 74

Tribe **IDRINI** Kozlov

Idrini Kozlov, 1970a, p. 122; Masner, 1976, p. 64.

Type-genus *Idris* Foerster, 1856.

Diagnosis

Head usually wider than mesosoma; frons without depression; mandibles tridentate; palpal formula 2-1; eyes large; lateral ocelli either touching eye margins or OOL < OD; ♀ antennae 7-, 10- or 11-segmented; ♂ antennae 8- to 12-segmented; skaphion absent; scutellum usually posteriorly rounded; metanotum unarmed; netrion usually absent, at most weakly indicated anteriorly by foveolae, closed, ecarinate; hindwing with complete submarginal vein reaching frenal hooks; tibial spur formula 1-1-1; metasoma free and flattened, never sessile; T3 largest metasomal tergite; ♀ with 7 tergites and 6 sternites, T7 external; ♂ with 7 tergites and 7 sternites; laterotergites incised.

Discussion

The tribe Idrini is well established and has been defined adequately by Kozlov (1970a) and Masner (1976). It is more generalized than the Baeini, as it lacks many of the morphological specializations of the latter tribe. It has characters in common with both the Gryonini and Embidobiini (Masner 1976) and may possibly be related distantly to them. Differences between genera mainly occur in antennal segmentation and shape of the propodeum and T1. Antennae in females are basically seven-segmented and have a prominent unsegmented club, however, in *Odontacolus* Kieffer and *Hickmanella* Austin the club is divided into four segments. The latter genus also has one extra funicle segment. Female *Odontacolus* and *Ceratobaeus* Ashmead have the propodeum indented to accept the horn present on T1.

There are currently 55 species described from Australia and all are thought to be highly specific egg-parasites of spiders (Hickman 1967; Austin 1981a).

Genus *Idris* Foerster
(Figs 201, 206, 219, 220)

Idris Foerster, 1856, pp. 102, 105.

Acoloides Howard, 1890, p. 269. Synonymy: Masner, 1961, p. 163.

Acolus auctorum nec Foerster. Synonymy: Masner, 1961, p. 163.

Dissacolus Kieffer, 1926, p. 155. Synonymy: Austin, 1981a, p. 85.

Megacolus Priesner, 1951, p. 121. Synonymy: Masner, 1961, p. 163.

Philoplanes Muesebeck and Walkley, 1956, p. 384. Synonymy: Masner, 1961, p. 163.

Pseudobaeus Perkins, 1910, p. 620. Synonymy: Huggert, 1979, p. 7.

Tasmanacolus Hickman, 1967, p. 30. Synonymy: Masner, 1976, p. 64.

Tasmanibaeus Hickman, 1967, p. 27. Synonymy: Masner, 1976, p. 64.

Type-species *Idris flavicornis* Foerster, 1856.

Discussion

Idris has been greatly confused in the past due to Foerster's (1856) mistake of describing males and females under two different genera, viz *Idris* and *Acolus*. The synonymy tangle surrounding *Idris* was finally unravelled by Masner (1961, 1976) and later by Huggert (1979) and Austin (1981a). Huggert (1979) proposed *Ceratobaeus* Ashmead as a synonym of *Idris*, however, the former is maintained as a valid genus in this study [see Austin (1981a) and *Ceratobaeus* in this study]. *Idris* represents the most generalized of the genera in the Idrini. It is similar to *Gryon* Haliday and *Hickmanella* Austin, but differs from these in antennal segmentation, forewing venation and metasomal segmentation (*Gryon* only). *Idris* is quite diverse in Australia with 27 described species. Hickman (1967) presents some biological information for several Australian species.

Generic Description (based on Australian species)

Head subtriangular in shape; frontal carina usually present but small; ♀ antennae 7-segmented, with 4 funicle segments and unsegmented club, sometimes club with 3 faint incomplete sutures; ♂ antennae rarely 10-segmented, usually 11- or 12-segmented, f9 and f10 always approximated.

Mesosoma. Notauli rarely developed; scutellum nearly always posteriorly rounded [posteriorly pointed and extended over anterior T1 in *I. scutellaris* (Dodd)]; propodeum never excavated, horizontal surface complete, dorsally with longitudinal ridges and lateral and medial teeth; macropterous, rarely brachypterous (♀ only), venation clearly visible.

Metasoma usually rounded, often anteriorly constricted; T1 flat, never expanded into hump or horn.

Species of *Idris* Described from Australia

1. *I. amplus* (Dodd), 1914a, p. 90
2. *I. angustipennis* (Dodd), 1914b, p. 67
3. *I. bidentatus* (Dodd), 1914c, p. 127
4. *I. brunneus* (Dodd), 1914b, p. 69
5. *I. cteatus* (Walker), 1839, p. 60
6. *I. dugandani* (Girault), 1928, p. 3
7. *I. flaviceps* (Dodd), 1915a, p. 30
8. *I. flavipes* (Dodd), 1914a, p. 90
9. *I. glorius* (Girault), 1926c, p. 2
10. *I. helpidis* (Hickman), 1967, p. 31
11. *I. ixentici* (Hickman), 1967, p. 21
12. *I. maculosus* (Dodd), 1914b, p. 71
13. *I. magnus* (Dodd), 1914b, p. 67
14. *I. minuta* Dodd, 1913c, p. 178
15. *I. niger* (Hickman), 1967, p. 27
16. *I. ovi* (Dodd), 1914b, p. 67
17. *I. pulcher* (Dodd), 1914b, p. 68
18. *I. rufus* (Dodd), 1914b, p. 72
19. *I. scutellaris* (Dodd), 1926a, p. 314
20. *I. seminitidus* (Dodd), 1914b, p. 66

21. *I. silvensis* (Dodd), 1914a, p. 90
22. *I. sordidus* (Dodd), 1914b, p. 68
23. *I. spadix* (Hickman), 1967, p. 25
24. *I. speciosissimus* (Dodd), 1914b, p. 70
25. *I. splendidus* (Dodd), 1914b, p. 73
26. *I. theridii* (Hickman), 1967, p. 29
27. *I. unifasciatipennis* (Dodd), 1914b, p. 68

Genus *Ceratobaeus* Ashmead
(Figs 201, 206, 207, 223–225)

Ceratobaeus Ashmead, 1893, pp. 167, 175.

Type-species *Ceratobaeus cornutus* Ashmead, 1893.

Distribution

Ceratobaeus is widespread throughout the Australian continent. Most species have been recorded from the eastern coast, however, several inhabit drier inland areas.

Discussion

Females of *Ceratobaeus* are recognized by the dorsal hump or cylindrical horn on T1 and the excavation of the propodeum and often the metanotum that accommodate the horn. The propodeum is usually bordered by two laminae, which possibly represent a modification of the horizontal surface of the propodeum in *Idris* Foerster. In several species that have a long horn, the scutellum is also indented or divided. In a few Australian species, this medial cavity extends into the scutum and the horn almost reaches to the pronotum. *Odontacolus* Kieffer also has T1 developed as a horn, but in this genus it is considerably compressed at the sides, so as to be ellipsoidal in cross-section. *Ceratobaeus* and *Odontacolus* also differ in antennal segmentation, shape of the head and metasoma, and spination of the propodeum [see Masner (1976) for key and diagnoses].

Ceratobaeus is closely related to *Idris*. It differs from the latter genus in the morphology of the posterior mesosoma and the development of T1. Males of these two genera are especially difficult to distinguish, however, *Ceratobaeus* has a moderate dorsal inflection of the anterior margin of T1 and the propodeum is slightly excavated and bordered by diverging laminae, as in females. The more developed the horn and posterior mesosoma in females of *Ceratobaeus*, the more obvious are these expressed in males. In both sexes of *Idris*, T1 is always flat, the propodeum is never excavated, and its horizontal surface is always complete and not divided into laminae (Austin 1981a). *Ceratobaeus* is, therefore, maintained as a separate genus and not combined with *Idris*, as suggested by Huggert (1979). *Ceratobaeus* species also show a great range in the length of the metasoma (excluding the horn). In most species, the metasoma is approximately as long as the head and mesosoma combined, but in some species, e.g. *C. elongatus* Dodd and *C. longicornutus* Dodd, the metasoma can be two or three times this length. The length of the horn and metasoma are closely correlated with that of the internally retractable ovipositor. Those species with either a long horn and/or a long metasoma have correspondingly elongated ovipositors compared with species that

have a short horn and metasoma. Presumably these differences have evolved in response to varying accessibility of the host eggs.

Generic Description (based on Australian species)

Head subtriangular in shape, not long in buccal region; frontal carina usually present but small; ♀ antennae 7-segmented with 4 funicle segments and large unsegmented club, sometimes club with 3 incomplete sutures; ♂ antennae 12-segmented, f9 and f10 usually approximated.

Mesosoma. Notauli rarely developed; posterior mesosoma in ♀ excavated or indented to form cavity for reception of metasomal horn; cavity sometimes present in ♂, but less pronounced; propodeum with 2 lateral teeth or with near vertical or diverging laminae, sometimes produced dorsally into small teeth; macropterous, rarely brachypterous (♀ only); venation clearly visible.

Metasoma elongated in ♀, less so in ♂; T1 expanded into hump or cylindrical horn in ♀; ♂ without hump or horn, but anterior T1 inflected dorsally.

Species of Ceratobaeus Described from Australia

1. *C. ater* (Hickman), 1967, p. 20
2. *C. aureus* Dodd, 1914a, p. 88
3. *C. australicus* (Dodd), 1914b, p. 72
4. *C. elongatus* Dodd, 1914a, p. 89
5. *C. fasciiventris* Dodd, 1914b, p. 63
6. *C. fasciatus* Dodd, 1914b, p. 62
7. *C. faunus* (Girault), 1926d, p. 2
8. *C. flavicarpus* Dodd, 1914b, p. 61
9. *C. flavios* (Dodd), 1914b, p. 68
10. *C. flavipes* (Hickman), 1967, p. 23
11. *C. flaviventris* Dodd, 1914c, p. 126
12. *C. giraulti* Dodd, 1914b, p. 62
13. *C. grandis* Dodd, 1914a, p. 88
14. *C. laeviventris* (Dodd), 1915b, p. 451
15. *C. lamponae* (Hickman), 1967, p. 18
16. *C. leai* Dodd, 1914b, p. 61
17. *C. longicornutus* Dodd, 1914b, p. 62
18. *C. maculatus* Dodd, 1914a, p. 89
19. *C. mirabilis* Dodd, 1914b, p. 64
20. *C. parvicornutus* Dodd, 1914b, p. 62
21. *C. setosus* Dodd, 1914b, p. 65
22. *C. turneri* (Dodd), 1920, p. 362
23. *C. varicornis* Dodd, 1914b, p. 63

Genus *Hickmanella* Austin

Hickmanella Austin, 1981b, p. 303.

Hickmaniella Austin, 1981a, p. 85. Spelling error.

Type-species *Baeoneurella intrudens* Hickman, 1967.

Discussion

A description and discussion of the genus are given in Austin (1981b).

Species of Hickmanella Described from Australia

1. *H. holoplatysa* Austin, 1981b, p. 306
2. *H. intrudens* (Hickman), 1967, p. 37

Genus **Odontacolus** Kieffer
(Figs 204, 205, 209, 221, 222)

Odontacolus Kieffer, 1910b, p. 294.

Ceratobaeoides Dodd, 1913b, p. 337. Synonymy: Austin, 1981a, p. 88.

Type-species *Odontacolus longiceps* Kieffer, 1910b.

Distribution

In Australia, *Odontacolus* appears to be mostly tropical in distribution, with most specimens being collected in northern Queensland.

Discussion

Kieffer (1910b) erected *Odontacolus* for a female specimen collected in the Seychelles. Because of Kieffer's inadequate description, Dodd (1913b, 1914c) included Australian species of *Odontacolus* in *Ceratobaeoides*. Both Kieffer (1926) and Masner (1976) maintained *Ceratobaeoides* as a valid genus, as neither worker had examined the type. Dodd (1914b, 1915b), Girault (1926d) and Hickman (1967) confused the matter further by describing a number of species under *Odontacolus* that belonged in *Ceratobaeus* Ashmead. Austin (1981a) synonymized *Ceratobaeoides* with *Odontacolus* and transferred several species to *Ceratobaeus*. The generic limits of *Odontacolus* are now well defined (Masner 1976). Despite having several characters in common with *Ceratobaeus*, *Odontacolus* differs substantially in the shape of the head and metasoma.

The only host record from Australia is for an undescribed species, which was reared from the eggs of a clubionid spider in South Australia (Austin, unpublished data).

Generic Description (based on Australian species)

Head elongated in anterior view, long in buccal region, strongly conical towards mandibles; frons flat, often smooth and shining; frontal carina small; genae considerably prolonged; occiput exposed; occipital carina high on head, rounded at corners; ♀ antennae 10-segmented, with 4 funicle segments and 4-segmented club; ♂ antennae 8- or 9-segmented, subclavate.

Mesosoma. Notauli often present; scutellum flattened or rounded posteriorly, rarely indented; propodeum flattened or slightly excavated, with 2 long posteriorly pointing spines flanking horn, spines often expanded into triangular or rounded flanges in ♂ and some ♀; macropterous, venation clearly visible.

Metasoma wider than mesosoma, constricted anteriorly, rounded posteriorly; T1 in ♀ expanded into dorsal horn which is compressed from sides; ♂ without horn but anterior T1 dorsally strongly inflected.

Species of Odontacolus Described from Australia

1. *O. doddi* (Austin), 1981a, p. 88
2. *O. hackeri* (Dodd), 1913b, p. 337
3. *O. spinosus* (Dodd), 1914c, p. 125

Genera Incertae Sedis

Genus *Neuroscelio* Dodd

Neuroscelio Dodd, 1913c, p. 170; Dodd, 1926a, p. 302.

Type-species *Neuroscelio nervalis* Dodd, 1913c.

Distribution

Recorded only from Australia.

Discussion

Apart from the type female collected in northern Queensland, no additional specimens of this genus have been recorded. The head and forewings of the type are mounted on a slide, and the hindwings are missing. The head has been crushed under the coverslip, making an examination of sculptural characteristics and mouthparts very difficult.

The following characteristics of the genus seem to suggest a close relationship with the Gryonini: palpal formula 2-2(?); antennae 12-segmented; prepectus and skaphion absent; metasoma short and broad with 7 tergites and 6 sternites; T2 largest tergite. The following characters, however, indicate that *Neuroscelio* is a strange element in the Gryonini: 7-segmented antennal club; percurrent notauli; forewing with stigmal vein long, $2 \times$ length of marginal vein; postmarginal vein absent; basal and median veins indicated by thick brown lines; radial vein represented by lighter brown line forming closed radial cell; tibial spur formula 1-1-1 (? , partly hidden by glue over specimen).

Neuroscelio may represent an independent tribe but until further specimens are collected no decision should be contemplated.

Genus *Sceliacantha* Dodd

Sceliacantha Dodd, 1913c, p. 174; Kieffer, 1926, p. 412.

Type-species *Sceliacantha quadrispinosa* Dodd, 1913c.

Distribution

Recorded only from Australia.

Discussion

The following characteristics suggest that *Sceliacantha* has a close relationship with *Opisthacantha*: frons without depression margined by keel; mandibles tridentate; lateral ocelli contiguous with inner orbital margin; ♀ antennae 12-segmented with 6-segmented club; propodeum medially unarmed but with posterolateral corners produced to form spines; forewing with marginal vein shorter than stigmal vein, postmarginal vein present; hindwing with submarginal vein complete; metasoma spoon-shaped; T3 largest metasomal tergite.

However, *Sceliacantha* can be distinguished from *Opisthacantha* as follows:

Maxillary palps 2-segmented; metanotum with 2 short spines	<i>Sceliacantha</i> Dodd
Maxillary palps usually 4-segmented; metanotum with 1 medial spine	<i>Opisthacantha</i> Ashmead

These differentiating characteristics are of problematic value as *Opisthacantha* on a world-wide basis has been found to be a very large genus with wide limits.

In Australia, *Opisthacantha* is well represented but no generic revision has ever been attempted. Consideration of the validity of *Sceliacantha* should, therefore, be delayed until such a revision is accomplished.

Genus *Sceliacanthella* Dodd

Sceliacanthella Dodd, 1913c, p. 174; Dodd, 1914d, p. 164; Kieffer, 1926, p. 413.

Type-species *Sceliacanthella parvipennis* Dodd, 1913c.

Distribution

Known only from Australia.

Discussion

Sceliacanthella is also closely related to *Opisthacantha* and, with the exception of the forewing venation, shares all characters listed as common to both *Sceliacantha* and *Opisthacantha*. In addition, *Sceliacanthella* and *Opisthacantha* both have a medial spine on the metanotum. It would appear, however, that *Sceliacanthella* can be distinguished from *Opisthacantha* by the presence of three-segmented maxillary palps and forewings with the marginal vein longer than the stigmal vein. As both characters appear to be of doubtful generic value, any consideration of the validity of *Sceliacanthella* should also be delayed until a revision of the Australian *Opisthacantha* is possible.

Species Incertae Sedis

Because of the poor condition of the type-specimen, the following species cannot be placed with certainty in a genus:

- Baryconus amabilis* Dodd, 1913b, p. 336
- B. citreus* Dodd, 1914c, p. 109
- B. imperfectus* Dodd, 1916, p. 27
- B. sordidus* Dodd, 1914b, p. 126
- B. trispinosus* Dodd, 1914b, p. 127
- B. variipes* Dodd, 1914c, p. 108
- B. vulgaris* Dodd, 1913b, p. 336
- Ceratoteleia eximia* Dodd, 1913a, pp. 144, 174
- C. speciosa* Dodd, 1913c, p. 175
- Hadronotus goethei* Girault, 1932
- H. nigricoxa* Dodd, 1913a, p. 179
- H. striatus* Dodd, 1913a, p. 155
- Opisthacantha longipennis* Dodd, 1913c, p. 168
- Plastogryon elegans* Dodd, 1914c, p. 94
- P. fasciatipennis* Dodd, 1913a, p. 153
- Telenomoides giraulti* Dodd, 1913a, p. 169
- T. nigricornis* Dodd, 1913a, p. 170

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Figs 1-6. Generalized scelionid. 1, Head, frontal view. 2, Head, dorsal view. 3, Head, lateral view. CL, clypeus; FD, frontal depression; GE, gena; IO, inner orbit; LA, labrum; LO, lateral ocellus; LOL, lateral ocellar line; MD, mandible; MO, median ocellus; MR, malar region; OC, occipital carina; OD, diameter of ocellus; OOL, ocular ocellar line; OP, occiput; POL, posterior ocellar line; TE, temple; TR, toruli; VX, vertex. 4, Male antenna. F1-F10, funicle segments 1-10; TY, tyloid. 5, Female antenna. CB, club; F1-F4, funicle segments 1-4; P, pedicel; R, radicle; SC, scape. 6, Mesosoma, dorsal view. MN, metanotum; MS, mesoscutum; NO, notauli; PN, pronotum; PR, propodeum; SC, mesoscutellum; SK, skaphion; TG, tegula. Scale lines 0.5 mm.

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Wings removed from all specimens except in Fig. 223.