AUSTRALASIAN CHALCIDOIDAEA
(HYMENOPTERA)

A Biosystematic Revision of Genera of Fourteen Families, with a Reclassification of Species

Z. Boubek
9. Family EUCHARITIDAE

The family name, based on Eucharis Latreille, was proposed first by Walker (1846a: 21), as Eucharidae. Dalla Torre (1898: 359) corrected it to Eucharidinae and Girault (1928[425]: 451) used Eucharitinae (with -t-), now accepted as correct (Heraty, 1985: 62).

Since exclusion of the Perilampidae from the Eucharitidae by Förster (1856) the definition of the Eucharitidae has changed only little, mainly because most included forms possess rather striking features. The family (at times downgraded to subfamily) was divided into two subfamilies by Kirby (1886: 37) when he erected the Eucharisinae which is here considered as part of Eucharitinae. Apart from the 4 subfamilies recognised here there is one extralimital one, the Philomidinae, which is also included in the generic key below.

The Eucharitidae are regarded as related to the Perilampidae, probably their plesiomorphic sister-group (Bouček, 1956b: 87; Graham, 1969: 7; Heraty & Darling, 1984: 309, 326). However, some plesiomorphies seem to suggest a very early origin, whilst the Perilampidae may have developed later from some other ancestral pteromaloids.

Eucharitidae are fully winged chalcids which include a variety of peculiar forms. It is still uncertain which of their features belong to the plesiomorphic inheritance from the ancestors, and which are synapomorphic specialisations of the group. For instance, in Saccharissa Kirby the antennae are at least 14-segmented and in the extralimital (southern African) Eucharis Westwood up to 26-segmented. However, all other aspects of these two genera suggest that such multisegmented antenna is a primitive, ancestral feature and, although unique in Chalcidoidea, it seems not to be a duplication of the segments as is sometimes thought. In many genera the flagellum is branched, often with two rows of long branches, apparently a specialisation. The antennal apex has, however, no specialised function unlike perhaps all other groups of Chalcidoidea. The pronotum is mostly (in Eucharitiniae and Philomidinae) strongly reduced in median part and often fused with the prepectus; the fusion may be a derived condition. The axillae are enlarged and usually broadly fused in middle (?groundplan, ancestral feature). Another possible synapomorphy is the falcate mandibles: the left with 2 sharp teeth and the right with 3 (but sometimes mandibles reduced (atrophied): Psilogaster ghesquièrei, Indosema Husain & Agarwal, Orasemorpha Bouček, Echthrodaphe Burks). Further synapomorphies may be the partly obliterated venation, the frequent obliteration of the malar sulcus, possibly the form of the gaster and of the ovipositor (so far little studied), and the planidium first-instar larva. Phylogenetic evaluation of these characters is not easy. For instance the lack of specialisation of the antennal apex (absence of sensilla, probably due to difference in function) is probably reflected by the unusual variation (above 13) of the number of antennal segments, a feature not found anywhere else in Chalcidoidea, but frequent in Ichneumonoidea. However, when other features are taken into account the multisegmented antenna of Saccharissa and Eucharis, on which Kirby (1886: 37) based the subfamily Eucharisinae, has only generic value.

The biology of Philomidinae is not known (they may be parasites of some ground-nesting bees). Species of Echthrodapinae seem to be parasites of twig-nesting bees (see below). The remaining species of Eucharitidae are probably all parasites of ants (Clausen, 1941; host records listed by Wheeler & Wheeler, 1937: 171-172). The eggs are generally laid in great numbers, either on the leaves or in cuts made by the ovipositor in the leaves (some Oraosema, e.g. O. assectator Kerrich in tea leaves in Assam, India; Das, 1963), normal buds (e.g. Stilbula; cf. Clausen, 1940b, 1940c) or flower buds (Eucharis adscendens Fabr., Bouček, 1954), among young seeds of infructescences of some Compositae (Stilbula; see Parker, 1937), or in some other parts of herbaceous plants or shrubs and trees. Some Oraosema spp. lay eggs near to thysanopterous eggs on leaves and the hatched planidia feed temporarily on immature thrips (Johnson et al., 1986). The eggs and larvae, especially the first-instar planidium larvae are described for several species (e.g. Clausen, 1940a, 1940b; Heraty & Darling, 1984). The habits of the adults of some of these species have been described also (Clausen, 1941). The planidium larvae are very mobile, some can even jump, and attach themselves to the oncoming insects. Some planidia are eventually carried by the suitable kind of ants into their nests and there get onto the full-grown ant larvae. They develop mostly as ectoparasites of the prepupae or pupae, emerging from the ant cocoons (e.g. Wheeler & Wheeler, 1937; Clausen, 1940b, 1941). The adults seem to live only for few days, not taking any food.

Eucharitidae are rather well represented in the region, especially in Australia (15 genera), but do not reach New Zealand. The American genera and species are being studied by Heraty (e.g. 1985, 1986). The South European species are treated in the now rather obsolete papers of Ruschka (1924), Gussakovsky (1929) and Nikolaevsky (1952). The African forms need extensive study. In Asia the Indian genera were keyed by Narendran (1985: 186-187) and the species were later listed by him (1986: 51-55). The Micronesian species were treated by Watanabe (1958) and several Indo-Australian genera were reviewed by Hedqvist (1978b). Some earlier-described species of the region were placed in Psilogaster Blanchard (these now mainly under
Austenicharis) and Eucharis Latreille. The latter genus does not reach Australia and the species in question are found under several other genera, except Eucharis democles Walker, 1839, the single type specimen of which, in the BMNH, is a male of a formicine ant (confirmed by B. Bolton).

**Key to genera of Australasian EUCHEMATIDAE**

1. Labrum broadly exposed and well sclerotised, without digitiform bristles; prepectus strongly bulging as a broad shoulder conspicuous in dorsal view, its ventral corner overlapping pronotal corner; pronotum dorsally strongly reduced, concealed; axillae extremely short, scutellum at apex produced or only slightly so; gaster sub sessile, dorsally depressed; marginal and submarginal vein combined, always shorter than half the costal cell; extralimital: Mediterranean, Afrotropical, to South Asia .................. [PHILOMIDINAE]

   — Labrum concealed or, if slightly exposed, with digitiform processes and bristles; prepectus never bulging, not shoulder-like, different; axillae well developed, usually broadly meeting in median line; gaster and other characters often different .................................................. 2

2. Pronotum dorsally well developed, exposed; antenna 13-segmented, elbowed, with distinct scape ........ 3

   — Pronotum dorsally strongly shortened and mostly concealed by the head; antenna mostly different...... 4

3. Pronotum dorsally rounded (fig. 916); prepectus clearly separated from pronotum; genae in facial view strongly receding, mouth small (fig. 917), mandibles reduced to small lobe-like rudiments; scrobes not well delimited; dorsal thorax with piliferous puncturation; axillae narrowly meeting in middle, scutellum not produced; hind femur with subapical tooth; marginal vein stout and short, postmarginal vein very short; gaster sub sessile, short, more or less dorsally depressed; ovipositor apex hook-like (fig. 918); ECHETHRODAPINAE ............................. 1. Echthrodape Burks

   — Pronotum with sharp collar edge (fig. 919) and laterally completely fused with prepectus; genae convex, mandibles normally developed, sickle-shaped; scrobes delimited by subelliptic carina (fig. 923); thorax with rugulose alveolation; axillae broadly fused in median line, scutellum with a long flat bi lobed projection over the petiolo gaster; ovipositor different; AKAPA LINAЕ ............. 2. Akapala Girault

4. Pronotum and prepectus separated as different sclerites (fig. 925); scutellum simple, not produced at apex; antennae simple, elbowed, at most 13-segmented, usually with first flagellar segment anelliform; ORASEMINAE .......................................................... 5

   — Prepectus evidently fused with pronotum (fig. 932), although fusion sometimes indicated as a groove or carina; scutellum often apically produced; antennae mostly different from alternate, in males often with branches; EUCHARITINAE .......................................................... 6

5. In female, gaster sessile or nearly so (fig. 927), petioli always transverse in dorsal view; in male petiolar subquadrate to about twice as long as broad and always embraced ventrally in distal part by swollen projection of first sternite (fig. 928); head and thorax rugulose (often also gaster), scapula and axilla strongly convex .................................................. 3. Orasema n. nom. n.

   — In both sexes petiolo slender and conspicuous, in female at least twice as long as broad (always longer in regional spp.), in male more than 3 times as long as broad; thorax often with different sculpture, head reticulate or mainly smooth .................................................. 4. Orasema Cameron

6. Scutellar apex either simply rounded or, if produced (then either forked or not) its apical part separated by transverse frenal groove or depression (figs 938, 940, 953, 960) seen laterally as a distinct ascending borderline .............................................................. 7

   — Scutellum with its apical part not dorsally separated and always distinctly produced into a horn or a prong (figs 966, 969, 971); frenal line noticeable only laterally or on underside of projection (fig. 970)............ 19

7. Hind basitarsus almost to fully as long as, and distinctly broader than, rest of tarsus (fig. 936), slightly so in females, more strongly in males; antenna 8 to 12-segmented, mostly simple (figs 934, 937), often stout, in male rarely flagellar segments with short stout expansions (fig. 935); body dark-coloured, often with
alveolate reticulation and mostly with sparse erect hairs; hind tibia with 2 distinct spurs; mandibles falcate but rather stout ................................. 7. Tricerina Kirby

8 Scutellar apex more or less rounded (fig. 932), not distinctly bidentate, although sometimes with short postfrenal transverse carina which may be slightly emarginate in middle .................................................. 9

— Scutellum with apical prong but at least a stout projection with 2 small teeth (figs 954, 960, 963) ........................................ 15

9 Flagellar segments in both sexes simple, virtually symmetric .................................................. 10

— Flagellar segments at least serrate (females, fig. 946), or with distal dilatations, or bearing projections or branches (mostly males; fig. 945) ................................................................. 14

10 Vertex posteriorly rounded; head smooth; antennae thin, generally 13-segmented (fig. 930), with long scape reaching ocellus, elongate pedicel followed by 8 segments before a 3-segmented clava (its segments sometimes fused); thorax including propodeum irregularly rugose-areolate; petiole slender, especially in male (fig. 929); body black or dark brown, only up to 2.3 mm long (extralimital ones up to 2.7 mm) ................................................................. 5. Losbanus Ishii

— Vertex carinate behind ocelli, scape not reaching or exceeding ocellus, antennae 12-segmented, also otherwise different, body larger .................................................. 11

11 Antenna narrowly filiform (fig. 933), scape exceeding ocelli level; scutellum very convex but with transverse depression (fig. 932); thorax dull, sculpture dense and deep; extralimital .......................... 6. Anurasema gen. n.

— Flagellar segments at least slightly wider at distal ends or whole flagellum rather stout; scape not reaching level with ocelli; scutellum not very convex, not saddle-like; thorax always fairly bright metallic, green, bluish or cupreous; Australian .................................................. 12

12 Flagellum slender (figs 949, 950); thorax densely rugoso-foveolate or rugoso-punctured, including pleura, but scapula sometimes with small shiny area; postmarginal vein only slightly shorter than the marginal; body rather long, even in males over 4.5 mm (up to 11 mm) .................................................. 9. Austrochartis gen. n.

— Flagellum relatively stouter (figs 947, 948, 951); sculpture of thorax different; postmarginal vein much shorter than the marginal; body length 2.3-4.1 mm .................................................. 13

13 Head and thorax with rather bright metallic colours and at least in some places shiny, mainly with wider-meshed foveolation, including sides of thorax which are not convex; antenna in both sexes 12-segmented (figs 947, 948), in female similar to some Chalcera (fig. 944) but not serrate; apex of scutellum not bidentate; postmarginal vein distinct, about half as long as the marginal .......................... 10. Parapilosogaster Ghesquière

— Head and thorax almost black, head striate, thorax with very dense rugose punctuation, including convex thoracic sides with large prepectal area and deep ditch for mid femur; antenna in female with only 6 funicular segments (figs 951); scutellar apex usually shortly bidentate; postmarginal vein indistinct; [cf. below 12. Rhipipalloidea Girault and 13. Subtibila gen. n.] .................................................. 16

14 Flagellar segments in both sexes apically dilated (fig. 941), obconical, or with stout, irregularly leaf-like expansions (fig. 943) .................................................. 8. Propsiogaster Girault

— Flagellar segments in female serrate, in male with a number of longer or shorter branches, often in 2 rows (figs 944-946) .................................................. 11. Chalcera Kirby

15 Male flagellum slender and very long (fig. 964), also petiole very long; female flagellum 9 or 10-segmented, slender, but segments shortening towards apex (fig. 965); [scutellum always with horizontal narrow prong; thorax densely punctured or foveolate-reticulate] .................................................. 15. Stibila Spinola

— Male flagellum shorter, either thickened and its middle segments subquadrate, or evidently serrate or ramoso; female flagellum different, either with fewer segments or serrate .................................................. 16

16 Male flagellum simple but thickened (figs 958, 959); female flagellum simple (fig. 957), with 6 funicular segments preceding a distinct clava; body almost black, very dull, virtually bare; scutellar apex with 2
small teeth or a prong ............................................................... 13. Substilbula gen. n.
— Male flagellum serrate or ramose; female flagellum at most 10-segmented, serrate, apical segments mostly not fused into clava ................................................................. 17

Note. If female flagellum 8-segmented and serrate see 11. Chalcura.

17 Female antenna very short, only 8-segmented (fig. 951), with 5 serrate funicular segments; head coarsely rugoso-alveolate, without striation; scutellum hardly or not bidentate (fig. 953) ........................................................................................................ 12. Rhipipalloidea Girault

— Female antenna 10-segmented; head with distinct concentric striation around scrobes; scutellum distinctly bidentate .............................................................................................................. 18

18 Thorax shiny, with distinct transverse striae on scutum (fig. 954) and longitudinal striae on axillae and scutellum, latter bidentate, projections usually asymmetric; body almost black 14. Striostilbula gen. n.
— Thorax densely punctured-reticulate (fig. 960), scutellum with 2 distinct diverging teeth; body mostly with bright metallic colours ................................................................. 16. Silbaloida gen. n.

19 Antennae in both sexes simple, long and slender, 12-segmented; scutellum with single narrow horn which is blunt or emarginate (then bidentate) at apex; thorax laterally, including pronotum, mesepimero, metapleuron and lateral propodeum, with thick, felt-like pilosity .... [Oriental Ancylotropus Cameron]
— Antennae with a row of long branches in male (figs 967, 968), in female serrate or with short branches; scutellum different from alternate; thoracic sides at least on pronotum and mesopleuron with only thin pilosity ................................................................. 20

20 Antenna at least 14-segmented (figs 967, 968); scutellum produced into a stout and rather short fork and usually with distinct longitudinal striation ............................... 17. Saccharissa Kirby
— Antenna 12-segmented; scutellar projection often long, as a simple spine or a fork; scutellum mostly different ................................................................. 21

21 Scutellum produced into a long horizontal spine (fig. 971) which is dorsally shallowly grooved; sides of thorax high, flat, vertical and mainly shiny ................................................................. 19. Thoracenoides Girault
— Scutellum produced into a fork (figs 969, 970); sides of thorax strongly sculptured, not flat ................................................................. 18. Schizaspida Westwood

Subfamily ECHTHRODAPINAE subf. n.

Type genus Echthrode Burks.

The main characters of the subfamily are mentioned in the key above and also in the original generic description. The genus was placed by Burks in Perlalampidae, but the axillae narrowly meet in the median line, the peculiar ovipositor, relatively short scapus and some other features (see also figs 916-918) seem to indicate that Echthrode should be included in Eucharitidae. The elbowed apex of the ovipositor resembles that of some Chalcididae (Phasgonophorini).

Echthrode africanus is known from Kenya and at least one other species comes from southern Africa. Here another species is described from New Guinea.

1. Genus Echthrode Burks
(Figs 916-918)

Echthrode Burks, 1969: 73-75. Type species Echthrode africanus Burks; by original designation.

The genus is easy to recognise, especially on the illustrated features (figs 916-918). The propodeal spiracles are unusually large.
Biology. *E. africana* was described as a solitary ectoparasite of pupae of bees of the genus *Braunsapis* Michener (before partly *Allodapula* Cockerell) nesting in dead stems of *Lantana camara*. According to Michener (1969) the late instar of the larva is hairy and has 7 pairs of pseudopods, very similar to the host larva. Both the host and parasite larvae develop in a common stem cavity without cell partitions; the host bees attend and feed their larvae without attacking the parasites.

Distribution. South and East Africa (2-3 spp.), New Guinea (1 sp.).

Papuan species of *Echthrodape*:

*papuana* sp. n.—Holotype female, PNG: Port Moresby, Konedobu, 3.xi.1972 (T.I.Fenner); in BMNH.

Female. 3.9 mm. Body blue violet, especially on head and thorax, mesoscutum anteriorly coryphey; all knees broadly, tibiae mostly and all tarsi pale yellowish, mid and hind tibiae broadly infuscate; wings subinfumate near veins.

Head narrower than mesoscutum (as 9:10); head and thorax with short greyish to whitish pilosity; clypeus and supraclypeal area bare, convex, shiny; parascrobal areas and vertex with rugose punctuation. Genae converging in straight line in facial view (fig. 917). Relative measurements: head width 42, height 28, dorsal length 13.5, frontovertex width 24.5, POL 11, OOL 4, eye 19:14, malar space 11.5, mouth about 10, scape 9:4, thorax dorsally 61:45, scutellum hardly longer than broad, 29.28, forewing 97:41, costal cell 44.5, marginal vein 9.5, postmarginal 5, stigmal 4.5. Thorax robust (fig. 916); scutellum convex, its hind margin with narrow thin carina. Propodeum irregularly deeply rugose, with irregularly margined median groove, sublaterally slightly raised in place of plicae; spiracle large, oval, by fully its long diameter from posterior margin, by its transverse diameter from metanotum; lateral pilosity conspicuous.

Gaster short and stout (fig. 916) but ovipositor rather thin, although typically bent and toothed at apex (fig. 918).

Male not known.

*E. africana* differs mainly by its smaller size and narrower body, the genae are concave in facial view, the hind margin of scutellum is broadly laminate and the lamina is protruding, the postmarginal vein is almost absent, the ovipositor is shorter but stronger, etc.

Subfamily AKAPALINAE subf. n.

Type genus *Akapala* Girault.

This group is based on *Akapala* Girault, a genus which by many features clearly belongs to the vicinity of Eucharitinae, but has a well developed pronotum, with a sharply edged collar as in *Perilampus*, Perilampidae (cf. figs 919 and 920). Also the antenna is similar to the latter genus. *Akapala* is placed near to Eucharitinae mainly on the form of the axilae and of the scutellum, especially the large axilae meeting broadly in middle, and the apex of the scutellum produced into two broad horizontal lobes or horns (figs 919-921). The prepectus is fused with the pronotum. The petiole is distinctly elongate.

2. Genus *Akapala* Girault
(Figs 919–923)

*Akapala* Girault, 1934[442]: [1]. Type species *Akapala astriaticeps* Girault; by monotypy.

The genus is being redescribed in full by Dr Darling, who seems to have discovered another species. It should be recognisable by the figures and the key. The shallow scrobal depression is delimited by an elliptic carina as in *Parelatius* Girault (Perilampidae).

Biology. Not known.

Distribution. Australia (probably 3 spp.).

Australian species of *Akapala*:

*astriaticeps* (Girault)—*Kapala astriaticeps* Girault, 1926[399]: 66-67. QLD: Kingston.
Akapala astraleipes Girault, 1934[44]: [1]. QLD: Kingston. Syn. n. Also QLD: Tara (Dahms, 1983: 61). Both descriptions were probably based on the same material but Girault (except for the identical species names) made no mention of it or of the conspecificity. Main diagnostic characters combined from the two mutilated types (they are regarded as lectotypes of their respective species, because it is not clear whether they were single specimens; see Dahms, 1983: 60-61): Lower part of face produced, ocular line almost in half of scrobal cavity. Concave area anterior to gulf between scutellar branches fully as long as the gulf, nearly reaching base of process (fig. 920); longitudinal carinae replaced near base of process by wide-meshed irregular areolation as that on basal part of scutellum; posterior corner of propodeum obliquely produced into a sharp-angular tooth.

**radus** (Westwood) **comb. n.—Schizaspidia radis** Westwood, 1874: 152, pl. 28, fig. 5. SA: Angus. Lectotype (here designated), probably female (judging by antenna): the thorax pinned, parts glued to a card beneath, but gaster apparently lost. The labels include handwritten: “very rare 6 Ja. on Melaleuca” and “South Australia Angus 1863”, the specimen registered Type Hym. 676 in UOM, Oxford. Main diagnostic characters: Head more transverse (fig. 923), part below lower ocular line short, the ocular line distinctly below middle of scrobal cavity. Concave area around the gap between scutellar branches extending barely to middle of the process (fig. 921), each branch only slightly narrower than the gulf between them; branches: process dorsally with strong longitudinal ridges reaching anteriorly onto the basal part of scutellum; the median longitudinal ridge the strongest and highest. Posterolateral corner of propodeum not produced, subrectangular.

**Subfamily ORASEMINAE**

The name was used first by Burks (1979: 876). The subfamily includes eucharitids with the pronotum dorsally strongly reduced but laterally clearly separated from the prepectus (figs 925, 927). The antenna is elbowed, and if the clava is counted as 3-segmented (the subdivision is not always evident) then the antenna is 13-segmented, with one anellus (figs 926, 927).

Heraty (1985: 63) enumerates the following genera as probably belonging here: “Orasema Cameron, Lobsanus Ishii, Psilogasterellus Ghesquière (in part) and probably Parasemora Gemignani.” However, the South American Parasmora, if it has a separate prepectus, may be just a species group of Orasema. Both Psilogasterellus (a replacement name for Psilogaster Blanchard) and Lobsanus are both placed in the Eucharitinae. On the other hand the fauna of Africa, southern Eurasia and Australia includes several orasemina genera which may be separated as follows.

a Gastral petiole in female more than twice as long as broad, in male still much longer, slender ...... **Orasema** Cameron
b Petiole in female transverse, hence gaster sessile or nearly so; in male at most about twice as long as broad but then distal third or half supported by swollen extension of first stigmate (fig. 928) ....................... b

Notauli clear-cut, complete, axillae distinctly separate from mesocutum; mandibles sickle-shaped, normally with teeth 2/3; Australia ............................................................. **Orasemora** gen. n.

— Notauli and especially transcutal suture (between mesocutum and axillae) obliterated; mandibles more or less reduced, mostly without teeth .................................................. c

Body with metallic colours, surface dull (even on gaster), distinctly rugulose, length at least 3.5 mm; mandibles distinctly developed, both 2-toothed; Africa .................................. **Timoderus** Waterston

— Body black, almost smooth, about 2 mm long; mandibles almost atrophied, replaced by bluntly lobe-like maxillae; India.............................................. **Indosema** Husin & Agarwal

Of these genera only **Orasema** is represented with certainty in the Americas. In the treated region only two genera occur, **Orasema** and **Orasemora**. Species of both of them were found associated with ants of the genus **Pheidole**.

3. **Genus Orasemora nom. n.**

(Figs 927–928)

Eucharomorpha Girault, December 1913[175]: 94. Type species Eucharomorpha viridis Girault; by original designation. Preoccupied by Eucharomorpha Girault, September 1913[157].

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The Australian delay species (1923: 1027).

**Euchla** Tullberg

The body is not covered by the head; weak to absent legs; head a weak wheel; thorax a large wheel; dorsal

E. bideni

E. dubia

E. eribot

E. fuscip

E. goethei

E. partig

E. pyitalu

E. sp

E. trideni

E. varide

E. viridis

E. wheel

E. xenia
This genus has been known as the 'Australian Eucharomorpha'. Girault originally intended to make an Australian species the type species of Eucharomorpha, his E. viridis (1913[175]: 95), but that publication was delayed and in the meantime the name Eucharomorpha was validated by descriptions of two South American species, of which E. worcesteri (Girault, 1913[157]: 62) was designated as type species by Gahan & Fagan (1923: 58). That cannot be changed, although it was regretted e.g. by Brues (1934: 201). By consequence Eucharomorpha, based on the American type species, becomes now a junior synonym of Orasema Cameron.

The genus is recognised by the prepectus distinctly separated from the pronotum as a different sclerite, and by the sessile or only shortly petiolate gaster (see the key). The body is only up to about 4 mm long, with the head and thorax and at least sides of the gaster irregularly rugulose but the sculpture is dorsally sometimes weak and then the surface is fairly shiny. Some species have both mandibles sharply 3-toothed, e.g. O. wheeleri, in most others the left mandible is 2-toothed. The ovipositor is thickened and curved, and bears dorsally two saw-like ridges as in Orasema (figured e.g. by Brues, 1934: 202).

Biography. Two Australian species were reared from nests of the ant genus Pheidole. Distribution. Australia (at least 5 spp.).

Australian species of Orasemorpha:

*bidentata* (Girault) comb. n.—Eucharomorpha bidentata Girault, 1940[459]: 325-326. ACT: Canberra, Blundells. Probably the same as eribotes.

*dubia* (Girault) comb. n. Eucharomorpha dubia Girault, 1913[175]: 95. TAS: Hobart. Partly repeated by Girault, 1915[241]: 230.

*eribotes* (Walker) comb. n.—Eucharis Eribotes Walker, 1839b: 13-14. TAS: Hobart, and NSW: Sydney. Two syntypic specimens in BMNH; a ♂male (only head and thorax extant, without antennae, but longitudinal rugosity on the scutellum suggests a male) labelled ‘1440b’, hence probably from Hobart (cf. Walker, 1846a: 21), Type Hymn. 5-619, is here designated Lectotype. The paralectotype is a headless male labelled ‘1444a’, hence probably from NSW: Sydney. There are remnants of another specimen (‘1440c’, a female), not mentioned by Walker (1846). Probably they belong to the same species, although the posterior half of the scutellum shows a shallow median groove. Transferred to Psilocasteroides by Girault (1913[175]: 94) and to Epimetagea by Hedqvist, 1978b: 243. Fig. 927. O. eribotes may be the oldest name for a species which may include the following names as synonyms: bidentata, partiglabra, pyttalus, varidentata and viridis, if not more. It is about 2.6-3.3 mm long, the forewing with dense pilosity except most of the basal cell, the gaster also densely pilose. I find some intriguing variation in the shape of the head and also in the rugosity of the head and thorax. Specimens which seem to belong to eribotes were found in the nest of a Pheidole sp., WA: Serpentine River, x.1918 (J.Clark). Other material comes from eastern NSW, ACT, VIC and also WA.

*fuscipes* (Girault) comb. n.—Eucharomorpha fuscipes Girault, 1913[175]: 95. TAS: Hobart. See also Girault, 1915[241]: 229-230.

*goethei* (Girault) comb. n.—Eucharomorpha goethei Girault, 1934[442]: [2]. VIC: Melbourne.

*partiglabra* (Girault) comb. n.—Eucharomorpha partiglabra Girault, 1940[459]: 324. ‘VIC’. Probably same as eribotes.

*pyttalus* (Walker) comb. n.—Eucharis Pyttalus Walker, 1846a: 21, 87-88. SA: Adelaide. The holotype, single specimen, ‘a’ (see l.c. p. 21), in BMNH, Hymn. 5-615; it is a female lacking the gaster. Probably the same species as eribotes but the synonymy may be proposed after the species are better known.

*tridentata* (Girault) comb. n.—Eucharomorpha tridentata Girault, 1915[241]: 230. QLD: Mackay.

*varidentata* (Girault) comb. n.—Eucharomorpha varidentata Girault, 1936[447]: 3. TAS. Probably the same as eribotes.

*viridis* (Girault) comb. n.—Eucharomorpha viridis Girault, 1913[175]: 95. TAS: Swansea. Also TAS: Launceston (Girault, 1929[431]: 331). Very close to eribotes (and pyttalus).

*wheeleri* (Brues) comb. n.—Eucharomorpha wheeleri Brues, 1934: 201-203. NSW: Wentworth Falls; nest of Pheidole proxima Mayr. Probably close to xeniades.

*xeniades* (Walker) comb. n.—Eucharis Xeniades Walker, 1839b: 14-15. NSW: Sydney. One of three syntypic males in BMNH, Hymn. 5-620 (also: ‘1441b’) is here designated Lectotype. The male petiole is fully twice as long as broad but the distal half is ventrally supported by swollen projection of first sternite (fig. 928). The female petiole is transverse. Body length 1.9-2.2 mm. New records. QLD: Graham Range nr Babinda, 18.x.1979 (LaSalle, Woolley & Dahms); Palmerston Nat. Park, Crawford’s Lookout, 1.iv.1976
4. Genus *Orasema* Cameron

(Figs 924–926)

*Orasema* Cameron, 1884: 101-105. Type species *Orasema stramineipes* Cameron; by monotypy.


Further synonyms are *Semora* Cameron, 1910, and its replacement names *Semorella* Ghesquière, 1946, and *Semorata* Strand, 1947, all based on the South American *S. xanthopus* Cameron.

Girault regarded the South American species with relatively short petiole as congeneric with the Australian ones. One of the latter species was intended as type species of *Eucharomorpha* (*E. viridis* Girault, 1913 [175]; see *Orasemornaph* above) but eventually descriptions of two American species were published earlier and that validated the generic name, as explained already by Gahan & Fagan (1923: 58). *E. worcesteri*, the type species of this first-published *Eucharomorpha*, belongs to *Orasema*, as confirmed by the examination of its holotype, kindly sent to me by Dr F. Koch, from the Zoological Museum in Berlin, GDR.

In the female of the same species the petiole is relatively shorter than in the male, but always fairly long (fig. 924). The ovipositor is rather stout and curved, and bears dorsally two toothed saw-like ridges. The genus includes several species groups. Even in the treated region at least three are present. One is represented by *O. purpureovenritis*, with smooth and shiny head, the second is the *valgius*-group, the third includes *O. delicatula*. In general the regional species are relatively easy to recognize but need a revision. The only key to a number of species (21) of *Orasema* has been published so far only by Gahan (1940: 437-439) but that includes only American species.

**Biography.** One Australian species was reared from ants of the genus *Pheidole* in one case from *Solenopsis*. This is the only eucharitid genus in which some species develop as endoparasites (not ectoparasites) of ants (Clausen, 1941: 66-67). The Indian species ovipositing into leaves of tea bushes were recorded as potenial pests (Das, 1963); when ovipositing they damage the leaf by their peculiar ovipositor (fig. 924). Some American species oviposits in the vicinity of a thysanopterous egg and the hatched planidia feed temporarily on the immature thrips (Johnson et al., 1986).

**Distribution.** Americas (probably over 30 spp.), Africa with Madagascar (at least 15 spp.), South Asia (about 8 spp.), to east to New Guinea and Australia (at least 6 spp.).

**Australo-Papuan species of *Orasema*:**

**delicatula** (Walker) **comb. n.**— *Eucharis delicatula* Walker, 1862: 377. 'Australia (?). The single female in BMNH, Hym. 5-612, labelled 'Psilogaster delicatula Walker', is here designated Lectotype. It is remarkable by its size (about 4.5 mm) and the petiole laterally widened in middle, but the country of origin is not certain.

**emma** see *theocles*

**gemma** Girault—*Orasema gemma* Girault, 1932[437]: [4]. QLD: Kuranda. The intact female, one of five syntypes, on Card 2 (Dahms, 1984d: 646) is here designated Lectotype.

**palgravei** Girault—*Orasema palgravei* Girault, 1922[361]: 105-106. QLD: Greenhills nr Cairns.

**pheiodolophaga** see *valgius*

**purpureovenritis** (Cameron) **comb. n.**— *Eucharis purpureovenritis* Cameron, 1909b: 232. East Malaysia, Sarawak: Kuching. Transferred to *Gollumella* by Hedqvist, 1978: 230. The single male in BMNH, Hym. 5-367, is here designated Lectotype.


EUCHARITIDAE


*theocles* (Walker) comb. n.—Eucharis *Theocles* Walker, 1839b: 11-12. NSW: Sydney. Transferred to *Psilogaster* by Girault, 1913[175]: 93 and 1915[241]: 232. The single extant male in BMNH, Hym. 5-618 and labelled also ‘Psilogaster theocles (1839) Walker’, is here designated Lectotype. =*Otrasema emma* Girault, 1934[442]: 2, and 1936[447]: 3. QLD: Tumoulin. Syn. n. The single female in QM (Dahms, 1983: 249) is here designated Lectotype. By mistake the same description was published twice. New records. QLD: Yungaburra nr Atherton, xii.1982; Mt Tibrogargan and Mt Glorious, xii.1976 and 1981 (Bouček, Dahms); NSW: Tooolorum Scrub, i.1977 (Bouček); Sydney with Canley Vale and Casula, xi.1961 and i.1962 (Nikitin); Gibraltar Range, i.1979 (Naumann); TAS: 13 km W of Geeveston, i.1983 (Gauld); Port Arthur (Townes coll.).

*valgius* (Walker) comb. n.—Eucharis *Valgius* Walker, 1839b: 11. NSW: Sydney. The single extant male in BMNH, Hym. 5-617, is here designated Lectotype. Species transferred to *Psilogasteroides* by Girault, 1913[175]: 94, to *Parapsilogaster* by Girault, 1915[241]: 233 (and description repeated), and to *Epimegates* by Hedqvist, 1978b: 243. =Otrasema pheidolophaga* Girault, 1913[175]: 96. VIC: Geelong; from nest of *Pheidole* sp. Syn. n. Common species. New records. QLD: Normanton; Mt Glorious; Mt Nebo; Brisbane, Indooroopilly; Stanthorpe; Wilson's Peak; Mt Tambourine; NSW: Sydney with Canley Vale, Cabramatta, Casula and Royal Nat. Park; Cabbage Tree Valley nr Clyde Mtn; Araluen Valley; Tomah distr.; The males collected at Stanthorpe differ from the typical ones in having the flagellum proximally thickened (a form?).

Subfamily EUCHARITINAE

The subfamily is defined briefly in the key. Some of the genera exhibit peculiar characters. In *Lobsanus* the antenna is 13-segmented (figs 929, 930, with the last 3, claval segments, often fused), as is the groundplan situation in Pteromalidae. Most other genera have in general 12-segmented antennae, as the first flagellar segment becomes anelliform (female *Anorasema*) and then disappears. However, two peculiar genera, the African *Eucharistis* Westwood and the Oriental-Australian *Saccharista* Kirby, have no anellus but at least two (but up to 12) additional segments in the flagellum. Moreover, the two genera are apparently not related closely.

The subfamily includes the bulk of the eucharitid genera, but most of them seem to have relatively limited distribution. Probably most widely distributed is *Stilbula*, ranging from France to southern Australia. The Old World genera are not present in the Americas where a characteristic genus is *Kapula* Cameron, but this has one species in Africa. In Australia 14 genera are recognised and from these 8 seem to be endemic.

5. Genus *Lobsanus* Ishii
(Figs 929-931)


The holotype of *Gollumiella longipetiolata* (probably a male!) clearly belongs to *Lobsanus* and must be very close to *uichancoi*. The paratype male described as *longipetiolata* belongs, however, to *Anorasema* and seems to be conspecific with its type species.
This genus includes perhaps the smallest Indo-Pacific eucharitids, the next minute ones belonging to *Orasema*. *Losbanus* is rather easy to recognize on the characters used in the key. In addition the following ones seem of importance.

Head without sculpture, shiny, almost bare, with scrobes shallow and not reaching median ocellus. Mandibles normal for the group, long, teeth 2:3. Genae straight and fairly long. Antennae very slender, 13-segmented (clava 3-segmented), little different in two sexes, yellowish; in male pilosity on flagellum slightly longer than in female (figs 929, 930); scape reaching but not exceeding median ocellus; flagellum with pedicel combined not as long as (female) or only slightly longer than (male) width of head; scape in male often slightly widened above middle. Thorax elongate. Prepectal corner of pronotum large, reaching tegula, at about 60°; prepectal separation vague, indicated only by broad depression with several horizontal rugae. Frenuline on scutellum in form of distinct carina situated slightly behind middle. Forewing with distinct pilosity except for proximal third; submarginal and marginal vein very smoothly sinuate; postmarginal vein vague but less than half the length of the marginal. Ovipositor not widened, without saw-like ridges (fig. 931). Watanabe (1958: 26) placed the Ceylonese *Parapsilogaster laeviceps* Gahan, 1940, in Losbanus, but from two syntypes which I examined it is a synonym of *Orasema purpureoventris* (Cameron). On the other hand the Malay Pan *Psilogaster antennata* Gahan, 1940, belongs here, as *Losbanus antennatus* Gahan, comb. n.

**Biology.** No host record available but Ishii (1932: 211-212, pl. 11) described and figured the egg and the plandium larva of *L. uthanai*; the eggs are laid on the underside of young leaves of *Celtis philippinensis* and of *Leucaena glauca*. I found females of *Losbanus* sp. on leaves of *Mangifera indica* at Dehra Dun, India, and on a shrub with soft leaves in Guangzhou, China.

**Distribution.** From India and Bangladesh to South China (including Hainan), the Philippines (altogether probably 4 spp.), Caroline Islands (2-3 spp.), New Guinea (1 sp.) and Queensland (1 sp.).

**Australo-Papuan species of Losbanus:**

*minutus* sp. n.—Holotype male, QLD: Mt Tambourine, 6.iii.1981 (I. Galloway); in QM. Paratypes (2 females, 8 males). QLD: Eungella Nat. Park, 8.iv.1974 (Galloway); Landsborough St., 8.iii.1984 (Masner); Mt Tibrogargan, 26.xii.1976 (Bouček); Mt Grismer, 2.iii.1984 (Masner). Some paratypes in BMNH.

Female. 1.8-2.3 mm. Black, including coxae and petiole, but on shiny parts with very faint bronze to bluish metallic tinge, bronze especially on head; legs otherwise pale yellow, femora mostly slightly infuscated, also flagellum slightly brownish. Wings hyaline.

Head in dorsal view with distinct wide angle between lateral frons and eye outline. Antenna (fig. 930) unusually slender, with pedicel dorsally as broad as clava and almost parallel-sided, about 2.8 times as long as broad, hardly shorter but much broader than following 2 segments combined; basal two segments of flagellum almost equal (3.5:4), the first only slightly tapering to base and about 2.5 times as long as broad. Flagellum shortly pilose, but with interspersed longer hairs and on distal segments with some short longitudinal sensilla. Whole thorax with very broad-meshed irregular areolation; subvertical side of scutellum with 2 or 3 longitudinal rugae. Petiole about 1.6 times as long as propodeum mediolaterally. Basal third of forewing bare in basal third, at most with 2 or 3 hairs.

Male. 1.7-2.3 mm. Very similar to female but basal two segments of flagellum still slenderer, both combined slightly longer than pedicel, the second slightly longer than the first and 3 times as long as broad. Scape not thickened above middle. If genitalia not seen the male can be recognized on the longer petiole: it is twice as long as propodeum mediolaterally. Basal third of forewing with some (up to 10) hairs scattered on lower surface.

*peterseni* see 4. *Orasema purpureoventris*

(Figs 932-933)

Type species *Eucharis pallidipes* Cameron.

Name from a. an, as negative (not) and *Orasema*; feminine gender.

Head smooth, with minute and sparse decumbent hairs. Occipital margin as sharp ridge just behind ocelli; almost no temples. Scrobes distinct and reaching median ocellus. Genae straight, slightly concave at mouth.
corners. Mandibles normal for the group. Antennae very slender, long-filiform; scape slightly exceeding vertex; pedicel short, subglobous; one thin discoid anellus discernible in female, indistinct in male; rest of flagellum with very dense short hairs, each placed on a raised papilla; no distinct longitudinal sensilla; in female 7 funicular segments slightly decreasing in length, last one 2/3 as long as clava, this undivided; in male flagellum with 9 long segments decreasing in length, last one subdivided by 2 vague constrictions (fig. 933).

Thorax slightly elongate, bare, very dull with rugose alveolation (although with distinct metallic colours, blue to purple); dorsum strongly convex with 2 double humps (fig. 932), one formed by scapulae and axillae, second by scutellum divided by broad transverse depression bearing longitudinal rugae and situated just before an irregular frenal cross-carina; apex of scutellum rounded. Prepectal part of pronotum not separated, concave, angle at tegula about 50°. Propodeum sloping, rather narrow, without lateral convexities or ridges, surface irregularly areolate except for 3 irregularly larger areolae at petiolar margin; small spiracle at a tubercle at metanotal margin; bare side of propodeum confluent with narrow metapleuron. Legs very slender and long: coxae conical, bare; tarsi slender, hind basitarsus as long as rest of tarsus. Forewing extensively and conspicuously pubescent (except bare part of basal cell); venation distinct: postmarginal vein almost as long as the marginal, short sigmal vein almost perpendicular.

Biology. Not known.
Distribution. Borneo and Philippines (1-2 spp.).

**Bornean species of Anorasema:**


7. Genus *Tricoryna* Kirby
(Figs 934-938)

*T. kirbyi* Kirby, 1886: 29. Type species *Eucharis ello* Walker; by original designation.

*Metagea* Kirby, 1886: 30. Type species *Eucharis zalates* Walker; by original designation. Syn. n.


The antennae have a very short scape and still shorter pedicel. The flagellum is always simple, unbranched, except in males of one (perhaps two) species where it is dorsally serrate (this species is similar to *Propsilogaster* but has the hind basitarsus enlarged). However, the number of flagellar segments varies from 6 to 10. Moreover, the distal segments tend to fuse, so that even at the species level their number is not quite constant. This variation led to establishment of *Metagea* and *Prometagea*.

Apart from the antennae the following characters are important. Body at most about 4 mm long, with sparse and thin erect hairs, with only weak and dark metallic gloss. Gloss often indistinct owing to rugoso-reticulate sculpture, although several species are only superficially sculptured; in one species dorsal thorax virtually smooth. Legs including coxae with short, usually dense decumbent pubescence apart from longer erect thin hairs. Clypeal margin truncate or barely protruding. Scutellum sometimes produced over propodeum, as a rounded swollen and sculptured lobe (fig. 934). Petiole never very long. Wing pubescence rather weak; outer marginal fringe usually absent.

Biology. Recorded from ant nests of the genera *Ectatoma* and *Chalcoponera*.

Distribution. Australia (about 10 spp.).

**Australian species of *Tricoryna***:

*chalcoponerae* Brues—*Tricoryna chalcoponerae* Brues, 1934: 203-205. NSW: Mt Kosciusko; ex *Chalcoponera metallica* Smith.
ectatommae Girault—Tricoryna ectatommae Girault, 1915[241]: 228-229. VIC: Melbourne; ex nest of Ectatomma sp.

New records. QLD: Mt Tambourine, iv.1935 (Turner); NSW: NE of Nerriga, i.1984 (Masner); VIC: Black's Spur NE of Melbourne, ii.1983 (Bouček); TAS: Coles Bay, ii.1977 (Sedlček).

kirbyi (Ashmead) comb. n.—Metagea Kirbyi Ashmead, 1900: 337-338. NSW: Gosford. Description repeated by Girault, 1915[241]: 225.

minor (Girault) comb. n.—Prometagea minor Girault, 1934[443]: [2]. TAS: Patrick River.

myrmicis Girault—Tricoryna myrmicis Girault, 1940[459]: 324. Victoria.

offenbachi (Girault) comb. n.—Prometagea offenbachi Girault, 1934[443]: [2]. QLD: Gympie.

punctulativensis (Girault) comb. n.—Metagea punctulativensis Girault, 1928[422]: [3]. South Australia, and VIC: Bright.

New record. ACT: Canberra, Black Mountain, 13 ii.1983 (Bouček).

reticulativensis (Girault) comb. n.—Epimetagea reticulativensis Girault, 1934[442]: [1]. QLD: Forest Hill. Rufiventris (Metagea) see 9. Austeucharis


tuberculaticornis (Girault) comb. n.—Metagea tuberculaticornis Girault, 1915[241]: 225-226. NT: Darwin.

zalates (Walker) comb. n.—Eucharis Zalates Walker, 1839b: 13. NSW: Sydney, and WA: King George’s Sound. Lectotype, here designated, in BMNH, Hym. 5-608 (without gaster and without locality label). The species was transferred to Metagea by Kirby, 1886: 30. Fig. 938.

8. Genus Propsiologaster Girault
(Figs 939-943)

Propsiologaster Girault, 1940[459]: 324. Type species Propsiologaster biclavata Girault, by original designation.

The generic name, ending in -gaster, is of the feminine gender.

The species classified here seem to be related both to Tricoryna and to Chalcura. They are similar especially to the dark-coloured forms of the genera which have the thorax (and head) dull with very dense rugose puncturation. However, the Propsiologaster species lack the erect sparse setae present in Tricoryna and the hind basitarsus is not expanded. Most Chalcura differ from Propsiologaster in having parts of the thorax shine, often with brighter metallic colours. Parapsilogaster differs from both mainly in the antennae. The flagellar segments are dilated at apex, the segments being of obconical shape (biclavata; fig. 944) and then rather regular, but in some species the expansion becomes stronger and more irregular. In alcicornis the middle segments have the expanded part subdivided into a broadly subtriangular dorsal plate with several teeth on the outer margin, a narrower similar mesal branch, and a small external tubercle (fig. 943); the antenna is at least 13-segmented.

Biology. Not known.
Distribution. Australia (3 spp.).

Australasian species of Propsiologaster:

alcicornis sp. n.—Holotype male (and 1 male paratype), NSW: Jerilderie, 26.i.1979 (J. McGechan); in BCRI Rydalmere (paratype in BMNH).

Male. 4.5 mm. Black, with gaster (beyond petiole) and legs beyond coxae reddish testaceous, yet femora in basal halves infuscate. Wings whitish.

Head and thorax dull with dense rugose reticulate puncturation very similar to that of P. biclavata, but still slightly coarser and present also on centres of scapulae (which have weaker sculpture and are slightly shiny in biclavata); sloping sides of scapulae with very dense but thin white pilosity. Very distinctive in
antennae (fig. 943), with flagellum consisting of at least 11 segments, the last one double, with a narrow rudiment of another segment. All 11 flagellar segments with dorsal transverse expansions similar to flattened and widened antlers of elk (or moose, Alces; hence the name): each segment on outer side with a transverse broad branch bearing on distal margin several teeth or tubercles; segment 2 on mesal side with a small spine, segments 3 to 8 with a broad mesal branch bearing several teeth on distal periphery, segments 9 to 11 with a mesal branch fused with the lateral one. All expansions are flat and less stout than in biclavata in which dorsal margins of expansions are less irregular. Forewing venation whitish. Relative measurements: head width 47, height 30, dorsal length 15, minimum distance between eyes (below antennae) 33.5, POL 14, OOL 8; eye 17:12, malar space 12, mouth width 15, scape 6:3.5, flagellum (if stretched) about 38, first flagellar segment on venral side slightly shorter than scape; pedicel transverse. Thorax length to width as 67:48; scutellum in dorsal view slightly elongate, 31:28. Petiole (18:5) as long as propodeum medially.

Female not known.

biclavata Girault—Propsilogaster biclavata Girault, 1940[459]: 324. QLD: Watsonville. Described from a female; a male from N. QLD: Somerset, i.1875, probably belongs here.

(Figs 949–950.)

Type species Psilogaster pallipes Brullé.

Name from Australia and Eucharis; feminine gender.

This genus is meant for a group of species which were usually placed in Psilogaster. The name Psilogaster Blanchard, 1840, was found preoccupied by Psilogaster ‘R.L.’, 1817, and was replaced by Psilogasterellus Ghesquière (1946: 368). For a long time its Egyptian type species remained unknown, till I had an opportunity to study it and explained (Boucké, 1977: 124) that it is identical with the Mediterranean Pachyeucharis Boucké, described as a subgenus of Eucharis Latreille. It has nothing to do with the Australian eucharitids.

Main characters (for a photograph of female fasciventris see Brues, 1919: 22). Body relatively large (4-10 mm long), with subglobose and densely sculptured thorax, slender petiole and short gastor. Head and thorax usually with bright green, coppery or bluish metallic gloss, petiole always dark, wings often extensively infumate. Antennae in both sexes (figs 949, 950) simple and very long, filiform, with short scapus; in female scapus about 2-3 times as long as broad and always shorter than second flagellar segment; flagellum almost filiform, with 8 or 9 segments of decreasing length, the seventh at least 1.3 times as long as broad. In male flagellum fully as long as twice the breadth of head, slightly tapering, 10-segmented, all segments longer than the scape which is relatively shorter than in female, always less than twice as long as broad, testaceous. Forewing venation well defined, postmarginal vein several times as long as the stigmal; pilosity short but often distinct and relatively dense, marginal fringe absent. Female petiole at most twice as long as hind coxa, male petiole about as long as, or even longer than hind tibia.

If the antennae cannot be examined some small females could be mistaken for Chalcera, especially the species in which the scapula has a broad smooth area. Such Chalcera forms differ by straight converging genae, whilst in Austeucharis they are always slightly swollen below the eyes.

Biology. Parasites in cocoons of bulldog ants (genus Myrmecia). As with most eucharitids, the species of this genus are rather poor fliers and some may be caught on flowers by hand. A label on a female of a species nr pallipes says that it was "caught by hand and made no attempt to fly away".

Distribution. New Guinea (1 sp.); Australia and Tasmania (about 12 spp.).

Australo-Papuan species of Austeucharis:

boudienyi (Girault) comb. n.—Epiptetaea boudienyi Girault, 1940[459]: 325. NSW: Tweed Head (Upper Tweed River); also VIC. The staged female in QM, identified as a syntype by Dahms (1983: 146) with help of Girault's Manuscript, is here designated Lectotype. It is labelled 'Tweed River' in Frogbatt's handwriting; the paralecotype bears 'Victoria French'.

fasciventris (Brues) comb. n.—Psilogaster fasciventris Brues, 1919: 14-15. NSW: Hornsby; from cocoon of Myrmecia gulosa.
flavifemora (Girault) comb. n.—Epimetegea flavifemora Girault, 1929[431]: 334. NSW: Camden, also Monaro.

ilychi (Girault) comb. n.—Epimetegea ilychi Girault, 1936[447]: 3. TAS: Hobart. Apparently close to flavifemora.

implexa (Walker) comb. n.—Eucharis implexa Walker, 1862: 377-378. TAS. The single female (without antennae) in BMNH, Hym. 5-613, is here designated Lectotype.

kosciuskoi (Girault) comb. n.—Epimetegea kosciuskoi Girault, 1940[459]: 325. NSW: Mt Kosciusko.

laryma (Walker) comb. n.—Eucharis Laryma Walker, 1846: 21. 86-87. ‘Australia’. Walker states (p. 21) ‘a. Australia’, by which he refers to just one specimen (a) in BMNH, but he described ‘male and female’. The single (headless) male in BMNH, Hym. 5-3067, is here designated Lectotype.

myrmeciae (Forel) comb. n.—Eucharis Myrmeciae Forel, 1890: tx. SA: Bull Creek nr Adelaide; from cocoons of bulldog ant Myrmecia forficata Fabr.

=Psilogaster myrmeciae Cameron, 1891: 186-187. SA: Bull Creek. Syn. Based on same material. Forel’s name was made available by his description, however unintentional. A male of myrmeciae in BMNH, Hym. 5-368, is here designated Lectotype.

myrmeciae see myrmeciae

palliipes (Brulle) comb. n.—Psilogaster pallipes Brulle, in Lepeletier de St.Fargeaux, 1846: 375. pl. 39. Tasmania. One female, labelled ‘Psilogaster pallipes Br. male’ in MNHN (Paris), is here designated Lectotype.

=Psilogaster pallidipes Dalla Torre, 1898: 362. Unnecessary emendation. The petiole is about twice as long as broad, slightly tapering forwards, with weak minute punctuation. New record. TAS: Port Davey.

partiglabra (Psilogaster) see 11. Chalcura

piceicornis (Walker) comb. n.—Eucharis piceicornis Walker, 1862: 376-377. NSW: Sydney. The single male (without gaster) in BMNH, Hym. 5-611, is here designated Lectotype. Very close to pallipes.

pulcher (Girault) comb. n.—Psilogaster pulcher(!) Girault, 1913[175]: 93. TAS: Mt Wellington. Description repeated by Girault, 1915[241]: 232.

rufiventris (Ashmead) comb. n.—Metagea rufiventris Ashmead, 1900: 338. ‘Australia’.

smaragdina (Walker) comb. n.—Eucharis smaragdina Walker, 1862: 376. TAS. The single male in BMNH, Hym. 5-610, is here designated Lectotype. Most probably the same as pallipes.

(Figs 947-948)

Psilogasteroides Girault, 1913[175]: 93-94. Type species Eucharis fausta Walker; by original designation.

Preoccupied by Psilogasteroides Brethes, 1910.


Parapsilogastrus Ghiesquière, 1946: 368. Replacement name for Parapsilogaster Girault.

Parapsilogastrus, together with its two invalid synonyms, were synonymised with Epimetegea by Hedqvist, 1978b: 242.

Girault’s description of Psilogasteroides is brief: “Male. Agreeing with Psilogaster, Blanchard, but having 12-jointed antennae; first funicle-joint long, the others short.” This fits P. fausta (Walker), but it is a mystery how he correctly recognised the species on which he based the genus. Namely, Eucharis fausta was originally described from a male that apparently lacked antennae (they were not mentioned by Walker). Therefore it proved difficult to recognise the species (and the genus) from the type specimen. Girault probably described the antenna of Orasema valgus, which he also included in his Psilogasteroides.

This genus includes species which are very similar to some Chalcura, especially to the group of species related to C. pollia, formerly classified as Epimetegea. The males are easy to separate on the simple antennae (fig. 947), without branches, the flagellar segments being almost completely symmetric and bearing very dense short hairs, each placed on a minute tubercle, and apart from the hairs some small and rather short longitudinal sensilla, which are otherwise rarely encountered in Eucharitidae. The females have the flagellar segments also virtually symmetric (fig. 948). whilst in Chalcura they are always at least slightly serrate. In Chalcura the antennal pubescence is, at least in males, much sparser than in Parapsilogastrus, the surface between the hairs rather shiny. Apart from the antennae however, there is hardly any difference and it is possible that more representative material will prove that Parapsilogastrus must be united with Chalcura.
In *P. fausta* and related forms examined by me the scutellum has a short upturned, almost fingernail-like, carina immediately behind the frenal groove. In varying form this carina is also present in many *Chalcura* species in which there is often a similar, though less regular elevation, just in front of the frenal groove.

Biology. No host record known (for biological data on the extralimital *P. montanus* see under *Chalcura*). Distribution. Philippines (1 sp.), Australia (4 spp.).

**Australian species of Parapsilogastrus:**

*fausta* (Walker)—*Eucharis Fausta* Walker, 1839b: 9-10. TAS: Hobart. Transferred to *Psilogasteroides* by Girault, 1913[175]: 94, to *Parapsilogastrus* by Girault, 1915[241]: 232 (and Walker’s description repeated), to *Parapsilogastrus* by Ghesquière, 1946: 368, and to *Epimenteage* by Hedqvist, 1978b: 242, 243. (name misspelt as *faustus* and incorrectly stated as type species of *Epimenteagea*). The single male in BMNH, Hym. 5-616, is here designated Lectotype. It lacks antennae but is recognisable.

=Epimenteage phidiasae Girault, 1940[459]: 325. ACT. Syn. n.

New records. QLD: Mt Glorious nr Brisbane; Mt Tambourine; NSW: Tooloom Scrub; Sydney, Cabramatta; VIC: Melbourne; nr Kinglake Nat. Park, Lake Mountain.

*phidiasae* see *fausta*

*uylanovi* (Girault) comb. n.—*Epimenteage uylanovi* Girault, 1940[459]: 325. ACT: Blundells. Probably the same as *fausta*.

11. **Genus Chalcura** Kirby

(Figs 944-946)

*Chalcura* Kirby, 1886: 30. Type species *Eucharis deprivata* Walker; by original designation.

*Rhipipallus* Kirby, 1886: 31. Type species *Eucharis volusus* Walker; by original designation.

*Epimenteage* Girault, 1913[148]: 225-226. Type species *Epimenteage purpurea* Girault; by original designation.

**Syn. n.** Description repeated by Girault, 1915[241]: 226.

*Chalcreuleoides* Girault, 1913[156]: 46. Type species *Chalcreuleoides hyalinus* Girault; by original designation.

**Syn. n.** Description repeated by Girault, 1915[241]: 237.

*Chalcreuroidella* Girault, 1913[159]: 100. Type species *Chalcreuroidella orientalis* Girault; by original designation.

**Syn. n.** Description repeated by Girault, 1915[241]: 236.

*Chalcreuella* Girault, 1913[175]: 94. Type species *Chalcreuella nigricans* Girault; by original designation. **Syn. n.** Description repeated by Girault, 1915[241]: 230-231.

*Astibula* Girault, 1913[175]: 96. Type species *Astibula magnifica* Girault; by original designation. **Syn. n.** *Chalcreuroides* Girault, 1913[175]: 115. Type species *Chalcreuroides versicolor* Girault; by original designation.

**Syn. n.** Description repeated by Girault, 1915[241]: 236.

*Arhipipallus* Girault, 1936[447]: 3. Type species *Rhipipallus turneri* Kirby; by original designation. **Syn. n.** *Parachalcura* Girault, 1940[459]: 324. Type species *Parachalcura ramosa* Girault; by monotypy. **Syn. n.**

Hedqvist recently (1978b) placed some of the above species either under *Epimenteage* or *Rhipipallus*, the two as valid and different from *Chalcura*, although previously *Rhipipallus* was declared a synonym of *Chalcura* by Baltazar (1961: 394). Hedqvist’s *Epimenteage* included as synonyms *Psilogasteroides*, *Parapsilogastrus*, *Astibula*, *Propssilogastrus* and *Parapsilogastrus* *Rhipipallus* in his view included *Chalcreuroides*, *Chalcreuroidella*, *Chalcreuroids*, *Arhipipallus*, *Parachalcura* and *Rhipipalloidea*. It seems, however, that *Parapsilogastrus* is more different from the remaining species and can be maintained as a valid genus. I have separated also some species, regarded as belonging to *Epimenteage* by Hedqvist, as a different genus, *Austecharis*.

Despite of several attempts I have failed to divide *Chalcura* into several genera as the previous authors have. The genus in the present limits includes several species groups. One of the more extreme forms is the Ceylonese type species of *Chalcura*, *C. deprivata* (figured in Westwood, 1874: pl. 28, fig. 6; its single male syntype in BMNH, Hym. 5-623, is here designated Lectotype). In this the antennae are fairly long and slender, in the female with middle flagellar segments only slightly serrate (asymmetric) and in the male flagellar segments 1 to 9 each bearing a slender branch of medium length. The first flagellar segment of the male of the Micronesian *C. upeensis* Fullaway (see Watanabe, 1958: 30) has no projection. At least 2 similar species occur
in Australia, and another with the branches very long and partly alternating. The antennae are also long in the Philippine C. aeginetus (Walker), but in the female the middle segments have already sharper and more evident projections; and in the male, apart from long branches, the distal segments bear also short mesial projections. Species with the antennae fairly long, and the mesal flagellar projections prolonged into distinct mesal branches, and the forewing maculate at the stigma, were classified mostly in Parachalcara (e.g. P. maculata Watanabe, 1958: 32). Such species, at least as to the location and number of flagellar branches, match Girault's description of Parachalcara. For some time I considered classifying the forms so far mentioned in one genus, on the combination of rather long antennae and the maculate forewing. However, I failed to find any further tangible difference, except that in some Australian forms the antennae are relatively shorter than in more northern forms, with the branches becoming slightly clavate or stout and slightly more curved. The type species of Parachalcara differs just in the mentioned way from the more northerly species, including one in PNG, which I believe to be Rhipiphallus cameroni Kirby. The female of the latter species is indistinguishable from the typical Rhipiphallus females, except for an infumate stigmal spot.

The central species-group of the present genus is formed by the numerous species earlier placed either in Epimetaga or Rhipiphallus (e.g. Hedqvist, 1978b). R. volusus belongs to close relationship with affinis and I find the latter probably conspecific with the type species of both Epimetaga and Chalcuroidea. Astilbula, December 1913 with type species magnifica, (but not Astilbula, September 1913, with type species aenea) was correctly synonymised with Epimetaga by Girault himself (1915[241]: 226). Also the type species of Arkhiphipalus and of Parachalcara belong to this group. Apparently this group was called by Girault 'Epimetaga', because he could not recognize Rhipiphallus, being misled by the incorrect statement both by Walker and Kirby (1886: 31) that the type species volusus has 13-segmented antennae. Probably the original mounting did not allow proper examination. The lectotype of volusus, as all other species of Chalcara in the present sense, has the antennae 12-segmented.

Probably another extreme in the male antenna is reached by (Chalcurella) nigricansae and (Rhipiphallus) turneri. Here the branches are in two rows and are fairly long, the last two, on the ninth flagellar segment, are both of almost equal length with the last antennal segment.

Biography. C. affinis was reared from an Odontomachus species; no other regional records available. The Philippine C. montana (Girault) comb. n. (earlier in Parapsilogaster, but from Ishii's figure should belong to Chalcara; this is confirmed by examination of the type of glabra, a synonym of montana) deposits eggs on leaves on Sandricicum and Premna, as described, with the egg and the planidium larva, by Ishii (1932: 205-206).

Distribution. From Sri Lanka (1 sp.) to the Philippines (2 spp.), to the Marshall and Samoa Islands (2 spp.), New Guinea and Australia (probably over 20 spp.).

Australo-Papuan species of Chalcara:

aenea see 18. Schizaspindia
aeneobrunnea (Girault) comb. n.—Epimetaga aeneobrunnea Girault, 1929 [431]: 334-335. WA: King George’s Sound.
affinis (Bingham) comb. n.—Rhipiphallus affinis Bingham, 1906: 129-130. QLD: Townsville; ex cocoon of Odontomachus ruficeps coriarius Mayr. A female from the ‘types in the Hope Department’ (Oxford), labelled ‘Type Hym: 47 2/6’, ‘30.7.02’ and ‘1906 2702’, is here designated Lectotype.
=Epimetaga purpurea Girault, 1913[148]: 227, and 1915[241]: 226-227. QLD: Townsville; from ant pupae. Syn. n. The syntypes were supplied by Dodd, probably from the same lot as syntypes of affinis. =Chalcuroidea versicolor Girault, 1915[241]: 236. QLD: Townsville; ex ‘Myrmecia sp.’. Syn. n. The body of the type of versicolor is missing from the card (in SAM) but Girault identified as versicolor one of the syntypes of affinis (in BMNH) submitted to him. Possibly he mistook Odontomachus for Myrmecia. The ant is on the same card and the specimen is labelled in almost the same way as the syntypes of affinis. Transferred to Rhipiphallus by Hedqvist, 1978b: 245.
bicoloriventris (Girault) comb. n.—Epimetaga bicoloriventris Girault, 1915[241]: 228. QLD: Bribie Island.
bispinosa (Girault) comb. n.—Chalcuroidea bispinosa Girault, 1929[431]: 335. SA: Mt Lofty. Transferred to Rhipiphallus by Hedqvist, 1978b: 244. The holotype is a male with deformed anterior part of the petiole (anterior corners as long asymmetric horns) and the apex of the scutellum, but probably conspecific with C. turneri.
boudienyi see 9. Austeucharis
brunneipetiole (Epimetaga) see 15. Astilbula
brunneipolita (Girault) comb. n.—Epimetaea brunneipolita Girault, 1934 [442]: [1]. QLD: Brisbane.

bunyae (Girault) comb. n.—Epimetaea bunyae Girault, 1934[442]: [1]. QLD: Bunya Mts. Very close to affinis. For E. bunyae elongata see elongata.

cameroni (Kirby) comb. n.—Rhipipillus Cameroni Kirby, 1886: 37, pl. 1, fig. 6. ‘Australia(?) or Celebes(?)’
The type specimen(s) seems lost, but from the figure I believe to have recognised the species. New records. Irion Jaya: Jufeta Bay, Pim, ii.1936 (E.Cheesman); PNG: Ovop nr Tufl, vii.1983 (Ismay); 20 km SE of Port Moresby, i.1985 (Ismay); Aieme River 60 km E of Pt Moresby, xii.1982 (Boucek); Popondetta, Sangara Plantation, vii.1968 (E.Hassan); 6 km N of Wau, x.1973 (K.A.Spencer). Solomonis: Tulagi, x.1934 (H.T.Pagden); Russell Is., vii.1934 (Lever). Also Singapore: Sungei Mandai mangroves, vii.1976 (D.H.Murphy).

elongata (Girault) comb. & stat. n.—Epimetaea bunyae elongata Girault, 1940[459]: 324. QLD: [Lamington] National Park. Most probably a species different from bunyae.

flavifemora (Epimetaea) see 9. Austeucharis

hemiglabra (Girault) comb. n.—Epimetaea hemiglabra(?) Girault, 1940[459]: 325. NSW: Yass.

hyalina (Girault) comb. n.—Chalcurelloides hyalina Girault, 1913[156]: 46-47. QLD: Gordonvale (Nelson). Description repeated by Girault, 1915[241]: 237. Transferred to Rhipipillus by Hedqvist, 1978b: 244. Near to turneri.

ilyichi and kosiukoi (Epimetaea) see 9. Austeucharis

magnifica (Girault) comb. n.—Astilbula magnifica Girault, 1913[175]: 96-97. NSW: [Sydney, Royal] National Park. Transferred to Epimetaea and description repeated by Girault, 1915[241]: 227. Also reported from SA: Mt Lofty, and commented on by Girault, 1929[431]: 334.

maximovi (Girault) comb. n.—Epimetaea maximovi Girault, 1936[447]: 3. NSW. Probably the same as female nigrocinerea.

monilicornis (Girault) comb. n.—Epimetaea monilicornis Girault, 1940[459]: 325. SA. Close to affinis. Or a Parapsilogastrus?

> myrmica (Girault) comb. n.—Epimetaea myrmicae Girault, 1936[447]: 3. VIC (Belgrave; Dahms, 1984a: 842).


oji see sanguiniventris

orientalis (Girault) comb. n.—Chalcuroidea orientalis Girault, 1913[159]: 100-101. QLD: Gordonvale (Nelson). Description repeated by Girault, 1915[241]: 227. Transferred to Rhipipillus by Hedqvist, 1978b: 244.

partigabra (Girault) comb. n.—Psilogaster partigabra Girault, 1926[401]: 131. QLD: Brisbane.

petersoni (Hedqvist) comb. n.—Rhipipillus petersoni Hedqvist, 1978b: 244. PNG: New Britain, Yalom. Very close to or probably the same as, cameroni (Kirby).

phidiaceae see 10. Parapsilogastrus

polita (Girault) comb. n.—Epimetaea polita Girault, 1915[241]: 228. QLD: Brisbane.

=Epimetaea polita varia Girault, 1940[459]: 324: QLD: Bribane, Indooroopilly. Probably the same as polita.

The BMNH has specimens from Mackay identified as polita by Girault, but the females have longer antennae than the type material. The extent of variation has to be studied.

purpurea (Girault) comb. n.—Astilbula purpurea Girault, 1913[175]: 97. QLD: Cairns. Transferred to Epimetaea and unnecessarily renamed Epimetaea purpureicaprypus by Girault, 1915[241]: 227 (thought to be homonymous with purpurea).

=Epimetaea purpureicaprypus oji Girault, 1940[459]: 325. NT: Daly River.

purpureicaprypus see purpurea

ramosa (Girault) comb. n.—Parachacura ramosa Girault, 1940[459]: 324. QLD: Ayr. Transferred to Rhipipillus by Hedqvist, 1978b: 244.


sanguiniventris (Girault) comb. n.—Epimetaea sanguiniventris Girault, 1929[431]: 334. SA: Mt Lofty.

=Epimetaea sanguiniventris oji Girault, 1940[459]: 325. NT: Daly River.
**turneri** Kirby—*Rhipiplus* (?) *Turneri* Kirby, 1894: 47. QLD: Mackay. The female from the syntypic couple in BMNH, Hym. 5-375, is here selected as Lectotype.

**uwanovi** see 10. *Parapsilogastrus*

**varia** see *polita*

**versicolor** see *affinis*

**volusus** (Walker)—*Eucharis Volusus* Walker, 1839b: 8-9. WA: King George’s Sound. Original description is supplemented by a part by Haliday (quoted by Walker). Figures in Walker, 1842: pl. P, 1871d: 65 and Westwood, 1874: pl. 28. Transferred to *Stilbula* by Walker, 1871d: 65, to *Rhipipiulus* by Kirby, 1886: 31. Misspelt ‘volusus’ by Hedqvist, 1978b: 245. The single extant original specimen, a male in BMNH, Hym. 5-621, is here designated Lectotype. I remounted it to see the antenna properly. It was originally on a card but about 70 years ago was placed, as many other Walker types, on Waterston’s instructions on a point (which in many cases resulted in damage to the types).

(Figs 951–953)

*Rhipipiloidea* Girault, 1934[442]: [1]. Type species *Rhipipiloidea mira* Girault; by monotypy.

The genus was incorrectly synonymised with *Rhipipiulus* by Hedqvist, 1978b: 244.

The type species is known only from the brief description and the incomplete type specimen. That has only the gaster preserved, together with a slide bearing the crushed head, antennae and a forewing (Dahms, 1984d: 823); see figs 951, 952. Girault compared it with *Rhipipiulus* (see under *Chalcus*). Further information comes from the type of *R. gruberii* which has the thorax preserved (fig. 953). The strongly rugose head with irregular alveolate sculpture but no striae, suggests rather a relation to *Tricoryn*

The reduced antennal segments mostly resemble females of *Subostiula* but the latter has a finely striate head and the female antennae is simple. It resembles the latter also in the form of thorax, but the scutellar apex is short, not bidentate (*gruberii*) or only slightly so (as described for *mira*).

Biologia. Not known.

Distribuzione. Australia (1-2 spp.).

Australian species of *Rhipipiloidea*:

**gruberii** Girault—*Rhipipiloidea gruberii* Girault, 1940[459]: 326. NSW: Mt Kosciusko. Transferred to *Rhipipiulus* by Hedqvist, 1978b: 244. Probably a smaller form of *mira*.


(Figs 957–959)

Type species *Stiulbula bidentata* Girault.

The species classified here seem to form a group different from the general type known as *Stiulbula*. They are certainly closely related to them as well as to *Stiulbuloidea* and *Stiulbuloidea*. As in *Stiulbula* the prefranal part of the scutellum ends in a slight hump (in side view); its apical (postfranal) part is short, bidentate, or (in one species) in form of an elongate prong. The body is very dark, almost black, only very slightly metallic, the head and thorax dull, with very dense irregular punctuation-retrilecation. The main difference from *Stiulbula* is in the antennae: they are simple in both sexes, but short and relatively stout. In the female the unusually short flagellum consists of only 6 or 7 funicular segments preceding the clava which is formed by fusion of the remaining ones (fig. 957). In the male the flagellum is 10-segmented and tapering to the apex. The female petiole is dull, rugulose-punctured, less than twice as long as broad; in the male rugulose-punctured, 1.5 times to almost twice as long as the rugoso-aveolate propodeum in the middle. In both sexes the wing pilosity is obliterated, strongly reduced, also the venation is not well defined.
Biology. No host records available.
Distribution. Australia (4 spp.).

**Australian species of Subsitilula:**

*albipennis* (Girault) comb. n.—*Situla albipennis* Girault, 1929[431]: 332. NT: Groote Eylandt. See fig. 958.

*australiana* (Girault) comb. n.—*Situla australiana* Girault, 1913[175]: 93. QLD: Mt Tambourine. Description repeated by Girault, 1915[241]: 231-232. Probably same species as *bidentata*.

*bidentata* (Girault) comb. n.—*Situla bidentata* Girault, 1913[175]: 92. QLD: Mt Tambourine. Repeated by Girault, 1915[241]: 231. New records. QLD: 20 km E of Mareeba, xiii.1982 (Bouček); Kuranda, ix.1949 (G.Brooks); Miva, xii.1950 (Lipsett); 15 km SE of Nambour, xi.1976; Gatton, i.1977 (Bouček); Mt Tambourine, 17.iii.1971 (J.Donaldson); NSW: Ballengarra St. Forest, ii.1968 (Colless). See fig. 959.

*pallidiclavata* (Girault) comb. n.—*Situla pallidiclavata* Girault, 1934[442]: [1]. QLD: Brisbane, Indooreopily. Probably based on female of *bidentata*. See fig. 957.

(Figs 954-956)

Type species *Situla quadridigitata* Girault.

Name from *Situla* and striate (thorax); feminine gender.

*Striostilula* is near to *Situla* but differs notably in having distinctly serrate antennae in both sexes (figs 955, 956) and a much shinier body (especially females), with raised striation on the thorax replacing the punctuation characteristic of *Situla*.

Body almost bare. Vertex carinate behind ocelli. Mandibles normal, sickle-shaped. Male flagellum evidently 10-segmented (antenna 12-segmented), in both sexes scape only about twice as long as broad. Female flagellar segments after the seventh more or less fused in an acuminate clava. Mesoscutum transversely striate, axillae and scutellum longitudinally so (in type species striae slightly intermixed with punctuation, in another species hardly any trace of it). Scutellum without preapical hump, apex (frenal part) short but clearly bidentate, though teeth often inequal. Propodeum moderately convex and almost to quite smooth between crenulate postspiracular grooves, usually with incomplete median carina; side swellings on top (outside minute spiracle) with laminate carina towards hindwing base. Prepectus broadly triangular, shiny, separated by deep crenulate groove. Petiole, gaster and legs as in *Situla*. Wing pilosity almost absent; stigmal vein very short but distinct, postmarginal vein tapering, about half as long as the marginal.

Biology. Host not known.
Distribution. Australia (2-3 spp.).

**Australian species of Striostilula:**

*quadridigitata* (Girault) comb. n.—*Situla quadridigitata* Girault, 1929[431]: 331-332. SA: Ardrossan. A male from QLD: Gatton (Townes Coll.) probably belongs to this species.

15. Genus *Situla* Spinola
(Figs 963-965)

*Situla* Spinola. 1811, p. 150. Type species *Ichneumon cyninnosis* Rossius; by monotypy.

*Elolada* Cameron, 1909, p. 230. Type species *Elolada trimaculata* Cameron, designated by Gahan & Fagan, 1923.

*Elolada* was correctly placed under *Situla* by Hedqvist (1978b: 245).

This genus is relatively easy to recognize on the simple and at least in the male very long antennae, slender and long petiole and the subglobose and mostly densely alveolate or punctured thorax, with a short horizontal fork formed by the frenal part of the scutellum (figs 963, 964). In the females antenna shorter, but also simple
and 12-segmented as in the males. Some Australian species deviate from the last statement in having fewer segments in the female, e.g. *S. arenace* has the antenna only 11-segmented.

Biology. No host records available for the region. Extraliminal species in India and Korea oviposits in leaves of various shrubs or trees, *S. cyniformis* in southern Europe among young seeds of Compositae flower-heads. They develop in nests of ants of the genus *Camponotus* and allied genera. The Philippine *S. polyrhachicida* (Wheeler & Wheeler) was reared from cocoons of another formicine, *Polyrhachis dives* Smith (polyrhachicida was described in *Schizaspidea* but transferred to *Stilbula* by Gahan, 1940: 435).

Distribution. Africa (7 5 spp.), Eurasia (over 10 spp.) to southeast reaching Australia (4-5 spp.).

**Australo-Papuan species of Stilbula:**

*albipetiole* Girault—*Stilbula albipetiole* Girault, 1929[431]: 332-333. VIC: Caramby.

*arenace* Girault—*Stilbula arenace* Girault, 1934[442]: [1]. QLD: Southport. Described from males. Scutellar process short; female flagellum only 9-segmented, 3 preclaval segments transverse. New record. QLD: Airlie E of Proserpine, ex cocoon of *Crytomeria* sp. in a nest amongst tree leaves, xii.1976 (Kohout). A closely related species was found in north PNG, nr Paup.

*australiana* and *bidentata* see 13. *Substilbula*

*brunneipetiole* (Girault) comb. n.—*Epimetagea brunneipetiole* Girault, 1934[443]: [2]. NSW: Uralia. According to Girault’s Manuscript the species should belong to *Schizaspidea* (see Dahms, 1983: 154).

*octodigitata* Girault—*Stilbula octodigitata* Girault, 1929[431]: 333. WA: King George’s Sound.

*pallidicava* see 13. *Substilbula*

*peduncularis* Westwood—*Stilbula peduncularis* Westwood, 1874: 155, pl. 28, fig. 7. VIC: Angus. New record.

*quingueguttata* (Girault)—*Schizaspidea quingueguttata* Girault, 1915[241]: 235-236. QLD: Cairns district (Gordonvale). Transferred to *Stilbula* by Hedqvist, 1978b: 247.

*toga* Girault—*Stilbula toga* Girault, 1937[448]: [1]. VIC: Ringwood.

16. **Genus Stilbuloida gen. n.**

(Figs 960-962)

Type species *Schizaspidea doddi* Bingham.

The name is derived from *Stilbula*; feminine gender.

The genus is close to *Stilbula* but the antennae are serrate to ramose, the sculpture of the thorax is coarser, the scutellar fork broader, as mentioned in the key above. The body is, in both sexes, much more robust than in average *Stilbula*. The female antenna is not long, the flagellum is dorsally serrate, the serration decreasing distally but proximal 6 segments subequal (fig. 962). In the male flagellum with one line of moderately long branches (fig. 961), the mandibles are normal for the group. The whole thorax is coarsely alveolate-punctured (fig. 960), including pleural areas; the prepectal subdivision is not indicated. The propodeum is medially flat, and steep, about perpendicular to the underside of the scutellar prong; the postspiracular groove is not deep below the minute spiracle, on its outside the swelling is only moderate, most developed dorsally where it bears a narrow ridge. The hind coxa is short, almost bare, dorsally with a subglobous swelling; the hind tibia has just one spur; the basitarsus is barely as long as three following segments combined. The forewing has the stigma strongly reduced, rather sparse and very short, the stigmal vein is short and widened but not well defined. The petiole in both sexes is less than twice as long as broad.

The series of *doddi* from Arenyoga exhibits some variation in body size (length 2.3-3.7 mm), the development of the prong, and sculpture. This suggests that *doddi* and *calomerycida* may belong to the same species. The holotype of *doddi* is a male with unusually large, broad gastrid body, as if it were a female. A male from WA (in ANIC) may represent another species, with the apical branches of flagellum strongly shortening and the last 3 segments closely applied to each other, short.

The male with ramose antennae, from South Australia, placed as *Stilbula albipetiole* by Girault (1929[431]: 333), may also belong to the present genus.
Biology. Recorded host ants are *Camponotus* sp. and *Calomyrmex purpureus* Mayr. Distribution. Australia (probably 2 spp.).

**Australian species of Stilbuloida:**

*calomyrmexis* (Brues) **comb. n.**—*Schizaspidia calomyrmexis* Brues, 1934: 206-207. WA: Meekatharra; ex nest of *Calomyrmex purpureus*. Transferred to *Stilbulida* by Gahan, 1940: 435. Very probably a female of *doddi*.  

17. **Genus Saccharissa** Kirby  
(Figs 966-968)

*Saccharissa* Kirby, 1886: 37. Type species *Eucharis contigens* Walker; by original designation.

The name of the type species has the original spelling *contigens* (Walker, 1862: 378-379), which was emended to *contigens* by Kirby (i.e.). The species comes from North Borneo and has the scutellum produced into a single, longitudinally striate horn. In other species this horn is broader and emarginate or forked at the apex, hence with two short teeth (fig. 966). *Saccharissa* is evidently close to *Schizaspidia* Westwood, *Thoracanthoides* Girault and *Ancylotropus* Cameron. It differs mainly in having 14-16 segmented antennae (the last 3 are sometimes less distinctly separated in females). The female antennae are serrate and in the males bear 10-12 branches but the first flagellar segment is simple. In *Schizaspidia* and *Thoracanthoides* there are only 8 or 9 branches and the antennae are at most 12-segmented. *Ancylotropus* has simple, slender and long antennae in the males.

Biology. Hosts not known.  
Distribution. Oriental region (e.g. Assam, southeast China, North Borneo) (probably 3 spp.), reaching Australia (1 sp.). One species is the Chinese *Saccharissa vicina* (Masi) **comb. n.** (from *Schizaspidia*; antenna 14-segmented, in male with 10 thin branches).

**Australo-Papuan species of Saccharissa:**

*latifrons* **sp. n.**—Holotype male, QLD: Meringa, 26.x.1926 (A.N.Burns); in ANIC. Paratypes, QLD, 1 male: Cairns, before 1940 (R.C.L.Perkins); in BMNH; Australia (Nov.Holl., Mus. Drews.), 1 female, about 1850; in Univ.Museum Copenhagen.  
Female. 5.7 mm. Dark metallic purple-bluish, face and sides of thorax mainly dark blue; antennae and femora dark brown but scape, pedicel and legs including apical part of femora testaceous; forewing subhyaline with brownish band darkest around stigma.  
Vertex and dorsal thorax, prepectal triangle and propodeum except narrowly in middle, densely pilose, pilosity thick on anterior corners of mesoscutum and especially on ventral sides of scutellum and sides of propodeum. Face with concentric rugae, these higher and transverse on occiput and on mesoscutum; on scutellum about 15 longitudinal carinae. For antenna see fig. 968, for scutellum fig. 966. Flagellum 12-segmented but last segment as if double, the first with acute short branch. Relative measurements: head width 61.5, dorsal length 22, height 45, frontovertex width 44, eye 20:16, malar space 17, scape length 13, flagellum plus pedicel 58, longest branch 12. Width of scutum 72, of scutellum 40, constriction at fork 19, scutellum length (without axillae) 59; costal cell 47:8, marginal vein 30 (postmarginal about half that), perpendicular stigma vein 8.5; petiole dorsal breadth 10, about 1.5 times as long as broad.  
Male. 4.3 mm. Very similar to female, even in striation and form of scutellum. Different in the following: colour of mesoscutum brighter, mainly cupreous to bronze green; wing fascia indistinct; antennae wholly yellow; head dorsally more transverse, width to length as 56:17; flagellar branches much longer than in female, relative length of the flagellum combined with pedicel to length of longest branch as 48:22 (fig. 967).
18. Genus *Schizaspidia* Westwood (Figs 969-970)


*Laetocantha* and *Psygmatoeca* were placed in synonymy under *Schizaspidia* by Baltazar (1961: 394). *Neokapala*, *Kapatella* and *Thoracanthella* were added by Hedqvist (1978: 231). *Kapaloïdes* has been formally added by Hedqvist (1978b: 227, Abstract; but omitted in the text) and again by Narendran (1986: 53). Girault (e.g. 1915[241]: 237) mistook *Schizaspidia* for the Neotropical *Thoracantha* Latreille. He described one species (*aenea*, 1913[159]: 101) in *Asitibula* but stated that he was "not sure that this species belongs to *Asitibula*". This was regarded as doubtful inclusion by Gahan & Fagan (1923: 19), especially because Girault 3 months later described *Asitibula* more properly (1913[175]: 96) and named another species as type species. Under our Code, however, similar conditional action is not acceptable only after 1960. Therefore *Asitibula* as first established should be known as with *A. aenea* Girault as its type species and because that species belongs to *Schizaspidia*, *Asitibula* becomes a synonym of that generic name. For *Asitibula* of the later date see *Chalcera*.

The key above includes a closely related genus, *Ancylostopus* Cameron, distributed from India to the Philippines. In India it is represented by *A. manipuresis* (Cameron), comb. n., originally described in *Schizaspidia* and incorrectly transferred to *Stilbula* by Gahan (1946: 436).

As a genus, *Schizaspidia* is relatively easy to recognise, forming a compact species group, but in the past it was often mistaken for the American *Kapala* Cameron. It is close to *Saccharissa* but with lower number of the flagellar segments. Most conspicuous is the usually large horizontal and flat fork of the scutellum. *Schizaspidia* always has distinct metallic colours, the forewing has an unfuscation at the stigma, the antennae have 12-segments, in the male the flagellum is serrate, in the male it bears one row of 8 or 9 long branches (the first flagellar segment has sometimes a branch, sometimes only a raised angle). The posterior corners of the mesocutum are usually raised, protruding. A key to many species, separately to the males and females, together with a list of species, was published by Hedqvist (1978b: 237-240). However, the identification of species is far from easy and also association of the sexes of the same species is difficult. In the female the thorax is often much shinier, with stronger rugae than in the male. Also the intraspecific variation seems considerable.

Biology. No regional host records are available. The Ceylonese *S. convergens* (Walker) was reared from the ant *Odontomachus hirtipes* (L.) (Gahan, 1940: 431). The egg and the planidium larva of the Philippine *S. nasua* (Walker) was described by Ishii (1932: 208-209, as *Kapala loveatella*), who observed oviposition into young leaves of *Glicidium sepium* and *Leucaena glauca*.

Distribution. From India and South China (and Taiwan) to Queensland and to the Tonga and Samoa Islands (about 15 spp.).

**Australo-Papuan species of Schizaspidia:**

*aenea* (Girault)—*Asitibula aenea* Girault, 1913[159]: 101. QLD: Gordonvale (Nelson). Transferred to *Epipteryx* by description repeated by Girault, 1915[241]: 227.

=*Neokapala furcatella* Girault, 1913[175]: 92. QLD: Cairns.


*calomymreis* and *doddi* see 16. *Stilbuloidea*

emersoni (Girault)—Thoracantha emersoni Girault, 1915[241]: 237. QLD: Gordonvale. Transferred to Thoracanthella by Girault, 1940[459]: 323, and T. emersoni declared a synonym of Schizaspida murrayi Kirby by Hedqvist, (1978b: 240). I could not compare the respective types directly but from my notes it seems that murrayi and emersoni may be different species.


carcatella see aenea

gutipennis and gutipennis see emersoni


quingueguttata see 15. Stilbula

rudis see 2. Akapala

transstriata see aenea

19. Genus Thoracanthoids Girault (Fig. 971)

Thoracanthoids Girault, 1928[422]: [4]. Type species Thoracanthoids albispina Girault; by monotypy.

This is a distinctive genus, recognisable mainly on its scutellum produced into a long spike (fig. 971), although known only from the mutilated male type. The head has the face medially shiny, without striation. The mandibles are sickle-shaped, teeth 2:3. The antenna is similar to Schizaspida; the scape is about 3.5 times as long as the subtransverse pedicel; the flagellum is 10-segmented, its first segment triangularly expanding but without distinct branch, the segments 2 to 9 each with a branch, the longest equal to length of segments 1 to 4 plus half of the fifth combined; last segment simple, slightly shorter than the scape. The thorax is fully 1.2 times as high as broad, with vertical and flat high sides which are broadly smooth and shiny, including the acute-angular prepectal area of the pronotum. The thoracic surface is shiny except for the rugosity and the minute piliferous punctures. The mesoscutum is anteriorly very high below the anterior margin of the dorsum, which is depressed in middle; the vertical-receding anterior panel is fully 3 times as high as length of the moderately sloping median part of the pronotum. The scutellum has a shallow median channel continuing onto the spine; the lower part of the latter is formed by an extension of the frenal area (visible in lateral aspect). The propodeum is hairy, rugose-punctured, without protuberances. The petiole is about twice as long as hind coxa, shorter than the gastric body; the latter is narrow, yellow, almost smooth, with sparse outstanding thin hairs.

Biology. Not known.

Distribution. Queensland (1 sp.).

Australian species of Thoracanthoids:

albispina Girault—Thoracanthoids albispina Girault, 1928[422]: [4]. QLD: Mareeba. The single male (see Dahms, 1983: 34-35, QM T.8632) is here designated Lectotype.