



MEDITERRANEAN CHALCIDOIDEA (HYMENOPTERA)

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

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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 Eucharissinae 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) *Eucharissa* 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 Eucharitinae 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): *Psilogastrellus* Ghesquière, *Indosema* Husain & Agarwal, *Orasemorph* Bouček, *Echthrodape* 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 *Eucharissa*, on which Kirby (1886: 37) based the subfamily Eucharissinae, 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 *Orasema*, 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 inflorescences of some Compositae (*Stilbula*; see Parker, 1937), or in some other parts of herbaceous plants or shrubs and trees. Some *Orasema* spp. lay eggs near to thysanopterous eggs on leaves and the hatched planidia feed temporarily on immature thrips (Johnson & 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 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 Nikolskaya (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

Austeucharis) 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 EUCHARITIDAE

- 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 subsessile, 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 subsessile, short, more or less dorsally depressed; ovipositor apex hook-like (fig. 918); ECHTHRODAPINAE 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 bilobed projection over the petiolate gaster; ovipositor different; AKAPALINAE 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), petiole always transverse in dorsal view; in male petiole 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. *Orasemorpha* nom. n.
- In both sexes petiole 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. *Tricoryna* Kirby
- Hind basitarsus mostly much, only rarely slightly, shorter than the rest of tarsus, and not distinctly widened; antenna and body often different 8
- 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 or 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. *Anorasema* 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. *Austeucharis* 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 *Chalcura* (fig. 944) but not serrate; apex of scutellum not bidentate; postmarginal vein distinct, about half as long as the marginal 10. *Parapsilogastrus* Ghesquière
- Head and thorax almost black, head striate, thorax with very dense rugose puncturation, including convex thoracic sides with large prepectal area and deep ditch for mid femur; antenna in female with only 6 funicular segments (fig. 951); scutellar apex usually shortly bidentate; postmarginal vein indistinct; [cf. below 12. *Rhipipalloidea* Girault and 13. *Substilbula* gen. n.] 16
- 14 Flagellar segments in both sexes apically dilated (fig. 941), obconical, or with stout, irregularly leaf-like expansions (fig. 943) 8. *Propsilogaster* Girault
- Flagellar segments in female serrate, in male with a number of longer or shorter branches, often in 2 rows (figs 944-946) 11. *Chalcura* 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. *Stilbula* Spinola
- Male flagellum shorter, either thickened and its middle segments subquadrate, or evidently serrate or ramose; 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. *Stilbuloida* 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, mesepimeron, 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. *Thoracanthoides* Girault
- Scutellum produced into a fork (figs 969, 970); sides of thorax strongly sculptured, not flat..... 18. *Schizaspidia* Westwood

Subfamily ECHTHRODAPINAE subf. n.

Type genus *Echthrodape* 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 Perilampidae, 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 *Echthrodape* should be included in Eucharitidae. The ellbowed apex of the ovipositor resembles that of some Chalcididae (Phasgonophorini).

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

1. Genus *Echthrodape* Burks (Figs 916-918)

Echthrodape Burks, 1969: 73-75. Type species *Echthrodape africana* 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*:

papua 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 coppery; all knees broadly, tibiae mostly and all tarsi pale yellowish, mid and hind tibiae broadly infusate; 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 puncturation. 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 axillae and of the scutellum, especially the large axillae 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 astriaticiceps* Girault, 1934[442]: [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.

rudis (Westwood) **comb. n.**—*Schizaspidia rudis* 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 UMO, 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, *Losbanus* Ishii, *Psilogastrellus* Ghesquiére (in part) and probably *Parasemora* Gemignani." However, the South American *Parasemora*, if it has a separate prepectus, may be just a species group of *Orasema*. Both *Psilogastrellus* (a replacement name for *Psilogaster* Blanchard) and *Losbanus* are both placed in the Eucharitinae. On the other hand the fauna of Africa, southern Eurasia and Australia includes several orasemine 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
- 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 sternite (fig. 928) b
- b Notauli clear-cut, complete, axillae distinctly separate from mesoscutum; mandibles sickle-shaped, normally with teeth 2:3; Australia *Orasemorpha* **gen. n.**
- Notauli and especially transscutal suture (between mesoscutum and axillae) obliterated; mandibles more or less reduced, mostly without teeth c
- 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 *Timioderus* Waterston
- Body black, almost smooth, about 2 mm long; mandibles almost atrophied, replaced by bluntly lobe-like maxillae; India *Indosema* Husain & Agarwal

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

3. Genus *Orasemorpha* **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].

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).

Biology. 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 Hym. 5-619, is here designated Lectotype. The paralectotype is a headless male labelled '1440a', 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 *Psilogasteroides* 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, Hym. 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 Xenziades* Walker, 1839b: 14-15. NSW: Sydney. One of three syntypic males in BMNH, Hym. 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.ix.1979 (LaSalle, Woolley & Dahms); Palmerston Nat. Park, Crawford's Lookout, 1.iv.1976

(Galloway); Mt Glorious, 1982; Brisbane, Indooroopilly, xii.1976; nr Wilson's Peak, 9.i.1977 (all Bouček); NSW: Sydney, Cabramatta, xii.1962 (Nikitin); Mt Kosciusko Nat. Park, Sawpit Creek, 12.ii.1977 (Bouček); Nerriga, i.-ii.1984 (Masner); SA: Mt Lofty nr Adelaide, i.1977; VIC: Nr Kinglake Nat. Park, i.1977 (Bouček).

4. Genus *Orasema* Cameron (Figs 924-926)

Orasema Cameron, 1884: 101-105. Type species *Orasema stramineipes* Cameron; by monotypy.
Eucharomorpha Girault, 1913[157]: 62-63. Type species *Eucharomorpha worcesteri* Girault; designated by Gahan & Fagan, 1923. **Syn. n.** Not *Eucharomorpha* Girault, 1913[175].

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]: 95; see *Orasemomorpha* 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. purpureoventris*, 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 recognise 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.

Biology. One Australian species was reared from ants of the genus *Pheidole*. The extralimital species were recorded mostly from *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 potential pests (Das, 1963); when ovipositing they damage the leaf by their peculiar ovipositor (fig. 924). Some American species oviposit in the vicinity of a thysanopterous egg and the hatched planidia feed temporarily on the immature thrips (Johnson & 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.

pheidolophaga see *valgius*

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

= *Parapsilogaster laeviceps* Gahan, 1940: 429-430. Sri Lanka: Peradeniya. **Syn. n.** Transferred to *Losbanus* by Watanabe, 1958: 26. The type series seem to be dwarf specimens of *purpureoventris*.

= *Psilogaster nishidai* Ishii & Nagasawa, 1941: 292-294, pl. 6. Caroline Islands: Palau. **Syn. n.** Transferred to *Losbanus* by Watanabe, 1958: 27-28. Part of Watanabe's material examined (BPBM).

=*Losbanus peterseni* Hedqvist, 1978b: 229. Philippines: Palawan, Tagembung. **Syn. n.** Type material from Zoological Museum Copenhagen examined.

Apparently rather widely distributed. New records. India, Karnataka: Mudigere, and Kerala: Periyar Nat. Park, x.-xi.1979 (J.S.Noyes). China: Hainan Isl., Tien Fong Mts, v.1983 (Bouček). Brunei (Borneo): Labi, viii.-ix.1979 (Gauld); W. Malaysia, Pahang: Tanah Rata, viii.1979 (Gauld). Indonesia: N. Sulawesi, 1985 (Noyes). PNG: Bulolo, and 25 km E of Mt Hagen, xii.1982 (Bouček); 20 km SE of Port Moresby, i.1985 (J.Ismay); QLD: Kuranda xii.1902 (Turner), 7.xii.1982 (Bouček). Surprisingly one female, apparently of this species, is labelled 'Biskra, Algeria' (it would be also the first *Orasema* found north of the Sahara).

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. =*Orasema 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: Tooloom 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 *Epimetegea* by Hedqvist, 1978b: 243.

=*Orasema 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 EUCARITINAE

The subfamily is defined briefly in the key. Some of the genera exhibit peculiar characters. In *Losbanus* 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 *Eucharissa* Westwood and the Oriental-Australian *Saccharissa* 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 *Kapala* Cameron, but this has one species in Africa. In Australia 14 genera are recognised and from these 8 seem to be endemic.

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

Losbanus Ishii, 1932: 210-211. Type species *Losbanus uichancoi* Ishii; by monotypy.

Gollumiella Hedqvist, 1978b: 230. Type species *Gollumiella longipetiolata* Hedqvist; by original designation.

Syn. n.

The holotype of *Gollumiella longipetiolata* (probably a male!) clearly belongs to *Losbanus* 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 recognise 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. Frenal line 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 Malayan *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 planidium larva of *L. uichancoi*; 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 Glorious, 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 infuscate, also flagellum slightly brownish. Wings subhyaline.

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 medially. 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 recognised on the longer petiole: it is twice as long as propodeum medially. Basal third of forewing with some (up to 10) hairs scattered on lower surface.

peterseni see 4. *Orasema purpureoventris*

6. Genus *Anorasema* gen. n. (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, subglobose; 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 irregular 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 stigmal vein almost perpendicular.

Biology. Not known.

Distribution. Borneo and Philippines (1-2 spp.).

Bornean species of *Anorasema*:

pallidipes (Cameron) **comb. n.**—*Eucharis pallidipes* Cameron, 1909b: 232-233. East Malaysia, Sarawak (N. Borneo): Kuching. The single male in BMNH, Hym. 5-366, is here designated Lectotype. New records. Sarawak: Gunong Mulu Nat. Park, vii.1978 (R. Geogr. Soc. Exp., J.D. Holloway); Semengoh, Enghabang Plantation, iv.1980 (A. Hamid); Brunei: Labi, viii.1979 (I. Gauld). In my view also the male paratype of *Gollumiella longipetiolata* Hedqvist (1978b: 230-231, fig. 10) from Tawi Tawi in the Philippines belongs to *pallidipes* (for the holotype see *Losbanus*).

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

Tricoryna Kirby, 1886: 29. Type species *Eucharis iello* Walker; by original designation.

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

Prometagea Girault, 1934[443]: [2]. Type species *Prometagea minor* Girault; designated by DeSantis, 1961: 158. **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 *Propillogaster* 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 *Ectatomma* and *Chalcoconera*.

Distribution. Australia (about 10 spp.).

Australian species of *Tricoryna*:

chalcoconerae Brues—*Tricoryna chalcoconerae* Brues, 1934: 203-205. NSW: Mt Kosciusko; ex *Chalcoconera metallica* Smith.

- ectatommae* Girault—*Tricoryna ectatommae* Girault, 1915[241]: 228-229. VIC: Melbourne; ex nest of *Ectatomma* sp.
- ✓ *iello* (Walker)—*Eucharis iello* Walker, 1839b: 12-13. TAS: Hobart. Lectotype, here designated, the single extant male in BMNH, Hym. 5-607. Transferred to *Tricoryna* by Kirby, 1886: 29. Misspelt *jello* by Dalla Torre, 1898: 362, and *iella* by Gahan & Fagan, 1923: 148. Fig. 937.
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 (Sedláček).
- 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.
- punctulativentris* (Girault) comb. n.—*Metagea punctulativentris* Girault, 1928[422]: [3]. South Australia, and VIC: Bright.
=*Metagea punctulativentris* Girault, 1929[431]: 335-336. South Australia. Probably isotypic with that of 1928.
New record. ACT: Canberra, Black Mountain, 13.ii.1983 (Bouček).
- reticulativentris* (Girault) comb. n.—*Epimetagea reticulativentris* Girault, 1934[442]: [1]. QLD: Forest Hill.
- rufiventris* (*Metagea*) see 9. *Austeucharis*
- ✓ *subsalebrosa* Girault—*Tricoryna subsalebrosa* Girault, 1915[241]: 229. QLD: Brisbane. Close to *iello*. New record. QLD: Mt Tambourine, iv.-v.1935 (R.E. Turner).
- 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 *Propsilogaster* Girault (Figs 939-943)

Propsilogaster Girault, 1940[459]: 324. Type species *Propsilogaster 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 *Propsilogaster* species lack the erect sparse setae present in *Tricoryna* and the hind basitarsus is not expanded. Most *Chalcura* differ from *Propsilogaster* in having parts of the thorax shinier, often with brighter metallic colours. *Parapsilogastrus* 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.).

Australian species of *Propsilogaster*:

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.

9. Genus *Austeucharis* gen. n. (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 *Psilogastrellus* Ghesquière (1946: 368). For a long time its Egyptian type species remained unknown, till I had an opportunity to study it and explained (Bouček, 1977c: 124) that it is identical with the Mediterranean *Pachyeucharis* Bouček, described as a subgenus of *Eucharis* Latreille. It has nothing to do with the Australian eucharitids.

Main characters (for a photograph of female *fasciiventris* see Brues, 1919: 22). Body relatively large (4–10 mm long), with subglobose and densely sculptured thorax, slender petiole and short gaster. 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 *Chalcura*, especially the species in which the scapula has a broad smooth area. Such *Chalcura* 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*:

boudiennyi (Girault) comb. n.—*Epimetagea boudiennyi* 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 Froggatt's handwriting; the paralectotype bears 'Victoria French'.

fasciiventris (Brues) comb. n.—*Psilogaster fasciiventris* Brues, 1919: 14–15. NSW: Hornsby; from cocoon of *Myrmecia gulosa*.

- flavifemora* (Girault) **comb. n.**—*Epimetagea flavifemora* Girault, 1929[431]: 334. NSW: Camden, also Monaro.
- ilyichi* (Girault) **comb. n.**—*Epimetagea ilyichi* 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.**—*Epimetagea kosciuskoi* Girault, 1940[459]: 325. NSW: Mt Kosciusko.
- larymna* (Walker) **comb. n.**—*Eucharis Larymna* 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: ix. SA: Bull Creek nr Adelaide; from cocoons of bulldog ant *Myrmecia forficata* Fabr.
- = *Psilogaster myrmeciae* Cameron, 1891: 186-187. SA: Bull Creek. **Syn n.** 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*
- pallipes* (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 puncturation. 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*.
- pulchra* (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*.

10. Genus *Parapsilogastrus* Ghesquière **gen. rev.** (Figs 947-948)

- Psilogasteroides* Girault, 1913[175]: 93-94. Type species *Eucharis fausta* Walker; by original designation. Preoccupied by *Psilogasteroides* Brethes, 1910.
- Parapsilogastrus* Girault, 1915[241]: 232. Replacement name for *Psilogasteroides* Girault. Preoccupied by *Parapsilogastrus* Bigot, 1882.
- Parapsilogastrus* Ghesquière, 1946: 368. Replacement name for *Parapsilogastrus* Girault.

Parapsilogastrus, together with its two invalid synonyms, were synonymised with *Epimetagea* 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 subsequently difficult to recognise the species (and the genus) from the type specimen. Girault probably described the antenna of *Orasema valgius*, 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. polita*, formerly classified as *Epimetagea*. 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*.

no species +
have same sp

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 *Epimetegea* by Hedqvist, 1978b: 242, 243, (name misspelt as *faustus* and incorrectly stated as type species of *Epimetegea*). The single male in BMNH, Hym. 5-616, is here designated Lectotype. It lacks antennae but is recognisable.

=*Epimetegea 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*

ulyanovi (Girault) **comb. n.**—*Epimetegea ulyanovi* 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.

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

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

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

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

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

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

Chalcuraella Girault, 1913[175]: 94. Type species *Chalcuraella nigricyanea* Girault; by original designation. **Syn. n.**

Description repeated by Girault, 1915[241]: 230-231.

Astilbula Girault, 1913[175]: 96. Type species *Astilbula magnifica* Girault; by original designation. **Syn. n.**

Chalcuroides Girault, 1913[175]: 115. Type species *Chalcuroides 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 names either under *Epimetegea* 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 *Epimetegea* included as synonyms *Psilogasteroides*, *Parapsilogastrus*, *Astilbula*, *Propsilogastrus* and *Parapsilogastrus*. *Rhipipallus* in his view included *Chalcuraella*, *Chalcurelloides*, *Chalcuroidella*, *Chalcuroides*, *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 *Epimetegea* by Hedqvist, as a different genus, *Austeucharis*.

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 mesal 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 *Parachalcura* (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 *Parachalcura*. 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 stouter and slightly more curved. The type species of *Parachalcura* differs just in the mentioned way from the more northerly species, including one in PNG, which I believe to be *Rhipipallus cameroni* Kirby. The female of the latter species is indistinguishable from the typical *Rhipipallus* 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 *Epimetegea* or *Rhipipallus* (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 *Epimetegea* and *Chalcuroides*. *Astilbula*, December 1913 with type species *magnifica*, (but not *Astilbula*, September 1913, with type species *aenea*) was correctly synonymised with *Epimetegea* by Girault himself (1915[241]: 226). Also the type species of *Arhipipallus* and of *Parachalcura* belong to this group. Apparently this group was called by Girault 'Epimetegea', because he could not recognise *Rhipipallus*, 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 *Chalcura* in the present sense, has the antennae 12-segmented.

Probably another extreme in the male antenna is reached by (*Chalcurella nigricyanea* and (*Rhipipallus*) *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.

Biology. *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 *Chalcura*; this is confirmed by examination of the type of *glabra*, a synonym of *montana*) deposits eggs on leaves on *Sandricum* 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 *Chalcura*:

aenea see 18. *Schizaspidia*

aeneobrunnea (Girault) **comb. n.**—*Epimetegea aeneobrunnea* Girault, 1929 [431]: 334-335. WA: King George's Sound.

affinis (Bingham) **comb. n.**—*Rhipipallus 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.

=*Epimetegea 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*.

=*Chalcuroides 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 *Rhipipallus* by Hedqvist, 1978b: 245.

bicoloriventris (Girault) **comb. n.**—*Epimetegea bicoloriventris* Girault, 1915[241]: 228. QLD: Bribie Island.

bispinosa (Girault) **comb. n.**—*Chalcuroidella bispinosa* Girault, 1929[431]: 335. SA: Mt Lofty. Transferred to *Rhipipallus* by Hedqvist, 1978b: 244. The holotype is a male with deformed anterior part of the petiole (anterior corners as long asymmetric thorns) and the apex of the scutellum, but probably conspecific with *C. turneri*.

boudiennyi see 9. *Austeucharis*

brunneipetiole (*Epimetegea*) see 15. *Stilbula*

- brunneipolita* (Girault) **comb. n.**—*Epimetegea brunneipolita* Girault, 1934 [442]: [1]. QLD: Brisbane.
- bunya* (Girault) **comb. n.**—*Epimetegea bunya* Girault, 1934[442]: [1]. QLD: Bunya Mts. Very close to *affinis*. For *E. bunya* *elongata* see *elongata*.
- cameroni* (Kirby) **comb. n.**—*Rhipipallus 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. Irian Jaya: Jutefa Bay, Pim, ii.1936 (E.Cheesman); PNG: Ovop nr Tufi, vii.1983 (Ismay); 20 km SE of Port Moresby, i.1985 (Ismay); Aieme River 60 km E of Pt Moresby, xii.1982 (Bouček); Popondetta, Sangara Plantation, vii.1968 (E.Hassan); 6 km N of Wau, x.1973 (K.A.Spencer). Solomons: Tulagi, xi.1934 (H.T.Pagden); Russell Is., ii.1934 (Lever). Also Singapore: Sungei Mandai mangroves, vii.1976 (D.H.Murphy).
- elongata* (Girault) **comb. & stat. n.**—*Epimetegea bunya* *elongata* Girault, 1940[459]: 324. QLD: [Lamington] National Park. Most probably a species different from *bunya*.
- flavifemora* (*Epimetegea*) see 9. *Austeucharis*
- hemiglabra* (Girault) **comb. n.**—*Epimetegea hemiglabra* (!) Girault, 1940[459]: 325. NSW: Yass.
- hyalina* (Girault) **comb. n.**—*Chalcurelloides hyalinus* Girault, 1913[156]: 46-47. QLD: Gordonvale (Nelson). Description repeated by Girault, 1915[241]: 237. Transferred to *Rhipipallus* by Hedqvist, 1978b: 244. Near to *turneri*.
- ilyichi* and *kosciusko* (*Epimetegea*) see 9. *Austeucharis*
- magnifica* (Girault) **comb. n.**—*Astilbula magnifica* Girault, 1913[175]: 96-97. NSW: [Sydney, Royal] National Park. Transferred to *Epimetegea* and description repeated by Girault, 1915[241]: 227. Also reported from SA: Mt Lofty, and commented on by Girault, 1929[431]: 334.
- maximovichi* (Girault) **comb. n.**—*Epimetegea maximovichi* Girault, 1936[447]: 3. NSW. Probably the same as female *nigricyanea*.
- monilicornis* (Girault) **comb. n.**—*Epimetegea monilicornis* Girault, 1940[459]: 325. SA. Close to *affinis*. Or a *Parapsilogastrus*?
- myrmicae* (Girault) **comb. n.**—*Epimetegea myrmicae* Girault, 1936[447]: 3. VIC (Belgrave; Dahms, 1984a: 842).
- nigricyanea* (Girault) **comb. n.**—*Chalcurella nigricyanea* Girault, 1913[175]: 94. TAS: Hobart. Description repeated by Girault, 1915[241]: 231. Transferred to *Rhipipallus* by Hedqvist, 1978b: 244 (as '*nigrocyanus*'). New records. SA: Deep Creek, Cons. Pk, 138.16E 35° 37.5S, iii.1981 (E.Matthews & J.Forrest); NSW: Kosciusko Nat. Park, 20 km NNE Tooma, i.1981 (G.Brown & M.Fletcher).
- oji* see *sanguiniventris*
- orientalis* (Girault) **comb. n.**—*Chalcuroidella orientalis* Girault, 1913 [159]: 100-101. QLD: Gordonvale (Nelson). Description repeated by Girault, 1915[241]: 227. Transferred to *Rhipipallus* by Hedqvist, 1978b: 244.
- partiglabra* (Girault) **comb. n.**—*Psilogaster partiglabra* Girault, 1926[401]: 131. QLD: Brisbane.
- peterseni* (Hedqvist) **comb. n.**—*Rhipipallus peterseni* Hedqvist, 1978b: 244. PNG: New Britain, Yalom. Very close to or probably the same as, *cameroni* (Kirby).
- phidiasae* see 10. *Parapsilogastrus*
- polita* (Girault) **comb. n.**—*Epimetegea polita* Girault, 1915[241]: 228. QLD: Brisbane.
= *Epimetegea polita varia* Girault, 1940[459]: 324. QLD: Brisbane, 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.
- purpura* (Girault) **comb. n.**—*Astilbula purpura* Girault, 1913[175]: 97. QLD: Cairns. Transferred to *Epimetegea* and unnecessarily renamed *Epimetegea purpureicarpus* by Girault, 1915[241]: 227 (thought to be homonymous with *purpurea*).
- purpurea* see *affinis*
- purpureicarpus* see *purpura*
- ramosa* (Girault) **comb. n.**—*Parachalcura ramosa* Girault, 1940[459]: 324. QLD: Ayr. Transferred to *Rhipipallus* by Hedqvist, 1978b: 244.
- rufiventris* (Walker) **comb. n.**—*Eucharis rufiventris* Walker, 1862: 378. 'Australia'. The single female (without antennae) in BMNH, Hym. 5-614, is here designated Lectotype. New record. QLD: Mackay, 1982 (G.Turner).
- sanguiniventris* (Girault) **comb. n.**—*Epimetegea sanguiniventris* Girault, 1929[431]: 334. SA: Mt Lofty.
= *Epimetegea sanguiniventris oji* Girault, 1940[459]: 325. NT: Daly River.

turneri Kirby—*Rhipipallus*(?) *Turneri* Kirby, 1894: 47. QLD: Mackay. The female from the syntypic couple in BMNH, Hym. 5-375, is here selected as Lectotype.

ulyanovi 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 *Rhipipallus* 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).

12. Genus *Rhipipalloidea* Girault gen. rev. (Figs 951-953)

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

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

The type species is known to me 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 *Rhipipallus* (see under *Chalcura*). Further information comes from the type of *R. gruberi* which has the thorax preserved (fig. 953). The strongly rugose head with irregular alveolate sculpture but no striae, suggests rather a relation to *Tricoryna*. The reduced antennal segments slightly resemble females of *Substilbula* but the latter has a finely striate head and the female antenna is simple. It resembles the latter also in the form of thorax, but the scutellar apex is short, not bidentate (*gruberi*) or only slightly so (as described for *mira*).

Biology. Not known.

Distribution. Australia (1-2 spp.).

Australian species of *Rhipipalloidea*:

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

mira Girault—*Rhipipalloidea mira* Girault, 1934[442]: [1]. VIC: Echuca. Transferred to *Rhipipallus* by Hedqvist, 1978b: 244.

13. Genus *Substilbula* gen. n. (Figs 957-959)

Type species *Stilbula bidentata* Girault.

The species classified here seem to form a group different from the general type known as *Stilbula*. They are certainly closely related to them as well as to *Stilbuloida* and *Sriostilbula*. As in *Stilbula* the prefrenal part of the scutellum ends in a slight hump (in side view); its apical (postfrenal) 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 puncturation-reticulation. The main difference from *Stilbula* 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 rugoso-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 *Stilbula*:

- albipennis* (Girault) **comb. n.**—*Stilbula albipennis* Girault, 1929[431]: 332. NT: Groote Eylandt. See fig. 958.
australiana (Girault) **comb. n.**—*Stilbula 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.**—*Stilbula bidentata* Girault, 1913[175]: 92. QLD: Mt Tambourine. Repeated by Girault, 1915[241]: 231. New records. QLD: 20 km E of Mareeba, xii.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.1981 (J. Donaldson); NSW: Ballengarra St. Forest, ii.1968 (Colless). See fig. 959.
pallidiclava (Girault) **comb. n.**—*Stilbula pallidiclava* Girault, 1934[442]: [1]. QLD: Brisbane, Indooroopilly. Probably based on female of *bidentata*. See fig. 957.

14. Genus *Striostilbula* gen. n.
(Figs 954-956)

Type species *Stilbula quadridigitata* Girault.

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

Striostilbula is near to *Stilbula* 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 puncturation characteristic of *Stilbula*.

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 puncturation, in another species hardly any trace of it). Scutellum without preapical hump, apex (frenal part) short but clearly bidentate, though teeth often unequal. 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 *Stilbula*. 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 *Striostilbula*:

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

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

Stilbula Spinola, 1811, p. 150. Type species *Ichneumon cyniformis* Rossius; by monotypy.

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

Eltolada was correctly placed under *Stilbula* by Hedqvist (1978b: 245).

This genus is relatively easy to recognise 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. arenae* has the antenna only 11-segmented.

Biology. No host records available for the region. Extralimital species in India and Korea oviposit 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 *Schizaspidia* but transferred to *Stilbula* by Gahan, 1940: 435).

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

Australo-Papuan species of *Stilbula*:

albipennis see 13. *Substilbula*

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

arenae Girault—*Stilbula arenae* 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 *Cyrtomyrma* 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: Uralla. According to Girault's Manuscript the species should belong to *Schizaspidia* (see Dahms, 1983: 154).

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

pallidiclava see 13. *Substilbula*

peduncularis Westwood—*Stilbula peduncularis* Westwood, 1874: 155, pl. 28, fig. 7. VIC: Angus. New record. QLD: The Ridges nr Mackay (G. Turner).

quadridigitata see 14. *Striostilbula*

quinqueguttata (Girault)—*Schizaspidia quinqueguttata* 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 *Schizaspidia 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 subglobose swelling; the hind tibia has just one spur; the basitarsus is barely as long as three following segments combined. The forewing has the pilosity 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 Areyonga exhibits some variation in body size (length 2.3-3.7 mm), the development of the prong, and sculpture. This suggests that *doddi* and *calomyrmecis* may belong to the same species. The holotype of *doddi* is a male with unusually large, broad gastral 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*:

calomyrmecis (Brues) **comb. n.**—*Schizaspidia calomyrmecis* Brues, 1934: 206-207. WA: Meekatharra; ex nest of *Calomyrmex purpureus*. Transferred to *Stilbula* by Gahan, 1940: 435. Very probably a female of *doddi*.
doddi (Bingham) **comb. n.**—*Schizaspidia doddi* Bingham, 1906: 123, 130. QLD: Townsville; ex *Camponotus* sp. Hedqvist, 1978b: 240, writes: "belongs to *Kapala*". On examination the holotype male (Type Hym. 49, UMO Oxford) proved to belong to a new genus here erected. New record. NT: Areyonga, W of Alice Springs, 15.x.19?? (Townes Coll.); SA: Kimba, 4.i.1960 (P.Aitken).

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 *contingens* by Kirby (l.c.). 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*:

latifurca 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 stigmal 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)

Schizaspidia Westwood, 1835: 69. Type species *Schizaspidia furcifera* Westwood; by monotypy.
Laetocantha Shipp, 1894: 188. Type species *Thoracantha nasua* Walker; by original designation.
Psygmatochera Enderlein, 1912: 146. Type species *Psygmatochera ceylonica* Enderlein; by original designation.
Astilbula Girault, 1913[159]: 101. Type species *Astilbula aenea* Girault; by monotypy. **Syn. n.**
Neokapala Girault, 1913[175]: 92. Type species *Neokapala furcatella* Girault; by original designation.
Kapatella Girault, 1932[437]: [4]. Type species *Kapatella transstriata* Girault; by monotypy.
Thoracanthella Girault, 1940[459]: 323. Type species *Thoracanthella emersoni* Girault; by original designation.
Kapaloides Mani, 1942: 155. Type species *Kapaloides travancorensis* Mani; by original designation.

Laetocantha and *Psygmatochera* were placed in synonymy under *Schizaspidia* by Baltazar (1961: 394), *Neokapala*, *Kapatella* and *Thoracanthella* were added by Hedqvist (1978: 231). *Kapaloides* 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 *Astilbula* but stated that he was "not sure that this species belongs to *Astilbula*". This was regarded as doubtful inclusion by Gahan & Fagan (1923: 19), especially because Girault 3 months later described *Astilbula* 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 *Astilbula* as first established should be known as with *A. aenea* Girault as its type species and because that species belongs to *Schizaspidia*, *Astilbula* becomes a synonym of that generic name. For *Astilbula* of the later date see *Chalcura*.

The key above includes a closely related genus, *Ancylotropus* Cameron, distributed from India to the Philippines. In India it is represented by *A. manipurensis* (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 unfumation at the stigma, the antennae have 12-segments, in the female 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 mesoscutum 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 haematodes* (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 foveatella*), who observed oviposition into young leaves of *Gliricidia 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)—*Astilbula aenea* Girault, 1913[159]: 101. QLD: Gordonvale (Nelson). Transferred to *Epimetagea* and description repeated by Girault, 1915[241]: 227.
 = *Neokapala furcatella* Girault, 1913[175]: 92. QLD: Cairns.
 = *Kapatella transstriata* Girault, 1932[437]: [4]. QLD: Gordonvale (Nelson).
 Transfers to *Schizaspidia* and synonymy proposed by Hedqvist, 1978b: 240. I am not sure about the species synonymy. New records. QLD: Rex Range Lookout via Julatten, xi.1981 (Galloway); Shiptions Flat, v.1981 (Naumann); Palmerston Nat. Park, iv.1976 (Galloway).
- calomyrmecis** and **doddi** see 16. *Stilbuloida*
- cyanea** Walker—*Schizaspidia cyanea* Walker, 1862: 386-387. Indonesia: Maluku, Amboina. The single male in BMNH., Hym. 5-626 (without scutellum), is here designated Lectotype.
 New records. PNG: Aieme River 60 km E of Port Moresby, xii.1982 (Bouček, Ismay); Brown River nr Pt Moresby, 24.xi.1973 (K.A. Spencer).

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 *Schizaspidia 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.

=*Thoracantha guttipennis* Girault, 1932[437]: [4]. QLD: Gordonvale (Nelson). **Syn. n.** Emended to *guttipennis* by Girault, 1932[439]: [1]. Transferred to *Schizaspidia* by Hedqvist (1978b: 240; as *guttipennis*). New records. QLD: Kuranda, iii.1902 and v.-vi.1913 (R.E.Turner).

furcatella see *aenea*

guttipennis and *guttivpennis* see *emersoni*

murrayi Kirby—*Schizaspidia Murrayi* Kirby, 1884: 403. Tonga Islands: Tongatapu. Dalla Torre, 1898: 364, recorded it as from "Austr. Tongatabu", then Girault, 1915[241]: 235, as from "Australia". Recently Hedqvist, 1978b: 237, reported it from PNG: New Britain, Cape Hoskins. See also *emersoni*.

ponapensis Ishii—*Schizaspidia ponapensis* Ishii, 1941: 107. Caroline Island: Ponape.

=*Schizaspidia palauensis* Ishii, 1941: 108. Caroline Islands: Palau. Synonymised with *ponapensis* by Watanabe, 1958: 21.

Recorded from PNG: New Britain, Cape Hoskins, by Hedqvist, 1978b: 235.

quingueguttata see 15. *Stilbula*

rudis see 2. *Akapala*

transstriata see *aenea*

19. Genus *Thoracanthoides* Girault (Fig. 971)

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

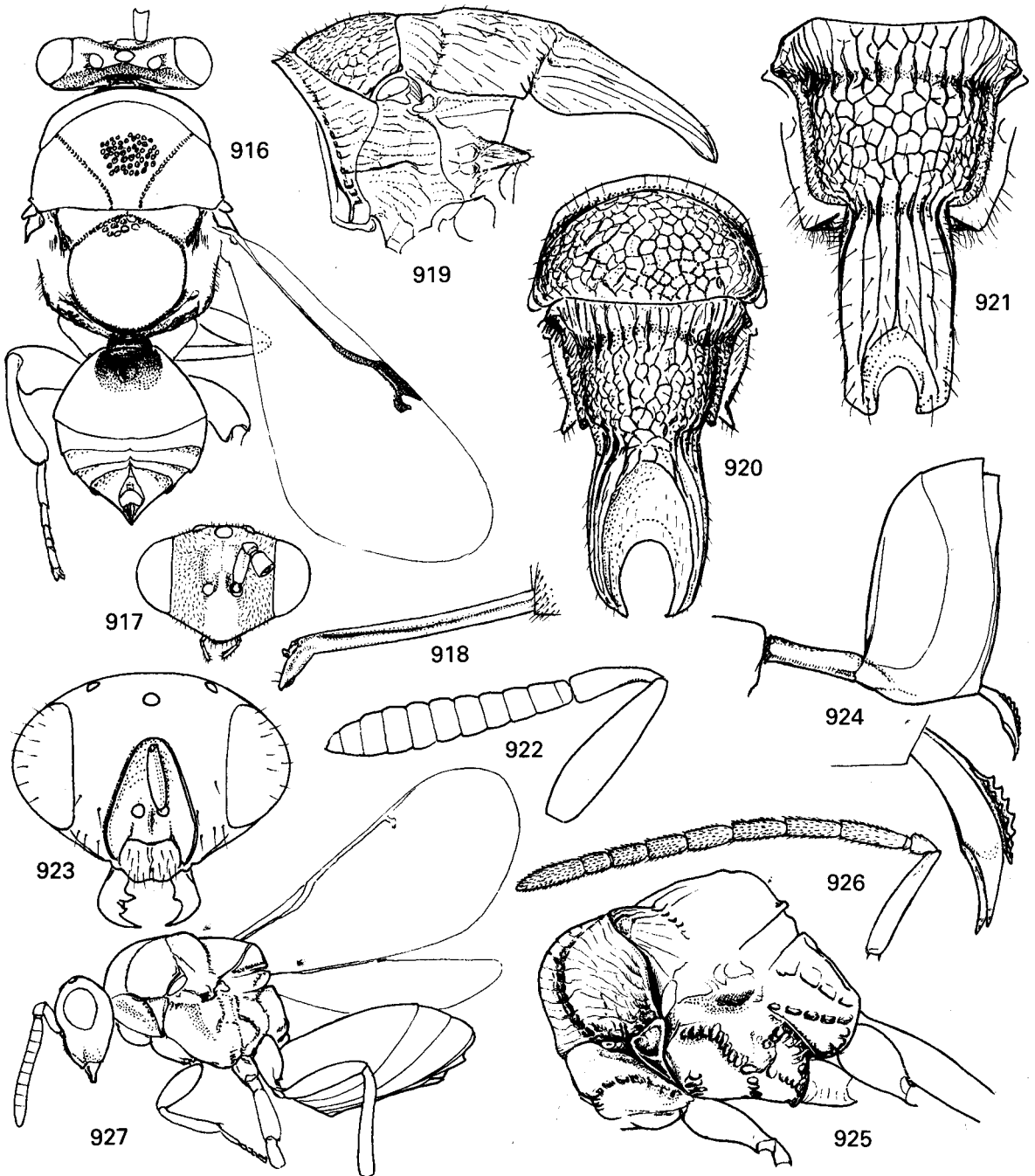
This is a distinctive genus, recognisable mainly on its scutellum produced into a long spike (fig. 971), although known only from the mutilated male type. The head has the face medially shiny, without striation. The mandibles are sickle-shaped, teeth 2:3. The antenna is similar to *Schizaspidia*; the 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 gastral body; the latter is narrow, yellow, almost smooth, with sparse outstanding thin hairs.

Biology. Not known.

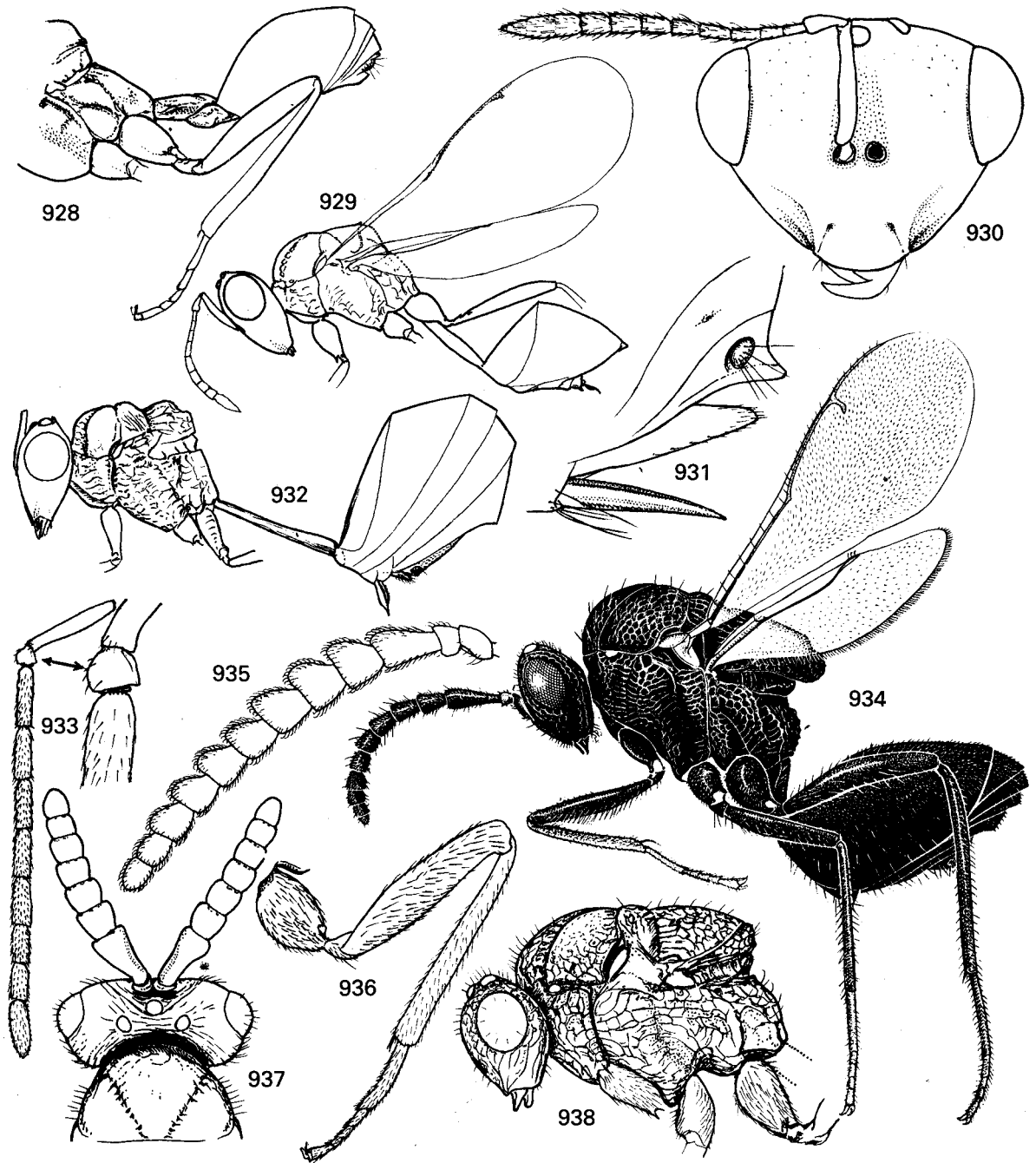
Distribution. Queensland (1 sp.).

Australian species of *Thoracanthoides*:

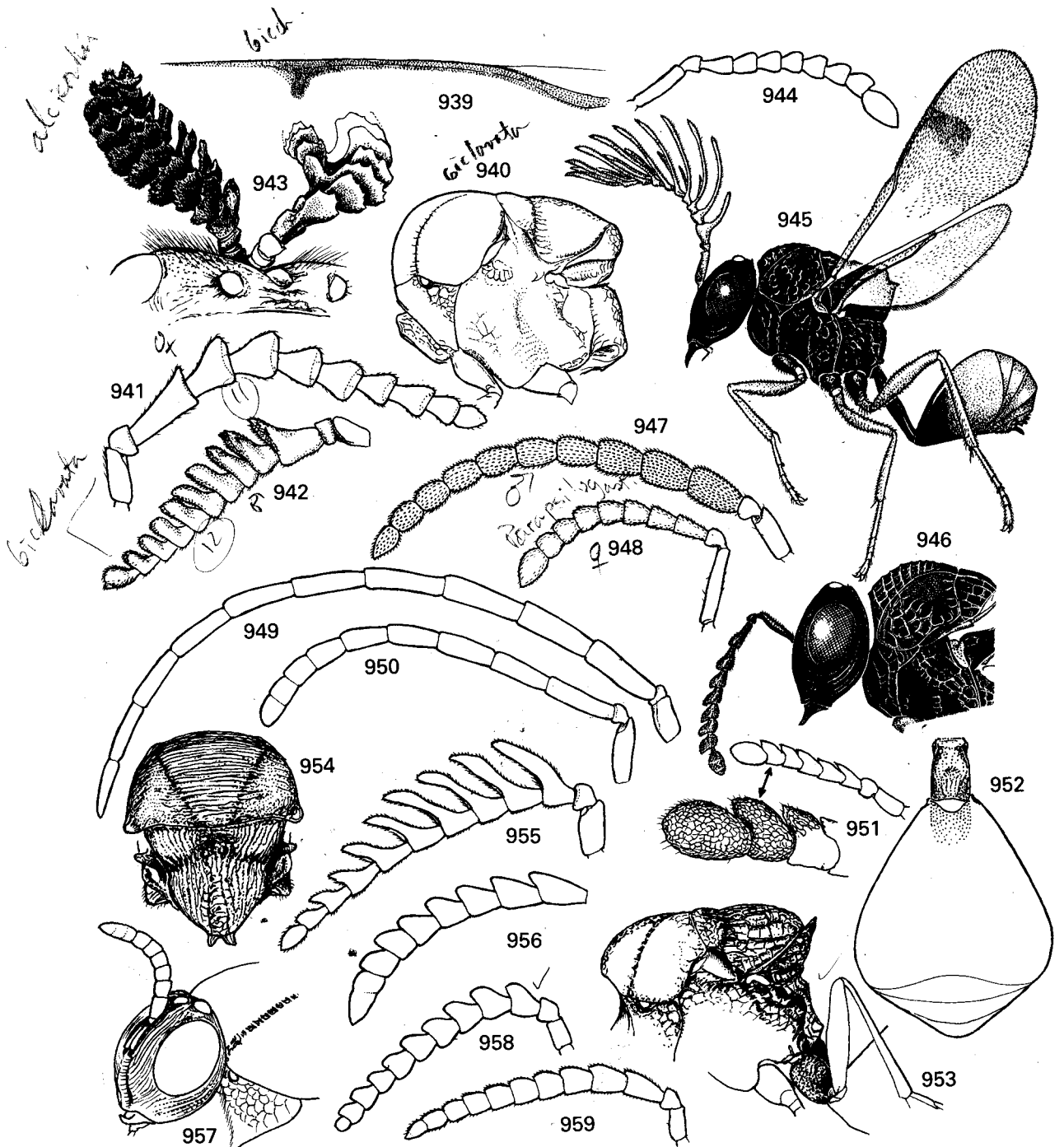
albispina Girault—*Thoracanthoides albispina* Girault, 1928[422]: [4]. QLD: Mareeba. The single male (see Dahms, 1983: 34-35, QM T.8632) is here designated Lectotype.



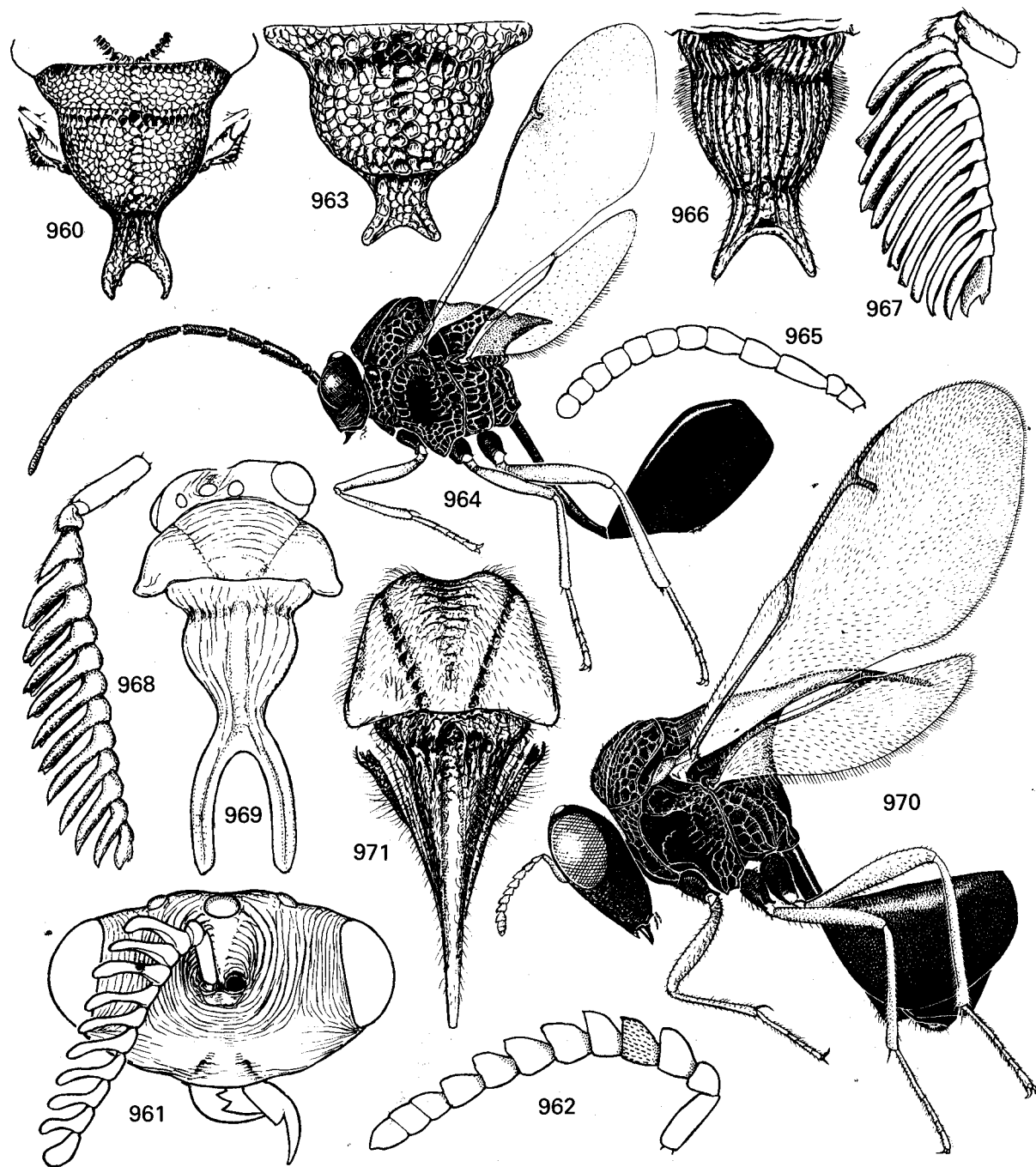
916-927. **EUCHARITIDAE.** 916-918. *Echthrodape papuana*, female; body with forewing (916), head anteriorly (917), ovipositor (922).- 919-920. *Akapala astriaticeps*; thorax laterally (919) and dorsally (920).- 921-923. *A. rudis*; thorax dorsally (921), antenna (922) and head in facial view (923).- 924. *Orasema valgius*; female gaster with exposed ovipositor and this enlarged.- 925-926. *O. purpureoventris*; female thorax (925) and male antenna (926).- 927. *Orasemorpha eribotes*; female.



928-938. EUCARITIDAE. 928. *Orasemorpha xeniades*; male gaster with part of thorax.- 929-931. *Losbanus minutus*; male (929), head with antenna (930), apex of female gaster (931).- 932-933. *Anorasema pallidipes*; female body (932), male antenna (933).- 934. *Tricoryna ?reticulativentris*; female.- 935-936. *Tricoryna* sp. A; male antenna (935) and hind leg (936).- 937. *T. iello*; female.- 938. *T. zalates*; head and thorax.



939-959. **EUCHARITIDAE.** 939-942. *Propislogaster biclavata*; venation (939), female thorax (940) and antenna (941), male antenna (942).- 943. *P. alcicornis*; male antenna.- 944. *Chalcura polita*; female antenna.- 945-946. *Chalcura* sp.; male body (945) and anterior part of female body (946).- 947-948. *Parapsilogastrus fausta*; antenna of male (947) and of female (948).- 949-950. *Austeucharis pallipes*; antenna of male (949) and of female (950).- 951-952. *Rhipipalloidea mira*; female antenna with apex enlarged (951) and gaster (952).- 953. *R. gruberi*; thorax.- 954-956. *Striostilbula quadridigitata*; thorax (954), male antenna (955) and female antenna (956).- 957. *Substilbula pallidiclava*; female head with part of thorax.- 958. *S. albipennis*; male antenna.- 959. *S. bidentata*; male (? , described as female) antenna.



960-971. EUCARITIDAE. 960-962. *Stilbuloida doddi*; scutellum with axillae (960), male head with antenna (961), female antenna (962).- 963-964. *Stilbula peduncularis*; scutellum with axillae (963), male (964). 965. *S. octodigitata*; female antenna.- 966-968. *Saccharissa latifurca*; scutellum with axillae (966), male antenna (967), female antenna (968).- 969-970. *Schizaspidia aenea*; head and thorax dorsally (969); female laterally (970).- 971. *Thoracanthoides albispina*; thorax.