

AUSTRALIAN HYMENOPTERA CHALCIDOIDEA—X.*

The Family Eucharidæ with Descriptions of New Genera and Species.

By A. A. GIRAULT.

FAMILY EUCHARIDÆ.

GENUS METAGEA Kirby.

1. METAGEA KIRBYI Ashmead.

Female:—“Length, 4 mm.

Æneous black, tinged with blue or purplish in certain lights. Head and thorax, except discs of parapsides which are smooth and æneous, coarsely rugose. Legs brownish yellow, femora except at tips dark brown; hind coxæ black, hind tibiæ, except tips, fuscous. Wings hyaline; venation brown. Flagellar joints, except first, submoniliform, not or very little longer than thick; first joint of flagellum as long as 2 and 3 united. Abdomen æneous black, petiole about four times as long as thick, smooth and impunctate.”

Habitat: Gosford, New South Wales. (A. Koebele, collector.)

Type: No. 4886, United States National Museum, Washington, D.C.

2. METAGEA RUFIVENTRIS Ashmead.

Female:—“Length, 9 mm. Head and thorax bright metallic green, coarsely rugose; mouth parts, scape, pedicel and legs except coxæ, yellow; abdomen, except petiole, second segment at base above and hypopygium wholly rufous; flagellum and second abdominal segment at base above black, petiole purplish; wings subfuscous, hyaline at base. Flagellar joints 1 to 6 all longer than thick; terminal joints alone moniliform; first three or four joints elongate, but gradually shortening, 1 about five times as long as thick at apex, 4 less than two thirds the length of 1, the others still shorter, seventh and eighth submoniliform. Abdomen, except as noted, red; petiole about four times as long as thick, finely microscopically punctate above.”

Habitat: Gosford, New South Wales.

Type: No. 4887, United States National Museum, Washington, D.C.

3. METAGEA ZALATES (Walker). Male and female.

Eucharis zalates Walker, 1839, pp. 13-14.

4. METAGEA TUBERCULATICORNIS new species.

Female:—Length, 3.80 mm.

Dark metallic purple with dark greenish reflections, the abdomen with its petiole and the femora (except cephalic ones) chocolate brown; cephalic femur light brown. Coxæ colorous; tibiæ and tarsi straw yellow. Wings lightly yellowish, the venation pale. Antennæ

* Contribution No. 33, Entomological Laboratory, Bureau of Sugar Experiment Stations, Bundaberg, Queensland.

and mandibles reddish brown. Head circularly striate, the mandibles as in *Orasema*. Thorax uniformly rugoso-punctate, the scutellum obtuse at apex. Parapsidal furrows complete, punctate. Dorsum of thorax plane. Abdomen large, compressed, upturned, the petiole somewhat longer than the hind coxa. Metatarsus slender. Scape somewhat shorter than funicle 1, distinctly longer than wide, the pedicel short, wider than long; funicle 1 longest of the antennæ, widening distad, one and a half times longer than wide at apex, or that many times longer than funicle 2, which with the following joints are no longer than wide at apex, narrower at base, becoming smaller toward apex, the simple club joint a little longer than funicle 2 (in one antenna the distal funicle joint was fused with the club); funicle joints armed around apex with several short, nipple-like tubercles. Antennæ 11-jointed, no ring-joint.

From one female labelled "No. 37. Darwin, N.T. 10-10-13. Sweeping in jungle. G. F. Hill."

Habitat: Port Darwin, Northern Territory.

Type: No. *Hy 3282*, Queensland Museum, Brisbane, the female on a tag; head on a slide.

GENUS EPIMETAGEA Girault.

Synonym: *Astilbula* Girault.

The same as *Metagea* Kirby but the antennæ not moniliform and only 10-jointed. Also agreeing somewhat with *Pseudochalcura* Ashmead but differing again in lacking one antennal joint. Head thin, triangular, the antennæ inserted slightly below the middle of the face, the club solid and ovate, longer than any of the funicle joints but slightly shorter than the simple cylindrical scape; pedicel obconic, short, subequal to joint 4 of the funicle, bearing from one side of its apical margin a single, very long, slender but stiff bristle-like seta which reaches distad nearly to the apex of joint 3 of the funicle. Proximal funicle joint longest, nearly twice the length of the pedicel, all the funicle joints obconic, widening distinctly distad, all more or less prolonged obtusely from one apical corner, the distal joints more so. None of the joints petiolate or subpetiolate; no ring-joint. Mandibles long and falcate, acute at apex, the right with two large triangular teeth within, the left with one that is larger than either of those of the right; also exteriorly at base each with a large tooth. From beneath the clypeus there projects a flat, palmate (9-digitate) brownish plate, above and between the mandibles; clypeus convex along its distal margin, the latter with two teeth on each side of its end, the first very obtuse, the second more toothlike but not large. Ocelli nearly in a straight line across the short vertex, the cephalic one within and at the apex of the short scrobicular cavity. Parapsidal furrows complete, with deep punctures. Scutellum normal, terminating in a short plate whose distal margin is entire though convex. Thorax elevated convexly in places but the convexities obtuse. A rather large toothlike plate from the lateral aspect of the thorax some distance ventrad of the axilla. Thorax with large irregular reticulations or narrow carinate lines, but not punctate except the large punctures in sutures. Abdomen with a distinct petiole (which is moderate in length), depressed, diamond-shaped from dorsal aspect, opaque. Petiole somewhat over twice longer than wide. Proximal tarsal joints of all the legs long and slender but the first tarsal joints are not half the length of the tarsi. Venation obscure, the stigmal and postmarginal veins short, much shorter than the marginal, the stigmal the longer of the two, curved or bent like a boomerang. Wings hyaline, all ciliation nearly absent; a trace of marginal cilia disto-caudad. From lateral aspect, scutellum appearing as if terminating in a short acute tooth. The axillæ meet mesad.

1. EPIMETAGEA PURPUREA Girault. Female. Genotype.

Length, 3.5 mm.

Metallic purple, the abdomen with green reflections; knees, tibiæ, tarsi (except distal dark part of distal joint) and the antennæ, brown, the latter suffused with purplish distad. Venation nearly invisible but the stigmal vein brownish. Head impunctate but with very

fine circular striæ, glabrous ventrad of the antennæ; lateral ocelli very distant from the eye margins; scrobicular cavity with its lateral margins noncarinate; a tubercle at latero-cephalic aspect of pronotum. Scutellum between and behind the axillæ (at the meson) sunken. Abdominal petiole longitudinally striate. Cephalic part of thorax dorsad (cephalad of the middle of the scutum) coarsely reticulate as is also much of the scutellum. Base of propodeum with deep transverse foveæ, the region with lateral grooves. Caudal half of scutum practically smooth.

Habitat: Townsville, Queensland. Reared from ants, July, 1902.

Types: No. *Hy 1195*, Queensland Museum, Brisbane, three females on a card, a head on a slide.

2. **EPIMETAGEA MAGNIFICA** (Girault). Female.

Astilbula magnifica Girault.

Length, 3.95 mm. Robust.

Brilliant metallic æneous-green, the abdomen shining, the scutum transversely striate, the scutellum longitudinally so, both more or less irregularly; scutellum with a weak median carina. Wings hyaline. Petiole roughened. Venation brown. Legs straw yellow brown, the coxæ and most of the femora concolorous; also antennæ but the scape and pedicel brownish. Club joint next longest of the flagellum.

Habitat: National Park, New South Wales.

Type: No. *I. 1237*, South Australian Museum, a female on a card, the head on a slide.

3. **EPIMETAGEA PURPUREICORPUS** new name. Female.

Astilbula purpura Girault.

Length, 3.75 mm.

Metallic purplish, the abdomen much darker; knees, tarsi and tibæ straw yellow, the first three antennal joints brownish; wings hyaline, the venation brown. Femora and coxæ concolorous. Sculptured as in *magnifica*. Joints of funicle after the first cup-shaped or nearly, erected on thick peduncles; first funicle joint cylindrical, long. Abdomen ascending. Mandibles dentated as in the preceding (*i.e.*, regarding number of teeth).

Habitat: Cairns, Queensland.

Type: No. *I. 1288*, South Australian Museum, the specimen on a tag, the head on a slide.

4. **EPIMETAGEA ÆNEA** (Girault). Male.

Astilbula ænea Girault.

Length, 4.75 mm.

Dark æneous green, the head and scutum with purplish; abdomen beneath mesad and the legs, except coxæ, yellowish brown, the scape and pedicel pale; petiole of abdomen and coxæ blackish. Fore wings with a sooty blotch under the stigmal vein (continued attenuatingly proximad) and another opposite to the first (continued proximad more distinctly). Thorax rugose and transversely lined, the scutellum with the lines longitudinal, the base of the prong-like process about twice longer than its least width, longitudinally striate. Hind outer angle of each parapside produced laterad into a platelike tooth. Head finely circularly striate, the lower half of the face glabrous. Propodeum with a lateral groove. Antennæ 12-jointed, no ring-joints, eight long branches from joints 2-9, all from the same side; funicle 1 twice the length of the pedicel, 2 a little shorter than the pedicel, transverse, 3 a little wider than long, 4-9 gradually increasing in length, 9 being distinctly longer than 1; club very long, much over twice the length of the distal funicle joint. Petiole thrice the length of the hind coxæ.

Habitat: Gordonvale (Cairns), Queensland. Jungle, May 9.

Type: No. *Hy 3223*, Queensland Museum, Brisbane. Tag and slide.

The type has been re-examined.

5. *EPIMETAGEA POLITA* new species.

Female:—Length, 3.25 mm.

Dark metallic purple, the wings hyaline, the knees, cephalic tibiæ, tips of other tibiæ and the tarsi yellowish brown, also the scape and pedicel. Head mostly smooth. Scutum at cephalic third with four transverse carinæ not close together, otherwise polished; parapsides polished, the furrows coarsely foveate. Axillæ glabrous, laterad with traces of longitudinal carinæ at cephalic margin; scutellum the same but with longer carinæ from base laterad, coarse and interlacing (parapsides laterad with scattered pin-punctures), the lateral and apical margin foveate and then strongly carinate; apical fourth of scutellum at meson with a median carina projecting cephalad from apex and terminating in a cross-carina (abbreviated laterad) at about distal two thirds. Propodeum with a line of foveæ around cephalic margin, dorsad with a few longitudinal carinæ (a long, complete, curved lateral carina is distinct), foveate toward the margins. Petiole rugulose, not quite twice the length of the hind coxæ. Funicle joints only slightly produced from disto-lateral angle but the antennæ as in the genotype except that the pedicel lacks the long seta.

From one female minutien-mounted captured by H. Hacker, April 24, 1912. Also another taken November 19, 1913.

Habitat: Brisbane, Queensland.

Type: No. Hy 3284, Queensland Museum, Brisbane, the first specimen and an antenna on a slide.

6. *EPIMETAGEA BICOLORIVENTRIS* new species.

Female:—Length, 5 mm.

Like *polita* but all tibiæ yellowish brown and the distal half (more ventrad) of abdomen is dull blood red. Head finely longitudinally striate along upper half of face, elsewhere smooth but with scattered fine punctures. Scutum coarsely, transversely striate; scutellum densely coarsely foveate. Caudal half of parapside glabrous, the other half like the scutum. Axillæ foveate. A more or less distinct, coarse, median line of transverse foveæ along the scutellum. Propodeum wholly rugose but not as coarse as the scutellum. Antennæ as in *polita* but the scape is longer. Thoracic pleura rugulose, polished centrally ventrad of tegulæ (farther dorsad and ventrad in *polita*). Occiput with faint circular striation. Petiole somewhat longer than the hind coxæ.

From one female minutien-mounted labelled "Hacker, Bribie Island, Moreton Bay near Brisbane, November 3, 1913."

Habitat: Bribie Island, Queensland.

Type: No. Hy 3285, Queensland Museum, Brisbane, the above specimen and one antenna on a slide (with a pair of same of *polita*).

GENUS *TRICORYNA* Kirby.1. *TRICORYNA ECTATOMMAE* new species.

Female:—Length, 2.85 mm.

Dark metallic blue-green, the wings hyaline, the tarsi whitish (hind tarsi so distad of first joint which is about half the tarsus). Head circularly striate, the striæ not dense. A median groove on thorax, coarser on the scutellum, faint on distal scutum. Scutellum unarmed, with coarse longitudinal striæ, the scutum with oblique striæ cephalad but the caudal half together with all of the parapsides, glabrous. Axillæ like the scutellum. Surface between striæ glabrous. Abdomen glabrous, blackish, with numerous but scattered, distinct, rather coarse pin punctures over the surface, the petiole finely longitudinally lined, a little over twice longer than wide. Antennæ 9-jointed like those of *subsalebrosa* except that one joint is absent and the last one is no smaller than those immediately preceding it. Antennæ thick, moniliform.

From one female on a card labelled "Taken from nest of ant *Ectatomma*. Fern Tree Gully, 8-3-11. F. P. Spry."

Habitat: Melbourne, Victoria.

Type: In the National Museum, Melbourne, the female on a card.

2. *TRICORYNA SUBSALEBROSA* new species.

Male:—Length, 3.50 mm.

Black, finely, densely rugulose except the caudal portion of each parapside which is glabrous. Cephalic tibiae brown. Wings hyaline, the postmarginal vein long. Scutum and scutellum with a median groove, wider and coarser on the former. Abdomen finer in sculpture than the rest of the body. Legs thick, the front tibiae slender but not long, the thick first tarsal joint in hind legs not quite half the length of the hind tarsus. Axillae meeting inwardly. Quite as figured by Haliday. The scape and pedicel are so short that the long first funicle joint appears to be the scape. Antennae 10-jointed; scape very short, somewhat longer than wide, pedicel much wider than long; funicle 1 elongate, thrice the length of the scape, about twice the length of the next joint; joints following funicle 1 shortening in succession, all the funicle joints narrower at base; club not differentiated, the last antennal joint smallest after the pedicel, subglobular. Flagellum hispid but not uniformly. Scutellum blunt at apex, slightly overhanging the propodeum. Petiole long, striate, about as long as in *ectatommae*.

From one male captured by H. Hacker, January 17, 1913.

Habitat: Brisbane, Queensland.

Type: No. *Hy 3286*, Queensland Museum, Brisbane, the above specimen on a tag, an antenna on a slide.

3. *TRICORYNA IELLO* (Walker). Male; female.

Eucharis iello Walker, 1839, pp. 12-13.

GENUS EUCHAROMORPHA Girault.

Somewhat like *Psilogaster* Blanchard but the antennae 11- to 12-jointed, with a true ring-joint, the funicle joints cylindrical to subquadrate; postmarginal vein distinct, also the venation; scutellum with a cross-furrow before apex. Abdomen sessile, the petiole extremely short or absent. Parapsidal furrows deep, the parapsides somewhat gibbous, also the axillae. Head not striated, the ocelli in a small triangle. Club solid.

1. *EUCHAROMORPHA VIRIDIS* Girault Female. Genotype.

Length, 4 mm.

Bright metallic aeneous green, the coxae concolorous, the legs straw-yellow, the antennae black but with the scape and ring-joint honey-yellow, the pedicel more or less so. Venation brown. Wings subhyaline. Antennae 12-jointed, the first funicle joint long, twice the length of the pedicel, the second a third shorter, the others subquadrate and more or less equal; club joint conical ovate, subequal to first funicle joint. Head and thorax rugulose, subpunctate, not rude. Abdomen robust, sessile.

Habitat: Swansea, Tasmania.

Type: No. *I. 1283*, South Australian Museum, Adelaide.

2. *EUCHAROMORPHA FUSCIPES* Girault. Male.

Length, 3.87 mm.

The same as the preceding but more slender, the femora along proximal half fuscous and with more or less metallic green, the abdomen with a distinct but short petiole, the

antennæ wholly black and differ structurally in that the third funicle joint is longer, also the club; ring-joint yellow brown. The abdomen is smaller. One specimen of this species was tinged with metallic blue while another was smaller and with a shorter scape.

Habitat: Hobart, Tasmania.

Type: No. I. 1284, South Australian Museum, Adelaide.

3. EUCHAROMORPHA DUBIA Girault. Male.

Length, 3.80 mm.

The same as *fuscipes* but the antennæ only 11-jointed, the funicle 7-jointed; the femora are dark up to the tips and with more metallic coloration. The club is longer, distinctly much longer than the first funicle joint and the funicle joints are all longer than wide.

Habitat: Hobart, Tasmania.

Type: No. I. 1285, South Australian Museum, Adelaide.

4. EUCHAROMORPHA TRIDENTATA new species.

Female:—Length, 1.68 mm.

Dark purple, the knees, tibiæ and tarsi yellowish brown, also the scape which, however, is darker. Scutum and scutellum densely, finely punctate, the parapsides polished, also the axillæ, the scutellum with a polished central area just before the transverse groove, distad of the latter with more scattered punctures and a median groove. Propodeum long, finely punctate, with a distinct delicate median carina (lateral carinæ apparently absent); abdomen subsessile, globular. Mandibles with three distinct acute teeth, the outer the longer but greatly longer, the teeth more equal than usual for the family. Antennæ as in the male of the genus; funicle 1 distinctly the longest, one and a third times longer than wide, longer than the pedicel; funicle 2 a little longer than wide, 3 subquadrate, the rest subequal, a little wider than long; the solid club equal to more than the two preceding joints united. Pedicel a little longer than wide.

Described from one female captured by sweeping lantana in a field, October 19, 1911.

Habitat: Mackay, Queensland.

Type: No. Hy 3237, Queensland Museum, Brisbane, a female on a tag, the head on a slide.

GENUS ORASEMA Cameron.

Orasema pheidolophaga Girault. Female; male.

Length, 2.80 mm.

Dark metallic green, sometimes with a bluish tinge; abdomen coppery; wings subhyaline, the venation brown; antennæ dark metallic green throughout; coxæ concolorous, the tarsi and tibiæ straw-yellow, the femora metallic green, the cephalic femora less so. Thorax rugulose and punctate. Scutellum rimmed at apex. Head circularly striated. Antennæ 13-jointed with a short ring-joint, the club 3-jointed, the first funicle joint longest, the others shortening, but all longer than wide, rectangular; club joints more or less coalesced, yet plainly indicated. Mandibles 2- and 3-dentate, as described for the genus, flavous, fuscous at tip.

Habitat: Geelong, Victoria. From pupæ of *Pheidole*.

Type: No. I. 1286, South Australian Museum, Adelaide.

GENUS CHALCURELLA Girault.

The same as *Chalcura* Kirby but the antennæ with paired branches, the funicle joints distad of the third, bearing a pair of branches from the apex of each joint, opposite and forming the two arms of a tuning fork; the second two joints of the funicle bearing but a single branch, the branches hairy; first funicle joint very long, widening distad; the second,

third, fourth and fifth short; the sixth and following lengthening, slender, becoming as long as the first; scutellum with a median groove. Scape short. Stigmal vein quadrate, the wings hyaline. Abdomen as in *Eucharis*. Propodeum with a broad, longitudinal sulcus dorso-laterad.

1. CHALCURELLA NIGRICYANEA Girault. Male. Genotype.

Length, 4.85 mm.

Black with a bluish tinge, the coxæ and antennæ concolorous, the femora fuscous or brown-black, the knees, tibiæ and tarsi yellowish-brown, also the tegulæ and venation. Rudely punctate, the head striate. Thorax pilose. Pedicel chocolate. Posterior coxa and abdominal petiole irregularly and rather delicately roughened. Tegulæ brown.

Habitat: Hobart, Tasmania.

Type: No. I. 1282, South Australian Museum, Adelaide.

GENUS NEOKAPALA Girault.

1. NEOKAPALA FURCATELLA Girault. Female. Genotype.

Length, 3.25 mm.

Dark metallic green, the propodeum, abdomen and head blue; legs fuscous, the antennæ black with brownish club and scape, 11-jointed, no ring-joint. Fore wings infuscated distad of the distal end of the marginal vein (more proximad at caudal margin), the infuscation accented under the end of the marginal vein. Scutellum produced into a prong like the two arms of a tuning-fork, each prong about as long as the scutellum, brownish toward tip, flattened, the edges carinated; scutellum longitudinally striate. Head shining, thorax umbilicately punctate. Abdominal petiole not as long as the arms of the scutellar process. Antennæ with the funicle joints produced from one side at apex, flattened, the club solid, ovate, the pedicel small and cup-shaped, funicle joints 2 and 5 longest, subequal, the first funicle joint longer than the pedicel by far but cylindrical oval, not produced.

Habitat: Cairns, Queensland.

Type: No. I. 1278, South Australian Museum, Adelaide.

This genus differs from *Kapala* Cameron by the scutellar processes which are short, blunt at end and forming a prong which is high up over the base of the abdomen.

GENUS STILBULA Spinola.

1. STILBULA PEDUNCULARIS Westwood, Thesaur. Ent. Oxon. p. 155, ♀, ♂ (1874).

2. STILBULA BIDENTATA Girault. Female.

Length, 3 mm.

Very dark metallic green, the abdomen darker, the wings colourless, their wings very pale. Legs fuscous, the knees, posterior tibiæ and tarsi fulvous. Scutellum bidentate, the head circularly striate, the thorax roughly punctate including the propodeum, the rather long abdominal petiole pitted. Antenna 12-jointed, of the flagellum (excluding pedicel) the first joint longest, thrice the length of the short pedicel, the club joint shortest; excluding the bulla, scape shorter than funicle 1; antennæ brownish toward tip, otherwise black; funicle joints 3 and 4 subequal, each about somewhat over a half the length of joint 1.

Habitat: Mount Tambourine, Queensland.

Type: No. I. 1279, South Australian Museum, Adelaide.

3. STILBULA AUSTRALIANA Girault. Female.

Length, 3.10 mm.

The same as the preceding but more greenish (dark green), the scutellum similarly slightly produced but not bidentate and with a more or less obscure median grooved line.

the axillæ divided by a more or less distinct foveate suture; distal halves of femora, the tibiæ and tarsi yellowish brown. Abdomen as in *Eucharis*. In the antennæ, the second, third and fourth funicle joints are subequal, somewhat longer than wide, the first joint longest, narrowing proximad.

Habitat: Mount Tambourine, Queensland.

Type: No. I. 1280, South Australian Museum, Adelaide.

GENUS PSILOGASTER Blanchard.

1. **PSILOGASTER PULCHER** Girault. Male.

Length, 4.5 mm.

Metallic æneous green, the abdomen dark; scape and pedicel yellow, the wings slightly stained, the legs except coxæ straw-yellow, the posterior femora washed with fuscous; venation brown, the postmarginal vein long. Scutellum with a median grooved line, otherwise simple and normal. Rugulose punctate. Antennæ 10-jointed, the joints long and cylindrical, the club shortest, the first funicle joints longer than the scape; distal funicle joint subequal to the club; pedicel cup-shaped, very short. Differs from Brullé's *pallipes*, apparently, in having 10-jointed antennæ, though it should be compared with that species.

Habitat: Mount Wellington, Tasmania.

Type: No. I. 1281, South Australian Museum, Adelaide.

2. **PSILOGASTER PALLIPES** Brullé, Hist. Nat. Ins. Hym., IV, p. 574, ♀, ♂ (1846).
Tasmania, Australia.

3. **PSILOGASTER THEOCLES** (Walker).

Eucharis theocles Walker, 1839, pp. 11-12.

PARAPSILOGASTER new name.

Psilogasteroides Girault, preoccupied.

Agreeing with *Psilogaster* Blanchard but having 12-jointed antennæ; first funicle joint long, the others short.

1. **PARAPSILOGASTER FAUSTA** (Walker). Male. Genotype.

Eucharis fausta Walker, 1839, pp. 10-11.

Psilogasteroides fausta (Walker).

“*Mas. Viridis cupreo et cyaneo varia, pedes fulvi, femora viridia, alæ limpidaæ.*”

Viridis, cupreo-varia: capitis frons cyaneo-viridis: oculi et ocelli obscure rufi: thorax subtus et postice cyaneo-viridis: abdomen cupreum: pedes fulvi; coxæ virides; femora viridia, apice fulva; tarso apice fuscii: alæ limpidaæ; squamulae picæ; nervi fulvi, apice obscuriores. (Corp. long. lin. 1¾; alar. lin. 2¾.)

Hobart Town, Van Diemen's Land.

Mas.—Corpus convexum, parum nitens, rude punctatum, parce pubescens: caput sat magnum, breve, transversum, thorace latius; vertex latus, non impressus; frons abrupte declivis: oculi parvi, subrotundi, extantés: ocelli approximati, vertice triangulum fingentes: antennæ 12-articulatæ, filiformes, pubescentes, thorace paullo longiores; articulus 1us longus, gracilis, sublinearis; 2us cyathiformis; 3us longus; 4us et sequentes breves, lineares, usque ad 9um curvantes; 10us 11us et 12us arcte applicati clavam fingentes fusiformem. 9o duplo longiorem: thorax ovatus: segmentis suturæ bene determinatæ: prothorax brevissimus, supra vix conspicuus: mesothoracis scutum longitudine latius; parapsides conspicuæ, extantés;

scutellum ovatum, valde convexum: metathorax medioeris, declivis: petiolus perlongus, sat validus: abdomem ovatum, convexum, nitens, laeve, glabrum, thorace brevius, apice non truncatum; segmentum lūm magnum, dorsi plus dimidium occupans; 2um et sequentia brevia: ventralia vix conspicua: pedes simplices, subæquales; coxæ mediocres; femora gracilia; tibiæ rectæ; tarsi articuli 1o ad 4um curtantes, 5us 4o paullo longior; ungues et pulvilli minuti: alæ amplæ; ulnaris humerali paullo brevior, radialis brevis, cubitalis brevissimus, stigma fingens punctiforme.’’

2. PARAPSILOGASTER VALGIUS (Walker). Male and female.

Eucharis valgius Walker, 1839, p. 11.

Psilogasteroides valgius (Walker).

‘‘Mas.—*Viridis, antennæ nigræ, abdomen nigro-viride, pedes fulvi, femora viridia, alæ subfusca.*

Viridis: oculi et ocelli obscure rufi: antennæ nigræ; articuli 1us et 2us virides: abdomen nigro-viride: pedes fulvi; coxæ virides; femora viridia, apice fulva; metatibiæ pallide fusca, apice et basi fulvæ; tarsi flavi, apice fuscii; protarsi obscuriores: alæ subfusca; squamulæ virides; nervi fuscii. (Corp. long. lin. 1½; alar. lin. 2½.)

Sydney, New South Wales.

Fem.—Corpus convexum, nitens, rude punctatum, parce pubescens: caput sat magnum, breve, transversum, thorace latius; vertex latus, non impressus; frons abrupte declivis; oculi parvi, subrotundi, extantes: ocelli approximati, vertice in triangulum dispositi: antennæ 12-articulatæ, extrorsum crassiores, pubescentes, thorace fere breviores; articulus 1us longus, gracilis, sublinearis; 2us cyathiformis; 3us et sequentes transversii, usque ad 9um curtantes; 10us 11us et 12us arete applicati, clavam fingentes fusiformem 9o duplo longiorum: thorax ovatus: segmentis suturæ bene determinatæ: prothorax brevissimus, supra vix conspicuus: mesothoracis scutum longitudine latius; parapsides conspicuæ, extantes; scutellum ovatum, valde convexum: metathorax medioeris, declivis: petiolus longus, sat validus: abdomen ovatum, convexum, nitens, læve, glabrum, thorace brevius, apice non truncatum; segmentum lūm magnum, dorsi plus dimidium occupans; 2um et sequentia brevia; ventralia vix conspicua: pedes simplices, subæquales; coxæ mediocres; femora gracilia; tibiæ rectæ; tarsi articuli 1o ad 4um curtantes, 5us 4o paullo longior: ungues et pulvilli minuti: alæ amplæ, ulnaris humerali paullo brevior, radialis brevis, cubitalis brevissimus stigma fingens punctiforme.’’

GENUS EUCHARIS Latreille.

1. EUCHARIS DELICATULA Walker. Male.

Eucharis delicatula, Trans. Ent. Soc. Lond., I, p. 377, ♂ (1862). Australia.

2. EUCHARIS IMPLEXA Walker, Trans. Ent. Soc. Lond., I, p. 377, ♀ (1862).

Tasmania, Australia.

3. EUCHARIS PICEICORNIS Walker, Trans. Ent. Soc. Lond., I, p. 376, ♂ (1862).

4. EUCHARIS RUFIVENTRIS Walker. Female.

Eucharis rufiventris Walker, Trans. Ent. Soc. Lond., I, p. 373, ♂ (1862).
Australia.

5. EUCHARIS SMARAGDINA Walker. Male.

Eucharis smaragdina Walker, Trans. Ent. Soc. Lond., I, p. 376, ♂ (1862).
Australia.

6. EUCHARIS LARYMNA Walker. Female and male.

Eucharis larymna Walker, List Hym. Brit. Mus., Chalcid., I, p. 86, ♀ ♂ (1846).

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7. **EUCHARIS PYTTALIS** Walker. Female; male.

Eucharis pyttalis Walker, List Hym. Brit. Mus., Chalcid., I, p. 87, ♀, ♂ (1846).

8. **EUCHARIS ERIBOTES** Walker. Male; female.

Walker, 1839, pp. 14-15.

9. **EUCHARIS XENIADES** Walker. Male.

Walker, 1839, p. 15.

10. **EUCHARIS DEMOCLES** Walker. Male.

Walker, 1839, p. 15.

GENUS RHIPIPALLUS Kirby.

1. **RHIPIPALLUS CAMERONI** Kirby.

Rhipipallus cameroni Kirby, Journ. Linn. Soc. Lond., Zool. XX, p. 37, t. 1.
Australia (?). Celebes (?).

2. **RHIPIPALLUS TURNERI** Kirby.

Rhipipallus turneri Kirby, Ann. Mag. Nat. Hist., XIV, p. 47 (1894). Australia.

3. **RHIPIPALLUS VOLUSUS** Walker. Male.

Eucharis volusus Walker. 1839, pp. 9-10.

4. **RHIPIPALLUS AFFINIS** Bingham. Male; female.

Male:—Length, 5 mm.

Head lenticular; clypeus triangular, deeply incised anteriorly; front below the antennæ slightly raised, smooth and shining; cheeks, face and vertex finely but somewhat obsolete longitudinally striate; scape of antennæ short, smooth and shining; flagellum finely granulose, pilose, the hairs very short, the basal two joints simple, the rest except the apical joint with long slightly clavate rami on each side, two to each joint, apex distinctly incrassate. Thorax densely and somewhat coarsely punctured; scutellum conically produced, the apex terminating in two short teeth; at base a transverse series of foveæ or large shallow punctures; post-scutellum and median segment very coarsely cribrate, the latter with two or three irregular more or less vertical carinæ; wings hyaline and iridescent; legs slender. Abdomen smooth and shining, its petiole opaque granulose. Mandibles, tibiæ and tarsi pale yellowish-brown; coxæ and femora dark blue or black; antennæ dark reddish brown; head, thorax anteriorly, scutellum and median segment, metallic green with in certain lights a bronze tint; middle of thorax above entirely coppery bronze; petiole and abdomen dark metallic blue.

The female differs from the male as follows: Clypeus not incised; antennæ moniliform, the joints simple not provided with lateral rami; scutellum not bidentate at apex, at base a deep, broad transverse sulcation within which is situated the transverse series of foveæ so conspicuous in the male; petiole of abdomen much shorter. Abdomen as in the male. Antennæ paler, head and thorax more bronze than green; abdomen a darker blue.

Habitat: Townsville, Queensland. July 30, 1902. Also in March and October.

Types: In the Hope Department; cotypes in British Museum of Natural History.

Superficially this form closely resembles the type of the genus (*R. volusus*, Walker) but besides other points of difference it is easily separable by the sculpture of the thorax which in *volusus* has the humeral angles of the thorax conspicuously smooth and shining, not coarsely punctured and no carinæ on the median segment.

F. P. Dodd (Transactions Entomological Society of London, May 29, 1906, p. 123) states: "These bright little Chalcididæ I have bred frequently from the pupæ of the fine long-jawed ant *Odontomachus* sp., several sometimes coming from the one cocoon . . . , 1 worker ant identified by Prof. Forel as *Odontomachus ruficeps*, Sm., subsp. *coriarius* Mayr., . . ."

GENUS SCHIZASPIDIA Westwood.

1. SCHIZASPIDIA MURRAYI Kirby. Male.

Schizaspidia murrayi Kirby, Ann. Mag. Nat. Hist., III, p. 403, ♂ (1884).
Australia. Tongatabu.

2. SCHIZASPIDIA RUDIS Westwood.

Schizaspidia rudis Westwood, Thesaur. Ent. Oxon., p. 152 (1874). Australia.

3. SCHIZASPIDIA DODDI Bingham. Male.

Length, 5 mm. Mandibles sickle-shaped with three teeth, apical tooth long acute, two small teeth on the inner margin; clypeus short quadrate with the cheeks and face below the base of the antennæ transversely striate, the striæ curving round upwards and becoming vertical behind and between the eyes, vertex longitudinally striate; scape of antennæ smooth, flagellum finely granulose, first joint simple, rounded, remaining joints throwing outward comparatively short, slightly clavate rami. Thorax short and stout, densely and somewhat deeply punctured; scutellum produced, elongate conical, overhanging the median segment and bearing a stout bifurcate process at apex, the points of the fork blunt, with a tooth on the inner side of each; postscutellum and median segment vertical and vertically striate the division between them well marked. Abdomen petiolate, petiole shorter than the rest of the abdomen which is subobconically depressed above and broadly and bluntly rounded posteriorly. Mandibles, scape of antennæ and coxæ, femora, tibiæ and tarsi of the legs pale yellowish brown; flagellum darker brown; head and thorax rich golden bronze with in certain lights scattered green and purple points; wings hyaline iridescent; abdomen shining bronze-brown. Expanse, 12 mm.

Habitat: Townsville, Queensland. January, 1903.

Type: Hope Department.

F. P. Dodd (place cited above) states: ". . . is a great rarity and the only specimen I have bred from several lots of pupæ of a large ant, *Camponotus* sp."

4. SCHIZASPIDIA QUINQUEGUTTATA new species.

Male:—Length, 5.30 mm.

Running to *Schizaspidia* Westwood but the antennæ only 12-jointed, the petiole of the abdomen very long and slender, distinctly longer than the body of the abdomen. Scutellum armed with a short prong (or two short, stout teeth) whose base is quadrate and longer than the arms or teeth, the whole less than half the length of the scutellum. Head, propodeum except latero-cephalad, metapleurum, mesopleurum except dorsad, venter of meso- and meta-thorax; coxæ (also venter of prothorax cephalad of coxæ), teeth (but not the base) of the scutellar prong; a large hive-shaped spot at cephalic margin of scutum at meson, reaching to middle (and proceeding ventrad a short distance on to face of the exceedingly short pronotum); an oblique, ovate spot a little caudad of the middle on each parapside and a transverse elliptical spot on each axilla, dark metallic purple with a bronze reflection. Petiole and legs white, the former broadly ringed with fuscous distad of middle. Rest of body yellow brown but the dorsum of abdomen jet black. Fore wing hyaline but with a distinct sooty spot appended from the end of the venation about the stigmal vein. Mandibles as in *Orasema*

Cameron. Parapsidal furrows straight, meeting at apex. Head finely, circularly striate, the thorax foveate-punctate. Antennæ 12-jointed, no ring-joint; scape very short, twice the length of the very short pedicel which is longer than wide; no distinct club. Funicle 1 distinctly the longest, the following joints all more or less equal, gradually shortening, a little more than half the length of 1 which is elongate.

From one male captured in jungle, January 18, 1914 (A. P. Dodd).

Habitat: Gordonvale (Cairns), Queensland.

Type: No. *Hy 3288*, Queensland Museum, Brisbane, the specimen on a tag, the head on a slide.

GENUS CHALCUROIDES Girault.

Agreeing with *Chalcorella* Girault but the scutellum terminating in a minute, upturned spinelike plate nearly as in *Epimetafea* Girault and the antennæ bear paired branches after the fifth funicle joint, the first five funicle joints with single branches from opposite sides alternately. Joints 2-5 short, joint 1 as long as a third or more of the long club, the funicle joints lengthening after the fifth; pedicel very short; twelve joints, no ring-joint. Scutellum with a median groove. Mandibles with one and two teeth within, respectively.

1. CHALCUROIDES VERSICOLOR Girault. Male. Genotype.

Length, 3.85 mm.

Metallic green, the axillæ and rest of thorax distad of them, purple, the abdomen blue, the long petiole greenish and roughened like the thorax; face bluish about the antennæ, striate; antennæ black (submetallic); wings hyaline, the venation brown. Legs dark, submetallic, the knees, tips of tibiæ and tarsi brownish.

Habitat: Townsville, Queensland. Parasitic upon *Myrmecia* species.

Type: No. *I. 1352*, South Australian Museum, Adelaide, tag and slide.

GENUS CHALCUROIDELLA Girault.

Like *Chalcorella* Girault but the antennæ with paired branches after the third funicle joint and thus like those of *Chalcuroides* but the third funicle joint bears a shortened second branch which is a fifth or less the length of its opposite or any of the branches; twelve antennal joints, no ring-joint, all the funicle joints with branches. Mandibles as in *Orasema*.

1. CHALCUROIDELLA ORIENTALIS Girault. Male. Genotype.

Length, 3.20 mm.

Dark metallic purple, the wings hyaline, the branches of the antenna dark chocolate brown; coxæ and femora concolorous, the cephalic femora less concolorous, the rest of the legs brown; abdomen except petiole and base, dark chocolate brown, venation black. Rugosely punctate, the head striate weakly, glabrous ventral half of face. Propodeum with a distinct lateral groove, otherwise convex, the scutellum with a very obscure median groove. First funicle joint as long as the next three combined, the club joint long, capitate, without branches, straight and longest. From lateral aspect scutellum with two upturned teeth in a longitudinal line near or on the apex. Petiole aciculated, dark greenish; posterior coxæ shining, very dark. Corrected description from types.

Habitat: Gordonvale (Cairns), Queensland. Forest, April 15, 1912.

Types: No. *Hy 3289*, Queensland Museum, Brisbane, two malés on tags (two pins), a head on a slide.

GENUS CHALCURELLOIDES Girault.

Like *Chalcurella* Girault but the scutellum as seen from beneath is faintly bidentate (or with a short emarginate plate) and the antennæ bear paired branches after the fourth segment, the first, second and fourth funicle joints with a single, rather long branch from the same side, the third joint with a very short branch; first funicle joint moderately long. Propodeum with a groove on each side, the median groove of scutellum subobsolete. Wings hyaline. Antennæ 12-jointed. Also somewhat like *Chalcuroides*. No ring-joint. Mandibles as in *Orasema*.

1. CHALCURELLOIDES HYALINUS Girault. Male. Genotype.

Length, 4 mm.

Æneous or coppery green, the propodeum green, also the abdomen and its petiole, the latter alutaceous, the abdomen and the posterior coxæ shining and smooth. Legs dark brown, the coxæ, posterior femora and proximal half of intermediate femora (more or less) concolorous with the body; cephalic femur subfuscous. Antennæ concolorous, suffused lightly with brownish. Thorax rugosely punctate, the head finely striate. First single branch of antennæ shorter than the other two long ones. Venation nearly black. Apex of abdomen yellowish brown. Scutellum rugoso-punctate. Petiole twice the length of the hind coxæ. Type re-examined.

Habitat: Gordonvale (Cairns), Queensland. Forest, April 16, 1913.

Type: No. Hy 3290, Queensland Museum, Brisbane, the male on a tag, the head on a slide.

GENUS THORACANTHA Latreille.

1. THORACANTHA EMERSONI new species. Male.

Length, 3.75 mm.

Metallic darkish green with purplish reflections, the long abdominal petiole concolorous, the abdomen brick red; femora fuscous, the tibiae lighter, the tarsi still somewhat paler; antennæ dark brown (chocolate), their branches the same color; face longitudinally striate but smooth below the antennæ, on each side with a groove leading from each bulla to the mouth. Scutellum with an obscure median groove, thickly prolonged somewhat at end, then terminating in a prong like the two arms of a tuning-fork. Antennæ 12-jointed, with nine branches on the nine joints of the funicle, the single club joint as long as the scape. Mandibles with one and two teeth within respectively. Mesoscutum with the hind angles subacute. Thorax rugulose and with short pilosity, the rugulosity transverse on scutum, longitudinal on scutellum. Petiole about twice the length of the hind coxæ.

The antennæ of this species are 12-jointed while those of *Thoracantha* are 11-jointed; also the scutellar processes seem quite different but for the present the species is placed here.

Described from three males captured by sweeping foliage and grass in a forest, April 13, 1913.

Habitat: Gordonvale (Cairns), Queensland.

Type: No. Hy 3291, Queensland Museum, Brisbane, a male on a tag.

The species is respectfully dedicated to R. W. Emerson.

Rightly, a study of this family should be based upon large series of reared specimens, since general collecting yields but very few females. For this reason, a large number of forms have been left undescribed. A most unsatisfactory state of affairs. However, the family needs intensive study over a comparatively long period of time. All the species seem to be parasitic upon the larvæ or pupæ of ants.