

AUSTRALIAN HYMENOPTERA CHALCIDOIDEA—II.

SECOND SUPPLEMENT.¹

By A. A. GIRAULT.

FAMILY MYMARIDÆ.

OOCTONINI.

GENUS CAMPTOPTERA Foerster.

1. CAMPTOPTERA GREGI Girault.

By mistake, in the original description, the name of this species was spelled *gregsi*. The single European species (*papaveris*) is not like the single North American species with which this species was compared. But the European species formerly identified by me as *papaveris* Foerster is a new species which is now named *saintpierrei* (*Camptoptera papaveris* Foerster in Girault, 1909). The species occurs in England and is much like the North American *pulla* of Girault. The species *gregi* is common in its type locality.

GENUS OOCTONUS Haliday.

1. OOCTONUS FLAVIPES new species of Girault and A. P. Dodd.

Male:—Length, 1.60 mm.

Black; legs (including coxæ) bright golden yellow; abdominal petiole golden yellow. Thorax normal. Scutum shining, finely reticulate, caudad sublongitudinally rugose; parapsides shining, with very faint reticulation. Axillæ glabrous; scutellum glabrous at immediate base, thence scaly and with half a dozen longitudinal rugæ. Propodeum rugose, the meson broadly smooth, bounded at caudal half by two sharp carinæ, rather wide apart. Antennæ 13-jointed, long and slender, distinctly longer than the body; pedicel small; second funicle joint the longest, one half longer than first; others gradually and slightly shortening, the tenth subequal to first. Fore wings long, rather broad but of the graceful type; somewhat infuscated; longest marginal cilia equal to one seventh greatest wing width; discal cilia present under marginal vein in two long and two shorter rows; discal cilia not fine, dense, arranged in about 30 rows.

Described from one male caught by sweeping in open forest, 1,300 feet, September 16, 1913 (A. P. Dodd).

Habitat: Kuranda, Queensland.

Type: No. Hy 2445, Queensland Museum, Brisbane, the male on a slide.

2. OOCTONUS GIGAS new species.

Female:—Length, 2.10 mm.

Jet black, the petiole of abdomen, hind coxæ, trochanters, scape and pedicel pale or straw yellow, the legs reddish brown, the hind tibiae below knees darker; distal third of blade

¹ See Volumes I and II, Memoirs Queensland Museum.

of hind wing sooty, the fore wing also sooty at same place, accented proximad (a little over half way to apex from end of venation) in a large ovate black spot narrowly connected along the middle to a smaller ovate spot in center of blade farther proximad (just distad of end of venation but in midlongitudinal line of blade). Petiole distinctly longer than wide but not as long as hind coxæ. Marginal vein elongate, nearly as long as the submarginal; marginal fringes of fore wing short, at widest part about 32 lines of dense discal cilia. Scape slender; pedicel shorter than funicle 1 which is suffused with yellow; funicles 2 and 3 subequal, longest, thrice longer than wide, the following joints regularly shortening, 8 longer than wide, about half the length of 2. Club long. Strigil strong. Hind tibial spur single. Cephalic femur fuscous toward base. A groove on scutum at distal third at meson. No sclerites between scutum and scutellum, the latter very long, rectangular, longer than wide; axillæ widely separated. Parapsidal furrows complete. Thorax polygonally reticulate or scaly. Propodeum long, longer than scutum, with two curved median carinæ forking from base and a long, oblique (meso-caudad) one running to meson at apex but originating at a fovea at cephalic margin far laterad. Abdominal segments subequal, moderate in length.

Male:—Not known.

Described from one female captured in jungle, September 15, 1913.

Habitat: Kuranda, Queensland.

Type: No. *Hy 2446*, Queensland Museum, Brisbane, the above specimen on a slide.

3. OCTONUS PROMETHEUS new species.

Female:—Length, 2.00 mm.

Very similar to *gigas* but differing in having the femora black, in being a little smaller, in lacking a median groove on distal scutum, in lacking the lateral carinæ on the propodeum and in having the distal spot on fore wing deeper black and not quite as large, more clearly delimited. Otherwise (except in sculpture) identical with *gigas* with which I have compared it. Thorax finely polygonally scaly, the propodeum subglabrous, with a distinct median channel whose margins are carinated, otherwise plane. Scutellum as long as the long propodeum, simple, the post-scutellum transverse linear. Lateral margin of propodeum carinated and a few interlacing carinæ caudo-laterad. Axillæ widely separated. Median channel of propodeum narrowing caudad.

Male:—Not known.

Described from one female captured in jungle, February 11, 1914 (A. P. Dodd).

Habitat: Babinda, Queensland.

Type: No. *Hy 2447*, Queensland Museum, Brisbane, the specimen on a slide with type of *Gonatocerus renani* Girault.

GENUS COSMOCOMOIDEA Howard.

There are no Australian members of this genus, the two species formerly placed here belonging to *Gonatocerus* Nees. The genus belongs to this tribe.

TRIBE GONATOCERINI.

EUSTOCHOMORPHA new genus.

Form slender, graceful, the abdomen long, slender, longer than the head and thorax combined, the ovipositor inserted at base, long, exerted for some length, the extruded portion over a third that of the abdomen; legs normal, the tarsi 5-jointed. Thorax long, the parapsidal furrows complete, the sclerites normal, no phragma. Antennæ 12-jointed, the club 2-jointed. Fore wings somewhat as in *Signiphora*, the marginal fringes moderately short (the longest about a fourth the greatest wing width), the discal ciliation sparse. Hind wings rather short, slender.

1 EUSTOCHOMORPHA HAECKELI new species. Female. Genotype.

Length, 1.25 mm. excluding the ovipositor. Uniformly brownish black, the wings hyaline, the legs, scape and pedicel yellowish, the coxæ and hind tibiæ and femora more or less concolorous; funicle joints all distinctly shorter than the pedicel, the first two subequal, barely longer than wide, the third plainly longer than them but only slightly longer than any of the following joints of the funicle; club short, wider than the filiform funicle, its distal joint plainly longer than the other, somewhat longer than any of the funicle joints.

Habitat: Gordonvale (Cairns), Queensland. Forest, December 31, 1912.

Type: No. Hy 2118, Queensland Museum, Brisbane. On a slide.

Dedicated to Ernst Haeckel.

GENUS GONATOCERUS Nees.

Synonyms: *Agonatocerus* Girault; *Gonatocroides* Girault.

1. GONATOCERUS TOLSTOII Girault. Female.

Length, 0.80 mm.

Jet black and thus in the group of species including *nox* and *lomonosoffi* with which it is more closely allied. It differs from the latter in the inequality of the funicle joints, the first four joints all short but unequal, 1 and 2 equal (1 sometimes longer), globular, small, 3 and 4 equal (4 a little larger) globular but about twice larger, 4 less than half the length of 5 which is longest; joint 6 distinctly shortest of the distal four funicle joints, while 7 and 8 are subequal or nearly to 5. Pedicel as long as distal funicle joint. In *lomonosoffi*, joint 6 subequal to 5. Fore wings slightly broader in this species but otherwise the two cannot be distinguished.

Habitat: Gordonvale (Cairns), Queensland. Forest, 1,500 feet, May 29.

Type: No. Hy 2449, Queensland Museum, Brisbane. On a slide.

2. GONATOCERUS LOMONOSOFFI Girault. Female.

Length, 0.70 mm. Small for the genus.

Jet black and thus distinguished from all species of the genus in Australia excepting *nox* from which it differs as follows: Smaller, fore wings distinctly not so slender but rather of the broader type (yet not wide, only about fifteen lines of discal cilia), the first three funicle joints short and subequal, fourth only a little longer than third, the latter not longer than second as in *nox*, 5 plainly twice the length of 3, not so in *nox*; discal ciliation of fore wings absent under marginal vein and the body somewhat darker. Wings hyaline.

Habitat: Kuranda, Queensland. Jungle, May 18.

Type: No. Hy 3452, Queensland Museum, Brisbane, the female on a slide.

3. GONATOCERUS BICOLOR Girault.

Only the female is known. There is now no reason for thinking that a mesopraescutum is present.

4. GONATOCERUS AUSTRALIENSIS Perkins. Male, female.

“*Ooctonus* Haliday.

“ Male antennæ with 13 joints, the scape flattened and short, the second joint very small and roundish, the following ones subequally elongate, flattened and wide, but not so wide as long. Antennæ of female 11-jointed; scape very long, set on an elongate pedicel, so as to appear obsoletely 2-jointed, and as long as the three following joints together; club as long as the three preceding joints together. Posterior ocelli wide apart, perhaps placed close to the eye margins, the collapse of the head in dried specimens making it impossible to ascertain this point. Scutellum large and elongate, longer than the mesonotum; the axilla encroaching a little

or not at all on the scapulae; propodeum with two raised lines or longitudinal carinae. Tarsi 5-jointed. Apical cilia of front wings short, many times shorter than the greatest width of the wings. Abdomen pedicellate.

“*Ooctonus australiensis*, sp. nov.

“Black, shining, antennae of the male black, of the female with the scape mostly pale yellowish-brown, the second joint also more or less brownish, the following three blackish, the sixth also dark but less so than the preceding, seventh, eighth and ninth white, tenth much wider than the ninth and black, club black. Legs brownish yellow or testaceous, posterior tibiae more or less darkened. Abdomen pedicellate, brownish black or piecous. Length $1\frac{1}{2}$ mm.

“*Habitat*: Cairns, Queensland; two examples extracted from eggs of a conspicuous *Tettigonia* common in the cane fields.”

5. GONATOCERUS CINGULATUS Perkins. Female.

“Yellow; the face, the whole of the flagellum of the antennae, two adjacent spots on the front of the mesonotum which do not reach back to the middle, one on the anterior angle of the scapulae, another on each side adjoining the tegulae and a median one between these, the propodeum, the meso- and metapleura, hind coxae, all tibiae, tarsi above, two bands near middle of abdomen (appearing as one very broad one in contracted specimens) and sheaths of ovipositor dark, black or blackish fuscous. Scape and second joint of antennae and front and middle coxae more or less dark on margins. Front tibiae with distinct, small, stout spines, placed remotely and in line. Length $1\frac{3}{4}$ mm.

“*Habitat*: Brisbane, Queensland.”

6. GONATOCERUS SULCATUS new species.

Male:—Length, 1.25 mm.

Velvety black, the wings transparent, the body marked with intense golden yellow as follows: Head (excepting upper occiput and vertex), prothorax, legs except caudal two pairs of tibiae (caudal tibiae darker than middle, black), sides and venter of cephalic half of mesothorax and the scape. Antennae dusky yellow, the scape very short (without the bulla wider than long), the pedicel a little shorter than the scape; funicle 1 over twice the size of the pedicel, a little longer than wide, 2 a little longer than 1, 3 and following each a little longer than 2, subequal; funicle and club joints longitudinally striate; joints 9 and 10 of funicle a little the longest, nearly twice longer than wide and not so thick as 1. Thorax coarsely scaly, the propodeum with fine sculpture, long, with a median carina and carinated lateral margin. Scutum with a distinct median sulcus. Hind tibial spur long, slender. Cephalic tibiae armed as in *shakespearci*. Caudal wings broad with short caudal marginal cilia. Wings not visible plainly in balsam mounts but the marginal cilia very short.

Female:—Not known.

Described from one male captured April 15, 1914 in forest (A. P. Dodd).

Habitat: Cloncurry, Queensland.

Type: No. Hy 2450, Queensland Museum, Brisbane, the specimen on a slide with type of *Gonatocerus ayrensis* Girault.

7. GONATOCERUS NONSULCATUS new species.

Male:—Length, 1 mm.

Very similar to the preceding but the scutum simple, the thoracic sculpture somewhat finer, the mesothorax concolorous and also the caudal coxae and femora. Fore wings subtruncate at apex, very transparent. Pronotum above dark.

Female:—Unknown.

From one male captured at the same place with *sulcatus*.

Habitat: Cloncurry, Queensland.

Type: No. Hy 2451, Queensland Museum, Brisbane, the specimen on a slide.

8. GONATOCERUS ANGUSTIVENTRIS new species of Girault and A. P. Dodd.*Female*:—Length, 1.50 mm.

Black; abdomen a little suffused with brown; knees and tarsi yellow; antennal scape suffused with yellow.

With the habitus of *renavi* Girault and *grotiusi* Girault. Scutum with a median groove; scutum and scutellum with fine, polygonal scaly sculpture. Propodeum with a groove on each side of the meson, the grooves rather widely separated, also with a carina near each lateral margin, in the dorsal aspect. Abdomen tapering at its base. Antennæ 11-jointed, first funicle joint much shorter and narrower than the pedicel; second distinctly longer than first, as long as pedicel; third distinctly longer than second, three times as long as wide; 4-8 very slightly and gradually shortening, the eighth as long as the pedicel; club almost as long as the three preceding joints united. Fore wings long, rather broad, but of the graceful type; somewhat infuscated; longest marginal cilia equal to one eighth greatest wing width; discal cilia absent beneath the marginal vein, not fine, dense, arranged in about 30 rows.

Male:—Not known.

Described from one female captured by sweeping in open forest, 1,300 feet, September 16, 1913 (A. P. Dodd).

Habitat: Kuranda, Queensland.*Type*: No. Hy 2452, Queensland Museum, Brisbane, the specimen on a slide.**9. GONATOCERUS SHAKESPEAREI** new species.

Female:—Length, 1.35 mm., excluding ovipositor which is extruded for a distance equal to from a third to half the length of the abdomen.

Long and slender, the abdomen longer than the rest of the body. Golden yellow, the wings hyaline; flagellum, dorsal edge of scape, valves of ovipositor, a cuneate marking on each side of median line of cephalic half of scutum; a large triangular spot covering most of each parapside; center of scutellum at base (in one specimen down whole of meson broadly); meson of propodeum broadly and distal one or two tarsal joints, dusky black. First four funicle joints subequal, subglobular, that portion of the funicle slenderer than the following; joints 5-8 of funicle subequal, each wider and over twice the length of any of the joints 1-4. 7 a little shorter than the others. Discal cilia of fore wing disappearing some distance out from apex of venation, not dense except disto-cephalad yet well distributed over the blade, the fore wings moderately broad (about 16 lines of cilia where broadest), oblately rounded at apex; marginal cilia of fore wing indistinct, very short, absent around apex. Caudal wings rather broad (about five lines of discal cilia), the caudal marginal cilia about as long (or not quite) as the blade is wide. Thorax longitudinally shagreened, no grooves. Abdomen tapering toward base. Proximal tarsal joint long and slender (except in cephalic legs).

Male:—Not known.

Described from two females captured by sweeping in forest, October 10, 1913 (G. F. Hill).

Habitat: Port Darwin, Northern Territory and Cloncurry, Queensland.*Types*: No. Hy 2435, Queensland Museum, Brisbane, the specimens on a slide (Port Darwin).

A female of this species was captured at Cloncurry, April 13, 1914 (A. P. Dodd). The specimen, evidently a variant, had somewhat different fore wings and slightly longer funicle joints but otherwise the same. The cephalic tibiae are armed with scattered, distinct, short, thorn-like spines.

10. GONATOCERUS BOSWELLI new species.*Female*:—Length, 1.05 mm.

Golden yellow; two rather broad dusky stripes across dorsum of abdomen, the first a little distad of middle. Cephalic half of scutum, scutellum except the lateral margins, propodeum excepting a narrow yellow line some distance laterad of meson, tegulae, postscutellum,

flagellum and hind tibiae, black. Occiput dusky. Caudal margin of the black of scutum prolonged caudad a little at meson. Tip of ovipositor valves jet black. Wings hyaline. Funicles 4 and 5 longest, 4 narrower than 5, each somewhat longer than wide; joints 2 and 3 a little longer than wide, 1 subquadrate, the pedicel subequal to 5; 6 and 7 subequal, slightly shorter than 4 or 5. Club rather long. Longest marginal cilia of fore wing between a fourth and a fifth of the greatest wing width where there are about 25 lines of fine discal ciliation. Fore wings of the graceful type but not narrow. Valves of ovipositor slightly extruded.

Male:—Not known.

Described from one female taken in jungle, March 6, 1914 (A. P. Dodd).

Habitat: Cooktown, Queensland.

Type: No. *Hy 2454*, Queensland Museum, Brisbane, the specimen on a slide.

11. GONATOCERUS CIRCUMVAGUS new species.

Female:—Length, 2.25 mm.

Like *mirissimus* but the abdomen and the hind tibiae are black, the first funicle joint over twice longer than wide and slenderer, joints 2 and 3 longest, distinctly over twice the length of the pedicel. More like *poincarci* but the hind tibiae and the pedicel are black, the longitudinal black stripe on the fore wing from immediate apex and is longer, abruptly fading but the fainter portion continuous, not broken, leaving a faint, proximal spot in the mid-longitudinal line. Thorax shining black, with no distinct sculpture, the pronotum long and quadrate and with either a groove or a carina along each side like parapsidal furrows; mesoprascutum absent. Scutellum very long. Hind tibial spurs double. Fore wings somewhat broader than those in *poincarci*.

Described from one female captured by sweeping in jungle, September 15, 1913 (A. P. Dodd).

Habitat: Kuranda, Queensland.

Type: No. *Hy 2455*, Queensland Museum, Brisbane, the above specimen on a tag (with the type of *G. carlylei*).

12. GONATOCERUS HUMBOLDTI Girault. Genotype of *Agonatocerus*.

Agonatocerus humboldti Girault.

This species was originally described erroneously, parts of the antennae having been lost while two pieces of them became so disposed in the mount of the single specimen as to make these organs appear 13-jointed. Also, the median sulcus of the scutum is in reality a yellow line down the meson; the lateral margins of the scutum are also yellow. The species is valid but resembles *huyghensi* and *metschnikoffi*. From the former it differs in the color of the thorax and abdomen, its slender build and narrow fore wings; and from *metschnikoffi* in having the yellow on the thorax, more yellow at base of abdomen, in the color of the legs and the more graceful body and appendages. Also, the distal half of the scape is colored. The four funicle distal joints are each about twice longer than wide.

Compared with types of all Australian species.

13. GONATOCERUS AUSTRALICA Girault. Genotype of *Gonatoceroidea* Girault.

Gonatoceroidea australica Girault.

This species appears to be valid but should be compared with the following from which it seems to differ as follows: From *goethei* in that the legs are colored and all of thorax, being otherwise the same as *goethei*; from *haeckeli* in lacking the swollen hind femora present in that species; from *huyghensi* in having funicle 4 longer than 6 and not longer than the pedicel; from *fasciiventris* in not having pleurum or lateral line of abdomen yellow and there is no regular discal ciliation under the marginal vein but only a V-shaped line; from *darwinii* in that the fore wings are as in *haeckeli*.

In the species *fasciiventris*, the so-called yellow stripes across the abdomen are the incisions between the segments.

14. GONATOCERUS TRICOLOR Girault.

Antea, first supplement, p. 113, omit last sentence in line 2-3 as irrelevant.

What appeared to be the female was captured May 20, 1914, by sweeping in forest, type locality. Distal half of abdomen and hind tibiae (only) in this specimen dusky black. The antennae are similar to those of *bicolor* and *tricolor* may be but a variety of *bicolor* but very doubtfully so.

15. GONATOCERUS GREGI new species.

Male:—Length, 1.75 mm.

Jet black; first two pairs of knees, tarsi (hind tarsi darker) and cephalic tibiae yellowish. Fore wing with two broad cross-stripes of dusky, the first across a little distad of venation (longer cephalo-caudad than proximo-distad), the second at apex, wider than the first, occupying about a fourth of the wing surface and separated from the first by a space narrower than the width of the latter. Thus, very similar to *renani* except that the cephalic femora are black, the first band of the fore wing is very distinctly much less than its own width distad of apex of venation and there is no infuscation under the marginal vein. Also, there is no median grooved line on the scutum; the proximal margin of second stripe of wing is less convex and the hind wings are dusky at tip. Cephalic tibiae armed with scattered prickle-like setae (*renani* also). Funicle joints nearly twice longer than wide, 1 shorter, all distinctly longer than the pedicel. The discal cilia of fore wing nearly reaches venation in this species (some distance distad of it in *renani*). Hind tibial spurs double.

From one male caught by miscellaneous sweeping, May 11, 1914 (A. P. Dodd).

Habitat: Murwillumbah, New South Wales.

Type: No. Hy 2456, Queensland Museum, Brisbane, the specimen on a slide.

16. GONATOCERUS FLOSCULUS new species.

Female:—Of the same build and so on of *shakespearei* but black, the venter of prothorax and under sides of mesonotum yellowish, the last two pairs of tibiae and scape dusky, the caudal femur dark like their tibiae. Knees, femora, tips of tibiae and the tarsi pale yellowish. Antennae about as in the named species but the scape is more compressed, the distal four funicle joints somewhat longer, also the club. Fore wings as in *shakespearei* but the marginal vein is a little longer. The ovipositor is a little shorter. Scutum with an obscure median sulcus centrally. Thorax rather coarsely coriaceous, the propodeum smooth, noncarinate. Scutellum simple. Otherwise as in *shakespearei*. Colored much like *nonsulcatus* but that species has no obscure median groove on scutum, the propodeum bears a median carina and the fore wings bear extremely fine discal ciliation which is very faint. Moreover, *nonsulcatus* has a normal abdomen (as probably all males of the species with females of the peculiar habitus of this species do). In *nonsulcatus*, the cephalic tibia is no longer than the combined lengths of the first three joints of the tarsus; in this species it is longer than the three joints taken together. In this species grooves on each side of the meson of propodeum as in *angustiventris* Girault and Dodd are faintly indicated.

From one female caught in forest, Tweed River, May 4, 1914 (A. P. Dodd).

Habitat: Tweed Heads, New South Wales.

Type: No. Hy 2457, Queensland Museum, Brisbane, the specimen on a slide with male type of *haeckeli*.

17. GONATOCERUS COMPTEI Girault.

Female:—The distal half of the abdomen sometimes jet, the scutellum with a large round black spot at base centrally and the funicle joints all a little longer. Base of abdomen sometimes not striped.

A female, forest, May 27, 1914, type locality.

TRIBE ANAPHINI.

GENUS PARANAPHOIDEA Girault.

The thorax bears a phragma.

1. PARANAPHOIDEA CAUDATA new species.

Female:—Length, 1 mm.

Very similar to *egregia* Girault but the conspicuous black line along each side of the postscutellum absent, this sclerite wholly yellow; the so-called V-shaped yellow marking on the scutum (in reality, two acute, long, black wedges from cephalad on a yellow ground and extending about to caudal margin) is absent since the black areas from cephalic margin on each side are rectangular, somewhat longer than wide but extending only half way to the caudal margin leaving the meson and lateral margins of cephalic half of scutum narrowly yellow. The legs are wholly yellow and the antennae except the club. Funicle 1 is somewhat larger. Otherwise identical.

Male:—Unknown.

Described from female taken from a window, February 3, 1912.

Habitat: Cooktown, Queensland.

Type: No. Hy 2459, Queensland Museum, Brisbane, the specimen on a slide with the type of *egregia*.

2. PARANAPHOIDEA INTERMEDIA new species.

Female:—Length, 1.10 mm.

Exactly similar to *egregia* but distinctly larger and characterised by having finer discal ciliation on the fore wing (about 32 lines) and the head is all yellow, together with the legs. The funicle joints are all somewhat longer, the cephalic tibiae bear strigils. In both species, there is a triangular black spot laterad on postscutellum. In all four species of the genus, the axillae are margined with yellow caudad and laterad.

Male:—Not known.

From one female captured on April 6, 1914, by sweeping grass in forest.

Habitat: Gordonvale (Cairns), Queensland.

Type: No. Hy 2460, Queensland Museum, Brisbane, the specimen on a slide.

A male of a species of this genus collected by Mr. A. P. Dodd at Cloncurry, Queensland, April, 1914, resembled closely the genotype. The male antennae are as in *Stethynium*. The color pattern of the thorax appears to be a generic characteristic.

GENUS POLYNEMOIDEA Girault.

This genus differs fundamentally from *Stethynium* Enoch in lacking the thoracic phragma.

GENUS STETHYNIUM Enoch.

1. STETHYNIUM CINCTIVENTRIS Girault.

Female:—Length, 0.80 mm.

With the habitus of *Anaphes*. Black, the abdomen with a broad band of silvery white around its base which occupies nearly a third of the surface; legs white or nearly, the antennae black, the first three funicle joints cylindrical, the second longest, 1 and 3 more or less equal, a third shorter than 2; 6 subglobular, a third shorter than 5 while 4 is a fourth shorter than 5; proximal club joint nearly half of the club. Fore wings rather narrow and graceful, with about fourteen lines of discal cilia across the widest part of the blade, the longest marginal cilia about half the greatest width. Hind wings rather narrow and curved, with five lines of fine discal cilia toward tip, the third and fourth lines soon disappearing. Scutum more or less pallid especially at caudal half, the parapsides and scutellum white. Strigil present. Scutellum rectangular, the mesopostscutellum much longer than it and joined onto the phragma (two

pairs of sclerites between scutellum and postscutellum). Fore wings with a more or less distinct subfuscous stripe across at about the middle. Valves of ovipositor slightly exerted. Tibial spurs single.

Male:—Not known.

Described from one female captured September 3, 1913 by sweeping in a jungle pocket.

Habitat: Gordonvale (Cairns), Queensland.

Type: No. Hy 2461, Queensland Museum, Brisbane, the above specimen on a slide with an *Anagrus* male.

2. *STETHYNIUM FLAVINOTÆ* new species.

Female:—Length, 0.65 mm.

Black, the wings hyaline, the body marked with golden yellow as follows: Legs, the whole of the large, peltate scutellum which bears a deep median sulcus, distal fifth of scutum, the sclerites between scutum and scutellum, center of vertex, caudal half of each parapside and much of the face. Antennæ black suffused somewhat with yellow; distal funicle joint a little longer than wide, subequal to 1, 2 longest, plainly longer than wide, 3 and 4 subequal, slightly shorter than 2; distal club joint longest. Fore wings very broad (about 36 lines of very fine discal cilia), their longest marginal fringes not much more than a fifth the greatest wing width. Hind wings broad, bearing about six lines of sparse discal cilia, curved, their longest marginal fringes distinctly longer than those of the fore wing. Phragma and strigils present.

Male:—The same but only the propleura, mesopleura, ventral cheeks, the face and the base and margins of phragma are yellow. Thorax very finely sculptured. Club 2-jointed. Marginal cilia of fore wing longer.

Described from one female from fleshy galls on gum, March 20, 1911 and two males labelled "52. From galls," all from the collections of the National Museum, Melbourne, Victoria.

Habitat: Melbourne?, Victoria.

Type: No. Hy 2462, Queensland Museum, Brisbane, the above female on a slide with the types of *perlatipennis*.

3. *STETHYNIUM GLADIUS* new species.

Female:—Length, 0.75 mm., excluding ovipositor which is extruded for nearly half the length of the abdomen and dusky black.

Pale golden yellow, marked with black as follows: Cephalic half of pronotum except lateral margins and meson (two large wedged spots), cephalic half of each parapside, a round dot on axilla cephalad, two dots on abdomen one on each side of meson just before tip, two dots on meson of same just out from base in a line longitudinally and a narrow cross-stripe a little distad of middle accented on each side at lateral margin and obscurely, narrowly divided along meson. Scutellum with three grooves, one median. Legs, scape and pedicel yellow, rest of antenna blackish. Funicle 1 shortest, barely longer than wide, 3 longest, somewhat longer than wide, the others subequal to each other and to the pedicel. Fore wings slender, their longest marginal cilia about three fourths the greatest wing width and caudo-distad. Usual for the genus with the exception of the ovipositor. Pedicel globular. Hind wings linear, with two complete lines of discal cilia along each margin.

From one female caught in forest, June 26, 1914.

Habitat: Gordonvale, Queensland.

Type: No. Hy 2463, Queensland Museum, Brisbane, the female on a slide with type *maxwelli*.

4. *STETHYNIUM MAXWELLI* new species.

Female:—Length, 1.12 mm.

Jet black, the large mesopostscutellum contrasting golden yellow and with two lateral grooved lines. Legs pale yellow, the caudal femur dusky. Fore wings lightly infuscated,

outlining a large distal ovate hyaline area with the broader end at apex of the blade and its narrower end penetrating centrally more than half way from apex to apex of venation. Tip of abdomen whitish, the pallid dusky valves of the ovipositor extruded a short distance. Thorax as in *cincliventris* which also appears to have the lateral grooves on postscutellum; however, here, the scutellum is longer and widens somewhat caudad. Scape and pedicel pallid dusky; funicle 3 longest, subequal to the pedicel, nearly twice longer than wide, 4 and 6 shortest, subglobular, 2 and 5 subequal, somewhat shorter than 3, 1 a little shorter than 2; club only slightly wider than the funicle, its middle joint shortest, distinctly wider than long. Strigil distinct. Ovipositor inserted at base of abdomen. Fore wings as in *Paranophoidea*, truncate at apex, bearing about 32 lines of fine discal ciliation, the marginal cilia very short. Caudal wings broad, with about 7 lines of discal cilia, their caudal marginal cilia distinctly not as long as the greatest width of the blade (which is at distal third) but over twice the length of the uniform marginal cilia of the fore wing. Hind tibial spur single. Caudal femur with numerous very short, stiff setæ dorsad.

From one female caught in forest, June 6, 1914.

Habitat: Gordonvale (Cairns), Queensland.

Type: No. Hy 2464, Queensland Museum, Brisbane, the specimen on a slide with the preceding species.

Dedicated to Clerk Maxwell.

5. STETHYNIUM NOTATUM new species.

Female:—Length, 0.50 mm.

Much like *daltoni* but the abdomen bears four distinct cross-stripes of black, the first at base, the cuneate marking on each side of meson of scutum reaches three fourths the way to caudal margin (only about half way in *daltoni*) and there is a round black spot just caudad of each parapside (besides the more obscure, crescentic marking farther caudad and present in *daltoni*). Also the scape and pedicel are lemon yellow. Structurally differs in that funicle 2 is somewhat shorter being only a little longer than wide, 3 is quadrate (6 is globular and larger than 5 in both species); the fore wings are less slender (about 16 lines of discal cilia where broadest); the caudal wings with five or six lines of discal cilia which are uniformly distributed distad and they are broader than with *daltoni*. Compared with type of *daltoni*.

From four females which emerged May, 1914 from gall No. 31 (of H. Hacker).

Habitat: Brisbane, Queensland.

Type: No. Hy 2465, Queensland Museum, Brisbane, four females on a slide.

The species *lavoisieri* bears a more or less distinct dusky band across abdomen somewhat proximad of middle while *daltoni* has a distinct cuneate marking on cephalic scutum on each side of the meson (cephalic half) and the cephalic end of each parapside is dusky. The types of *vesalii*, *cavieri*, *lavoisieri* and *mayeri* have been re-examined.

6. STETHYNIUM PERLATIPENNE new species.

Female:—Length, 0.90 mm.

Marked like *flavinotæ* but more robust, both wings very much broader, the fore wing bearing about forty-eight lines of discal cilia, the hind wings about eight.

Male:—Not known.

Described from two females reared with *flavinotæ*.

Habitat: Melbourne?, Victoria.

Types: No. Hy 2466, Queensland Museum, Brisbane, the above specimens on a slide with the type female *flavinotæ*.

7. STETHYNIUM LATIPENNE Girault.

The pronotum, scutum excepting lateral and caudal margins and the median line more obscurely, the tegulæ, the cephalic third of each parapside and the abdomen are velvety

MEMOIRS OF THE QUEENSLAND MUSEUM.

black. Differs from *flavinotæ* and *perlatipenne* in bearing distinctly longer marginal cilia on the fore wing.

The males of *Stethynium* may be distinguished from the males of *Paranaphoidea* by the characteristic shape of the fore wings and the arrangement of the longer marginal cilia. Otherwise, they are very much alike.

GENUS ANAPHOIDEA Girault.

1. ANAPHOIDEA GALTONI Girault.

Male:—Black, the wings hyaline, clouded along proximal half, the scape, pedicel and legs dusky brown, the antennæ otherwise black, the funicle joints a little over twice longer than wide. Same as the female.

From one male captured with the female type specimen.

GENUS ANAPHES Haliday.

1. ANAPHES MAZZININI new species.

Female:—Length, 0.50 mm.

In general like the North American *gracilis* and very similar to the Australian *kantii* from which it differs as follows: The head except vertex and all of thorax except cephalic third of scutum are golden yellow, the exceptions black or nearly; distal half of abdomen black. Club and caudal femur dusky; rest of legs and antennæ pale yellow. The fore wings are somewhat broader, their discal ciliation apparently absent but sparse and very faint—a long line along cephalic margin and scattered cilia in the cephalic half of the blade. The antennæ are similar in structure. Strigil present. The fore wings are a little broader than their longest marginal cilia (a little narrower in *kantii*).

Habitat: Capeville (Pentland), Queensland. Forest, December 26, 1912.

Type: No. Hy 2467, Queensland Museum, the female on a slide.

GENUS PARANAGRUS Perkins.

1. PARANAGRUS OPTABILIS Perkins.

Paserocean, Java. Associated with the eggs of *Dicranotropis vastatrix* Breddi on sugar-cane.

ANAGROIDEA new genus.

Female:—Like *Anagrus* Haliday but the scutellum is preceded by a sclerite which is nearly as long as itself, both wider than long, the antennæ inserted at the clypeus, the scape elongate, also funicle 1 and the club, the latter nearly as long as the funicle; no phragma; the abdomen depressed ovate, subpetiolate, the second segment occupying over a third of the surface, the ovipositor not exerted. Strigils present. Mandibles slender, bidentate. Fore wings as in *Anaphes* but their marginal cilia short. Caudal wings very broad, the blade shaped like an ordinary table-knife. Body with rather rough sculpture. Caudal tibial spurs double. Tarsi 4-jointed. Male antennæ filiform, 13-jointed. Black. With the habitus of certain scelionids.

Type: *Eustochus dubius* Girault.

1. ANAGROIDEA DUBIA (Girault).

Eustochus dubius Girault, first supplement, pp. 128-129.

The female is like the male except the 9-jointed antennæ as described in the foregoing. The vertex is finely transversely lined, the propodeum rugose. One specimen, Gordonvale (Cairns), Queensland, forest (2,600 feet), June, 1913. The type is a male, the type locality Gordonvale.

The genus *Anagroidea* is closely allied with *Cleruchus* Enoch but that genus has the scutellum longer than wide, the male antennæ are apparently 12-jointed, the sculpture is not rough, the marginal vein is distinctly shorter, the fore wings are narrow and with very long marginal cilia and the hind wings are not enlarged. *Erythmclus* Enoch (= *Enasius* Enoch) is valid on thoracic structure. The phragma is present and the scutellum is preceded by a single rectangular sclerite at the meson and between the axillæ. In *Anagrus*, the scutellum is followed by a pair of sclerites and the phragma is present.

PARANTHEMUS new genus.

Male:—Characterised by the antennæ which are only 3-jointed, scape, pedicel and a long unjointed club bearing three conspicuous whorls of long stout setæ. Phragma present. Fore wings as in *Anthemus* Howard. Mandibles edentate, obliquely truncate at apex, the extreme apex acute. Pedicel long, stout but not half the length of the tapering club. Scutellum hemispherical, apparently a solid piece.

Female:—Not known.

Type: The following species.

1. PARANTHEMUS SPENCERI new species.

Male:—Length, 0.43 mm.

Pale golden yellow and resembling the common species of *Anagrus* in general appearance; cephalic third or less of scutum dusky blackish on each side of meson there being a short cuneate area; fore wing lightly infuscated under the marginal vein, margin to margin, the longest marginal cilia about three fourths the greatest wing width. Discal cilia of the fore wings arranged in about seven lines, distinct, not dense. Hind wings narrow, with a single distinct line of discal cilia along the cephalic margin, the caudal marginal cilia much longer than the greatest width of the blade. Tarsi not especially long.

Female:—Not known.

Described from one male captured in jungle, February 4, 1914 (A. P. Dodd).

Habitat: Babinda, Queensland.

Type: No. Hy 2463, Queensland Museum, Brisbane, the specimen on a slide.

Dedicated to Herbert Spencer.

TRIBE MYMARINI.

GENUS POLYNEMA Haliday.

1. POLYNEMA POINCAREI Girault.

The distal band on fore wing covers the distal fourth of the wing rather than distal fifth.

A female was taken at Cooktown, Queensland, by sweeping in jungle, March 6, 1914 (A. P. Dodd). The head is polished. Pronotum as long as the scutum. Thorax smooth, the propodeum noncarinate. Scutellum without a cross-line of punctures before apex. Compared with type in balsam.

Male:—Like the female. Antennæ black, the pedicel short, yellow, the funicle joints 3-4 times longer than wide except the last two which are shorter, the last only one and a half times longer than wide, much shorter than the club joint which is subequal to the penultimate funicle joint. Pedicel subglobose.

Described from a male captured in a jungle pocket, April 2, 1914 at Gordonvale (Cairns), Queensland.

A. POLYNEMA POINCAREI NIGRITHORAX new variety.

Female:—Polished black; pronotum quadrate, subequal to scutum; scutellum longer

perfectly simple, no cross-line of foveæ before tip; propodeum perfectly plane, polished; no pubescence. Thorax jet black, also distal one or two funicle joints. Otherwise in color like the type forms. Petiole longer than the long hind coxæ.

Captured September 13, 1913 at Kuranda (A. P. Dodd).

Habitat: Kuranda, Queensland.

Type: No. Hy 2469, Queensland Museum, Brisbane, the above female on a slide.

2. POLYNEMA FRANKLINI Girault.

This species also differs from *rousseaui* in having no disto-cephalic spot on the fore wing.

3. POLYNEMA SAPPHO Girault.

The color of the legs given in the table of species is correct.

4. POLYNEMA LODGEI Girault.

Antea, first supplement, p. 123, fourth line from bottom *second* read *second*.

5. POLYNEMA FRATER Girault.

The type is a male, the type locality Ingham, Queensland.

6. POLYNEMA ROMANESI Girault.

In the table of species (first supplement, p. 127), this species should be included within the group containing *draperi* and allies. It differs from *draperi* in its greater size and longer antennal joints. Thus, funicle 2 is only about twice the length of the pedicel in male *draperi*, plainly thrice its length in male *romanesi*. The tarsal joints are much longer. From *nordawi* female, *romanesi* differs in the greater slenderness as with *draperi* and the hind legs are wholly orange yellow. The first joint of caudal tarsus is distinctly less than half the length of the caudal tibia in *nordawi* (somewhat less so in *draperi*) but in *romanesi* it is about half the length of the caudal tibia or a little more. In *romanesi*, joint 1 of the caudal tarsus is distinctly longer than any of the funicle joints while in male *draperi* it is about as long as the longest joints of the funicle in that species. In female *nordawi* the tarsal joint is a little shorter than funicle joint 2. Types of the species named re-examined.

7. POLYNEMA WALLACEI new species.

Female:—Length, 2 mm.

Characterised by bearing on the fore wing longitudinally a large subovate fuscous marking which fills over the distal third of the blade and thus running to *lodgei* Girault from which it differs in that the longitudinal marking in that species is uniform and central, columnar; also in *lodgei* the club is short and stout while in this new species it is long and slender; in *lodgei*, also, the distal funicle joints are shorter. The wings are about the same otherwise. Antennæ black except the first three joints which together with the first two pairs of legs (except coxæ and a ring around first femur at base), the petiole except distal half and the hind tarsi, are chrome yellow. Hind legs somewhat darker. Funicle joint 6 over twice longer than wide, shortest, somewhat longer than the pedicel. Ovipositor just tipping the abdomen. In *lodgei* the fore wings are a little broader and funicle joint 6 is not twice longer than wide but subequal to the pedicel. Differs from *grotiusi* in being smaller, the nonexserted ovipositor, the different color and somewhat longer antennal club. First two or three abdominal segments long, the others transverse. Short carinæ inclose the propodeal spiracle. Cross-groove of scutellum finely punctate. Scutellum, pronotum, scutum, axillæ, parapsides (except laterad centrally) polished; vertex faintly sculptured; scutellum with indication of a median groove at base (a longer than wide fovea); abdomen polished. Propodeum with a distinct median carina, which forks at apex; its spiracle minute.

From two females captured in jungle, February 4, 1914 (A. P. Dodd).

Dedicated to A. R. Wallace.

Habitat: Babinda, Queensland.

Type: No. *Hy 2470*, Queensland Museum, Brisbane, one female on a slide with a female of *mendeli*.

8. POLYNEMA ALIGHERINI new species.

Female:—Length, 1 mm.

In my table of Australian species runs to *spenceri* and allies (*australiense* and *pax*) but differs from all of them in bearing distinctly shorter marginal fringes on the fore wing, the longest of these cilia being not a half of the greatest wing width but between a third and a half of that distance. Black, legs and antennæ pale golden yellow; club black; distal three funicle joints more or less dusky. Funicle 1 subelongate, distinctly longer than the pedicel, 2 longest, a third longer than 1, 3 a little shorter than 2; next three funicle joints each shortening, each widening distad, 6 a little shorter than 1 but longer than the pedicel. Ciliation of fore wing not disappearing proximad. Funicle 2 five times longer than wide. Joint 1 of hind tarsus somewhat longer than funicle 2, somewhat less than half the length of the hind tarsus. Compared with types of *pax*, *draperi*, *zangwilli*, *romanesi* and *nordau*.

Male:—Not known.

Described from one female captured in jungle, April 13, 1914.

Habitat: Gordonvale (Cairns), Queensland.

Type: No. *Hy 2471*, Queensland Museum, Brisbane, the specimen on a slide.

Dedicated to Dante Alighere.

9. POLYNEMA THOREAUINI new species.

Female:—Length, 1.50 mm., excluding ovipositor which is extruded for somewhat more than a fourth the length of the abdomen.

In my table runs to *australiense* and *pax* but may be separated at once because of the distinctly extruded ovipositor. The wings are more densely ciliated than in *australiense* and the funicle joints are longer. Closest to *pax* which has the ovipositor a little extruded but the antennæ are all black and also the legs (the tarsi and petiole of abdomen yellow); also the fore wings are slightly different and the discal ciliation is continued to the venation only by a single (sometimes paired) line of cilia.

Pronotum large, with a narrow median carina; parapsidal furrows distinct. Scutellum with a curved cross-line of pin-punctures, the thorax with rather coarse longitudinal reticulation. Segment 3 of abdomen large, occupying nearly a third of the surface, 2 a third shorter than it, 4 transverse. Propodeum and abdomen practically without sculpture, the former without carinæ. Compared with slide type of *australiense* and *pax*.

From one female captured by sweeping forest uplands, May 28, 1914 (A. P. Dodd).

Habitat: Maclean, Clarence River, New South Wales.

Type: No. *Hy 2472*, Queensland Museum, Brisbane, the female on a slide with type of *Gonatocerus humboldti* (Girault).

Dedicated to Henry David Thoreau.

10. POLYNEMA HEGELI new species.

Male:—Length, 1.80 mm.

Shining; pronotum longer than the scutum, its lateral margin carinated, with a distinct neck. Parapsidal furrows complete. Scutellum plane, flat, the axillæ very small, the

postscutellum barely separated by sutures, very small, transverse; propodeum not well differentiated from the plane scutellum, not much inclined, smooth, noncarinate, nonsulcate, but its lateral margin very distinctly carinated or rimmed. Propodeal spiracle minute, round, cephalad. A long seta from each side of base of abdominal petiole on propodeum; and a somewhat shorter one on each side of meson of pronotum just before its caudal margin and one from each latero-caudal angle. Scutellum and scutum wholly naked. A short seta from center of each axilla. Head, thorax, legs, pedicel and abdominal petiole dark red brown; rest black.

Differs from *poincarci* as follows: In the second band of the fore wing which has the caudal margin deeply notched the whole forming a V; in *poincarci*, the caudal margin is straight. The two arms of the V thus formed are unequal, the longer being the cephalic. Also, the whole stripe is shorter, plainly shorter than the space between the stripes, not subequal to it as in *poincarci*. Nearly the distal half of the linear hind wings is dusky in both species.

Differs from the description of the male of *poincarci* in that (the club is somewhat shorter than funicle 1) funicles 2-8 are each about seven times longer than wide, 1 about five times longer than wide. The pedicel is somewhat longer than wide. The wing pattern is also different. Compared with female type of *poincarci*.

Described from one male caught in jungle, August 2, 1914 (A. P. Dodd).

Habitat: Harvey's Creek (Cairns), Queensland.

Type: No. Hy 2473, Queensland Museum, Brisbane, the specimen on a slide.

Dedicated to G. W. F. Hegel.

In describing forms in this family it is necessary to examine the thoracic structure and the sculpture since species may differ in this alone. Also, the thorax will have to be used largely in the classification of this group and I have already applied it in the case of *Anagrus* and allied genera. Special notice should be taken of those sclerites following the scutum.

CORRECTION.¹

Page 115, first supplement, volume II, line 9, *peregrinum* read *peregrinum*.

COLLECTION, PRESERVATION AND DESCRIPTION OF MYMARIDAE.

The fragile and delicate insects of this family may be collected by rearing, by sweeping and by scanning windows. The last two yield the largest number of specimens and species but the first is of importance because of the additional data obtained. Immediately after collected, the specimens should be killed by immersion in alcohol and preserved in this medium (about fifty per cent. with water) until they are to be studied when after preparing the balsam mount, they may be removed by means of a camel's hair brush to a clean slide, fixed in suitable positions for studying the thorax and sculpture while still wet and as the uppermost parts dry off, placed quickly upon the stage of the microscope and the desired notes made. By adding dilute alcohol from time to time at this stage, a more or less leisurely study may be made of the entire dorsal surface (the forms without a phragma may be allowed to dry out completely). As these procedures are to prevent shrivelling, after the notes have been made, the specimen should be allowed to dry long enough for all of the surface fluid to become evaporated and then with the aid of a needle or pin dipped in balsam, rapidly transferred to the prepared slide, immersed in the xylol-balsam and covered in the usual way. If necessary, clearing may be accomplished by heating until the xylol-balsam boils gently. These simple methods are

¹ For additions see supplement to Part V and Part XV.

all that I have found necessary or desirable in studying the Mymaridæ. They have been used with success with the Trichogrammatidæ. Forms of the latter should never be allowed to dry and color descriptions preferably should be made before mounting in balsam. This applies to the delicate phragma-bearing Mymaridæ as well.

Trichogrammatidæ are collected in the same manner as described for the Mymaridæ. When clearing with heat, it is best in all cases to make the application as gentle as suffices; with the Trichogrammatidæ, it is necessary to remove the head and mount it under a cover of its own so that pressure can be applied to the antenna.

The following Mymaridæ are common in their habitats: *Alaptus globosicornis*, *australiensis*, *Dicopus psyche*, *Gonatocerus comptei*, *G. cingulatus*, *Anagrus armatus*, *Paranagrus perforator*, *Stethynium lavoisieri*, *S. cuvieri*, *S. vesalii*, *Camptoptera gregi* and *Polynema poincarei*. "Common" means "frequently met with."

LITERATURE REFERRED TO.

1909. Girault, A. A. Annals Ent. Society of America, II, pp. 22-29.