III. *Australian* Braconidae *in the British Museum.* By Rowland E. Turner, F.Z.S., F.E.S.

[Read February 6th, 1918.]

Subfamily *BRACONINAE.*

Stigmatobracon, gen. nov.

Scape ovate, nearly twice as long as the greatest breadth, antennae as long as the whole insect or longer. Head transverse, eyes moderately large. Parapsidal furrows shallow, but distinct. Abdomen longer than the head and thorax, parallel sided, rather elongate; first tergite much longer than broad, with a deep longitudinal groove on each side; second tergite without a median area, with a deep oblique groove on each side from the base to the apical angles, the grooves nearer to each other at the base than to the anterior angles, the segment as long as its apical breadth; second suture feebly crenulate; the whole abdomen smooth and shining, the sutures, except the second, shallow and smooth. Terebra short and very stout, not more than one-third of the length of the abdomen, slightly curved downwards, the valvulae broad, especially at the apex and pubescent. Sternites 1–4 longitudinally carinate in the middle; the fifth sternite large, with a median longitudinal sulcus, narrowly emarginate at the apex and projecting much beyond the apex of the abdomen, so that the terebra has the appearance of originating on the dorsal surface instead of ventral. Third tergite with the basal angles only very indistinctly divided from the rest of the segment. Nervulus interstitial; first abscissa of the cubitus almost straight; first discoidal cell almost as high at the apex as at the base; stigma large, the radius originating before the middle; first abscissa of the radius very short, second very long; radial cell almost reaching the apex of the wing. Hind and intermediate tarsi no longer than the tibiae.

KEY TO THE SPECIES.

1. Stigma yellow. 2.
   Stigma black, with a very small yellow spot at the base . . . . . *S. torresensis*, Turn.
2. Wings wholly dark fuscous, except the stigma . . . . . *S. xanthostigma*, Turn.
   Wings more or less yellow at the base. 3.

3. Mesosternum and the greater part of the hind and intermediate legs black . . . . . *S. diversipennis*, Turn.
Thorax and legs wholly testaceous red. *S. basipennis*, Turn.

Type of the genus *S. xanthostigma*, Turn.

Stigmatobracon xanthostigma, sp. n.

♀. Rufa, capite, abdomine, tarsisque posticis nigris, segmentis abdominalibus duobus basalibus rufis, secundo apice nigro; mandibulis palpisque testaceis; alis fuscis, stigmate flavo.

Long. 15 mm.; terebrae long. 3 mm.

♀. Face shining, shallowly and rather sparsely punctured; vertex smooth and shining. Third joint of antennae nearly half as long again as the fourth, antennae with more than 100 and less than 110 joints. Thorax and median segment smooth and shining, a few scattered punctures with a short hair springing from each on the median segment. The longest spur of the hind tibia is about half as long as the hind metatarsus. Valvulae finely transversely striated on the basal half. An oblique hyaline streak in the first cubital cell extending into the angle of the second discoidal cell.

Hab. N. Queensland, Townsville (*F. P. Dodd*), November 29, 1901; Mackay (*Turner*), November 1892.

Described from two females.

Stigmatobracon basipennis, sp. n.

♀. Very near *xanthostigma*, but has the terebra shorter, only 2 mm. in length; the red colouring extends further on the abdomen, almost reaching the middle of the third segment; and the wings are yellow at the base for about one-sixth of their length.

Long. 14 mm.; terebrae long. 2 mm.

Hab. N. Queensland, Kuranda (*Turner*), May 1913.

Stigmatobracon diversipennis, sp. n.

♀. Rufo-testacea; capite, mesonoto lateribus postice, mesosterno, segmento mediano, segmentis abdominalibus quarto, quinto sextoque, coxis, tarsis posticis intermediisque, femoribus posticis intermediisque, apice extremo excepto, tibiis intermediis subtus, tibiisque postica dimidio apicali nigris; alis ad nervulum flavis, dimidio apicali fuscis, stigmate fasciaque lata sub-stigmate flavis.

Long. 14 mm.; terebrae long. 2 mm.

The antennae are a little shorter than in *basipennis*, being

scarcely as long as the whole insect, but the joints seem as numerous.

Hab. Victoria (*French*). (Possibly from a more northern locality.)

Stigmatobracon torresensis, sp. n.

♂. Rufa; capite, abdomine, tarsisque posticis nigris; segmentis abdominalibus duobus basalibus rufis; mandibulis palpisque testaceis; alis fuscis, stigmate nigro macula parva basali flava.

Long. 10 mm.

♂. Differs from *xanthostigma* in the colour of the stigma. The abdomen is more slender than in females of the genus, the third tergite being fully as long as broad, as are also the fourth and fifth tergites. The seventh tergite is short, very broadly subtruncate at the apex.

Hab. Queensland, Cape York (*Turner*), May 1902.

Genus Bracon, Fabr.

Bracon walkeri, sp. n.

♀. Rufo-testacea, nitida; capite, valvulis terebrae, unguiculisque nigris; alis dimidio basali flavis, dimidio apicali fuscis, stigmate maculaque magna sub stigmate flavis.

Long. 7 mm.; terebrae long. 1·5 mm.

♀. Smooth and shining; head transverse, distinctly narrowed behind the eyes; scape short, ovate; antennae fully as long as the whole insect, excluding the terebra. Parapsidal furrows distinct. Abdomen and neuration as in *B. bimaris*, but the second tergite is as long as the third and much narrowed to the base, second suture straight in both species.

Hab. N. Queensland, Kuranda (*Turner*), June and July; Northern Territory, Adelaide River (*J. J. Walker*), August 1890.

Belongs to the group of *B. urinator*, Fabr. The colour of the wings is prevalent among the *Braconidae* in tropical Australia, especially in the genera *Cyanopterus* and *Disophrys*, but I do not know another instance in the genus *Bracon*.

Bracon bimaris, sp. n.

♀. Rufa, nitida; capite, prothorace, valvulis terebrae, pedibusque nigris; segmentis abdominalibus apicalibus interdum etiam nigris; alis venisque fuscis.

Long. 7 mm.; terebrae long. 7 mm.

♀. Smooth and shining; head transverse; antennae as long as the whole insect, excluding the terebra; scape short, ovate. Parapsidal furrows distinct, but rather shallow. Abdomen as long as the head and thorax, a little broader than the thorax, the sides almost parallel; first tergite a little longer than its apical breadth; second tergite shorter than the third, twice as broad at the base as long. Radial cell reaching to the apex of the wing, the radius originating just before the middle of the stigma; first abscissa of the cubitus strongly bent at about one-third from the base; recurrent nervure received very distinctly before the first transverse cubital nervure.

Hab. Tasmania, Eaglehawk Neck (*Turner*), February.

This belongs to the group of the European *B. urinator*, Fabr. The brilliant red colour renders it very conspicuous.

Genus Cyanopterus, Hal.

KEY TO THE AUSTRALIAN SPECIES.

1. Wings yellow from the base to the basal nervure.	2.
Wings fuscous the stigma only yellow.	*C. innotatus*, Turn.
2. A broad yellow band extending from the yellow stigma almost to the inner margin of the fore-wing . .	*C. profiscator*, Fabr.
The stigma yellow, but without a yellow band below the stigma . .	*C. rufus*, Szép.

I have not seen *C. crassicaudis*, Szép., which belongs to the genus, the locality of which is doubtful. *C. festivus*, Szép., from New Guinea and *C. levissimus*, Cam., from Tenimber also belongs to the genus. The latter is *Iphiaulax levissimus*, Cam. 1912 (*nec* Cam. 1906), and is very nearly allied to *C. profiscator*, differing in the rather shallower emargination of the apical margin of the second tergite and in the red colour of the base of the hind metatarsus. I do not agree with Szépligeti in including the group of *Bracon capitator*, Fabr., in the genus.

Cyanopterus profiscator, Fabr.

Ichneumon profiscator, Fabr., Syst. entom., p. 335, 1775.
Bracon profiscator, Fabr., Syst. Piez., p. 105, 1804.

This species is very closely allied to *C. rufus*, Szép.,

differing in the presence of a broad yellow band which crosses the wing below the stigma, almost reaching the inner margin. In some specimens the hind tibiae are black at the extreme apex, in others wholly testaceous red. *C. crassicaudis*, Szép., may be a synonym, but the description is too short for certain identification.

Hab. Northern Territory, Port Darwin (*J. J. Walker*); Queensland, Cape York (*Turner*), April and May; Kuranda (*Turner*), May; Mackay (*Turner*), September to January.

Cyanopterus rufus, Szép.

Iphiaulax rufus, Szép., Termes. Fuzetek., xxiv, p. 397, 1901.
Cyanopterus rufus, Szép., Ann. Mus. Nat. Hungar., iv, p. 586, 1906.

Hab. New South Wales, Hunter River; Queensland, Mackay (*Turner*), September, October and March.

Cyanopterus innotatus, sp. n.

♀. Rufo-testacea; capite, valvulis terebrae, tarsisque posticis nigris; alis fuscis, stigmate flavo, apice extremo fusco.

Long. 8 mm.; terebrae long. 3 mm.

♀. Scape less than twice as long as broad; face shining, closely and minutely punctured, vertex smooth and shining. Parapsidal furrows shallow and indistinct. Thorax and abdomen smooth and shining; first tergite a little longer than the apical breadth, the sides deeply grooved longitudinally; second tergite twice as broad in the middle as long, the grooves separating the raised anterior angles from the rest of the segment separated in the middle of the anterior margin by a rather narrow raised space, the hind margin of the segment widely and shallowly emarginate in the middle. Sheath of the ovipositor thickened towards the apex. First abscissa of the radius straight, not bent at the base.

Hab. Queensland, Kuranda (*Turner*), January.

Closely allied to *rufus* and *profiscator*, but easily distinguished by the fuscous colour of the wings, and in the less strong emarginate apical margin of the second tergite.

Genus Iphiaulax, Först.

Iphiaulax transiens, sp. n.

♀. Flavo-testacea; capite, mesothorace, segmento mediano; segmentis abdominalibus quinto sequentibusque, valvulis terebrae,

coxis femoribusque posticis, tibiis posticis dimidio apicali, tarsisque posticis apice nigris; alis dimidio basali flavis, dimidio apicali fuscis, stigmate maculaque sub-stigmate flavis.

♂. Feminae similis.

Long. ♀, 8 mm.; terebrae long. 2·5 mm.; ♂, 3–9 mm.

♀. Antennae as long as the whole insect, including the terebra; scape less than twice as long as broad. Head smooth and shining, the face with scattered punctures. Thorax and median segment smooth and shining, parapsidal furrows distinct. Abdomen smooth and shining; the first tergite scarcely longer than its apical breadth, the raised median portion long and narrow, without carinae, the lateral grooves almost as wide as the raised area. Second tergite short and broad, about twice as broad at the base as long, elevated in the middle at the base, but without a defined basal area; the basal angles with a broad raised area which touches the elevation in the middle of the anterior margin, and extends nearly to the apical angles; second suture not quite straight, very feebly arched in the middle, very delicately crenulated. Areas of the anterior angles of the third tergite large, those of the fourth tergite smaller. Recurrent nervure interstitial, first abscissa of the cubitus straight.

Hab. N. Queensland, Mackay (*Turner*), February to May 1900; Kuranda (*Turner*), May and June 1913; Northern Territory, Port Darwin (*J. J. Walker*), June; N. W. Australia, Baudin Island (*J. J. Walker*).

This is one of the commonest *Braconidae* in Northern Australia. It approaches *Cyanopterus* very closely, but has the second suture finely crenulated, so cannot be included in that genus as defined by Szépligeti.

Genus Macrobracon, Szép.

Macrobracon nobilis, sp. n.

♀. Rufa; capite, mandibulis palpisque exceptis, valvulis terebrae, tarsis posticis, unguiculisque nigris; alis dimidio basali flavis, dimidio apicali fuscis, stigmate, cellula cubitali prima, secunda fere tota, cellula discoidali secunda macula magna basali, cellulaque radiella macula basali flavis.

♂. Feminae similis; oculis maximis.

Long. ♀ ♂, 17 mm.; terebrae long. 6 mm.

♀. Antennae as long as the whole insect; front opaque, rugose; vertex shining with very minute and sparse punctures. Mesonotum smooth and shining, the parapsidal furrows obsolete posteriorly. Median segment short, shining, with a few small scattered punctures.

Abdomen opaque, very finely rugose; second and third sutures crenulate. First tergite short, with a longitudinal carina which does not reach the apex; second tergite longer than the third, broadened from the base, shorter than its apical breadth, the median area large, not sharply defined, triangular, the apex of the triangle touching the apical margin. First abscissa of the radius much shorter than the second, nearly as long as the second transverse cubital nervure; nervulus not quite interstitial, received a little beyond the basal nervure.

Hab. N. Queensland, Mackay (*Turner*), April 1900, May 1899, 3 ♀♀; Townsville (*F. P. Dodd*), 1 ♂.

Differs in the points of neuration mentioned from typical *Macrobracon*, which has the second abscissa of the radius a little shorter than the first, whereas in the present species it is nearly half as long again. This is due to a lengthening of the second cubital cell, and not to a shortening of the first abscissa of the radius.

To this genus also belong *Iphiaulax clavimaculatus*, Cam. and Strand (1912), from Flores, and *Iphiaulax fulvopilosus*, Cam. (1905), from Ceylon, in both of which the second cubital cell is much longer than in the typical species of the genus, as is also the case in *Iphiaulax megapterus*, Cam. (1905), (*nec* Cam. 1887) = *successor*, Schulz (1906), which also belongs to the genus. I have not seen males of any of these species.

Genus Megalommum, Szép.

Megalommum annulatum, sp. n.

♀. Nigra; capite thoraceque rufis; antennis segmentoque mediano nigris; segmento abdominali primo ventrali, tergite primo lateribus, segmentisque 3–7 margine apicali anguste albidis; alis fuscohyalinis, stigmate venisque nigris.

♂. Feminae similis.

Long. ♀, 9 mm.; terebrae long. 2 mm.; ♂, 8 mm.

♀. Face finely rugose, not very narrow; eyes large, widely but shallowly emarginate on the inner margin near the base of the antennae; front deeply hollowed between the base of the antennae and the anterior ocellus; the vertex smooth and shining. Thorax and median segment smooth and shining, the parapsidal furrows almost entirely obsolete. First tergite broadened from the base, nearly half as long again as its apical breadth, the black median portion separated from the white lateral portions by distinct

marginal carinae; second tergite broader than long, with a triangular area at the middle of the basal margin, the apex of the triangle reaching beyond the middle of the segment, the base occupying not more than half of the basal margin, the triangle margined by a smooth groove on each side, an oblique lateral groove on each side of the segment, second suture smooth. Third tergite with a very small area at each of the anterior angles; the whole abdomen smooth and shining. First abscissa of the cubitus strongly curved near the base; radius originating close to the middle of the stigma.

Hab. Tasmania, Eaglehawk Neck (*Turner*), February 1913; S. W. Australia, Yallingup (*Turner*), October to December 1913.

The eyes are not quite as large as in typical species of the genus, and the face is therefore broader. The tegulae are large.

Genus Merinotus, Szép.

This genus is mainly Malayan, though several species occur in Africa. There seems to be only one Australian species.

Merinotus xanthocephalus, sp. n.

♀. Nigra capite flavo; thorace, pedibus anticis, pedibusque intermediis, coxis exceptis, rufis; segmento mediano nigro, in medio nonnunquam rufo suffuso; abdomine nigro, rufo-brunneo suffuso; ventre albo-flavido, lateribus nigro-maculato; alis fuscis, stigmate fusco, venis nigris.

♂. Feminae similis.

Long. ♀, 12 mm.; terebrae long. 25 mm.; ♂, 10 mm.

♀. Rostrum a little elongate, the palpi normal, none of the joints broadened. Face very finely and rather closely punctured, shining; front and vertex smooth; a rather shallow rounded depression above the base of the antennae. Parapsidal furrows well defined, the median lobe of the mesonotum not prominent; thorax and median segment smooth and shining. Abdomen rather slender; first tergite nearly half as long again as the apical breadth, with deep lateral furrows, the lateral margins of the segment and the margins of the elevated median area forming carinae, the space between the carinae shining, finely and irregularly rugulose. Second tergite with an oblique carina on each side from near the inner side of the basal angles, separated at the apex by about half the distance which separates them at the base; with a small elongate triangular area in the middle of the basal margin, from the apex of the triangle

a carina runs to the apex of the segment, the surface of the segment shining, with irregular rugae; second and third sutures crenulate. Anterior angles of the third tergite divided from the rest of the segment by a crenulated groove, the segment with a median longitudinal carina, the base longitudinally striated; the remaining segments smooth. First abscissa of the cubitus almost straight; the first discoidal cell much higher on the basal than on the recurrent nervure.

Hab. North Queensland, Mackay (*Turner*), October to May; Kuranda (*Turner*), November.

The scheme of colouring is fairly common among the larger *Braconidae* of the Austro-Malayan region and extends to the tropical districts of Queensland. This species is somewhat allied to *palpalis*, Szép., which has the third and fourth joints of the palpi broadly flattened, and to *medianus*, Szép., which has the face rugose.

I doubt if the genus *Merinotus* can be separated from *Sigalphogastra*, Cam., which has priority; but the male of *Sigalphogastra* has only five visible tergites, the fifth being very large; in *M. xanthocephalus* the male shows six tergites, the fifth very large and the sixth small. In both the mouth parts are somewhat elongate. The female of *Sigalphogastra* is still unknown. The male of the common South African species *Merinotus bellosus*, Sm., has six tergites visible, the fifth not unusually large and the sixth not very small. Until larger collections are available it is perhaps better not to sink the name *Merinotus*.

Genus Campyloneurus, Szép.

KEY TO THE AUSTRALIAN SPECIES.

1.	Thorax and abdomen red-brown.	2.
	Thorax red, abdomen black. . . .	*C. mutator*, Fabr.
2.	Wings flavo-hyaline	*C. australiensis*, Szép.
	Wings fusco-hyaline.	3.
3.	Stigma yellow, the apical third or less black.	4.
	Stigma black, a narrow spot in the middle only yellow	*C. praeclarus*, Turn.
4.	Sixth and seventh tergites black; tergites 3–5 finely rugose	*C. profugus*, Turn.
	Tergites wholly red-brown; tergites 3–5 almost smooth, shining . . .	*C. praepotens*, Turn.

1. **Campyloneurus mutator,** Fabr.

Ichneumon mutator, Fabr., Syst. entom., p. 335, 1775.
Bracon mutator, Fabr., Syst. Piez., p. 109, 1804.

♀. Nigra; thorace, segmento mediano, pedibusque anticis rufis; tibiis tarsisque intermediis fusco-ferrugineis; alis fuscis, stigmate venisque nigris; ventre basi albido.

Long. 6–7 mm.; terebrae long. 2–2·5 mm.

♀. Front very finely punctured; vertex, thorax and median segment smooth and shining; parapsidal furrows shallow. First tergite finely rugulose; second tergite rugulose, with a small, smooth, triangular area at the base, which is produced at the apex into a carina which does not quite reach the apex of the segment, an oblique carina on each side starting from near the basal angles, and not quite reaching the apex of the segment; the remaining tergites finely and closely punctured. First abscissa of the cubitus sharply bent near the base.

Hab. N. Queensland, Mackay (*Turner*), September and March; Kuranda (*Turner*), May 1913.

Brullé wrongly identifies this species, placing it in his genus *Myosoma*. I have not been able to identify his species, but it is certainly not the Fabrician species. Dalla Torre, without any apparent reason, gives America as the locality. The type of *mutator* is in the Banksian collection.

2. **Campyloneurus australiensis,** Szép.

Iphiaulax australiensis, Szép., Termes. Fuzetek., xxiv, p. 369, 1901, ♂ (*nec* Szép. 1905).
Campyloneurus australiensis, Szép., Ann. Mus. Nat. Hungar., iv, p. 561, 1906.

Hab. N. Queensland, Cooktown.

I have not seen this species, which appears to be closely allied to the two following. The wings are flavo-hyaline, the stigma yellow, and the fifth tergite of the male black.

3. **Campyloneurus profugus,** sp. n.

♀. Rufo-castanea; capite, segmentis abdominalibus sexto septimoque, pedibusque nigris; tibiis tarsisque anticis ferrugineis, intermediis posticisque fusco-ferrugineis; alis pallide fuscis, stigmate flavo, apice nigro, venis nigris.

Long. 8 mm.; terebrae long. 5 mm.

♀. Face finely rugose; vertex, thorax and median segment smooth and shining; parapsidal furrows shallow. Raised median area of the first tergite finely granulate, with a low median longitudinal carina, the lateral grooves deep. Second tergite rugulose, with a small, smooth, triangular basal area, from the apex of which a carina extends almost to the apical margin; on either side of the basal area is another smooth, elongate area, which is slightly oblique and becomes narrowed and obsolete towards the apex. Second suture crenulate; tergites 3–5 delicately rugose; the apical margin of each slightly raised with a punctured groove before the apex. First abscissa of the cubitus sharply bent near the base.

Hab. N. Queensland, Mackay (*Turner*); Kuranda (*Turner*), May 1913.

4. **Campyloneurus praeclarus,** sp. n.

♀. Rufo-castanea; capite nigro, orbitis hic illic angustissime rufo-marginatis, segmentis abdominalibus sexto septimoque, pedibusque posticis nigris, tarsis posticis, tibiisque tarsisque intermediis ferrugineis; alis pallide fuscis; stigmate flavo, apice costaque late nigris; venis nigris; ventre albido, nigromaculato.

Long. 6–7 mm.; terebrae long. 3·5–4 mm.

Very similar to *profugus*, but differs in the colour of the stigma, which is broadly black on the costa; the terebra is shorter, and tergites 3–5 are shining as in *praepotens*. The colour of the intermediate legs is variable.

Hab. N. Queensland, Mackay (*Turner*), April.

The male has the median segment partly black in some specimens. It is possible that this will prove to be a variety of *C. profugus*, the sculpture of tergites 3–5 and the colour of the stigma showing some tendency to vary.

5. **Campyloneurus praepotens,** sp. n.

♀. Rufo-castanea; capite nigro; pedibus intermediis posticisque nigris, rufo-variegatis; alis pallide fuscis, stigmate flavo, apice extremo nigro, venis fuscis.

Long. 9 mm.; terebrae long. 9 mm.

Very similar to *C. profugus*, but differs in the much longer terebra; in the sculpture of tergites 3–5, which are smooth and shining, punctured only in the ante-apical groove, and in the colour of the apical segments. The

black spot at the apex of the stigma is also less extensive in the present species.

Hab. N. Queensland, Mackay (*Turner*); Townsville (*Dodd*).

Genus Ipobracon, Thoms.

Ipobracon ingressor, sp. n.

♀. Rufa; capite flavo, antennis nigris; abdomine, tarsis intermediis articulis tribus apicalibus, tibiisque tarsisque posticis nigris; tergitis 3–8 apice angustissime albo-marginatis; sternitis albidis, utrinque nigromaculatis; alis pallide fuscis; stigmate venisque fuscis.

Long. 11 mm.; terebrae long. 45 mm.

♀. Head rather large, not narrowed behind the eyes; face minutely and closely punctured, a narrow groove reaching from between the antennae to the anterior ocellus. Scape twice as long as broad; antennae distinctly longer than the whole insect, measuring about 13 mm. Vertex and thorax smooth and shining, the parapsidal furrows almost obsolete. Median segment sparsely and minutely punctured; abdomen smooth and shining; second tergite with a large triangular basal area, which nearly reaches the apical margin, the marginal grooves of the basal area smooth; the anterior angles of the second tergite bounded by a smooth groove which runs from the basal angles of the triangular area to beyond the middle of the lateral margin of the tergite; second suture broad and finely crenulate in the middle, narrow and smooth at the sides. Anterior angles of the third tergite large, the grooves bounding them reaching to the middle of the lateral margin of the segment, but not to the middle of the basal margin. First abscissa of the cubitus sharply bent at about one-third from the base, recurrent nervure received by the first cubital cell a little before the apex; nervulus not quite interstitial, received just beyond the basal nervure.

Hab. N. Queensland, Kuranda (*Turner*), December 1901; Mackay (*Turner*), October 1899.

I took three specimens at the same time at Kuranda, flying round a fallen log in dense jungle. The Mackay specimen is smaller measuring 10 mm., terebra 27 mm., but I think it belongs to the same species.

This seems to belong to the group of *I. marginatus*, Szép

Ipobracon pallidicolor, sp. n.

♀. Rufo-testacea; antennis, valvulis terebrae, unguiculis pedibusque posticis nigris; capite, prothorace, pedibusque anticis

intermediisque flavis; alis subhyalinis, stigmate venisque fusco-testaceis.

♂. Feminae similis.

Long. ♀, 7 mm.; terebrae long. 6 mm.; ♂, 4–7 mm.

♀. Scape more than twice as long as broad; antennae longer than the whole insect, measuring 9 mm. in length. Face shining, indistinctly punctured, with a longitudinal sulcus on the upper half; front and vertex smooth and shining; head not narrowed behind the eyes. Thorax and median segment smooth and shining; parapsidal furrows distinct, but shallow. Raised area of the first tergite broad, almost smooth, distinctly margined. Second tergite with a lanceolate raised median area, which extends very narrowly almost to the apex, a small elongate-ovate subconcave space on each side of the area; the apical margin of the segment broadly and shallowly emarginate, the second suture smooth. Anterior angular areas of the third tergite small; the whole abdomen smooth and shining. First abscissa of the cubitus bent near the base, recurrent nervure received before the first transverse cubital nervure; nervulus interstitial.

Hab. N. Queensland, Mackay (*Turner*), October 1899, March to May 1900; Kuranda, July 1913.

The second suture is interrupted in the middle by a narrow ridge, but there is no raised area on the third segment.

Ipobracon quadricolor, sp. n.

♀. Variegata; capite flavo; thorace pedibusque anticis rufis; segmentis abdominalibus tribus basalibus quartoque basi ochraceis; antennis, mesopleuris, segmento mediano, segmentis abdominalibus apicalibus, valvulis terebrae, pedibusque intermediis posticisque nigris; femoribus intermediis apice tibiisque intermediis basi fusco-ferrugineis; tergitis sexto septimoque, interdum etiam quinto, apice angustissime albo-marginatis; alis fusco-hyalinis.

Long. 6 mm.; terebrae long. 4 mm.

♀. Antennae about equal in length to the whole insect. Very similar in structure and sculpture to *I. pallidicolor*; but the raised area of the second tergite is broader, and bounded by deep smooth grooves, not by a broader subconcave area, the raised spaces at the basal angles are also much larger, almost extending to the basal angles of the raised area; the lateral grooves reach the apex, which is not the case in *pallidicolor*; the third tergite has a small, raised, triangular area at the base, and the areas at the anterior angles are large.

Hab. N. Queensland, Kuranda (*Turner*), May 1913; Mackay (*Turner*), September 1899.

Ipobracon gilberti, sp. n.

♀. Variegata; capite flavo; prothorace mesonotoque rufis; antennis, mesopleuris, mesosterno, scutello, segmento mediano, segmentis abdominalibus tertio apice, quarto sequentibusque, valvulis terebrae, pedibusque intermediis posticisque nigris; segmentis abdominalibus primo, secundo, tertioque basi ochraceis; segmentis 4–7 dorsalibus apice angustissime albido-marginatis; femoribus intermediis apice, tibiisque intermediis basi fusco-ferrugineis; alis fusco-hyalinis, stigmate venisque fusco-testaceis.

Long. 11 mm.; terebrae long. 8 mm.

♀. Closely allied to *I. quadricolor*; but is a larger species, with the face distinctly punctured; the basal area of the second tergite is large, forming an equilateral triangle, the grooves bounding it indistinct, the raised areas at the basal angles large, touching the median area at the base, the lateral grooves not reaching the apex of the segment; the apical margin of the segment shallowly emarginate in the middle. Third tergite without a raised median area, the areas at the basal angles fairly large. Second suture smooth. Otherwise as in *quadricolor*, but the recurrent nervure almost interstitial.

Hab. N. Queensland, Mackay (*Turner*), October 1899; Kuranda (*Turner*), November, May and July.

This species, together with *pallidicolor* and *quadricolor*, seems to be related to the New Guinea species *I. elegans*, Szép. In all these the second tergite is much broader than long, as is usual in Australian species of the genus.

Ipobracon torridus, sp. n.

♀. Rufa; capite pedibusque anticis intermediisque rufo-flavescentibus; abdomine ochraceo; antennis, pedibus posticis, valvulisque terebrae nigris; alis subhyalinis, leviter infumatis, venis fusco-testaceis.

Long. 11 mm.; terebrae long. 8 mm.

♀. Though very different in colouring I cannot find that this differs either in sculpture or structure from *I. gilberti*. I do not think, however, that it can be a mere colour variety of that species.

Hab. N. Queensland, Cape York (*Turner*), April 1902.

Ipobracon flaviceps, Cam.

Poecilobracon flaviceps, Cam., Ann. Mag. Nat. Hist. (7) viii, p. 122, 1901, ♀.

A variety of this occurs at Mackay. The typical form has the tergites black, the second sometimes stained with fusco-ferruginous; in the Mackay form the three basal tergites at least are yellowish brown; the legs are black in the type, but in the Mackay form the fore legs entirely and parts of the intermediate and hind legs are testaceous brown. The second suture in this species is straight and crenulated. As the colour differences appear to be constant, I propose for the Mackay form the name *I. flaviceps* subspec. *mackayensis*, subspec. n.

Hab. N. QUEENSLAND, Mackay (*Turner*), October and November 1899.

The locality given for the type is Australia, but it probably came from the south-eastern portion of the continent.

Ipobracon fraterculus, sp. n.

♀. Nigra; capite flavo; segmentis dorsalibus duobus basalibus ochraceis, quarto sequentibusque apice angustissime albido-marginatis; ventre albido, nigro-maculato; tibiis tarsisque anticis brunneo-ferrugineis; tegulis testaceis; alis fusco-hyalinis, venis fuscis, stigmate pallide brunneo-flavescente.

Long. 10 mm.; terebrae long. 9 mm.

♀. Face subopaque, minutely punctured; the antennal tubercles prominent; front and vertex smooth and shining, a shallow depression between the anterior ocellus and the base of the antennae; scape more than twice as long as broad, cylindrical; head not narrowed behind the eyes. Thorax and median segment smooth and shining; the parapsidal furrows distinct, but shallow. First tergite smooth, longer than the apical breadth, the lateral grooves narrow and not margined externally; the raised portion with an indistinct median longitudinal carina and with distinct lateral carinae. Second tergite short, broader at the base than long, widened to the apex; the basal raised area large, triangular, margined at the sides by broad and rather shallow grooves in which are a few oblique striae; the lateral grooves of the segment very narrow, but extending to the apical angles; second suture almost straight, crenulated. The areas at the anterior angles of the third tergite are rather large. Recurrent nervure almost interstitial; first abscissa of the cubitus straight.

Hab. S. W. Australia, Yallingup (*Turner*), October 1913.

Closely related to *flaviceps*, Cam., but differs in the straight first abscissa of the cubitus, in the colour of the basal tergites, in the striation of the grooves by the median area of the second tergite and in the very much smaller raised areas at the anterior angles of the same tergite. The terebra is also considerably longer.

As I have not seen several of the Australian species of this genus described by Szépligeti, I am unable to give a key to the species.

Subfamily *AGATHINAE*.

Genus Microdus.

KEY TO THE AUSTRALIAN SPECIES.

1.	With a distinct longitudinal carina on the middle lobe of the mesonotum; median segment with an enclosed median area	*M. rufobrunneus*, Turn,
	Mesonotum without a carina; median segment without an enclosed area.	2.
2.	Median segment coarsely punctured rugose; antennae 27-jointed.	3.
	Median segment shining, almost wholly smooth; antennae 37-jointed	*M. martialis*, Turn.
3.	Head black; thorax red	*M. rufithorax*, Turn.
	Head yellowish brown, with a broad black band on the vertex; meso thorax and scutellum black . . .	*M. xanthopsis*, Turn.

I have not seen *M. pedunculatus*, Szép. (1905), described from Sydney. In this species the mediellan vein is obsolete, which is not the case in any species described here.

Microdus rufobrunneus, sp. n.

♀. Rufo-brunnea; capite pedibusque intermediis posticisque nigris; tibiis tarsisque intermediis, tibiis posticis basi, tarsisque posticis basi et apice pallide flavis; alis subhyalinis, leviter infuscatis, stigmate venisque brunneo-testaceis.

Long. 6 mm.; terebrae long. 4 mm.

♀. Smooth and shining, the face closely and minutely punctured; antennae inserted further from each other than from the eyes, 35-jointed. Mesonotum minutely punctured, parapsidal furrows deep and well marked, the median lobe furnished with a distinct longitudinal carina. The sulcus at the base of the scutellum broad and containing several longitudinal carinae; median segment with a well-defined elongate oval enclosed median area, which is transversely striated, the remainder of the dorsal surface transversely rugulose, a patch of yellowish white pubescence on each side before the posterior coxae. First tergite a little longer than its apical breadth, with a few delicate longitudinal carinae on the basal half; impressed transverse line of the second tergite arched, close to the base at the sides; curving to the middle of the segment. Second cubital cell triangular, petiolate; nervulus interstitial.

Hab. N. Queensland, Townsville (*F. P. Dodd*).

Microdus xanthopsis, sp. n.

♀. Nigra; capite, pronoto, mesopleuris antice, pedibusque anticis flavo-testaceis; vertice fascia lata transversa antennisque nigris; tibiis intermediis macula subbasali, posticis basi anguste et in medio latissime, calcaribusque albis; alis hyalinis, leviter infuscatis, stigmate venisque fuscis.

♂. Feminae similis.

Long. 4 mm.; terebrae long. 3 mm.

♀. Slender, smooth and shining; parapsidal furrows distinct but not deep; scutellum long and narrow, with a slightly arched crenulated sulcus at the base; median segment coarsely punctured-rugose, sparsely clothed with whitish hairs, the sides of the segment finely punctured. Second tergite with a distinct transverse impressed line near the middle; the first tergite subtriangular, longer than the apical breadth. Hind coxae and femora finely punctured, clothed with short white hairs; valvulae sparsely clothed with very short black hairs. Antennae 27-jointed, the third joint distinctly longer than the fourth, longer than the scape. Second cubital cell triangular, sometimes subpetiolate.

Hab. S. W. Australia, Yallingup (*Turner*), November and December 1913.

Microdus rufithorax, sp. n.

♀. Nigra; mandibulis palpisque testaceis; thorace pedibusque anticis et intermediis rufis; segmento dorsali secundo basi, tibiisque

posticis dimidio basali, prope basin nigro-annulatis, albidis; alis pallide fusco-hyalinis, stigmate venisque fuscis.

♂. Feminae similis.

Long. 4 mm.; terebrae long. 4 mm.

♀. Head smooth and shining, the face microscopically punctured. Thorax shining, the parapsidal furrows distinct and fairly deep; the transverse furrow at the base of the scutellum very feebly crenulated. Median segment black, coarsely punctured-rugose, the sides of the segment finely punctured. First tergite longer than its apical breadth, very feebly rugulose in the middle; transverse line on the second tergite very distinct. Hind femora punctured at the base. Antennae 27-jointed. Second cubital cell triangular, distinctly petiolate.

Hab. S. W. Australia, Kalamunda (*Turner*), March 1914; Yallingup (*Turner*), October 1913.

Differs from *M. xanthopsis* in colouring, in the longer terebra, the deeper parapsidal furrows, the sculpture of the first tergite and the less hairy median segment.

Microdus martialis, sp. n.

♀. Rufo-testacea; antennis, articulis duobus basalibus exceptis, nigris; tarsis posticis fuscis; alis fusco-hyalinis, stigmate venisque fuscis.

♂. Feminaæ similis.

Variat: ♀♂, Abdomine supra nigro.

Long. 5 mm.; terebrae long. 4 mm.

♀. Slender, smooth and shining, the face microscopically punctured. Antennae 37-jointed, clothed with minute hairs. Parapsidal furrows distinct, but rather shallow; the transverse furrow at the base of the scutellum crenulated. Median segment shining and almost smooth; abdomen smooth and shining, the transverse furrow of the second tergite obsolete.

Hab. N. Queensland, Kuranda (*Turner*), May 1913.

The second cubital cell is petiolate.

In addition to colour differences this species is easily distinguished from *xanthopsis* and *rufithorax* by the greater number of antennal joints, by the almost smooth median segment and by the absence of a transverse groove on the second tergite.

Genus Agathiella, Szép.

Agathiella, Szép., Termes. Fuzetek., xxv, p. 73, 1902.

The species of this genus seem to be numerous in Australia, especially in the southern half, and doubtless many more species remain to be discovered. The structural differences are usually small, and without a long series of specimens it is rather difficult to come to definite conclusions as to the extent of colour variation, but where I have taken a number of specimens I have not found any important colour varieties.

KEY TO THE AUSTRALIAN SPECIES.

1.	Mesonotum, scutellum and median segment black.	2.
	Mesonotum at least red.	5.
2.	Intermediate and hind legs entirely black.	*A. latibalteata*, Cam.
	Intermediate legs yellowish or reddish testaceous.	3.
3.	Hind tibiae wholly black, hind coxae and tibiae testaceous red. Length 8 mm.	*A. festinata*, Turn.
	Hind tibiae with a narrow white ring at the base. Length 5 mm.	4.
4.	Hind legs black; scape black . . .	*A. ruficeps*, Szép.
	Hind coxae, trochanters, femora and the scape yellow testaceous . . .	*A. tenuissima*, Turn.
5.	Median segment punctured-rugose.	6.
	Median segment smooth.	8.
6.	Intermediate femora wholly black, hind tibiae black, with a narrow white ring at the base. Length 8 mm.	*A. maligna*, Turn.
	Intermediate femora mostly or entirely testaceous. Length not exceeding 5 mm.	7.
7.	Hind tibiae black, with a very narrow obscure whitish ring at the base. .	*A. minima, Turn.*
	Hind tibiae with the basal half white, with a narrow black ring near the base	*A. rugosa*, Turn.
8.	Intermediate legs wholly black. . .	*A. meridionalis*, Turn.
	Intermediate legs not wholly black.	9.
9.	Intermediate legs wholly testaceous .	*A. unimaculata*, Turn.
	Apex of intermediate femora and middle of tibiae yellowish	*A. tricolor*, Szép.

Agathiella latibalteata, Cam.

Agathis latibalteata, Cam., Entomologist, xxxix, p. 26, 1906.

This is an *Agathiella*, not a true *Agathis*, having the face short and broad and no parapsidal furrows. As far as I am aware typical *Agathis* does not occur in Australia.

Hab. Australia.

Agathiella ruficeps, Szép.

Agathiella ruficeps, Szép., Ann. Mus. Nat. Hungar., iii, p. 52, 1905, ♂.

Hab. Sydney.

From the description this must be very near *latibalteata*, but the hind tibiae are white at the base instead of wholly black, and the intermediate legs are red, not black. It is also a smaller species.

Agathiella tricolor, Szép.

Agathiella tricolor, Szép., Ann. Mus. Nat. Hungar., iii, p. 52, 1905, ♀.

Hab. Sydney.

Agathiella meridionalis, sp. n.

♀. Nigra; capite, prothorace, mesothorace, femoribus anticis dimidio apicali, tibiis tarsisque anticis rufis; segmento abdominali primo albido, macula maxima mediana nigra supra et infra; secundo basi et lateribus albido, tertio angulis basalibus albido; alis pallide fusco-hyalinis, stigmate venisque fuscis; calcaribus nigris.

Long. 5–6 mm.; terebrae long. 5–6 mm.

Variat: scutello scapoque rufis.

♀. Feminae similis.

Variat: capite pedibusque anticis nigris.

♀. Smooth and shining; the median segment with microscopic punctures on the sides, but smooth on the dorsal surface; first tergite more than half as long again as the apical breadth, shorter in the male; second tergite as broad at the apex as long. Second cubital cell petiolate, triangular, not very small.

Hab. Tasmania, Mt. Wellington, 2300 ft. (*Turner*), January to April 1913.

Agathiella unimaculata, sp. n.

♀. Rufo-testacea; segmento mediano, abdomine, antennis, pedibusque posticis nigris; abdomine segmentis duobus basalibus albo-flavidis, segmento primo dorsali macula magna rotundata nigra; alis fusco-hyalinis, stigmate venisque brunneis.

Long. 4–5 mm.; terebrae long. 3·5–4 mm.

♀. Median segment smooth and shining; first tergite about half as long again as the apical breadth; second tergite broader than long; hind tarsi distinctly shorter than the hind tibiae, a little shorter in proportion than in *A. maligna*. Second cubital cell triangular, the petiole short.

Hab. N. Queensland, Kuranda (*Turner*), May to July 1913.

The median segment is black on the dorsal surface only. In a specimen from Sydney (*P. de la Garde*), January 1898, the black is reduced to a median streak; the wings are also paler.

Agathiella tenuissima, sp. n.

♀. Nigra; capite, prothorace, tegulis, segmentis abdominalibus duobus basalibus, primo basi nigro suffuso, pedibusque flavo-testaceis; femoribus posticis apice, tibiis tarsisque posticis fuscis; alis pallidissime fusco-hyalinis; stigmate venisque pallide fuscis.

Long. 5 mm.; terebrae long. 5 mm.

♀. Median segment smooth and shining; abdomen very slender; first tergite at least twice as long as the apical breadth; second tergite longer than broad. Second cubital cell very small, the petiole long, nervulus not interstitial, distinctly postfurcal.

Hab. Victoria (*French*).

Possibly the female of *A. ruficeps*, Szép., but the present species has the scape yellowish, the flagellum brownish beneath on the basal two-thirds, and the basal portion of the hind legs is flavo-testaceous. Nor can the median segment be described as "etwas uneben."

Agathiella festinata, sp. n.

♀. Nigra; capite rufo; antennis nigris, articulis duobus basalibus rufis; pedibus rufo-testaceis, posticis trochanteribus, tibiis tarsisque nigris; abdomine albo-flavido, segmentis dorsalibus primo secundoque macula mediana, tertio, quarto, quintoque basi nigris; tertio angulis anticis late albo-flavidis; alis fusco-hyalinis, venis brunneo-testaceis.

Long. 8 mm.; terebrae long. 7 mm.

♀. Very similar in structure to *A. maligna*, differing in the sculpture of the median segment, which is smooth and shining on the dorsal surface, with the sides very minutely punctured; in the shape of the second tergite, which is much broader at the apex than long, and in the slightly longer terebra.

Hab. S. Queensland (*ex coll. Turner, received from French*).

Agathiella maligna, sp. n.

♀. Nigra; capite, thorace, pedibusque anticis rufis; antennis segmentoque mediano nigris; segmentis abdominalibus duobus basalibus albo-flavidis, tergitis duobus basalibus macula magna mediana nigra; tibiis intermediis posticisque macula parva basali albo-flavida; alis fuscis, stigmate nigro.

Long. 8 mm.; terebrae long. 6 mm.

♀. Head smooth and shining; seen from in front much broader than long. Thorax smooth and shining, the parapsidal furrows absent; median segment finely punctured-rugulose, the apex smooth, the sides of the segment very finely punctured and sparsely clothed with short white hairs. First tergite distinctly longer than its apical breadth; second tergite a little longer than broad, with a rather indistinct impressed transverse line near the middle, which curves towards the sides and becomes obsolete before reaching the anterior angles; a slightly oblique lateral groove running from near the anterior angles to the middle of the lateral margin. Valvulae clothed with short delicate hairs. Second cubital cell very small, petiolate.

Hab. S. W. Australia, Yallingup (*Turner*), November 1913.

Agathiella rugosa, sp. n.

♀. Nigra; capite, vertice interdum antennisque nigris, prothorace, mesothorace, scutello, coxisque anticis rufis; segmentis abdominalibus duobus ventralibus totis, dorsalibusque basi anguste albidis; femoribus tibiisque anticis, femoribus intermediis dimidio apicali, tibiisque intermediis dimidio basali, basi anguste nigro-annulatis, testaceis; tibiis posticis dimidio basali albis, nigro-annulatis; alis pallide fusco-hyalinis, stigmate venisque fuscis; calcaribus albis.

Long. 5 mm.; terebrae long. 5 mm.

Variat: scutello nigro.

♂. Feminae similis, segmentis dorsalibus duobus basalibus albidis, primo in medio nigro-maculato.

Long. 5 mm.

♀. Face shining, minutely punctured, with sparse and very delicate pubescence; median segment rather coarsely rugose. First tergite nearly twice as long as the apical breadth; second tergite as broad at the apex as long, the impressed transverse line distinct. The male has the first tergite shorter, less than half as long again as the apical breadth.

Hab. Tasmania, Eaglehawk Neck (*Turner*), February; Mt. Wellington, 2300 ft. (*Turner*), March 1913.

This differs from *A. tricolor* in the sculpture of the median segment. The second cubital cell is very small, the petiole long. The West Australian *Microdus rufithorax* closely resembles this species, but has the parapsidal furrows well developed and the head black.

Agathiella minima, sp. n.

♀. Nigra; prothorace, mesothorace scutelloque rufis; palpis pedibusque anticis intermediisque testaceis; segmentis abdominalibus duobus basalibus albo-flavidis, dorsali primo macula magna basali nigra; tibiis posticis macula parva, obscura, basali, albida; alis subhyalinis, costa nigra, stigmate venisque pallide brunneis.

Long. 3 mm.; terebrae long. 2 mm.

♀. Smooth and shining; the median segment finely punctured-rugose. First tergite scarcely half as long again as the apical breadth; second tergite as broad at the apex as long, the impressed transverse line very distinct. Calcaria of hind tibiae pale testaceous. Second cubital cell triangular, the petiole short.

Hab. N. Queensland, Kuranda (*Turner*), July 1913.

It is possible that Ashmead's genus *Orgiloneura* may be founded on a species of this genus with somewhat reduced neuration, but his description is too short for any conclusions to be drawn.

Platyagathis, gen. nov.

Nearly allied to *Disophrys*, with which it agrees in the short broad face, in the distinct marginal carinae of the frontal depression and in the very short terebra. It differs from *Disophrys* in the very broad and somewhat flattened abdomen, which is sessile, with the first tergite as broad at the base, as long and somewhat broader at the apex; the intermediate and hind-tarsal ungues are simple, the ungues of the fore tarsi bifid. The median segment is

hairy; the parapsidal furrows strong. The only species known to me is

Platyagathis leaena, sp. n.

♀. Nigra; capite rufo, antennis mandibulisque nigris; segmentis dorsalibus primo, secundoque lateribus latissime, tertioque basi lateribus, ventralibus primo secundoque in medio nigro-maculatis, tertioque basi albis; tibiis anticis basi, tarsisque anticis fusco-ferrugineis; alis fusco-hyalinis, venis fuscis.

Long. 7 mm.

♀ ♂. Smooth and shining; the face very finely and closely punctured; two short longitudinal carinae between the antennae as in *Disophrys*. Antennae 49-jointed in both sexes, nearly as long as the whole insect in the female, distinctly longer in the male; marginal carinae of the frontal depression well defined, vertex smooth and shining. Parapsidal furrows and the sulci of the mesopleurae punctured; scutellum with a finely striated depression at the base; median segment short, the dorsal surface no longer than the scutellum, coarsely reticulate, with six rather ill-defined longitudinal carinae, covered with rather short whitish hairs, which partly conceal the sculpture. Abdomen smooth and shining; the white lateral bands of the two basal tergites as broad as the black median bands, and continued more narrowly on the basal half of the third tergite. Second cubital cell subquadrate, with the stump of a vein springing from the second transverse cubital nervure; nervulus interstitial. The cubital margin of the first cubital cell is open in the middle.

Hab. S. W. Australia, Yallingup (*Turner*), January 1914.