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HYMENOPTERA I

(ALL FAMILIES, EXCEPT APIDAE AND FORMICIDAE)

BY

P. CAMERON,

New Mills.

PHYTOPHAGA.

Oryssus Latr.1. *Oryssus trifasciatus* sp. nov.

Manokwari, 8 June.

Black, densely covered with white pubescence, all the femora, the fore tibiae narrowly in front, the greater part of the posterior and the base of all the tarsi red, wings fuscous-violaceous, the base, a broad band before the stigma and a narrower one at the apex, clear hyaline; the costa, stigma and nervures black, the latter obliterated in the hyaline parts. ♀.

Length 8.5 mm.

Head coarsely rugosely punctured, the punctures running into reticulations in parts; on the sides of the vertex are 4 smooth, transverse ledges, the lower of which are more distinct than the upper. The lateral ocelli touch the eyes. Behind and close to the eyes is a keel which commences at the top and reaches to the mandibles, the lower part being thicker than the upper. Shortly below the lower ocellus is a transverse keel, which is thinner in the middle than on the sides. The lower part of the face is broadly rounded, projecting into a narrow keel on the lower edge; above this it is depressed, smooth and shining. Scape and pedicle of antennae bare, shining; the other joints densely covered with a dense grey pile; the 1st joint of the flagellum is narrower, more cylindrical and slightly longer than the second. Parapsidal furrows broad, moderately deep; in the centre of the mesonotum on the basal half is a smooth, shining, broad, longitudinal line. The scutellum has the punctures larger and more widely and distinctly separated than on the mesonotum; at its base is a transverse depression, widened laterally and bordered behind by a keel. The apices of the abdominal segments are smooth and shining; the last segment is more coarsely, rugosely punctured than the rest; the 4th and 5th not so closely as the basal.

The discoidal cellules are completely obliterated and confluent with the cubital, these

being confluent with the base of the radial; the stigma is large, broadly rounded behind, somewhat twice longer than its breadth in the middle; the radius originates from its middle. The transverse basal nervure is widely broken in the middle by the white cloud, as is the transverse median on the posterior part; the lanceolate cellule appendiculated. The hind wings are hyaline, the apex broadly infuscated. The last abdominal segment has a distinct smooth pygidial area; its apex projects obliquely; the 2nd abdominal segment is as long as the following two united; the 3rd, 4th and 5th shorter than the following. The hind tibiae are more stoutly serrate than usual.

This is not a typical *Oryssus* as that genus is now limited.

EVANIIDAE.

Evania Fab.

1. *Evania de-Meijerei* sp. nov.

Manokwari, May.

Black, the head, thorax and coxae densely covered with white pubescence, the abdomen smooth and shining, its petiole coarsely rugosely punctured, the punctures running into striations towards the apex; wings clear hyaline, the nervures and stigma black; the recurrent nervure received shortly beyond the transverse cubital. Sides of metanotum broadly rounded, the centre depressed, the edges of pronotum sharply angled. ♂.

Length 8 mm.

The punctures on the front run into reticulations, which are more distinct in the centre than on the sides; the lower part of the face is more or less reticulated; the upper is rugose, with a not very strong keel down its centre. Eyes slightly converging above. The hinder ocelli are separated from each other by a distinctly greater distance than they are from the eyes. Apex of mandibles smooth and shining, the rest opaque, pilose and distinctly, but not closely, punctured. Palpi black, covered with a white pile. Malar space not furrowed, nearly as long as the antennal scape. Basal two joints of antennae nearly as long as the scape and equal in length. Occiput distinctly margined. Temples hardly narrowed. Parapsidal furrows obsolete. Scutellum more closely punctured than the mesonotum; there is a distinct transverse furrow at its base; its apex is rounded and it is separated from the median segment by a wide and rather deep furrow. Median segment densely covered with white pubescence; its centre, at the apex widely hollowed, the depression narrowed at the top and bottom. Pro- and mesopleurae bearing large, round, clearly separated punctures, the former stoutly striated below; the latter with a large smooth, shining space above. The base of the metapleurae is irregularly striated; the centre with round, clearly separated punctures; beyond this it is widely, irregularly reticulated, the reticulations are continued round the sides of the apex; the hollowed centre is irregularly widely striated. Mesosternum coarsely punctured. Metasternal process diverging, the forks fully twice longer than wide and rounded at the apex. Tibiae clearly spinose, the tarsi more minutely so; the long spur of the hind tibiae does not reach to the middle of the metatarsus. Hind coxae rugosely punctured, smooth at the base. Base of pronotum sharply angled.

The metasternal forks are not roundly curved and diverging as in *E. appendigaster*, being more as they are in *E. minuta* as figured by SCHLETTERER, Ann. d. k. k. Naturh. Hofmus. IV, f. 4^b and 4^a. In SCHLETTERER's table the species would come in near the Australian *E. humerata*.

Stephanus Jur.

1. *Stephanus malayanus* sp. nov.

Manokwari, May.

Black, the outer orbits on the innerside yellowish, on the outer more broadly red, the front above the antennae and the face and oral region more obscurely red. Antennal scape piceous red. Four front legs brownish in front, with the tarsi paler, the basal joints of the hind tarsi pale testaceous. Wings clear hyaline, the nervures and stigma black; the radius ends shortly before the apex of the wings, the radial cellule therefore being open; the cubitus shortly beyond the transverse cubital nervure; the recurrent nervure is received in the 1st cubital cellule close to the base of its apical third, not close to, or interstitial with it as in most of the species. Ovipositor black. ♀.

Length 11 mm.; terebra 12 mm. .

Temples broad, roundly dilated in the middle, the inner slope shorter and not so rounded as the outer. Vertex closely covered with roundly curved striae; the hind ocelli are united by a stout curved keel, the space on either side of it being rufous. Fore tubercle rufous and larger than the posterior. Front somewhat strongly and closely transversely striated; the striae at the ocelli irregular and oblique. There is a large fovea, longer than broad, transverse at top and bottom and deep, on the sides of the face. Pedicle and first joint of flagellum together are as long as the second. Pronotum at the apex of the basal fovea closely striated; the lower part of the propleurae closely striated, the upper smooth. Parapsidal furrows deep, obscurely crenulated, extending to shortly beyond the middle; in the centre is a shallower furrow which is interrupted near the base. At the base of the scutellum is a large oval transverse fovea from which run, obliquely, 2 rows of foveae towards the apex. Apex of scutellum (probably the whole) smooth. At the base of the median segment is a crenulated furrow; the rest of the segment bears round, shallow, widely separated punctures. Pro- and mesopleurae almost smooth; the apical half of the metapleurae coarsely reticulated. Abdominal petiole as long as the rest of the abdomen united, closely transversely striated. Hind coxae irregularly transversely striated; the 2 femoral teeth are long, stout.

Not unlike *S. maculifrons* Cam. from Borneo, which has the same alar neuration, but the wings are not clear hyaline, but smoky; it is a larger and stouter species; it wants the foveae at the base of the scutellum and the hind femora have numerous teeth.

BRACONIDAE.

Bracon Fab., sec. Szép.

1. *Bracon mōsoensis* sp. nov.

Mōso, 14 May.

Pale reddish yellow, the head paler, more yellowish in tint, the antennae, back of

abdomen and the hind femora, tibiae and tarsi, black; the ventral surface white, the segments with 2 black spots in the centre; wings fuscous, slightly violaceous, the nervures and stigma black; the body smooth and shining. ♀.

Length 7 mm.; terebra 3 mm.

Vertex sparsely covered with fuscous, the face more thickly with longer paler pubescence; the frontal keel distinct, deep. Apex of mandibles black. The depressed basal part of the 1st abdominal segment bears a few longitudinal striae; the raised apical part is depressed at the base in the middle; this part bearing 2 or 3 indistinct transverse keels. The area on the 2nd segment is smooth, slightly longer than its width at the base, its apex produced into a short, stout keel. Suturiform articulation crenulated, stoutly and widely in the middle, more narrowly on the sides; the apical branch is smooth; the furrows on the other segments are smooth; there is no oblique furrows on the sides of the 3rd and 4th segments.

The abdomen is ovate, as long as the head and thorax united and broader than the latter. The scutellum is fully longer than it is broad at the base. The temples are rounded, obliquely narrowed.

This species comes close to *Bracon spilogaster* Cam. from New-Guinea. That is a larger and stouter species, has the scutellum shorter than its width at the base; the basal segment of the abdomen is not striated, the apical abscissa of the radius is shorter compared with the basal two, the middle lobe of the mesonotum is not so clearly separated; and the plate on the 2nd abdominal segment is shorter, its apex not reaching so much beyond the middle but with the apical keel longer and narrower. Both species are intermediate between *Bracon* and *Iphiaulax*.

Iphiaulax Foerster.

1. *Iphiaulax papuanus* sp. nov.

Orum, 21—23 May.

Black; the head yellowish testaceous, the pro- and mesothorax red, the fore legs rufo-testaceous; the middle reddish, their coxae and basal joint of trochanters black; the antennal scape obscure red; wings uniformly dark fuscous, the stigma black. ♀.

Length 17 mm.; terebra 27 mm.

Head covered with pale pubescence; the face with the hair longer and sparser; there is a raised, roundish tubercle on either side of the apex of the clypeus, with a round hole in its centre, as is found, in some of the other Malay species. Mandibles with nearly the apical two-thirds black, the base yellowish testaceous. Middle lobe of mesonotum clearly raised. First abdominal segment in length nearly twice the width of the apex, smooth, the basal two-thirds with an indistinct keel down the middle; the apical half of the lateral furrows with 7 widely separated transverse keels. The basal plate on the 2nd segment in length twice the width of its base; finely obscurely striated, the keel reaches to the apex of the segment; the space on either of the central keel is, inwardly, irregularly transversely, coarsely striated, the striae running into reticulations; outwardly, irregularly, more closely longitudinally striated; the 3rd segment is closely, strongly, longitudinally striated; the 4th has the basal half finely closely striated; the 5th more obscurely striated at the base; the rest of

the abdomen smooth. Basal abscissa of cubitus slightly roundly curved; the recurrent nervure received near the apex of the 1st cubital cellule.

The lateral keels on the 2nd abdominal segment converge slightly towards the apex of the segment; suturiform articulation deep, closely, strongly striated, narrowed towards the outer edge; there are no lateral foveae. Sheaths of ovipositor, narrow, shortly haired, entirely black. The 2nd abdominal segment slightly shorter than the 1st, nearly twice longer than the width at the apex. Ventral segments with large, long black spots; the basal 3 segments together are slightly longer than the thorax.

Comes close to *S. rostratus* Szép. which should be, inter alia, easily known by the 2nd abdominal segment being „fast so lang wie breit.”

Megalommum Szép.

1. *Megalommum nigriceps* sp. nov.

Wakobi, March.

Black; the thorax and 4 front legs rufous, the legs paler than the thorax; the 1st segment of the abdomen rufo testaceous, the area of a darker testaceous colour; the 4th, 5th and 6th narrowly at the apex and the whole of the 7th pale yellow; the hind tarsi for the greater part fuscous. Wings long, dark fuscous; the nervures and stigma black, the nervures at the base of the wings rufo-testaceous. ♀.

Length 9 mm.; terebra 4 mm.

Front and vertex smooth, shining; the former furrowed down the middle, almost bare. Face not so shining, sparsely covered with long pale hair. Mandibles testaceous, their apical third black. Maxillae large, pale testaceous, densely covered with long pale pubescence. Parapsidal furrows distinct on the basal slope. There is a transverse crenulated furrow at the base of the scutellum. Median segment covered with long white hair. Abdomen smooth, covered with a white pile; the furrows bordering the area on 2nd segment are deep; the basal part straight and oblique, the apical more waved; they do not unite at the centre of the area, which does not extend to the apex of the segment. The 2nd segment is broader than long, its sides are bordered by a deep, broad furrow which reaches to the apex of the area; the suturiform articulation smooth, curved; its outersides, straight oblique; the segments become gradually narrowed to the apex from the base of the 3rd; the apex is bluntly rounded. If any thing the 3rd joint of the antennae is longer than the 4th. The 3rd abscissa of radius curved, clearly longer than the basal two united. The 3rd and following segments of the abdomen are all broader than long.

Comes nearest to *M. Biroi*, Szép.

Euagathis Szép.

1. *Euagathis fuscipennis* sp. nov.

Manokwari, 8 June.

Reddish yellow, the flagellum of the antennae, metanotum, abdomen, a line, above and below on the hind femora and the hind tibiae and tarsi, black; wings fuscous, the

nervures and stigma black. Metapleurae thickly covered with long white pubescence. ♂.

Length 7—8 mm.

Head, pro- and mesothorax shining, sparsely punctured and covered with fuscous hair. The base of the mesopleurae coarsely, irregularly punctured above; the lower part depressed, bearing some stout keels and running into the crenulated longitudinal furrow below. Post-scutellar keels black, angularly narrowed behind. Metanotum at the base, in the centre, with 2 stout keels which converge at the base; the outerside bordered by keels; the whole stoutly, transversely striated; on the apical slope in the centre is a triangular area formed by stout keels, the broad end being at the top; the sides are edged. Abdomen smooth and shining. Wings long; the areolet longer than broad, of almost equal width throughout; the transverse median nervure is received shortly beyond the transverse basal; the praebrachial nervure is testaceous.

Legs (especially the tibiae and tarsi) densely covered with white pubescence.

The scutellum is roundly convex; its sides and apex are not keeled. A stout keel runs from the outer side of the antennae to the hind ocelli. There is a keel near the base of the propleurae which, below, extends to near the apex. The recurrent nervure is received shortly before the transverse cubital.

This species resembles in colouration *E. eriophora* Cam. from Borneo; that species has the areolet smaller and narrowed in front and the scutellum is keeled at the sides and apex.

2. *Euagathis papua* sp. nov.

Superior part of Jamūr, 4 August.

Rufo-luteous; the flagellum of antennae, abdomen and hind legs, black; the wings uniformly dark fuscous, slightly tinged with violaceous, the stigma black. ♀.

Length 9—10 mm.

Malar space nearly as long as the eyes. Head sparsely covered with white pubescence; the face finely closely punctured. Space bordering the ocelli and middle of vertex depressed, smooth and bare. Mandibles pallid yellow, black at the apex; the palpi coloured like the head, thickly covered with white hair. Mesonotum punctured closely, but not strongly, except on the depressed middle of the apex; the middle lobe clearly raised and separated. Scutellar depression large and deep; its central keel short. Scutellum keeled all round; the keel on the base not so strong as the lateral; the punctuation is strong and close on the top. The depressed base of the metanotum is closely punctured; in the centre is a large area, which extends from the top of the basal slope to the apex of the segment; the base is obliquely narrowed, the keels uniting there; the apex is also narrowed, but the keels do not unite there; the upper part bears 3 or 4 stout, irregular transverse keels; the apical slope is smooth; the sides and the inner side of the spiracular region are bordered by a keel. Propleurae weakly punctured; the lower part of the depression with some striae. Mesopleurae closely and strongly punctured, the oblique depression wide, deep, with 9 stout keels, the lower larger and more widely separated. Metapleurae closely, distinctly punctured; a keel runs obliquely from the middle coxae to the apex above. Abdomen smooth; the ovipositor 1 mm. long. Legs covered with white pubescence; the hind coxae and femora more thickly haired than the rest; the 4 front claws cleft, the hinder with a distinct tooth near the middle. Areolet narrowed in front, the nervures uniting there; the 2nd with a short, thick branch.

Agathis Latr. sec. Szép.1. *Agathis albolineata* sp. nov.

Manokwari, June.

Rufo-testaceous; the antennal flagellum, abdomen except at the base and the hind tibiae and tarsi black; the wings dark fuscous, slightly tinged with violaceous, the nervures and stigma black. ♀ and ♂.

Length 8 mm.; terebra 8—9 mm.

Smooth and shining. Scutellar depression deep. The 3rd and following segments have their apices narrowly lined with clear white. Malar space and outer orbits tinged with white. The areolet is not much narrowed in front; the stump of a nervure issues from near the top and is as long as the transverse cubital nervure. Mandibles pale testaceous, blackish at the apex.

ICHNEUMONIDAE.**MESOSTENI.****Irabatha** nov. gen.

Thorax fully 3 times longer than broad; the median segment longer than wide, with one transverse keel and with long stout teeth on the apex. Parapsidal furrows not reaching to the apex of the mesonotum, bounding the apex of the middle lobe which is rounded. Scutellum flat, its sides not keeled. Metapleural keel not reaching to the hind coxae. Temples short, sharply obliquely narrowed. Front depressed, keeled down the centre. Areolet minute, narrow, longer than wide. Transverse median nervure received behind the transverse basal. Disco-cubital nervure almost broken by a stump of a nervure. Transverse median nervure in hind wings broken shortly below the middle and sharply angled. Petiole long, its apical half widened; the spiracles are nearer to each other than they are to the apex; the segments are smooth. Legs long and slender; the basal joint of the fore tarsi as long as the tibiae.

The apex of the clypeus is depressed and has a furrow down the middle; above this are 2 longish, shallow foveae; on the sides is a stout keel. There are 2 keels at the base of the transverse keel on the metanotum. Spiracles linear.

This genus comes near to *Buodias*, a Malay genus; it has a larger, not punctiform areolet; the transverse median nervure in hind wings is broken half way between the middle and lower part; the temples are much shorter, almost obsolete above; the scutellum is more distinctly convex and is stoutly keeled laterally on the basal half. The head is wider than the thorax.

1. *Irabatha albispina* sp. nov.

Superior part of Jamūr, August.

Black, shining, the 5—10 joints of the flagellum of the antennae, a mark on either side of the vertex, touching the eyes, broad at the eyes, gradually narrowed to a point inwardly, palpi, a conical mark on the apex of the middle lobe of the mesonotum, the narrowed, rounded

end at the apex, the apical two-thirds of the scutellum, the metanotal spines, an oblique, pyriform mark on the centre of the mesopleurae below the wings, the broad end above, a smaller, squarish mark below the hind wings, an irregularly oval large mark on the apex of the metapleurae, a band, narrowed in the middle, on the apex of the basal 4 abdominal segments, a very narrow line on the apex of the 6th and almost the apical two-thirds of the 7th, pale yellow. The 4 anterior coxae and trochanters pale yellow, the rest of the four front legs pale yellow, largely tinged with fuscous; hind coxae black, with a large yellow mark on the base above, the basal joint of the trochanters yellow, the apical black, the femora black, largely streaked with yellow on the outer and innersides, the tibiae black, with a yellow, narrow band near the base, the tarsi, yellow, the metatarsus black to near the middle. Wings hyaline, the nervures and stigma black. ♀.

Length 12 mm.; terebra 5 mm.

Upper part of face irregularly, transversely striated, the lower finely, sparsely punctured. Front and vertex almost smooth, except for some fine striae on eitherside of the keel. Pro- and mesothorax smooth, except for striated bands on the centre and apex of the propleurae behind the keel on the meso- and at the apex of the furrow. The base of the metanotum to the keel smooth, the rest of it irregularly transversely striated, the apex in the centre almost smooth. The spines are as long as their width at the base. Metapleurae strongly, irregularly obliquely striated. Abdomen smooth. Legs long; their tarsi (especially the anterior) longer than the tibiae.

OPHIONINI.

Enicospilus Steph.

1. *Enicospilus melanospilus* sp. nov.

Sentani, April.

Testaceous, tinged with fulvous, the antennae, except the scape below, a triangular mark on the vertex covering the ocelli and the 5th and following segments of the abdomen black. Wings hyaline, iridescent, slightly tinged with fuscous; the stigma and nervures black; there is one large, triangular black horny point; the narrow end of it is in front, the outer side is longer than the inner and roundly curved; the outer is straight and oblique. ♀.

Length 17 mm.

Head and thorax covered with a short, white down; the inner orbits broadly pale yellow, the outer obscure yellow. Mandibles testaceous, with the teeth black. The scutellum is keeled to the apex. The base of metanotum is smooth; the basal half of the apical slope is irregularly longitudinally striated, almost reticulated; the apex is irregularly transversely striated; the striae on both parts are broken considerably. Metapleurae at the base above smooth; the lower part irregularly obliquely striated; the upper more strongly, irregularly reticulated.

CHRYSIDIDAE.

Stilbum Spin.1. *Stilbum splendidum* F.

Manokwari, May. One example.

Pentachrysis Licht.1. *Pentachrysis papuana* sp. nov.

Manokwari, May.

Green, largely marked with brassy tints, the ocellar region and the middle of the vertex, a narrow line on the centre of the pronotum, the greater part of the middle lobe of the mesonotum, the centre of the scutellum broadly, the centre of the post-scutellum violaceous; the pro- and metapleurae and the sides of the back of abdomen broadly brassy; the back broadly indigo-blue. The basal 2 joints of the antennae green, the 3rd green above, the other joints black. Legs green, marked with brassy tints, the tarsi blackish, the base dark brassy green. Wings fuscous, largely tinged with violaceous, the nervures black. ♀.

Length 8 mm.

A medium sized species, moderately elongated. The pubescence dense, fuscous. Third antennal joint about one third longer than the 4th, clearly shorter than the following two joints united. Head slightly wider than the base of the pronotum; the front and vertex deeply, strongly punctured, the latter more strongly than the former. Apical half of the pronotum wider than the basal, rounded. Upper part of thorax strongly, closely punctured, the punctures round and deep. Post-scutellum roundly convex, not raised above the scutellum, the apex roundly narrowed; it is bordered behind laterally by a longish fovea with a few stout keels in the centre; between the two lateral foveae is a shorter deeper one with 2 stout keels in the centre. The upper lateral angles of the metanotum project into a stout tooth, longer than its width at the base and narrowed towards the apex. Upper part of propleurae depressed, above strongly, irregularly punctured; the middle less strongly punctured and with a longish fovea at the apex, the lower part finely, closely, irregularly striated-reticulated, smooth behind. Mesopleurae above stoutly punctured, the punctures large, round and deep; the lower part irregularly reticulated. Metapleurae closely, strongly obliquely striated; the apex deeply depressed, with 2 round foveae below. Back of abdomen closely, uniformly punctured; the 2nd segment distinctly, the 3rd indistinctly keeled down the centre. Ante-apical foveae 10; the inner more distinct than the outer; they are not very deep, somewhat oval and violaceous; the outer teeth are shorter and broader than the central, which is broad at the base, becoming narrowed to a sharp point at the apex.

Heptachrysis Licht.1. *Heptachrysis Novae-Guineae* sp. nov.

Manokwari, May.

Dark green, the ocellar region dark indigo blue, the mesonotum more slightly tinged

with blue; the back of the abdomen slightly tinged with blue, the sides with brassy tints. Antennae black, the basal joint entirely, the following 3 green above. Wings fuscous-violaceous, the nervures black. ♀.

Length 8 mm.

The 3rd antennal joint slightly shorter than the following two united. Vertex strongly and closely punctured; below the ocelli the punctuation is weaker and not so close, especially in the middle. Eye orbits transversely, stoutly striated; on the outer orbits these are bordered by a keel. Head slightly, but distinctly, wider than the pronotum. Upper part of the thorax closely and deeply punctured, the postscutellum with the punctures larger and deeper, its apex broadly rounded. The central fovea of the metanotum is larger, wider than long, rounded and narrowed behind, deep and with a narrow keel in the centre; there are 2 lateral oval ones, the inner being clearly larger than the outer. Upper part of propleurae stoutly punctured, the central depression large, deep, irregularly, closely finely striated-reticulated; on the top above there is a smaller depression, longer than wide. Mesopleurae stoutly, deeply, irregularly punctured; near the apex is an oblique depression; below is a longitudinal furrow, narrow at the base, wide at the apex, where there are 3 large irregular areas. Metapleurae deeply depressed, stoutly, closely obliquely striated. Abdomen closely punctured; the 3rd segment more closely and strongly than the basal; there is a deep, triangular depression in the centre above the basal slope. There are 10 anteapical foveae; the outer 3 are shallower and become gradually larger from the outer to the innerside and they are widely separated; the inner two are closer, smaller and deeper; the outer teeth are broader and slightly shorter than the inner. The legs are of a darker green than the body; the tarsi black, marked with green at the base.

MUTILLIDAE.

Mutilla Lin.

1. *Mutilla tamensis* sp. nov.

Tami, May.

Black, the basal three fourths of the thorax above and a large triangular mark on the base of the pleurae, above its apex reaching close to the middle, red, a small oval patch of silvery pubescence on the base of the 2nd abdominal segment and the whole of the 3rd covered with similar pubescence. Head nearly as wide as the thorax; closely, strongly punctured-reticulated, longitudinally above, more closely below, where the punctures run more into reticulations; it is covered with black pubescence. Temples closely rugosely punctured above, below coarsely reticulated. Lower part of front, above the antennae broadly, roundly bilobate. Thorax somewhat more than twice longer than its width at the base, gradually slightly narrowed towards the apex; before the middle above is a short, blunt, indistinct projection; above it is closely, sharply longitudinally striated; the upper part of the apical slope covered with large elongated, not very deep punctures; the rest is more shining, much less closely and less strongly punctured. Pro- and mesonotum smooth, except the latter below, where it is strongly reticulated-punctured. Basal segment of the abdomen with an oblique straight

slope at the base, shining, sparsely punctured and covered with long, pale hair; the apex is opaque, closely punctured and thickly covered with shorter black hair. Pygidium opaque, punctured, the punctures clearly separated; on the apical half is a broad, impressed line, which becomes gradually wider towards the apex; it is aciculated. Legs thickly covered with white hair; tibial spines long and black, the calcaria pale; the spines on the apex of the tarsi bright rufous.

This species comes near to *M. Urania* Smith from Borneo; the latter is a larger and stouter species; its thorax is shorter and broader and not so clearly narrowed towards the apex; it is entirely red; its sides above are more uneven, more tuberculate; at the base it is quite transverse, with sharp, outer edges, while they are broadly rounded in the present species. The colouration of the abdomen is the same in both species. In *Urania* the coloured band and spot on the abdomen is darker, more fulvous in tint, the base of the thorax is clearly, if slightly wider than the head, especially compared with the hinder edge of the latter; the tubercle before the middle is distinct; there is a blunt rounded one at the base and two, widely separated ones, behind the middle, the apical being the larger. The basal two segments of the abdomen together are equal in length with the head and thorax united. Pygidium rugose; there is a smooth line down the centre, commencing near the base. Tibial spines long, narrow and black; the tarsal spines rufous and the under side of the tarsi are thickly covered with rufous, stiff pubescence; calcaria pale rufous. The 2nd abdominal segment is punctured at the base, the punctures not forming distinct reticulations and not forming longitudinal striations as in the species described above; towards the apex the punctuation becomes very weak. The hair on the legs has a fulvous tinge.

I have given the above details regarding *M. Urania* because ANDRÉ, Termesz. Füzet. XIX, 12, appears to suspect that it may be identical with *M. cordigera* Rad. and Sich., a widely spread Malay species. The two, however, are clearly distinct, if any reliance is to be placed on the figure of *cordigera* given by RADOSKOWSKI and SICHEL, Horae Soc. Ent. Ross., 1869, pl. VII, f. 8; in that figure *cordigera* is shown to have the base of the thorax clearly rounded and narrowed while in *Urania* it is transverse, with sharp lateral angles.

SCOLIIDAE.

Discolia Sauss.

1. *Discolia culta* Smith.

SAUSSURE, Cat. Sp. Gen. Scolia, 122, 123. Journ. Linn. Soc. 1860, p. 117.

Tawarin, June.

Described by Smith from Doré, New Guinea.

Dielis Sauss.

1. *Dielis de-Meijerei* sp. nov. ♀.

Kwatisoré, July.

This species is very similar to *D. albicollis*, Christ., the two may be separated thus:

The second radial cellule much longer than its width at the apex; the wings dark fuscous violaceous; the hair on the abdomen black; the calcaria and tarsal spines black. *albicollis*.

The second radial cellule at the apex not much shorter than its length along the costa; the wings almost hyaline, the hair on the abdomen white; the calcaria and tarsal spines pale fulvous. *de-Meijerei* n. sp.

Length 16 mm.

The occiput and collar thickly covered with long white hair; the hair on the vertex tinged with fulvous. There is a double row of large deep punctures in a curve in front of the ocelli and a single one behind them; the part below the front row is smooth; the rest of the front is coarsely punctured. The hinder part of the vertex bears large, widely separated punctures. Mesonotum closely, distinctly punctured. The scutellum is similarly, but less strongly punctured, with a smooth band down the centre and on the apex; the post-scutellum less strongly, but slightly more closely punctured, with the apex smooth. Base of metanotum closely and rather strongly punctured and covered with white pubescence; the apical slope smooth, covered with a pale fulvous pile. Abdomen at the base sparsely, at the apex strongly and closely punctured; the base of the first segment covered with white hair; the apices of the segments fringed with white hair except the penultimate which, at the apex, is thickly covered with dark brown pubescence. The pubescence on the last segment is black. The wings have a steel-coloured iridescence, the base and front have a fulvous tinge, the stigma and nervures are black. The apex of the 2nd radial cellule does not project so much beyond the cubital as it does in *E. albicollis*, the cubital cellule, too, being narrower.

2. *Dielis manokwariensis* sp. nov.

Manokwari, May.

Black, the occiput, prothorax and base of mesothorax thickly covered with long white hair; the apices of the abdominal segments broadly and the tibiae and tarsi covered with bright fulvous hair; wings fuscous violaceous, the base lighter in tint, slightly tinged with fulvous; the radial cellule wide; the apex about one half shorter than the length along the costa; the apical abscissa of the radius straight, oblique, but not so long, nor so sharply obliquely sloped as in *albicollis*. ♀.

Length 17 mm.

Front and vertex smooth, the lower part of the front and the inner orbits above narrowly, punctured. Upper part of the clypeus smooth, the lower irregularly striated. The sides and apex of mesonotum strongly, but not very closely, the base more sparsely and slightly more weakly, punctured; the middle smooth. Scutellum smooth, the apex with 2 rows of punctures, the basal row with fewer punctures than the apical. Base of metanotum smooth; the apical half on the sides sparsely punctured and haired. Abdomen almost smooth; the apical segment covered with stiff black, mixed with dark rufous, pile. The hair and spines on the tibiae and tarsi fulvous; the apical spines rufous; the calcaria black.

The abdomen is shining, probably when fresh it would have micaceous tints; the stiff

spines fringing the fore tarsi are bright rufous; the upper part of the apical transverse cubital nervure is roundly curved outwardly.

3. *Dielis humboldti* sp. nov.

Humboldt Bay, June.

Length 12 mm. ♀.

This species has the hair colouration of *D. de-Meijerei*, thick white hair on the occiput and collar and on the apices of the abdominal segments, but may be known from it by the 2nd radial cellule projecting largely beyond the cubital, the wings, too, being dark fuscous violaceous. From *de-Meijerei* and also from *albicollis* it may further be known by the almost smooth, not punctured scutellums and metanotum. Vertex and upper part of front almost impunctate; the lower half of the latter strongly punctured. Mesonotum not very strongly or closely punctured, the centre at the apex smooth. Scutellum smooth, except for a transverse row of punctures at the base and apex. Post-scutellum very sparsely punctured. Base of metanotum almost impunctate except at the sides at the apex. Abdomen almost impunctate on the basal segments, their apices fringed with white hair; the last segment with stiff black, mixed with dark rufous hair. The 2nd radial cellule is wide; its length along the costa about one third more than the width of the apex; the nervure at the apex roundly curved outwardly. This is a more slenderly built species than *albicollis* or *manokwariensis*. The wings are as dark coloured as in *albicollis*.

4. *Dielis* sp. ♂.

Humboldt Bay, June.

A ♂ (13 mm.) does not appear to be the other sex of the 3 species I have described. The radius projects far more beyond the apex of the cubital cellule than it does in any of them, it being also more regularly, broadly, uniformly curved, and turned towards the apex of the wing from below. The sides of the clypeus and the apices of the abdominal segments are clear yellow as are also the outer edge of the tibiae.

CEROPALIDAE.

Macromeris Lep.

1. *Macromeris iridipennis* Smith.

Journ. Linn. Soc. 1859, 156.

Manokwari, June. ♂.

M. iridipennis is considered by BINGHAM, Fauna of India, Hymen. I, 105, to be a form of *violacea* Lep. with the hind femora serrate beneath in ♂.

Salius Fab., Kohl.1. *Salius ferrugineus* Sm.

Mygimima ferruginea SMITH, Journ. Linn. Soc. 1860, p. 121.

Manokwari, June. One specimen. The claws are bidentate.

2. *Salius schizostomus* sp. nov.

Manikion, February.

Claws with one tooth. Ferruginous, shining, covered with a ferruginous pile. Wings yellowish hyaline, a fuscous violaceous cloud near the apex, extending along the inner side of the 1st transverse cubital nervure, the 1st recurrent, the outside of the 1st transverse basal, above the 2nd cubital cellule in the radial, to the apical fourth of the 3rd cubital cellule, the apex of the cloud being broadly rounded, and from the bottom extending along the apex of the wings to the apex of the radial cellule. ♀.

Length 17 mm.

Eyes distinctly converging above, separated there by about the length of the scape and pedicle united. Hind ocelli separated from each other by about the same distance they are from the eyes. Apex of the clypeus transverse; the labrum with a \wedge shaped incision in the centre. Apex of mandibles black. Basal abscissa of radius roundly curved upwards; the 2nd cubital cellule much narrowed in front, being there about one third of its length behind, about the same length as the space bounded by the 2nd transverse cubital nervure and the 2nd recurrent; the 1st and 3rd transverse cubital nervures roundly curved, the former with a longer slope than the latter. Median segment weakly striated. The accessory nervure in the hind wings is received shortly before the cubital. The 1st joint of the flagellum is nearly as long as the following two united. Antennae nearly as long as the body, longer and more slender than usual.

Priocnemis adustus Smith, Journ. Linn. Soc. 1863, p. 30 from Misol, agrees with this species fairly in coloration, but the description of the ♂ given by SMITH is not precise enough for identification.

3. *Salius erythrourea* sp. nov.

Humboldt Bay, March—June. Sentani.

Claws with one tooth near the base. Black, the flagellum of antennae pale yellow; their scape, the head below from near the hind ocelli, the outer orbits narrowly above, 3 oval marks on the base of the 2nd abdominal segment, the apical two-thirds of the 3rd and the whole of the others, except the base of the 4th below, the apex of the fore femora, of the middle more broadly and of the hinder at the apex only and the tibiae and tarsi ferruginous; the tarsi paler, more yellowish, than the tibiae. The 3rd abscissa of radius is as long as the basal two united; the 1st and 3rd transverse cubital nervures are roundly curved; obliquely bent in front; the 1st recurrent nervure is received about one half the length of the 1st transverse cubital nervure from the 2nd; the 2nd recurrent shortly behind the middle of the cellule; the cubitus in hind wings received shortly behind the transverse median nervure. ♀.

Length 30 mm.

Eyes above converging; separated at the top by the length of the 3rd antennal joint, which, with the pedicle, is nearly as long as the following 2 joints united. Apex of clypeus almost transverse, with the sides rounded. The vertex, occiput, prothorax and pleurae thickly covered with longish black hair. Apex of pro- and base of mesonotum rounded, not angled in the middle. There is a deep longitudinal furrow on the apical half of the mesonotum; the centre of the scutellum broadly depressed; the post-scutellum with a shallow furrow in the centre. Outer calaria black, the inner for the greater part rufous. The basal half of the mandibles and the palpi ferruginous, the apical half of the former black. Mandibles broadly rounded at the apex, without teeth; the middle with a distinct, deep, curved furrow.

The ♂ is smaller (15 mm.) and similarly coloured except that the wings have a narrow fuscous border; the 3rd and 4th joints of the antennae are equal in length, the legs are less strongly spinose and serrate and the mandibles have an indistinct subapical tooth.

Pompilus Fab.

1. *Pompilus manokwariensis* sp. nov.

Manokwari, 15 May.

Black, spotted with silvery patches, wings fuscous, iridescent, the stigma and nervures black; the 3rd cubital cellule almost appendiculate, the nervures rounded, touching in front. ♀. Length 8 mm.

The silvery pubescence appears to be arranged in regular patches — on the clypeus, lower inner orbits, the outer entirely, base of mandibles, the sides of the pronotum at the base and apex, on apex of mesonotum, post-scutellum, base of propleurae, the lower half of the apex of mesopleurae, the apical half of the metapleurae and spots, obliquely narrowed on the innerside, on the sides of the abdominal segments. Apex of clypeus transverse, the sides rounded. The 2nd recurrent nervure is received very shortly behind the middle of the cellule; the transverse median nervure received shortly beyond the transverse basal, the cubitus in hind wings received very shortly behind the transverse median, almost interstitial. Eyes slightly converging above; the hind ocelli separated from each other by a slightly less distance than they are from the eyes. Median segment posteriorly rounded, without an impressed line above. Fore tarsi with stiff long spines; the claws with a median tooth. Marginal cellule acutely pointed at apex. Pronotum as long as mesonotum, roundly arcuate. First joint of flagellum clearly longer than the second.

Mygnumia Sm.

1. *Mygnumia aspasia* Sm.

A specimen of what I take to be this species (described: Proc. Linn. Soc. 1859, p. 157 from Aru, and recorded *l. c.* 1860, p. 121, from Amboina and Doré, New Guinea), is in the Collection from Wa Udu, August. The claws are stout, almost bifid, the inner claw being stouter than the outer, and reaching shortly beyond its middle; the eyes converge very little above and are separated there by about the length of the 3rd antennal joint. The hind ocelli are separated from the eyes by about double the distance they are from each other. Apex

of clypeus distinctly depressed, clearly separated from the rest, broadly rounded. The 2nd and 3rd abscissae of radius are almost equal in length, the 1st recurrent nervure is received close to, but clearly separated from the 2nd transverse cubital nervure; the 2nd recurrent clearly behind the middle; the 1st transverse cubital nervure is straight, sharply obliquely sloped; the 2nd less obliquely sloped and rounded behind; the 3rd broadly rounded. The wings have a violaceous tinge on the basal half.

SPHEGIDAE.

Sceliphron Klug.

1. *Sceliphron laetum* Smith.

Pelopaeus laetus, SMITH, Cat. Hym. Ins. Brit. Mus. IV, 229, pl. 7, f. 1; MAINDRON, Ann. Soc. Ent. Fr. VIII, 394, pl. 9, f. 1.

Humboldt Bay, March.

Sentani, June and July.

A common Papuan-Australian species.

2. *Sceliphron Bruynii* Maindron.

Pelopaeus Bruynii MAINDRON, l. c. 394, pl. 9, f. 10.

Manokwari, May. Recorded by Maindron from Doré and Andain.

Sphex Lin., Kohl.

1. *Sphex umbrosus* Christ.

KOHL, Ann. d. k. k. Hofmus., V, 406.

Manokwari, May and June. North of Lake Jamūr, August.

2. *Sphex aurulentus* Smith, Fab.

KOHL, Ann. d. k. k. Hofmus., V, 392.

The head and thorax are covered densely with reddish fulvous hair; the 1st and the basal half of the 2nd abdominal segment red, the rest black; the legs except the greater part of the coxae are reddish. Mandibles ferruginous, broadly black at the apex. Wings fuscous, tinged with violaceous. The paleness of the hair on the head and thorax may be owing to exposure to the weather.

Sphex morosus Smith.

Journ. Linn. Soc. 1861, 122; KOHL, Ann. d. k. k. Hofmus. Wien, V, 448.

One example. Bawé, March.

4. *Sphex aurifrons* Smith.

Journ. Linn. Soc. 1859, 157; KOHL, Ann. d. k. k. Hofmus., V, 439.

One example. Tami, May.

Liris Fab.1. *Liris aurata* Fab.

Humboldt Bay, March.

Notogonia Costa.1. *Notogonia vindex* Smith.

Larrada vindex, SMITH, Journ. Linn. Soc. 1860.

An example from Kwatisoré, August, is probably this species, which was described from Batjan.

It is not in fresh condition but it agrees fairly well with SMITH'S description, so far as that goes. The wings are hyaline suffused with fulvous, the apex with a violaceous tinge; the 2nd and 3rd cubital cellules are equal in length in front; the recurrent nervures are received at the apex of the basal third of the cellule. The pygidium is densely covered with dark golden-rufous pubescence; the pubescence on the head and thorax is pale golden (probably bright golden in fresh specimens); on the apices of the abdominal segments silvery. Mesonotum and scutellum minutely punctured; the median segment obscurely transversely striated. Legs spines black.

Cerceris Latr.1. *Cerceris papuana* sp. nov.

Manokwari, May.

Black; the clypeus, face, inner orbits to shortly above the antennae (the line obliquely narrowed) the scape of the antennae beneath except at the apex, 2 oval marks near the base of the 2nd abdominal segment, a band on the apex of the 3rd segment, narrowed in the middle, laterally extending to near the base, a mark on the sides of its ventral surface, a longitudinal line on the sides of the 4th, a transverse one, not reaching to the middle, on the sides of the 5th, its apex dilated, the greater part of the fore femora, tibiae and tarsi in front and, to a less extent, behind, a line on the middle femora, the middle tibiae, except for a black mark near the middle in front, the middle tarsi, except the apices of the joints which are darker coloured, a narrow line behind the middle of the hind tibiae, their extreme apex and the calcaria, yellow. Wings hyaline, the radial cellule and the apex smoky; the stigma and nervures black. ♀.

Length 9 mm.

Metanotal area smooth and shining; furrowed down the centre; the base of the furrow with transverse keels, the apex with 4 stout keels which extend laterally beyond the furrow. Front and vertex closely and strongly, the clypeus less closely punctured, the apex of the latter slightly bilobate in the middle, the sides thickly covered with white pubescence. Labrum

black, its apex transverse. Basal half of mandibles yellow on the innerside. Flagellum of antennae fulvous below. Thorax closely and strongly punctured, as is also the abdomen. Pygidium narrowed roundly at the base and apex, slightly wider at the base than at the apex; the base with some irregular longitudinal striae, the middle irregularly transversely striated, the apex finely rugose.

Bembex Latr.

1. *Bembex melancholica* Smith.

Cat. Hym. Ins. Brit. Mus. IV, 328, 47; Journ. Linn. Soc. 1860, 125; Handlirsch, Sitzunb. Akad. Wiss. Wien, CII, 1893, 783, pl. II f. 5, pl. V, f. 17, pl. VII f. 5.

This species extends northwards to the Sikhim Himalaya.

Stizus Latr.

1. *Stizus papuanus* sp. nov.

Lake Jamūr, August.

Lateral angles of metanotum distinctly incised, the upper and lower sides of the incision straight, oblique, forming a sharp angle on the innerside, the upper side longer than the lower. Black, shining, the head and thorax thickly covered with a whitish pubescence; the clypeus, except for a large black mark in the centre, the mark wider than long, the top transverse, the sides and apex rounded, face, palpi, labrum, a narrow line on the apex of the pronotum, tubercles, base of tegulae, scutellar keels, a small mark, longer than broad, on the base of scutellum at the sides, a broad line on the post-scutellum, the lateral angles of the metanotum, a broad band, narrowed in the middle on the apex of the 1st abdominal segment, a similar, but narrower one on the apex of the 2nd and narrower lines on the apices of the 3rd, 4th and 5th segments (that on the 3rd being narrower, less distinct, than on the others), pale yellow. The 4 anterior tibiae in front, the fore femora in front, the apex of the middle femora, and a mark on the outside of the hind tibiae at the base, yellow. Wings hyaline, the nervures and stigma black; the 2nd cubital cellule not appendiculated, but with the nervures close to each other. ♂.

Length 7 mm,

Eyes distinctly converging below, separated there by slightly less than the length of the antennal scape. Head and thorax sparsely, indistinctly punctured. The 2 keels on the apical half of the metanotum are stout, narrowed and slightly roundly diverging above.

The presence of an incision on the sides of the metanotum and the presence of a yellow fascia on the 3rd abdominal segment, would, in Handlirsch's table, Sitzungsber. d. kaiserl. Akad. d. Wissensch. in Wien, CI. Abth. I, 1892, p. 185, bring this species close to *S. signatus* Hand. from Australia, with which species it cannot be confounded. In size and general colouration it agrees with *S. proximus* and *S. socius*; but these species have not the sides of the metanotum excised.

VESPIDAE.

Vespa L.1. *Vespa cincta* F. race *affinis* F.

Manokwari, May, June.

Two of the workers are almost typical *cincta*. The Malay form is the race *affinis*.

Polistratus gen. nov.

Sides of scutellum roundly projecting at the apex, clearly separated; the sides of post-scutellum raised, margined, the sides at the apex projecting, distinctly raised above and separated from, the metanotum. Metanotum short, with a steep, oblique slope; its sides broadly margined. Malar space very small, almost obsolete. First abdominal segment triangular, very narrow at the base, becoming gradually wider towards the apex, which is rounded, not transverse and roundly raised above the base of the second, its width being equal to the total length of the segment. The second segment large, longer than wide. Second cubital cellule along the cubitus slightly, but distinctly, shorter than the third; much narrowed along the radius; the 2nd and 3rd transverse cubital nervures straight, oblique, not roundly curved.

This genus is founded on a small, fulvous and yellow species, which appears to be sufficiently distinct from *Polistes* and *Polistella* (ASHMEAD, Proc. U. S. Nat. Mus. 1904, XXVIII, 133) the genera most nearly allied to it. Both may be known by the flat sides of the scutellum and post-scutellum and by the latter not being raised and projecting at the apex and by the abdominal petiole being longer than it is wide at the apex. *Polistes*, too, has a distinct malar space, the eyes being distinctly separated from the base of the mandibles; the clypeus is longer and the 2nd and 3rd transverse cubital nervures are roundly curved. *Polistella* has a long abdominal petiole as in *Polistes* and it may otherwise be known by the 2nd cubital cellule being very short, along the radius and cubitus. *Polistratus* has a different *facies* from any of the other Oriental wasp genera.

1. *Polistratus cariniscutis* sp. nov.

Manokwari, May.

Head and thorax bright yellow, the vertex, upper half of front, occiput and mesonotum dark rufous; the latter with 2 yellow lines on the apical two-thirds, which are thick and almost united at the apex, becoming gradually narrowed towards the base; the sternum is of a darker rufous colour. Abdomen rufous, coloured like the mesonotum, except the sides and apex of the 1st and the apex of the 2nd segment which are yellow. Legs rufo-fulvous, the coxae and the 4 anterior femora in front yellow. Wings almost hyaline, the stigma fuscous, the nervures darker coloured. The metanotum is irregularly rugose, almost reticulated.

Length 7 mm.

Polistes Latr.1. *Polistes marginalis* F.

This species is represented by the forms *maculipennis* Sauss. from Manokwari, June and Wendesi and var. *synoecus* Sauss. from Manokwari. The former variety is the most abundant. Both forms are variable in colouration. Cf. Schulz, Berl. Ent. Zeits. XLIX. p. 230—232 for remarks on the Papuan forms of *P. maculipennis*.

2. *Polistes malayanus* sp. nov.

Manokwari, June. Several examples.

Black, the mandibles except the teeth, the lower inner orbits broadly, the yellow united to an equally broad transverse stripe across the lower part of the front and the prothorax, except the lower part of the base and the lower part of the pleurae, orange-yellow, an interrupted line behind the ocelli, a broad one on the upper two-thirds of the outer eye orbits and 2 irregular marks on the centre of the mesonotum, brownish-rufous; the abdomen dark brownish-rufous; the whole of the 1st, a broad band on the base of the 2nd, dilated in the middle and with a transverse projection there; and the base of the 3rd narrowly, black. Antennae rufous, slightly tinged with yellow. Legs black, the apex of the fore femora, of the middle more narrowly, the 4 anterior tibiae and the 4 anterior tarsi, rufous tinged with yellow. Wings hyaline, largely tinged with fulvous, the posterior lighter in tint, the apex of both more or less violaceous; the stigma and nervures fulvous. ♀ and ♂.

Length 20—23 mm.

♀. Clypeus as long as its greatest width, the apex gradually rounded to a bluntly rounded point; the middle above transverse, the sides rounded. Malar space slightly longer than the 4th antennal joint; the 3rd joint is nearly as long as the following 3 united.

♂. Clypeus slightly, but distinctly longer than wide, the apex broadly, roundly projecting in the middle, and fringed with white hair; the sides roundly curved; the top in the centre roundly projects downwards, the sides roundly narrowed. The last joint of the antennae is about one fourth longer than the preceding. The 4 front coxae are yellow below; the fore femora entirely yellow below, the middle in front only; the middle tibiae are for the greater part black behind; the tarsi are clear pale yellow. The last ventral segment bears 2 stout teeth, as long as they are wide at the base and with the apex rounded; the space between them is depressed.

The amount of black on the 2nd and following abdominal segments varies; the form of the band on the 2nd varies and may want the middle projection, the bands on the base of the 3rd and 4th vary; the 2 marks on the mesonotum vary; they are usually transverse on the innerside, dilated in the middle on the outer, with the base and apex obliquely sloped.

Comes close to *P. rothneyi* Cam. and *P. rufofemoratus* Cam. from Northern India; the former has the apical joint of the antennae in the ♂ compressed and dilated laterally; the colouration is different; in the ♀ the clypeus is much more strongly and closely punctured, not yellow, but dark rufous and its apex broadly transverse. *P. rufofemoratus* has the scutellum rufous; in its ♂ the clypeus is longer and it is transverse, not rounded, at the

apex. *P. diabolicus* Sauss. is probably closely related; but after a careful comparison of the description and figure of that species given by SAUSSURE, and the more detailed one given by Mr. W. A. SCHULZ, Berl. Entom. Zeitschrift, XLIX, p. 229 of the ♂ it seems to me that my species must be distinct. Thus, according to SCHULZ, the last antennal joint in the ♂ is „etwa $1\frac{1}{2}$ mal so lang als das vorhergehende Glied”.

3. *Polistes albobalteatus* sp. nov.

Manokwari, February. One example.

Black, a mark, longer than broad, transverse above and below, on either side of the clypeus in the middle, a line, dilated below, on the centre of the inner orbits, a line on the centre of the outer orbits, more than the apical half of the post-scutellum, a curved line on the sides of the apex of the metanotum, complete narrow lines on the apex of the basal 3 abdominal segments, and a line on the centre of the apex of the 4th, white. Wings hyaline, the radial cellule broadly smoky in front, the nervures and stigma black. ♀ or ♂.

Smooth, the head and thorax densely covered with pale pubescence. The front and clypeus with scattered punctures, the latter more shining than the former. Clypeus as long as it is wide, the middle above with a rounded incision, almost twice wider than long, through the face projecting into it. Mandibles inclining to brownish towards the apex. Metanotum very indistinctly striated; the centre with a deep, wide, furrow, with obliquely sloped sides.

The apex of the clypeus is sharply pointed; below the white line on the outer orbits is an irregular white spot; the antennae are narrowly brownish at the base and much more broadly at the apex.

Length 7 mm.

Icaria Sauss.

1. *Icaria zonata* sp. nov.

Moaif, Juni and Juli. Möso, May.

Black, a large mark on the sides of the clypeus, roundly dilated on the outside, contracted on the inner and narrowed above, a broad line on the inner orbits, extending from the clypeus to the top of the eye incision, a mark above the antennae, obliquely narrowed above, a broad line, narrowed above, on the outer orbits, a broad mark slightly narrowed above, on the base of the propleurae, an oblique mark on the sides of the scutellum, the post-scutellum, the metanotum, a large, oblique line, about 3 times longer than wide and rounded below on the base of the mesopleurae above, a similar one on its apex below, a broad line on the apex of the first abdominal segment, a narrower one on the second and a still narrower one on the third, pale yellow. Legs black, the 4 anterior tibiae and the tarsi fuscous in front; the base and apex of the hind tibiae in front testaceous. Wings hyaline; the radial cellule smoky, the nervures and stigma black. Mandibles piceous, darker at the base. ♀.

Length 9 mm.

Front and vertex not very shining, covered with a pale down and sparsely, distinctly punctured; the clypeus is more shining, especially at the apex and less strongly punctured, its apex is brought to a sharp point. Malar space minute. Mesonotum opaque, granular; a

furrow on its basal half. Post-scutellum and metanotum in one slope; the latter smooth, broadly furrowed down the middle. Tarsi minutely spinose. The first abdominal segment is narrowed at the base, becoming gradually widened towards the apex; it is about two-thirds of the length of the second, which is bell-shaped.

This species shows an approach to *Polybia*. The scutellum and metanotum form more distinctly one slope than usual, more as in *Polistes* than in typical *Icaria*. The size of the markings varies.

2. *Icaria maculiventris* Guér.

Rhopalidia maculiventris GUÉRIN, Voy. de la Coquille. Zool. II, Ins. 267, pl. 9, fig. 8; *Icaria maculiventris* SAUSSURE, Etudes sur l. Fam. d. Vespides II 23.

Sentani, April. Tami, May.

3. *Icaria australis* Sauss.

I. australis SAUSSURE, l. c., 21; pl. XXXIV, f. 5.

Moaif, June.

A characteristic of this species is the spiniform tubercle on the metanotum.

4. *Icaria spilostoma* sp. nov.

Manokwari, May.

Black, densely covered with a grey silky pile, a line on the inner orbits opposite the antennae, a broad mark on the sides of the clypeus on the lower two-thirds, the marks broad above, gradually narrowed to a point below, the black central part of the clypeus being thus broad above, gradually narrowed to a sharp point below and a narrow band on the apex of the 2nd abdominal segment, whitish yellow. The base of the antennae rufous above. Wings hyaline, the nervures and stigma black; the anterior half of the radial cellule is smoky. ♀.

Length 10 mm.

Clypeus slightly longer than its width in the middle, ending in a sharp point below; shining, thickly covered with white pubescence, strongly, but not closely punctured; the front and vertex are more closely and slightly more strongly punctured. Eyes almost reaching to the base of the mandibles, the malar space being about half the length of the antennal pedicle. Pro- and mesothorax strongly and closely punctured; the apical half of the post-scutellum smooth and shining. Metanotum deeply and widely depressed; its sides largely projecting in the centre, rounded, with the upper slope straighter, more oblique and longer than the lower; in the centre is a shallow smooth furrow. Abdominal petiole narrow at the base, becoming gradually wider towards the apex, which is rounded laterally; its length is not much more than the width at the apex; its basal half is smooth, the apical rather strongly, but not very closely, punctured; the 2nd is more closely and uniformly punctured; the 2nd is longer than usual, than in e.g. *I. irritata* or *I. maculiventris* compared with the width at the apex; it is not so much, or so distinctly narrowed at the base; it is much more distinctly longer than the width at the apex.

The ♂ has the face and clypeus densely covered with silvery pubescence; the clypeus has the sides and apex broadly yellow; its apex is broadly rounded. There is a large yellow

mark on the upper half of the base of the mandibles; the apical half piceous, tinged with yellow at the base of the mandibles. The antennae are formed pretty much as in the ♀; they are rufous below towards the apex. In both sexes there is a more or less distinct yellowish mark between the antennae. The 4 front coxae are largely yellow below.

This species comes near to *I. morosa* Smith from Waigöu, but the description is not precise enough to enable me to identify SMITH's species. My species is certainly not the *Icaria morosa* described by Mr. W. A. SCHULZ, Berlin. Ent. Zeitschr. XLIX, p. 226.

The size of the yellow marks on the ♀ clypeus and of the black one on the ♂ varies. In one ♀ the band on the 2nd abdominal segment is absent.

5. *Icaria irritata* Smith.

Proc. Linn. Soc. 1863, p. 6.

A specimen from Manokwari, May, is probably this species, which was described from Misol.

At any rate it agrees with SMITH's colouration description. It (the ♀) is covered with a dense grey pile; there is a narrow furrow on the scutellum, a conspicuous pyriform depression on the centre of the metanotum, the broad end being above; the sides are obliquely sloped; and there is a distinct furrow down the centre. The alar nervures and stigma are rufo-testaceous. The abdominal petiole is about one half longer than it is wide at the apex; it is narrow at the base, becoming gradually wider towards the apex; above it is roundly curved from the base to the apex. The base of the 2nd abdominal segment is broadly brownish on the sides.

The affinities of this species are with *I. australis*, it having the same form, general colouration and structure of abdominal petiole. *I. australis* is easily known from it by the alar stigma and nervures being black and, more particularly, by the sides of the metanotum projecting in the middle into stout tubercles, while in *irritata*, they have a gradual slope from the base to the apex.

Rhynchium Spin.

1. *Rhynchium haemorrhoidale* Fab.

This species is represented by the race *medium* MAINDRON, Ann. Soc. Ent. de Fr. 1879, p. 278 from Manokwari; and race *perentissium* SAUSS. from Humboldt Bay and Manokwari, May and June.

Odynerus Latr.

1. *Odynerus sariensis* sp. nov.

Siari, 12 February.

Black, a broad band on the sides of the apex of the clypeus and a mark on the base of the mandibles pale yellow; the anterior tibiae and tarsi in front testaceous; the spurs rufo-testaceous; wings almost hyaline, highly iridescent, the radial cellule smoky in front; the nervures and stigma black. ♀.

Length 7—8 mm.

Clypeus shining, the apical half strongly, but not closely punctured; the upper weakly

and sparsely punctured. Front and vertex closely and strongly punctured. There is an obscure transverse spot above the antennae and one opposite them at the eyes. Apex of pronotum transverse, margined, the margin testaceous in front. Scutellum large; the post-scutellum with an abrupt steep slope. Metanotum almost transverse, very slightly hollowed in the middle, the lateral angles rounded, narrow above, more broadly rounded below, where they project broadly. First abdominal segment without a suture; the second bell-shaped, in length clearly longer than its width at the apex; both are closely and distinctly punctured. The insect, all over, is covered with a dense white pile. The flagellum of the antennae is brownish below towards the apex.

This black insect cannot well be confounded with any of the recorded Malay species of *Odynerus*.

Eumenes Latr.

1. *Eumenes xanthura* Saussure.

There are 2 examples from Humboldt Bay which are probably referable to *E. xanthura*. As they do not agree with the descriptions of SAUSSURE, (Vespides, I, 46, pl. 10, f. 4) or BINGHAM (Fauna of India, Hymen. I, p. 341) I give a description of them.

♀ Black, the antennae, labrum, clypeus, a line from the middle of the lower half of the eye incision, a large mark above the antennae, curved roundly and bilobate above, a narrow line behind the eyes in the middle, labrum and the mandibles broadly in the middle, yellowish-testaceous; a large line on the base of the pronotum, a small one below the tegulae a mark in the centre of the abdominal petiole, which may have its middle entirely or the apical half only black, a large rounded mark, narrowed at the sides, on the apex of the 2nd segment and the others entirely, orange-red. Legs rufo-testaceous, the tarsi paler, more yellowish; all the coxae and broad lines on the underside of the femora black. Wings yellowish-hyaline, suffused with fuscous.

As with most of the species the colouration varies no doubt considerably. In this respect the 2 specimens in the collection are not identical. One of them has the hind tibiae broadly black.

2. *Eumenes tricolor* sp. nov.

Humboldt Bay, June.

Black, clypeus, labrum, a spot, longer than wide and dilated above over the antennae, the eye incision except narrowly above, prothorax, scutellum except at the apex, post-scutellum except narrowly at the base, the sides of the median segment at the apex broadly, 2 large spots on the base of the mesopleurae, almost united and of almost equal size; the upper is narrowed and rounded above; the base straight and slightly oblique, the apex rounded; the lower is more oblique, much narrowed and rounded below, where it is not half the width it is above, an interrupted line on the apex of the 1st abdominal segment, 2 large spots on the sides of the 2nd abdominal segment; its apical fourth; the apical third of the 3rd and 4th and almost the whole of the 5th and 6th, yellow; the mandibles, the 1st abdominal segment from close to the base to shortly beyond the middle and the 2nd segment broadly below at the

base, red. Legs yellow, their coxae black; the anterior femora rufous to near the apex, the hinder black, with the apex narrowly red; the hind tibiae black, tinged with red in front, yellow behind, the tarsi blackish red. Wings fuscous violaceous, the hinder much more hyaline; the nervures black, the costa rufous. ♀.

Length 22 mm.

Median segment almost vertical; the furrow shallow on the upper half, the lower widened, of equal width, with the sides obliquely sloped. Apex of clypeus transverse. Abdominal petiole as long as the thorax with the median segment, its middle without tubercles. The antennal scape is yellowish below, the rest reddish, mixed with black, the flagellum rufous, the apical half black above.

3. *Eumenes spilonotus* n. sp.

Sentani, 19 April. Manokwari, 23 May.

Black, the sides and top of the clypeus broadly, 2 lines uniting below on the apex in the centre; the lower inner orbits to the top of the eye incision and a band on the outer on the upper two-thirds, both lines being broad and the outer one narrowed below; the base of the pronotum above, the line dilated at the sides, the outerside and apex of the tegulae, 2 transverse oval marks on the scutellum, nearer the base than the apex, the sides of the median segment broadly at the apex, the yellow mark having a squarish black mark projecting into it above the middle on the outerside, a large irregularly oval mark on the base of the mesopleurae; the narrowed base of the 1st abdominal segment, a large irregular band on its apex, narrow in the middle at the apex, dilated irregularly backwards, dilated in the middle on the innerside and gradually narrowed towards the base and bands on the apices of the following 4 segments all round, bright yellow. The fore femora, tibiae and tarsi are bright yellow on the outerside, the femora black at the base, the tibiae and tarsi fulvous on the innerside, the middle legs are similarly coloured, but with the femora entirely black behind; the hind femora black, broadly yellow on the apical half; the hind tibiae black, with a yellow band beyond the middle and the innerside. Fore wings fuscous violaceous, the nervures and stigma black; the hind wings more hyaline. ♀.

Length 13 mm.

Scape of antennae yellow, the flagellum brownish below. Clypeus about one fourth longer than its width in the middle; its apex depressed in the middle; its centre is more strongly punctured than the rest; the punctuation is not close. Front strongly and closely punctured; the vertex much less strongly and closely punctured; there is a deep large depression or fovea behind the ocelli; it is wider than long and open in the centre at the apex. Thorax closely punctured; the apex of the meso- and base of metapleurae almost smooth. Apex of metanotum with an almost vertical slope; the depression of equal width throughout. Basal third of abdominal petiole narrowed, the rest much dilated; the whole is not much longer than the 2nd segment.

Belongs to SAUSSURE'S „1^{re} Division" (Études sur la Fam. d. Vespides. I, 28).

4. *Eumenes arcuatus* Fab.

Manokwari, May. One example.