

On the Malay Fossorial
HYMENOPTERA AND VESPIDÆ

OF THE MUSEUM OF THE

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BY

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Mutillidæ.

Mutilla javanica sp. nov.

Black, the thorax red; the tarsal spines bright rufous; 2 round, transverse spots close to the base of the 2nd abdominal segment, a band on the 3rd, narrowly interrupted in the middle; a spot, broader than long, on the sides of the 4th of depressed, silvery, tinged with fulvous, pubescence; the sides of the pygidium thickly covered with similarly coloured, long pale fulvous hair; the apices of the 2nd, 3rd and, to a less extent, the 4th, fringed with shorter similarly coloured hair; the hair on the tarsi whitish; the tibial spines long and black; the calcaria pale. ♀.

Length 15--16 mm.

Ardjuno. Java. (Scheepmaker leg.).

Antennæ entirely black, the flagellum densely covered with a pale pile, its 1st joint nearly twice the length of the 2nd. Head as wide as the thorax, coarsely, longitudinally rugosely punctured; above sparsely covered with black hair; the lower outer orbits and malar space thickly covered with pale fulvous

pubescence and, less closely, with silvery hair; the malar space thickly with similar hair. Thorax longish, more than twice longer than wide, the base broadly rounded, the apex transverse; the sides distinctly contracted in the middle, with irregular edges above. Collar closely, strongly, irregularly transversely striated, the base depressed and smooth; the upper part is coarsely irregularly longitudinally rugose; the punctuation becoming stronger towards the apex; on the apical slope it runs into coarse vertical striæ. Pleuræ smooth, except on the upper part of the metapleuræ which is irregularly punctured. Abdomen sessile, longer than the head and thorax united; the ventral keel ends at the apex in a distinct blunt tooth; the pubescence is dense and black. Pygidium at the base longitudinally, the rest, except at the apex, irregularly transversely striated. The punctuation on the 2nd ventral segment is sparse, on the others closer and stronger. Eyes large, oval.

Comes near to *M. accedens*, Rad.

Mutilla melmora sp. nov.

Length 12 mm. ♀.

Ardjuno. Java, (Scheepmaker leg.).

Identical in colouration with the preceeding, but easily known from it by being smaller and, more particularly, by the top of the apical slope of the thorax being irregularly striated, the rest smooth, by the ventral keel having a small tooth in the middle, and by the pygidium being longitudinally striated throughout, not transversely at the apex; otherwise the punctuation and pubescence is the same in both.

Head clearly wider than the thorax. The 3rd joint of antennæ nearly as long as the following two united; the flagellum covered with a grey down. Mandibles obscure rufous in the middle. Thorax slightly contracted in the middle, the dilated apex longer than the dilated base. Pleuræ entirely smooth.

Base of thorax broadly rounded, the apex transverse. Ventral keel with a small, somewhat triangular, keel shortly behind the middle. The abdominal spots are slightly tinged with fulvous; the 2 on the 2nd segment are round; the band on the 3rd is narrowly, on the 4th widely interrupted in the middle; the pygidium is fringed with long pale fulvous hair; the apices of the 2nd and 3rd ventral segments densely with similar pubescence; the basal half of pygidium strongly, closely, irregularly longitudinally striated, the striae becoming less distinct and closer towards the apex. Basal half of collar transversely striated. Tibial spines long, dark, the tarsal bright rufous; the calcaria paler; the pubescence on the under side of the hind tarsi is dense (especially on the metatarsus) and rufous. The basal half of the 2nd abdominal segment is distinctly, but not closely punctured. The upper edges of the thorax are regular, not crenulated.

Mutilla lodina sp. nov.

Black, the thorax red; the antennal tubercles and middle of abdomen of a darker red colour; 2 round transverse spots of clear white pubescence behind the middle of the 2nd segment; the 3rd segment, except in the middle, covered with clear white pubescence; the pygidium and ventral segment thickly fringed with longish clear white hair. Calcaria pale; the tarsal spines rufous; the tibial black; the legs thickly covered with white hair. ♀.

Length 7 mm.

Barabei. Z. O. Afd. Borneo. (A. Pool leg.).

Head wider than the thorax, the temples roundly, obliquely narrowed; the vertex closely, coarsely longitudinally striated, the front rugosely punctured. Eyes oval, moderately large, the malar space half their length. Thorax twice longer than wide, not much narrowed in the middle above; collar black,

roughly transversely striated at the base; the upper part strongly deeply striated — reticulated — punctured; the apical slope widely, moderately deeply reticulated. Pleuræ smooth, the base and apex obscurely punctured. The base of the thorax is rounded, the apex almost transverse, the sides of the metanotum bear, in the centre, 5 longish, sharply pointed teeth, the lower is smaller than the others; the upper part is irregularly tuberculated or toothed. Ventral tooth roundly incised in the middle, the apex of the projection longer than the base. Pygidium striated longitudinally in the middle.

This species is very similar to *M. gispa* Cam. from Sarawak; that is a larger and stouter species; the base of the thorax projects more in the middle; the colour is red, not black and is not transversely striated; there is no incision on the ventral keel, which is straight, the apex of metanotum is more coarsely, closely, vertically punctured, not reticulated, the head is slightly narrower compared with the thorax, the temples are not quite so obliquely narrowed and more rounded; and the occiput is more clearly transverse.

Mutilla urania Sm.

I may take this opportunity of clearing up the confusion in which this species appears to rest. It was described from Sarawak, Borneo by Smith in Proc. Linn. Soc. 1857, p. 83, the type being stated to have the head red like the thorax. The head, however, may be black, and it is this black headed form which I described in Manchr. Memoirs, (4) V, 1892 p. 117, 132; cf Bingham, Fauna of Brit. India, I, p. 21; as *M. buddha*. The head varies from black to red in colouration; and although *M. buddha* differs from the typical *urania* in the head not being red, yet, as the two forms agree otherwise in structure and colouration, I have no doubt in my mind of their being forms of the same species. My species, henceforth, may be called *M. urania* Sm. race *buddha* Cam.

André (Termés. Füzetek, XIX, p. 12) suggests that *cordigera* Rad. and Sichel, may be a form of *urania*. This, however, can hardly be the case if the figure of that species as given by the two authors just mentioned (Horæ Soc. Ent. Ross. 1870, pl. VII, fig. 8) be correct; *cordigera* is figured as having the base of thorax narrowed and rounded; in *urania* it is broad and transverse. Smith's description is not good. The first abdominal segment is more clearly separated from the second than usual, forming a well marked disc at the apex. It is probably, as André suggest's (Ann. Soc. Ent. de France, LXVII, 31), spread all over Malaya and Eastern Asia. André's statement l. c. that *M. sinensis* Smith is a black-headed form of *urania* is doubtless correct.

Scoliidæ.

Triscolia procera Ill.

Java. One example.

Triscolia patricialis Burm.

Java? (Dr. Ploem leg.).

This species is regarded by Saussure and Sichel (Cat. Spec. Gen. Scolia, p. 16) and Bingham (Fauna of Brit. India, Hym. I, 75), as a variety of *T. procera*. I am inclined to regard it as a good and easily recognized species. Apart from the differences in colouration — the absence of black on the prothorax, the continuous band on the 3rd abdominal segment, instead of 2 lateral spots, it differs in other respects; *e. g.*, the yellow spots on the pronotum and on base of abdomen are densely covered with fulvous pubescence, the apex of the 1st abdominal segment is also fringed with fulvous hair; the thorax is much more densely covered with black hair; the

apex of the pronotum is rounded gradually, not obliquely sloped, there is no tubercle on the top of the basal slope of the 1st abdominal segment; it is a smaller species, the temples are more gradually broadly rounded. Apparently also there is a difference in the alar neuration; in *procera* the 1st transverse cubital nervure is straight and oblique in front and behind; in *patricialis* it is much more rounded in front and behind, there being no clear line of distinction between the two slopes; in *procera* the 2nd transverse cubital has a small, rounded projection below the middle, while in *patricialis* the lower half roundly projects outwardly.

Triscolia speciosa Sm.

Riouw Lingo. (Teysman).

One specimen.

Triscolia opalina Sm.

A specimen from Palembang is probably *T. velutina* Sauss. I am, however, unable to separate it satisfactorily from *T. opalina* Sm. from Borneo. No doubt *T. intrudens* Sm. from Ceram is another form.

Triscolia rubiginosa Fab.

Tengger-mountains. Java. (Descher leg.). Several Java examples (Dr. Ploem leg.).

Triscolia capitata Guér.

Ardjuno, Java. (Scheepmaker leg.).

One example.

Discolia Vollenhoveni Sauss.

A specimen (♀) of what is probably this species is in the collection from Batavia, Java (Van Nooten).

It differs from the type, as described by Saussure, (Stett. Ent. Zeit. 1859, p. 188 and Cat. Spec. Scolia, p. 112) from Sumatra in having only the upper part of the prothorax — not the whole — orange, and the fore legs and breast are covered with black, not with fulvous, hair. It is only 15 mm. in length, while the type is 19 mm. The spines on the fore tarsi are rufous.

Discolia varifrons sp. nov.

Black, the thorax, abdomen and legs densely covered all over with stiff, black pubescence; the flagellum of antennæ dull black; fore calcaria rufo-testaceous; abdomen with blue and violaceous tints; wings fuscous violaceous. Basal segment of abdomen cup-shaped. ♂.

Length 19 mm.

New Guinea. (R. Semon leg.)

Upper half of frontal area bluntly, obliquely narrowed, extending shortly behind the front ocellus; smooth, except for a few punctures round the edges; the lower half, except on the lower edges, strongly and closely punctured; the frontal keel broad, opaque, sparsely punctured in the middle, which is rounded. The upper part of the clypeus strongly and moderately closely punctured, the lower smooth, the smooth part longer in the centre than on the sides. Mandibles obscure red beyond the middle. Pronotum and mesothorax strongly and closely punctured; the scutellum is less strongly punctured, almost smooth at the apex; the post-scutellum less strongly punctured, almost smooth in the middle. Metanotum sparsely punctured in the middle, more strongly on the sides; the

apex transverse. Abdomen almost uniformly, closely punctured. Apical abscissa of radius roundly curved below, straight, slightly oblique above; the apex of cubitus roundly, broadly curved in the middle. The spur of fore tibiæ is roundly curved; its apex is straight, slightly oblique. The transverse basal nervure is sharply oblique and elbowed below.

This species may be the ♂ of *D. nitida* Smith from Key (or Kí) Island; but the Smithian descriptions are not very good. The 2nd radial cellule is larger, broader, compared with its length than usual, than in *e. g.* *D. Vollenhoveni* or *D. capitata*.

Dielis javanica Lep.

Apparently a common species. Batavia. (Van Nooten leg.); Borneo.

Dielis sericeps sp. nov.

Black; the hinder part of the vertex, hinder orbits broadly and pleuræ thickly covered with dark silvery sericeous pubescence; the cheeks broadly and thickly covered with similarly coloured hair, the hair on the lower part of the front soot-coloured, on the rest of the body (including the abdominal fringes) black; wings fuscous-violaceous. ♀.

Length 37 mm.

Java. Ardjuno. (Scheepmaker leg.).

Front, except above, strongly, closely, deeply punctured; the vertex with deep, widely separated punctures, irregularly arranged, and sparser on the sides above the ocelli. Mesonotum strongly and closely punctured, except in the centre where they are sparser, the sparsely punctured central part being separated from the more closely punctured surrounding space by a smooth space. The scutellum is much more closely, but not so strongly, punctured; the post-scutellum is closely

but not so strongly punctured, with a smooth line in the middle. Metanotum closely and strongly punctured, with a smooth space, widest behind, in the centre of the basal half. The base and top of the propleuræ widely, closely punctured; the meso- and base of metapleuræ smooth; the apex of the latter weakly punctured. Abdomen shining, an irregular band of fine punctures behind the middle and close to the apex. Ventral pubescence black; the apices of the segments, at the sides, fringed with white hair.

This species resembles closely the species I make out to be *D. javana* Lep., the latter is smaller, has the front and vertex (especially the latter) much less strongly and closely punctured; its mesonotum is more strongly punctured, but with a large, impunctate space in the centre; the scutellum is less strongly punctured and is free from punctures behind, the metanotum is closely, strongly punctured throughout, without a smooth space at the base; it has the sides of the abdominal segments fringed with white hair; the head and pleuræ are not densely covered with sericeous pile and the face wants the dense clothing of pale hair so noticeable with the present species.

Dielis Lindenii Lep.

Batavia, Java. (Van Nooten leg.).

Dielis nigrofimbriata sp. nov.

Black, the front, face, clypeus, occiput, prothorax, base of metanotum and of abdomen thickly covered with dark rufous pubescence; the mesonotum more sparsely, with shorter, darker pubescence; the apices of the abdominal segments, above and below, fringed with black hair; the pleuræ covered more sparsely with paler, fulvous hair, and thickly with pale golden

pile; the hair on the legs long and fulvous, except on the tarsi where it is longer, stiffer and black; the spines fringing the fore tarsi bright rufous; on the inner side of the fore tibiæ is a belt of depressed, dark fulvous pubescence; the calcaria pale fulvous, the tarsal spines black. Wings fulvous-hyaline, darker at the base along the costa; the nervures rufo-fulvous, the costa darker coloured; tegulæ black on basal half, piceous red on apical. ♀.

Length 40 mm.

Batavia. (Van Nooten leg.).

Front and vertex strongly and deeply, but not very closely punctured; a broad, transverse smooth space, furrowed down the middle; except above the antennæ they are only sparsely covered with blackish hairs. Mesonotum strongly and closely punctured, except for a space in the centre, longer than broad, commencing near the centre and extending to near the apex. Scutellum similarly, but not strongly, punctured; it is more sparsely punctured in the centre at the base. Post-scutellum more closely punctured, with a smooth space in the centre at the base. Base of metanotum closely punctured with a smooth space, dilated at the base, in the centre; the apical slope smooth, covered with a fulvous pale. The basal 3 segments of the abdomen smooth, shining, with a distinct violaceous and blue iridescence; the other segments duller, more pilose; the 4th punctured at the base and apex, the middle smooth; the 5th is closely punctured, more weakly at the base; the 6th thickly covered with stiff, short, black pubescence.

Is not unlike *D. grossa* Fab., from which it may be known by the thorax and head being much more closely and strongly punctured, by the base of the metanotum being larger, by the wings being clearer at the apex and by the fringe on the abdominal segments being black; and it is a larger insect. The Indian *D. habrocoma* Sm. appears to be closely allied; but it has the abdominal fimbriæ »rich golden fulvous, with

no mixture of white hairs», according to Bingham, Fauna of Brit. India, Hymen. I, p. 98. According to Smith (Cat. Hym. Ins. Brit. Mus. III, 100), the pubescence on the basal segment is fuscous, on the apical black; and the prothorax above is covered with short fuscous pubescence, while in the present species it is neither short, nor fuscous.

Dielis albicollis Christ.

Both the white and the rufous collared form (*aureicollis* Sm.) are in the collection from Java.

Dielis iris Lep.

One exemple marked »Java«.

Dielis luctuosa Sm.

Ardjuno. Java. (Scheepmaker leg.).

Pompilidæ.

Salius aureosericeus Guér.

Ardjuno. Java. (Scheepmaker leg.).

Salius spilonotus sp. nov.

Claws unidentate. Ferruginous, the thorax for the greater part suffused with black; the face, clypeus, labrum, eye-orbits and mandibles lemon-yellow; the apical two thirds of the mesonotum with a large ferruginous mark in the centre, of equal width throughout and transverse at the base; the scutellums and prothorax are similarly coloured, the pronotum

at the apex having the rufous colour suffused with yellow. Antennal scape yellowish rufous, darker above; the flagellum dark rufous, blackish above. Apex of clypeus rounded; of the labrum slightly incised. Ocelli in a triangle, the anterior larger than the posterior; the hinder separated from each other by not much more than half the distance they are from the eyes. The 2nd abscissa of radius about one third longer than the 3rd; the 3rd transverse cubital nervure sharply, obliquely bent towards the 2nd from shortly below the middle; accessory nervure in hind wings received shortly beyond the cubital. ♂.

Length 13 mm.

Barabei, Z. O. Afd. Borneo. (Pool leg.).

The head and thorax have the appearance of having been covered with golden pubescence. Wings fuscous tinged with violaceous, the nervures and stigma blackish; there is no spot in the discoidal cellule. Apex of pronotum broadly rounded, not angled in the centre. The eyes distinctly converge above. Tibiæ sparsely, tarsi closely spinose. Metanotum longish, having a gradually rounded slope to the apex; its striation is indistinct and it is more densely haired than the rest of the thorax. Comes near to *S. crinitus* Bing.

Pompilus bataviæ sp. nov.

Black, densely covered with a whitish pile; the 1st. abdominal segment, except at the base, the 2nd entirely and more than the basal half of the 3rd, red, wings pale fuscous, tinged with violaceous; the hinder pair lighter coloured, darker at the apex; the stigma and nervures black. ♀.

Length 8—9 mm.

Batavia. (Van Nooten leg.).

Eyes distinctly converging above. Hinder ocelli separated from each other by a slightly greater distance than they are

from the eyes. Apex of clypeus broadly transverse, the sides rounded. Pronotum large, as long as the head, slightly angled in the middle behind. Calcaria and leg. spines black; the long spur of the hind tibiæ reaches to the middle of metatarsus. Radial cellule short; the 2nd and 3rd transverse cubital nervures are roundly curved and converge greatly in front, almost touching there; the recurrent nervures are received shortly beyond the middle; the transverse median nervure is received shortly behind the transverse basal. Accessory nervure in hind wings almost interstitial.

Sphegidæ.

Ampulex javana sp. nov.

Blue, the metanotum distinctly violaceous, the pleuræ green, the fore legs black, tinged with violaceous, the hind femora red to near the apex, their coxæ dark violaceous, green on the outside; their tibiæ and tarsi dark violaceous, the hinder femora blue, tinged with violet behind. Antennæ, mandibles and apex of clypeus black. Wings with 2 transverse cubital nervures, fuscous, tinged with violaceous, the stigma and nervures black. ♀.

Length 20 mm.

Tjibodas. Java. (R. Semon leg.).

The 2nd (apical) transverse cubital nervure received close to the apex of the radial cellule as in *A. latifrons* (cf. Kohl, Ann. K. K. Hofmus, VIII, pl. XI, f. 14), the apical transverse cubital nervure roundly curved outwardly below. Antennæ short; the scape as long as the 3rd joint; the 2nd and 3rd joint united are nearly as long as the following two united. Head large; shining, almost bare; the front and vertex distinctly punctured, but not strongly or closely, the vertex more closely than the front, except on the outer edge which

is impunctate; the lower part of the front in the middle is almost smooth, and with an oval fovea in the middle. The triangular depression on the apex of the clypeus longer than it is wide at the apex, which is deeply depressed. Raised apical part of pronotum wider than long, narrowed towards the base, which is transverse; it is strongly, but not closely punctured and has a long deep furrow on the basal slope. Mesonotum smooth, with some scattered punctures along the outer edges. Lateral apical edges of the metanotum with a short bluntly rounded tooth, the central longitudinal keel is short and has 4, more or less regular keels on either side, the central apical part is irregularly keeled, longitudinally in the centre, transversely on the sides; the 2nd and 3rd keels are regular and form a rounded curve at the apex; the space enclosed by them is smooth, except for some broken keels on the edges; the outer areas are closely, strongly transversely striated. Propleuræ almost impunctate; the apex with some keels; the meso- and metapleuræ strongly, but not closely punctured. First abdominal segment with the basal third narrowed into a clearly separated petiole; the 2nd is twice as long as it is wide at the apex. Claws stoutly toothed near the middle.

Allied to *A. latifrons* Kohl and *A. brevicornis* Cam.

Ampulex micado sp. nov.

Length 24 mm. ♀.

Japan.

Very similar — almost identical — in colouration with *A. javana* here described, having also the same alar neurulation, but is a larger insect, and may be known by the narrowed base of abdominal petiole being smaller; the metanotum is more strongly and regularly striated all over, the space between keels 2 and 3, instead of being smooth, is closely striated all over.

Front and vertex sparsely, but strongly punctured, the former more strongly and closely than the latter; there is a short longitudinal furrow in the centre of the vertex. Depressed base of the pronotum coarsely, closely irregularly reticulated; the raised apical part wider than long, sparsely, weakly punctured. Metanotum closely, strongly transversely striated; keel 1 irregular, indistinct, broken in the middle; 2 and 3 widely separated, united at the apex; the space between closely, but not finely transversely striated; 3 and 4 are united at the base, 5 is distinct and hardly converges towards the apex; the apex of the segment is transverse, with the sides bluntly rounded. Pleuræ distinctly, but not closely punctured, the base of the metapleuræ more weakly and sparsely than the rest. The 2nd abdominal segment is short, in length less than one half longer than the dilated part of the 1st; its sides are straight, not curved outwardly, below, its base is vertical, rounded beneath, above not clearly separated from the apex of the 1st by a furrow as in *latifrons*, *javana* and *brevicornis*; the apex of the 1st ventral segment is straight, as in Kohl's figure of *A. assimilis*, *l. c.* pl. XII, f. 38, not roundly dilated as in *latifrons*.

Tachytes borneana Cam.

Journ. St. Branch Roy. Asiatic Soc. 1902, p. 96.

Ardjoeno, Java. (Scheepmaker leg.); Lahat, Palembang, Sumatra.

Tachytes modesta Smith.

Batavia, Java. (Van Nooten leg.). Several specimens.

Pison nitidus Sm.

Tjandi near Semarang. April to June. (Drescher leg.).

Pison javanus sp. nov.

Black, shining, the head and thorax densely covered with silvery pubescence, the sides and ventral surface of the abdomen with shorter, sparse pubescence, the wings hyaline, the apex with a distinct smoky band; the 1st recurrent nervure received shortly before the 1st transverse cubital, the 2nd interstitial, the nervures and stigma black. ♂.

Length 7 mm.

Tjandi near Semarang. April to June. (Drescher leg.).

Front rugosely punctured, almost reticulated; the ocellar region finely punctured; the vertex is raised behind them and is strongly, distinctly punctured; the innerside of the eye incision finely closely rugose. Apex of clypeus broadly rounded, slightly sharply pointed in the middle. Palpi fuscous. Pronotum finely, closely punctured, depressed in the middle behind. Mesonotum closely and strongly punctured. The scutellum is somewhat less closely and less strongly punctured than it; the post-scutellum more finely and closely punctured than the scutellum. Apex of median segment broadly rounded; its basal furrow commences shortly behind the middle, is deep, narrowed at the base and apex; it leads into the apical furrow, which is wider and deeper and ends before the middle of the apical slope; the base to near the apex is irregularly, clearly, obliquely striated; the apex closely rugose; the apical slope is closely transversely striated in the middle; the sides closely rugose. Propleuræ finely rugose: the meso- strongly, closely punctured; the meta- rugose at the base, the rest irregularly striated. Abdomen smooth, shining; the basal 2 segments finely punctured.

The vertical furrow at the base of the meso-pleuræ is deep, moderately wide, smooth and extends from near the top to the bottom. Calcaria black.

Notogonia subtessellata Sm.

Batavia, Java. (Van Nocten leg.). Tjandi near Semarang. (Drescher). April—June.

Notogonia tristis Smith.

One exemple. Batavia, Java. (Van Nooten leg.).

Notogonia rufipes Smith.

Batavia, Java. (Van Nooten leg.). One specimen.

Notogonia jaculatrix Smith.

Batavia. (Van Nooten).

Liris auratus Fab.

Batavia. (Van Nooten leg.). Ardjuno. (Scheepmaker leg.). Common.

Trypoxylon petiolatum Smith.

Journ. Linn. Soc. 1857.

Tjandi near Semarang. (Drescher leg.).

Sphex umbrosus Christ.

Barabêi, Z. O. Afd. Borneo. (A. Pool leg.). Ardjuno, Java. (Scheepmaker leg.). Java. (Dr. Ploem leg.). Burnett River, Queensland. (R. Semon leg.).

Sphex morosus Smith.

Journ. Linn. Soc. V, 122.

One example. Bamé, Amboina, (R. Semon leg.).

Sphex aurulentus Fab.

Barabei, Z. O. Afd. Borneo. (A. Pool.). Palembang, Amboina.
(R. Semon leg.).

Sphex lobatus Fab.

Bintang, Kajutanam, Sumatra.

Ammophila atripes Smith.

Java, Ardjuno. (Scheepmaker leg.).

Both the black and red-legged forms are in the collection
from Java.

Sceliphron javanum Lep.

Nias. Batavia, Java. (Van Nooten leg.). Riouw. (Kluit leg.).

Sceliphron laetum Smith.

Batu.

Sceliphron violaceum Fab.

Borneo, Ardjuno, Java. (Scheepmaker leg.).

Sceliphron madraspatanum Fab.

One example. Tjandi near Semarang. July. (Drescher leg.).

Bembex semoni sp. nov.

♀. Black; the outer orbits narrowly above, more broadly below, the inner broadly in the centre, the line narrowed below and above, the lower half of the clypeus and a Δ -shaped mark in its middle above, labrum, mandibles, a narrow line along the apex of the pronotum, propleuræ from shortly above the middle, and all round the apex, tegulæ, a line along the apex of the scutellum and post-scutellum, a straight line, dilated at the sides on the apex of the 1st abdominal segment,

broad waved lines on the apices of the 2nd to 5th, the lines on the 2nd and 3rd narrowly separated in the middle, and 2 large triangular marks — the broad end at the base and slightly incised — on the 6th, pallid lacteous yellow. Legs similarly coloured; all the coxæ and trochanters black; the 4 front femora at the base all round and broadly above; the hinder except at the apex; a broad line on the hinder side of the 4 anterior tibiæ and a mark on the hinder pair and an irregular line at the apex, black. Wings clear hyaline, the nervures black. Antennal scape pale yellow, broadly black above; the flagellum black, more or less brownish below.

Length 12—14 mm. New Guinea (R. Semon).

Head, thorax and base of abdomen densely covered with longish cinereous hair. Eyes very slightly converging above. Front bluntly keeled. Mesonotum and scutellum closely, finely, but distinctly punctured; the metanotum is more closely, finely rugosely punctured. Abdomen finely and closely punctured and shining above; the last segment without an area. Fore metatarsus with 7 spines, the joint not widened. Second ventral segment strongly punctured and shining in the middle, the punctures irregular and clearly separated; the sides are closely, minutely, distinctly punctured and opaque. Innerside of mandibles with 2 teeth, the inner, longer and sharper than the outer. The 2nd longitudinal nervure in the hind wings is obsolete, or almost so.

Belongs to Handlirsch's group 33 (*Musca*) and comes near to *B. Finschii*. Cf. Sitz. der Kaiser. Akad. d. Wissensch. in Wien, CII, 188—189.

Vespidæ.

Provespa dorylloides Sauss.

One specimen. Riouw Lingo (Teysman leg.).

Vespa cincta Fab.

The typical *cincta* Fab. is rare (Riouw Lings, Teysman), the form *affinis* Fab. common and, as regards the colouration of the basal segment of the abdomen, variable. Java; Lahat, Palembang (Giesbers). Buitenzorg, Java (R. Semon leg.). Amboina.

Vespa analis Fab.

Java (Dr. Ploem leg.). Batavia (Van Nooten leg.).
Apparently a common species in Malaya.

Vespa velutina Lep.

Java (Dr. Ploem leg.). Tijendiby, Java (R. Semon).

The light colouration of the tarsi and abdomen varies from brown to light yellow.

Polistes varicornis sp. nov.

Reddish, the hind edge of the pronotum yellow; the apex of the 3rd and the whole of the following joints of the antennæ, a large mark extending from behind the ocelli to the antennæ, the mark narrowed in front, a line on the base of mesonotum, the line dilated in the middle behind, the sides more obscurely, the parts surrounding the scutellums, the base and apex of the metanotum narrowly, its middle more broadly, the mesopleuræ, except for a mark on the base above, and a smaller one below and another on the apex below, mesosternum, the base and lower part of the metapleuræ broadly, and the base of the abdominal segments (the basal more broadly than the others), black. Wings hyaline, largely suffused with rufous, the nervures and stigma rufous. ♂.

Length 27 mm.

Java.

Malar space large, three fourths of the length of the antennal scape; the last joint narrowed but not compressed. Clypeus distinctly longer than wide, clearly separated above from the eyes, rounded on top; the apex trilobate, the central lobe small and clearly separated; its sides and the sides of the front are pale, more yellowish in hue and densely covered with silvery pubescence. Pro- and mesothorax closely, distinctly rugosely punctured; the metanotum transversely striated, but not closely or strongly. The tarsi appear longer than usual compared with the tibiae. Antennal keel stout. Occiput black in the middle. The keel bordering the base of the prothorax is sharply raised.

Allied to *P. diabolicus* Sauss. of which I only know the ♀. The ♂ has been described by Mr. Schulz, (Berl. Ent. Zeit XLIX, p. 229). Schulz's description of the malar space »gleich der Länge des 3 Fuhlergeissel gliedes« and of the clypeus as »ungefähr so long als breit« cannot apply to the species I have described: the malar space is clearly longer than the 3rd funicular joint and the clypeus is distinctly longer than wide.

Polistes javanicus sp. nov.

Dark castaneous brown, the apical half of the 3rd antennal joint, more or less of the mesonotum, mesopleuræ and base of abdomen, black; the wings dark fuscous, towards the apex more or less tinged with fulvous, the nervures and stigma black. Front, vertex, pro- and mesothorax closely, rugosely punctured, the punctures running into reticulations and striations; the metanotum coarsely, transversely striated, the striæ finer and closer in the depressed centre; the apex of the metapleuræ closely, strongly obliquely striated; the base with shallow, clearly separated punctures. ♀ and ♂.

Length 23—25 mm.

Tjandi near Semarang. Java (Drescher leg.).

♀. Clypeus strongly and moderately closely punctured all over, more weakly above than below; shortly, but clearly longer than its greatest width; the apex in the centre narrowly bluntly rounded, it becoming gradually, obliquely narrowed from the sides to the centre; the lateral suture commences near the lower part of the eyes; it is there close to them and parallel; shortly below its middle it diverges obliquely. Malar space not much more than the length of the 4th antennal joint — about the length of the outer side of the eye incision. Tibiæ and tarsi pruinose; the underside of the fore tarsi with a golden pile.

♂. The clypeus is about one fourth longer than wide; its sides depressed and thickly covered with white pubescence, as is also, to a less extent, the apex and the lower inner orbits; below the pile, these parts are obscure yellowish. Malar space somewhat longer than the 4th antennal joint. The apex of the clypeus is broad, trilobate, the inner lobe narrower and shorter than the lateral.

Of the species known to me the present comes nearest to *P. Rothneyi* from Assam; it may be known by its more bluntly pointed apex of clypeus, it being broader and more distinctly rounded; its legs are black at the base, their hind femora and tibiæ being also black; the punctuation, too, is less coarse. The males of the two species are more easily separated, the differences between them being more marked. These differences may be expressed thus:

Apical joint of antennæ flattened and laterally dilated;
clypeus hardly longer than wide, its apex widely, roundly
dilated, the dilated middle much wider than the sides;
legs largely black *Rothneyi*, Cam.

Apical joint of antennæ not dilated and laterally
compressed; clypeus distinctly longer than wide, the

dilated middle much narrower than the sides ; the legs not largely marked with black. . . . *Javanicus*.

Polistes hoplites Sauss.

Ardjuno, Java. (Scheepmaker). Riouw. (Kluit leg.). *P. sagittarius* Sauss., in my opinion, is only a small form of *hoplites*. The deeper and better marked punctuation of the latter is doubtless owing to the larger size. The supposed colouration difference is of no value whatever as a specific distinction.

Polistes diabolicus Sauss.

This Papuan species is in the collection from Java, from which Island it has already been recorded by Saussure (*Vespides*, II, p. 18). The specimens (♀) have the base of the legs and the hinder femora, tibiæ and base of tarsi black.

Ischnogaster nigrifrons Smith.

Tjandi near Semarang. (Drescher leg.). Common.

Icaria intermedia sp. nov.

Ferruginous, the clypeus, lower inner orbits broadly from the top of the incision, a wedge-shaped longish mark between the antennæ, extending more above than below them, a narrow interrupted line on the outer orbits, a line round the apex of the prothorax, the scutellums, 2 large marks on the apex of the metanotum, a longish line near the base of the mesopleuræ, 2 oblique, irregular marks on the base of the 2nd abdominal segment, its apical fourth, marks on the lower side of the four front coxæ, a line on the outer side of the hinder and the anterior femora at the apex, bright yellow ; a longish

wedge-shaped line on the upper three fourths of the clypeus, the lower part of the vertex and the upper part of the front, the apex of the mesopleuræ, basal two-thirds of the meta-pleuræ, sternum and the middle of the 2nd abdominal segments broadly, black. Antennæ rufous, the scape tinged with yellow. Wings fuscous hyaline, the radial cellule, smoky except at the base; stigma fulvous. ♀.

Length 8 mm.

Tjandi near Samarang. (Drescher leg.).

Abdominal petiole nodose at apex; the narrowed base about one third of its length; the 2nd segment longer than its width at the apex. The 2nd cubital cellule is much narrowed in front.

Allied to *I. variegata* Sauss. and *I. artifex* Sauss. Both may be known by their larger size and longer petiole.

Icaria artifex Sauss.

A very dark coloured example from Tjandi near Samarang. (Drescher).

Icaria maculifrons Cam.

Journ. St. Br. Roy, Asiatic Soc., 1903, p. 172.

Barabei, Z. O. Afd. Borneo. (Pool leg.).

Icaria rufoplagiata sp. nov.

Black; the front, except for a broad black line above each antenna, an irregular mark on the upper part of the clypeus, a line on the outer orbits, more or less of the sides of the mesonotum in front and of the apex in the middle, scutellum, prothorax, a mark on the mesopleuræ below the tegulæ, more or less of the 1st abdominal segment and the sides of the 2nd at the base broadly, rufous, the clypeus, except for a larger or smaller rufous mark in the middle, a line on the

basal edge of the prothorax, the post-scutellum, a line on the apex of the 1st abdominal segment, a trilobate line, dilated in the middle on the apical fifth of the 2nd and the greater part of the coxæ and trochanters, bright yellow; the rest of the legs rufous; the coxæ marked behind with black. Wings hyaline; the radial cellule with a black cloud from near the apex of the stigma which is testaceous. ♀ or ♂.

Length 8—10 mm.

Tjandi near Semarang. (Drescher leg.). Passuruan. (Kobus leg.). Antennæ more or less rufous, the scape yellowish below, the flagellum blackish above. Head and thorax punctured, the punctures clearly separated; closely covered with white pubescence. Basal half of mandibles yellow, the rest rufous. Abdominal petiole pyriform, with a short, narrowed base; the rest becoming gradually widened towards the apex.

The ♂ is similarly coloured, but darker, with the rufous and yellow markings less developed; the apex of the clypeus projects roundly and broadly; the antennæ do not differ perceptibly from those of the ♀. On the apex of the metanotum there may be in both sexes two curved yellow lines.

Comes close to *I. maculifrons* Cam. from Borneo; that species may be known by the abdominal petiole being longer, more slender, the apex more nodose and the narrowed base longer and more distinctly separated from the dilated apex, the clypeus is largely marked with black, the apex of metanotum largely yellow, and the yellow on the 2nd abdominal segment is not trilobate.

Icaria bilineata sp. nov.

Dark rufous, the back of the abdomen darker, the clypeus, mandibles, palpi, the lower part of the eye incision broadly, the outer orbits, narrowly above, broader below; the base of the prothorax, the line dilated on to the pleuræ above, the

inner part of the tegulæ, 2 narrow lines on the centre of the mesonotum, scutellum except for a triangular mark in the centre of the apex; post-scutellum except narrowly in the middle, metanotum, except the depressed centre, a mark about 3 times longer than wide on the mesopleuræ below the tegulæ, a line near the apex of the 1st abdominal segment, a large irregular mark, obliquely narrowed towards the base, on the 2nd, a band of the same width as that on the 1st, and having attached to its centre 2 oblique, irregular marks, an obscure narrow line on the apex of the 3rd and a wider one on the centre of the 4th, bright yellow. Legs coloured like the body, largely bright yellow in front. Wings hyaline, the apex smoky from the apex of the stigma, the cloud extending on to the cubital cellule; the stigma testaceous. ♀ or more probably ♂.

Length 6 mm.

Tjandi near Semarang. April to June. (Drescher leg.). Antennæ dark rufous, the scape clear, the flagellum more obscurely yellow below. Head and thorax covered with a white pubescence; punctured distinctly, but not closely, the punctures being clearly separated, the metapleuræ smooth. Clypeus convex, obscurely punctured.

A distinct little species. Probably a series of specimens would show, as usual, some amount of variation in the yellow markings.

Icaria marginata Lep.

Tjandi near Semarang. (Drescher leg.). Ardjuno. (Scheepmaker leg.).

The following species is in my collection from India.

Icaria sericea sp. nov.

Black, densely covered with a white silky pubescence; the clypeus except for a large irregular black mark in the upper

two-thirds, a large irregular mark, about twice longer than wide above the antennæ, the inner orbits to the top of the eye incision broadly, basal half of mandibles, a broad line, obliquely narrowed above on the lower half of the outer orbits, an oblique narrow line on the outerside of the upper, a line, narrow below, irregularly dilated above, on the pronotum, 2 large, irregularly squarish marks on the base of the scutellum, the greater part of the post-scutellum, 2 large marks on the metanotum, an oblique mark, twice longer than wide, 2 irregular marks on the apex of the 1st, 2 irregular transverse ones on the base of the 2nd and a narrow line on its apex, yellow. Legs black, the fore coxæ almost entirely, and the 4 posterior broadly above, yellow. Wings hyaline, the radial cellule smoky, the nervures and stigma black. Antennæ black, the scape yellowish, the flagellum brownish below ♀.

Length 10 m.m.

Sikkim Himalaya.

Front and vertex covered with shallow, round punctures, the rest of the head almost impunctate. Pro- and mesothorax with round shallow punctures. Abdominal petiole two thirds of the length of the 2nd segment, becoming gradually widened from the base, there not being a distinctly narrowed part; the 2nd segment long, about one half longer than its width at the apex. First abscissa of radius as long as the following two united.

Allied to *I. aristocratica* and to *I. ornaticeps* Cam. The latter is smaller somewhat, has the petiole longer compared with the 2nd segment; the latter is shorter, compared with its width at the apex; all the yellow markings are larger; there are 2 oblique lines on the vertex behind the ocelli, 2 lines on the mesonotum and the hind femora are yellow at the apex.

Eumenes arcuata, Fab.

Java. Nais.

Eumenes blanchardi Sauss.

Common. Java (Dr. Ploemleg.) Batavia (Van Nooten leg.) Buitenzorg (Van Nooten leg.) Tjandi near Semarang (Drescher leg.).

Eumenes conica Fab.

Java.

Eumenes petiolata, Fab.

Java.

Eumenes gracilis Sauss.

Tjandi near Semarang (Drescher leg.) Java (Dr. Ploem leg.).

Eumenes circinalis Fab.

Java. Ardjuno (Scheepmaker leg.).

The specimens are almost entirely black, including the apical segments.

Rhynchium argentatum, Fab.

Metallicum Saussure, Etudes, I, p. 114, Pl. XIV fig. 8, c. f. Saussure, Stett. Ent. Zeit. XXIII, 187.

Ardjuno (Scheepmaker).

Rhynchium snelleni, Sauss.

Stett. Ent. Zeit. XXIII. 188.

Java (Dr. Ploem leg.).

This species (hitherto only known from Borneo) has the apex of the clypeus transverse, the sides projecting into teeth.

Rhynchium haemorrhoidale Fab.

Type. Batavia (Van Nooten leg.). One example; var. *peren-*

tissium, Sauss. Batavia (Van Nooten leg.). Tjandi near Semarang (Drescher leg.). Ardjuno (Scheepmaker leg.). Lahat, Palembang. Paseroem (Kobus leg.). Buitenzorg (R. Semon leg.).

Rhynchium superbum Sauss.

♂. One example. Thursday Island, Australia (R. Semon leg.).

As this species is not well known and is probably variable I think it useful to give a description of its ♂.

Black; the clypeus, the lower part of the eye incision entirely, the inner two-thirds above; a large mark on the front, obliquely narrowed to a point below, slightly dilated at the base, where the narrowed part commences, its base broad, with the sides projecting upwards and with the middle projecting into 2 short, irregular lobes, 2 lines on the hinder edge of the vertex, irregularly dilated in front on the inner side, the outer side gradually narrowed and reaching to the middle of the outer orbits; the antennæ, prothorax to shortly below the middle of the propleuræ and broad bands on the 2nd and following abdominal segments, pale cream-coloured yellow, the yellow on the pronotum with an orange tinge; the last segment almost entirely yellow. Anterior legs testaceous, their coxæ, trochanters and base of femora black; the middle black, the tibiæ and tarsi testaceous; the hinder black, the base of the tibiæ and tarsi, except at the base, dark testaceous. Antennæ yellow, tinged with orange, the scape paler coloured; the 3rd joint clearly longer than the 4th; the apical spine curved, as long as the joint. Apex of clypeus with a triangular incision. Apex of the metanotum closely, transversely striated; its sides with 6 large and small teeth on the upper half. Pro-mesonotum and scutellum smooth and shining; post-scutellum raised, furrowed in the centre; rugosely punctured and thickly covered with black hair. Apex of last ventral segment closely fringed with stiff bristles. Wings

pale yellowish hyaline to the end of the stigma, beyond smoky fuscous. The base of the middle femora is narrowed to near the middle, where it is dilated.

For remarks on this form of *Rhynchium* see Schulz, Berl. Ent. Zeit. XLIX, p. 219.

Odynerus Drescheri sp. nov.

Black, the clypeus, mandibles except the edges, the lower part of eye incision, a spot, broadly rounded above, narrowed below, between the antennæ, the antennal scape below, a short line on the upper part of the outer orbits, the upper part of the pronotum to near the middle, a spot, broad and slightly oblique above, rounded and narrowed below, the apex of tegulæ, greater part of scutellum, 2 small marks on post-scutellum, 2 large oval marks on the apex of metanotum, a line on the apex of the basal 2 abdominal segments, a large roundish mark on the sides of the 2nd and a transverse mark on the centre of the 4th and 5th, yellow. Legs black, the 4 anterior femora, all the tibiæ and the base of the anterior tarsi, yellow. Wings hyaline suffused with fuscous; the radial cellule violaceous, the stigma and nervures black ♂.

Length 9—10 m.m.

Tjandi near Semarang (Drescher leg.).

Basal abdominal segment not transversely keeled; the apical joints brownish beneath; the keel short, sharp-pointed, not reaching to the middle of the segment. Vertex and front closely and strongly, uniformly punctured; a short keel between the antennæ. Clypeal incision distinct, as long as its width at the apex. Thorax closely, coarsely, rugosely punctured, more rugosely above than on the sides. Scutellum with a smooth furrow in the centre which is only sparsely punctured; the post-scutellum coarsely punctured, more rugosely than the rest of the thorax; it is indistinctly bituberculate. Sides of

metanotum broadly rounded, not much dilated; the sides bear an oblique tooth. Basal half of 1st abdominal segment narrow at the base, becoming gradually widened towards the apex. The 2nd cubital cellule greatly narrowed in front, the 3rd of equal width throughout.

Belongs to the Division *Leionotus*. The base of the thorax is quite transverse; the body is covered by a white pile. It is not unlike *O. bipunctulatus*; but the ♂ of that species is readily separated by its clypeus being not much longer than wide; while in *Drescheri* it is distinctly — almost twice — longer than wide. *O. lybas* Cam. from Borneo has the thorax not so transverse, not distinctly angled at the base, and otherwise is readily separated by the difference in the form of the basal abdominal segment: in *lybas* it rises obliquely from the base, then falls obliquely towards the apex; in the present species there is no oblique slope on the apex.

The ♀ of *O. Drescheri* is similarly coloured; the lateral angles of the prothorax are somewhat more rounded; the clypeus is broadly rounded above; the apical half from the eyes are roundly narrowed to a point, which is bordered with black and triangularly incised; in the centre of the apical half is a large mark, broad above, the top slightly depressed, the sides rounded, narrowed below into a narrow line which extends to the apex. Apex of antennæ brownish below. The above description is from an old ♀ in my collection marked »Java«.



Cameron, Peter. 1906. "On the Malay fossorial Hymenoptera and Vespidae of the Museum of the R. Zool. Soc. Natura artis magistra at Amsterdam." *Tijdschrift voor entomologie* 48, 48–78.

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