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704
Cameron-1904

M. E. LaBerge

On some new Species of Hymenoptera from Northern India.

By P. CAMERON.

THE species described in this paper are from the Khasia Hills, Assam, and Simla, and are in the collection of Mr. G. A. James Rothney.

Ichneumonidæ.

Hadrojoppa fumipennis, sp. n.

Black; the face, except for an irregular mark in the centre (it is joined to the base of the antennæ by a narrow line, and there is a shorter line on either side), the inner orbits (narrowly below, more broadly above, and the line extends slightly beyond the top of the eyes), the lower half of the outer entirely, with a narrow line above, a line on the pronotum, tegulæ, two short lines on the centre of the mesonotum (obliquely narrowed on the inner side), the scutellums, two large triangular marks on the sides of the metanotum (laterally extending on to the pleuræ), a large mark on the lower half of the mesopleuræ (broadest at the base), an irregular mark (narrowest at the base) on the centre of the metapleuræ, the apical half of the postpetiole, and two large irregular marks on the apex of the second segment, pale yellow. Legs pale yellow; the four front femora behind and at the base and apex in front, the hind coxæ below and on the inner side, the base of the femora narrowly, the apical third, the base of the hinder tibiæ narrowly (their apex more broadly), the apices of the basal three joints of the tarsi, and the apical entirely, black. Wings smoky, with a violaceous tinge; the nervures and stigma black. ♀.

Length 20–22 mm.

Antennæ ringed with white before the middle, fuscous beneath towards the apex. Face and clypeus closely punctured and thickly covered with white pubescence. Front closely punctured. Mesonotum and scutellum closely, the pleuræ less closely, punctured; the median segment more closely and strongly and more thickly covered with white pubescence. Arcola twice longer than broad, roundly narrowed towards the base, the apex broadly curved inwardly; irregularly finely rugose, the apex with a broad, smooth, shining border. Postpetiole in the middle closely longitudinally striated, the second to fourth segments closely punctured, the apical smooth and shining. Gastrocæli large, deep, broad, smooth, except for a few striæ; the space between strongly striated.

The described Khasia species of this genus may be separated by the following table:—

- 1 (4). The petiole only marked with yellow.
- 2 (3). Large; the areola distinctly longer than broad, its apex broad, smooth, transverse, the yellow line on the petiole dilated backwards; the antennæ stout. Length 27 mm. *forticornis*.

- 3 (2). Medium-sized; the areola not distinctly longer than broad, its apex not transverse; the yellow line on the petiole not dilated backwards; the antennæ not stout. Length 17 mm. *maculiceps*.
- 4 (1). The second or following segments marked with yellow.
- 5 (6). The second segment with two yellow marks, the others immaculate; the areola sharply narrowed at the base *fumipennis*.
- 6 (5). The second segment broadly yellow at the apex; the third and fourth segments with two large marks on the apex; the areola broadly rounded at the base *annulitarsis*.

Mutillidæ.

Mutilla inoa, sp. n.

Black, densely covered with silvery pubescence; the second and third abdominal segments ferruginous; the scutellum pyramidal, its basal slope smooth and shining in the middle; the basal area on the median segment of equal width throughout and reaching to the top of the apical slope; the wings fusco-violaceous, paler at the base. ♂.

Length 15 mm.

Antennæ black, the scape covered with white hair. Head rugosely punctured, with a smooth space on the sides of the ocelli; the front and occiput thickly covered with long white hair, the vertex more sparsely with longer black hair. Face and clypeus bare, smooth and shining, the apex of the clypeus transverse and clearly separated from the sides. Base of mandibles thickly covered with silvery pubescence; the sub-apical tooth distinct. The malar space ends in a tubercle or blunt rounded tooth on the inner and outer side. Pronotum thickly covered with silvery pubescence; on the basal slope is a central and two lateral smooth spots; the propleuræ rugosely punctured, the apex smooth, the middle depressed and obscurely stoutly striated. Mesonotum rugosely punctured and thickly covered with longish black hair. Scutellum pyramidal, rugose, the basal slope smooth and shining; the base and apex of the smooth part longitudinally furrowed; the apical slope is oblique; the basal is also oblique, but more rounded than the apical; the hair is long, on the basal slope black, on the apical fuscous. Median segment coarsely reticulated, the base thickly covered with depressed silvery pubescence; the central area is of equal width throughout. Metapleuræ (except in the centre) reticulated. The second and third cubital cellules at the top are about equal in length. Abdomen black; the extreme apex of the first and the whole

of the second and third segments ferruginous ; the pubescence is white, on the apical two segments black ; the pygidium rugosely punctured, with a smooth space, dilated at the base and apex in the middle. The ventral keel with a slight broad curve. The epipygium is smooth at the base ; the rest depressed, irregularly rugose, with the sides smooth and raised. The apex of the radius is straight and oblique and distinct from the lower part. The second abdominal segment is punctured, smooth in the centre ; above it is gradually rounded.

Comes near to *M. perditia*, Cam.

Mutilla artaxa, sp. n.

Length 15 mm.

Hab. Simla.

This species agrees so closely in form, coloration, and structure with *M. inoa* that it might be considered identical with it, if it were not for the difference in the form of the ventral keel and of the pygidium. The two may be separated thus :—

The ventral keel slightly narrowed in the middle ; the smooth space on the pygidium V-shaped (broad at the base, becoming gradually wider towards the apex), narrow, the sides straight	<i>inoa</i> .
The ventral keel broadly projecting downwards at the base, forming a large triangular tooth ; the smooth space on pygidium large, broader at the apex than at the base ; the sides curved inwardly at the base and apex	<i>artaxa</i> , Cam.

The form of the scutellum is the same, but in *artaxa* the smooth space is not furrowed ; the basal area on the median segment is the same ; the apical abscissa of the radius is gradually rounded, and does not form two parts, as in *inoa*.

Mutilla trebia, sp. n.

Black ; the basal segment of the abdomen and the second (except at the apex) dark red, the second at the apex covered with black, the third, fourth, and fifth with white pubescence. Wings fuscous violaceous, the second segment with an oblique slope on the basal half. ♂.

Length 15 mm.

Head rugosely punctured above the antennæ ; the front and cheeks thickly covered with long silvery hair ; clypeus smooth and bare. Prothorax rugosely punctured ; the apex

of the propleuræ smooth; the mesonotum rugosely punctured, with two longitudinal furrows, and covered with dark fuscous hair. Scutellum more coarsely rugosely punctured, thickly covered with long pale hair, and not raised above the level of the mesonotum. Median segment coarsely reticulated; the central area short and wide, its base not twice its length, its apical half narrowed. Propleuræ punctured, except at the apex; the mesopleuræ punctured, except at the base and apex; the metapleuræ with one row of large reticulations on the apex, the lower middle part with some large round punctures. The basal two abdominal segments are dark red; the apex of the second black and covered with black hair; the ventral keel is almost straight and the apex is oblique and forms an incision with the obliquely rounded base of the second segment. The second segment is obliquely depressed from the middle on the basal and apical slopes; the white pubescent bands on the third, fourth, and fifth segments are broad; the pubescence on the apical segment is black.

This species is not unlike *pandara*, Cam.; that is a more slenderly built species and is smaller.

FOSSORES.

TIPHIA.

i. Median segment with three keels.

- A. The first transverse median nervure placed distinctly behind the basal, which is curved and thickened before the cubital nervure; a stout keel, broad and square at the base, extends on to the middle of the ventral surface of the petiole.

Tiphia clavinerva, sp. n.

Nigra; abdominis apice dense fulvo-piloso; alis fere fulvo-hyalinis, nervis fuscis, stigmata nigro. ♂.

Long. 9 mm.

Scape of antennæ sparsely covered with long fuscous hair; aciculated, sparsely punctured, shining; the flagellum opaque, thickly covered with pale down. Front and vertex shining, strongly punctured, more sparsely laterally below the ocelli. Face and clypeus closely punctured, thickly covered with fuscous pubescence; the apex of the clypeus has a rounded incision. Mandibles shining, rufous before the middle, the base sparsely covered with pale and golden hair; palpi rufo-testaceous. Pronotum sparsely punctured on the basal half, shining; the base thickly covered with long pale fuscous

hair. Mesonotum punctured, more sparsely and irregularly on the sides, and thickly covered with short fuscous pubescence. Scutellum punctured like the mesonotum; post-scutellum more closely and finely punctured. The middle of the metanotum bears three parallel keels; the space enclosed by them is strongly irregularly aciculated; the sides are closely striated; the apex is strongly aciculated and thickly covered with a pale pubescence; the top is depressed and longitudinally striated. Propleuræ smooth and shining; the base below strongly aciculated. Mesopleuræ sparsely punctured and thickly covered with pale pubescence. Metapleuræ striated (except at the base, which is strongly aciculated). Prosternum largely roundly tuberculated laterally on the apical half; the middle depressed. Mesopleuræ with two curved divergent furrows; the space between at the apex depressed in the middle. Legs thickly covered with white hair; the fore femora and tibiæ and the middle tibiæ less broadly rufous. Abdomen shining; the third and following segments thickly covered with bright fulvous pubescence; before the apex of the petiole is a narrow, longitudinally striated, transverse furrow; on the base of the second segment is a deeper, more regularly striated furrow; the apical segments are strongly punctured; the pygidium is smooth down the middle. Beneath, the base of the petiole is strongly aciculated, opaque, sharply keeled at the base and less strongly down the sides; the apex is more strongly obliquely raised; in front of this is a stout strongly aciculated keel which reaches near to the middle, becoming narrower and smoother as it does so; the middle is sparsely punctured; the apical half very smooth and shining; the second ventral segment is sparsely, the others more closely and distinctly, punctured and thickly covered with fuscous hair. The transverse median nervure is received distinctly behind the transverse basal; the apex of the radius is roundly curved; the second transverse cubital nervure is straight, oblique; the third is rounded outwardly at the top and oblique below; the second recurrent nervure is received in the middle of the cellule.

- B. The first transverse median nervure not placed distinctly behind the basal; the petiole without a stout keel on its ventral surface.

Tiphia himalayensis, sp. n.

Black, densely covered with longish dark silvery pubescence; the pro- and metapleuræ closely obliquely striated;

the wings fuscous violaceous, the second transverse cubital nervure roundly bisinuate. ♀.

Length 15-16 mm.

Front and vertex coarsely punctured, more sparsely on the ocellar region; the clypeus closely punctured, its apex smooth and broadly rounded. Mandibles broadly piceous. Middle of pronotum strongly punctured; the apex smooth, the basal slope closely punctured. The middle of the mesonotum is strongly punctured; the sides are sparsely punctured. Scutellum sparsely and deeply punctured on the base and apex; the postscutellum is sparsely punctured. Median segment 3-keeled, opaque, strongly aciculated, smoother, more shining on the sides at the apex, and irregularly striated near the bordering keel. The apical slope is coarsely aciculated. Pro- and metapleuræ closely obliquely striated, the mesopleuræ strongly and closely punctured. Wings uniformly fuscous violaceous and highly iridescent; the second transverse cubital nervure is roundly curved outwardly above and below, the upper part more roundly and distinctly than the lower. The tibiæ and tarsi are thickly covered with dark silvery hair; the spines are rufous. Abdomen shining; the apical, dorsal, and the ventral segments thickly covered with long silvery hair; the basal half of the pygidium is thickly haired; in the middle is a longitudinal keel.

Tiphia robusta, sp. n.

Black; the hinder femora bright red; the wings dark fuscous violaceous, the nervures and stigma black. ♀.

Length 15 mm.

Head above the antennæ coarsely and strongly punctured; there is a smooth patch behind each of the hinder ocelli and a smooth line down the front in the centre; the apex of the clypeus smooth. Mandibles black, dull rufous beyond the middle. The apex and the basal slope of the pronotum smooth, the middle strongly but not very closely punctured. The centre and sides of the mesonotum are rather strongly but not closely punctured; the scutellum is similarly punctured on the sides and apex; the postscutellum is punctured laterally. Median segment 3-keeled, opaque, aciculated; the outer keels converge slightly near the apex; the central keel becomes thinner towards the apex. Propleuræ smooth, with a few indistinct scattered punctures; the mesopleuræ closely and strongly punctured; the metapleuræ closely striated, except at the base below. Legs black, the hinder femora bright red; the tibiæ and tarsi are covered thickly

with white hair; the calcaria black. Wings dark fuscous violaceous; the nervures and stigma black. Abdomen black, shining, finely punctured, the apical segment thickly covered with long black hair, except on the apex; the ventral segments are fringed with white hair.

Comes near to *T. rufofemorata* and *T. khasiana*, but these species are both smaller and have the middle femora red. The upper half of the second transverse cubital nervure is roundly curved outwardly.

Tiphia denticula, sp. n.

Long. 12 mm. ♂.

This species comes near to *T. canaliculata*, but is more slenderly built; the depression on the apex of the median segment is not so wide nor so deep, nor is it so regularly striated; the basal abscissa of the radius is distinctly angled above the middle, not gradually rounded as in *canaliculata*; the lower abscissa of the apical part of the radius is longer, and there is a more distinct angle formed by it with the second recurrent nervure.

Head opaque, closely rugosely punctured and thickly covered with long white soft hair; the front is indistinctly keeled in the middle. Clypeus closely rugosely punctured, its apex smooth and transverse. Mandibles black, as are also the palpi. Pro- and mesonotum shining, closely punctured (except on the apex of the former); the scutellum and postscutellum are similarly punctured. Median segment irregularly coarsely aciculated; the three keels extend to the apex, but the outer become weaker towards the apex, which is broadly depressed, shining, and bears a stout longitudinal keel in the centre. The apical slope is coarsely aciculated and keeled down the middle. The basal half of the propleuræ is aciculated and obscurely striated; the mesopleuræ strongly and closely punctured; the metapleuræ striolated, aciculated at the base. Wings uniformly fuscous, with a violaceous tinge; the nervures and stigma black; the transverse basal nervure is thickened near the top, the transverse median is received shortly behind it; both the recurrent nervures are received shortly beyond the middle. There is a distinct curved broad tooth on the underside of the petiole at the base, from which a keel runs to the middle. The hair on the apical and on the ventral segments is long and white.

Tiphia tuberculata, sp. n.

Nigra, mandibulis rufis, tarsis testaceis; alis fusco-hyalinis, nervis fuscis, tegulis rufis; basi petioli subtus tuberculata. ♀.
Long. 8 mm.

Antennæ black, the apical joints rufous beneath; the scape is finely and closely punctured above, the sides and lower side covered with long silvery hair; the base of the flagellum is sparsely covered with white hair; the rest of it bears a white pubescence. The front is closely punctured below, more sparsely above; the vertex is similarly punctured; both are thickly covered with long fuscous hair; the clypeus smooth, shining, punctured closely at the base, its apex rounded. Mandibles red, black at the apex; their underside fringed with long golden hair. Palpi testaceous, the apical joints paler. Pronotum coarsely punctured, its apex smooth, the basal slope finely and closely punctured. The middle of the mesonotum is strongly but not closely punctured, its base and sides smooth, bare; the base in the middle slightly depressed. Scutellum strongly punctured (except in the middle); the postscutellum finely punctured. Median segment strongly aciculated; the three keels are almost parallel and all reach to the apex; the space bounded by them has a blistered appearance; the apex at the sides is depressed and bears a few striæ; the apical slope is blistered, is thickly covered with a white pubescence, and is obscurely keeled down the middle. The top of the propleuræ is smooth, the rest obscurely punctured; below the middle is an oblique keel. Mesopleuræ closely punctured, the apical slope strongly aciculated; the pubescence is thick and pale. Metapleuræ closely striated, much more finely, almost strongly aciculated on the base below. Mesosternum sparsely punctured, shining; the hair long and fuscous; the apical area is triangular at the base; finely furrowed down the middle, the apex in the middle triangularly depressed. Legs black; the fore knees, the apex of the tibiæ, and the tarsal spines rufous; the tibial spines are pale. The second transverse cubital nervure is roundly curved outwardly in the middle; the first recurrent nervure is received shortly, but distinctly, before the middle of the cellule and is roundly curved above; the second is received close to the apical third of the cellule. Abdomen shining, sparsely punctured, the middle and apical segments thickly covered with long white hair; the base of the second segment is depressed and marked with longitudinal keels all over; the apical half of the pygidium is rufous.

and smooth. The petiole beneath is smooth; the base punctured closely; its middle with a blunt raised tooth; its basal slope is longer, more rounded than the apical, which has an oblique slope.

Comes near to *T. spinosa*, but is smaller; the median segment is not transversely striated in the middle; the tooth on the petiole is blunter and longer; the under surface of the petiole at the apex is smooth and shining; the top of the propleuræ smooth and shining, and the mandibles are rufous.

Tiphia fulvinerva, sp. n.

Nigra, albo hirsuta, propleuris striolatis; metanoto opaco, medio tres-carinato; alis fulvo-hyalinis, stigmatibus nigro, nervis fulvis. ♀. Long. 17 mm.

Scape of the antennæ thickly covered with long white hair; the second and third joints are smooth and shining, sparsely covered with pale hair; the other joints are opaque and thickly covered with a fulvous down. Front and vertex bearing large, deep, clearly separated punctures, and with long fuscous hair; there is an elongated smooth space before the ocelli; above and between the antennæ is a stout keel. Clypeus closely punctured, its apex smooth and depressed. Mandibles black, obscure rufous near the middle, their lower side fringed with long pale golden hair. Palpi dark testaceous. The basal slope of the pronotum obscurely punctured, smooth below; the basal half of the upper part is strongly punctured, the apical smooth. Mesonotum irregularly punctured, sparsely covered with fuscous hair; the scutellum has a few punctures in the middle; the apex has a row of large deep ones; the sides are less strongly punctured. Propleuræ closely striated; the basal keel smooth and shining; the top with a row of punctures; the lower edge is opaque and strongly shagreened. Mesopleuræ strongly and deeply punctured and covered with long pale hair. Metapleuræ closely but not very strongly striated; the base opaque, shagreened. The basal half of the mesosternum strongly and deeply punctured, the apical smooth and shining; in its centre at the apex is a V-shaped area, clearly bounded by deep furrows; it is widely furrowed down the middle; the furrow is bordered by one or two punctures; its sides at the apex are triangular. Wings fulvo-hyaline; the nervures fulvous, the stigma darker; the apex of the radius is obliquely depressed and thickened; the first recurrent nervure is broadly rounded outwardly at the

top; the second is oblique and is received shortly beyond the middle. Legs thickly covered with silvery hair; the tibial and tarsal spines rufous. Abdomen shining; the petiole with the punctures large; the other segments have them smaller and closer; the apical segments are thickly covered with long pale hair; the pygidium has the basal half black and strongly rugosely punctured; the apical half is for the greater part rufous; in its centre is a longitudinal keel; on the sides are a few indistinct keels. The median segment is strongly aciculated, opaque, and has in the middle three keels; the central reaches near to the apex, to which it is joined by three minute ones; the apex has an oblique slope, is shagreened, opaque, and thickly covered with white pubescence. The ventral segments are fringed with long fulvous hair; the hypopygium is closely and strongly punctured (except in the middle) at the apex. The clypeus is broadly rounded at the apex.

Comes into Bingham's section B and b^2 and b^3 , but is different from anything included therein. It might come into section "C. Wings golden yellow," but it is quite distinct from *T. auripennis*, the representative of the section.

Tiphia simlaensis, sp. n.

Nigra, capite pronotoque dense punctatis; metanoto opaco, dense aciculato, medio bicarinato; alis fusco-violaceis, nervis stigmatibus nigris. ♀.

Long. 12 mm.

Hab. Simla.

The scape of the antennæ is covered with long white hair; the second and third joints are smooth, shining, sparsely covered with white hair; the others are opaque and thickly covered with a pale down. Front and vertex closely and strongly punctured, more sparsely near the ocelli; they are thickly covered with pale hair. The base of the clypeus is closely and strongly punctured, the apex smooth and shining, its middle roundly and distinctly incised. Mandibles smooth and shining, their middle broadly rufous; palpi fuscous. The lower part of the pronotum at the base is smooth and shining, the upper finely and closely punctured; the top is strongly and closely punctured (except on the apex). Mesonotum shining and marked with widely separated large punctures. The scutellum is punctured round the edges and more sparsely in the middle; the postscutellum is similarly, but more closely, punctured; at its sides is an opaque, coarsely aciculated depression. The basal region of the median

segment is opaque, coarsely aciculated, the sides near the base finely striated; the apex is smoother and more shining; there are two keels which reach to the apex and a less distinct one which reaches on to the middle; the apex has a blistered appearance, is sparsely, obscurely punctured, and has an indistinct keel down the middle. The upper part of the propleuræ is aciculated, the lower finely and closely longitudinally striated; the middle of the mesopleuræ is closely punctured and thickly covered with long white hair; the apical half of the metapleuræ is strongly striated; the striæ are distinctly separated. The basal half of the mesosternum is punctured; from the middle, on either side, a curved furrow runs to the sides at the apex; the space bounded by them is strongly punctured; outside them it is smooth. Legs black, the hair white; the calcaria rufous, as are also the tarsal spines. Wings uniformly fuscous violaceous, the nervures and stigma black; the second transverse cubital nervure is only slightly oblique and is roundly curved above; the second recurrent nervure is received at the base of the basal third of the cellule. Abdomen shining; the segments finely and sparsely punctured in the middle; the apical segments thickly covered with long white hair; the pygidium strongly punctured, the apex smooth, keeled in the middle, depressed laterally.

ii. *Median segment with five keels.*

Tiphia quinquecarinata, sp. n.

Nigra, flagello antennarum, mandibulis, tarsis abdominisque apice rufis; alis fulvo-hyalinis, nervis rufis, stigmatibus nigro. ♀.
Long. 11 mm.

Antennæ rufous, the flagellum black above, thickly covered with a pale down; the scape black, shining, sparsely covered with long white hair. Head shining; the front and vertex punctured, but not very closely, and sparsely covered with fuscous hair. Clypeus projecting; its apex rounded. Mandibles rufous, black at the base, their underside fringed with long golden hair; palpi testaceous. Thorax shining; the pronotum marked, but not closely, with large punctures, its apex smooth. Mesonotum strongly and closely punctured in the middle, more sparsely on the sides, and thickly covered with fuscous hairs. Scutellum with a row of large punctures round the apex, and there is a more scattered and irregular row on the sides; postscutellum smooth, without punctures. The three central keels on the median segment are parallel;

the outer pair converge slightly towards the apex ; the central hardly reaches to the apex ; the two bordering it are distinctly separated from it ; the space enclosed by the keels is coarsely aciculated (except at the apex) ; the apex has a sharp oblique slope, is strongly aciculated, and covered with a pale down. Propleuræ shining ; the upper part smooth, the lower very finely longitudinally striated ; the raised basal edge is impunctate, very smooth, and shining. Mesopleuræ shining, sparsely punctured in the middle, and covered with white pubescence. The base of the metapleuræ smooth at the base, the rest closely striated. Mesosternum shining, the basal two thirds sparsely, but distinctly, punctured ; the apex smooth ; the apical area is triangularly narrowed at the base, becoming gradually wider towards the apex ; it is almost opaque, sparsely punctured, and thickly covered with short white hair ; the middle furrow becomes triangularly widened at the apex. The four anterior tarsi and the front tibiae beneath are rufous ; the hair on the four hinder tibiae is silvery ; the spines are rufous ; the calcaria reddish testaceous. Wings hyaline, with a fuscous tinge ; the nervures testaceous, the stigma black ; the second transverse cubital nervure is roundly curved outwardly on the upper half ; the lower part is straight, oblique. Petiole shining ; the sides and apex punctured ; the punctured band on the apex bounded at the base by a furrow ; the apices of the segments are finely punctured and covered with pale hair ; the pygidium has the apical half rufous ; the middle has a band of long pale hair ; the triangular apical part of the basal ventral segment is very smooth, glabrous, and shining ; the apex of the hypopygium is testaceous and is covered with long fulvous hair.

In Bingham's table this species comes into "B. a^2 . Median segment with five longitudinal keels." *T. lyrata* may be separated from it by the apex of the petiole being longitudinally striated ; the other species of the section (*T. flavipennis*) is easily known from it by the clypeus having two blunt teeth on the apex.

Salix trichiosoma, sp. n.

Niger, dense longe nigro pilosus ; alis fusco-hyalinis, basi flavo-hyalinis ; pedibus ferrugineis, basi late nigris. ♀.
Long. 22 mm.

Claws with one tooth. Antennæ long, black, bare, moderately stout. Head opaque, black, densely covered with long black hair ; there is a narrow furrow on the front.

Ann. & Mag. N. Hist. Ser. 7. Vol. xiii.

Apex of clypeus transverse; the labrum slightly projecting laterally and to a less extent in the centre; it is fringed with long bright rufous hair. Mandibles and palpi black. Thorax opaque, alutaceous, densely covered with long black hair; the pleuræ obscurely punctured and with a distinct oblique furrow near the middle. The apex of the median segment is bare, smooth, and shining. Wings fulvous hyaline, the apex with the fulvous tinge less well marked and with a violaceous tinge. The stigma and costa are black; the nervures are testaceous; the second cubital cellule is distinctly shorter than the third above and below; the third transverse cubital nervure has the upper half straight and oblique, the lower is not so oblique and broadly rounded. Legs rufo-testaceous, the tarsi paler, the coxæ, trochanters, and basal half of the femora black. Abdomen smooth and shining.

A distinct species. Characteristic is the long, dense, black hair on the head and thorax.

Salix Frederici, sp. n.

Black; the antennæ (except at the base and apex) fulvous; the tibiæ (except at the apex and the hinder tarsi) rufous; the apices of the joints of the hinder tarsi black; the wings flavo-hyaline, the base of the anterior dark smoky to the transverse basal nervure, the hinder pair with the basal half dark fuscous, the apical yellow. ♂.

Long. 23 mm.

Claws with one stout tooth. Antennæ as long as the body, distinctly tapering towards the apex. Head black, sparsely covered with long black hair; the inner orbits narrowly, the face, clypeus, and labrum dark rufo-testaceous. A distinct, deep, narrow furrow extends from the ocelli to the middle of the front. Clypeus roundly convex; its middle at the apex transverse, the sides rounded. Mandibles black, the upper part testaceous. The head is obliquely narrowed behind the eyes and is well developed there; there is a testaceous line on the outer orbits above. Thorax opaque, sparsely covered with long black hair; the median segment is longish, has a gradually rounded slope, and is obscurely transversely striated. Wings yellowish hyaline; the base above is dark fuscous, with a violaceous cloud to the transverse basal nervure, below the cloud extends to the submedian nervure; the second and third cubital cellules are almost equal in length at the top and bottom; the third transverse cubital nervure has the upper half straight and oblique; the lower half is more

rounded. The four front tibiae are darker coloured than the hinder pair; the four front tarsi are almost entirely black.

Resembles in coloration *S. anthracinus*, Sm., but that belongs to the group with bidentate claws.

Salix lugubrinus, sp. n.

Niger, pruinosis; alis hyalinis, fusco-bifasciatis. ♀.
Long. 7 mm.

Antennae slightly pruinose; the underside of the scape thickly covered with short white hair. Front and vertex almost bare; the face and clypeus thickly covered with silvery pubescence; the apex of the clypeus transverse, smooth, and shining; in the centre of the front is a narrow longitudinal furrow. Apex of the mandibles reddish; the palpi black, thickly covered with white pubescence. Thorax alutaceous, shining; metanotum smooth; on its apex are two longish depressions. Legs black, pruinose, more thickly at the base. Wings hyaline; a large conical cloud extends from the base of the cubital nervure along the transverse basal nervure to the opposite side; there is a large cloud occupying the greater part of the radial cellule, the middle cubital cellules, and the middle of the discoidal cellules on either side of the second recurrent nervure to near the edge of the wing; the third cubital cellule is much narrowed above, being there scarcely half the length of the second; below it is slightly longer; the first recurrent nervure is received near the base of the apical third, the second shortly, but distinctly, before the middle. Abdomen smooth and shining, pruinose; the hypopygium is thickly covered with long fuscous hair.

Pseudagenia lepcha, sp. n.

Blue, the hinder femora for the greater part red; the head and thorax punctured and thickly covered with white pubescence; the scutellum (except in the centre) closely longitudinally striated; the median segment coarsely, irregularly striated; the wings fuscous hyaline, with a violaceous tinge; the nervures and stigma fuscous. ♀ ♂.

Long. 13-15 mm.

Hab. Simla and Khasia.

Antennae black, the scape with a blue tint and covered with a white pile. Front and vertex closely and distinctly punctured; the clypeus, on the sides, bears some shallow scattered punctures; the raised centre is closely and distinctly

punctured; the parts above the antennæ and behind the eyes are thinly covered with long white hair. Mandibles black, the base thickly covered with white pubescence. Palpi black. Thorax blue, with purple and brassy tints; above it is closely, but not very strongly, punctured; the sides of the scutellum are closely, irregularly, longitudinally striated; the postscutellum towards the apex is irregularly transversely striated. Median segment coarsely, irregularly, transversely striated; there is a broad shallow furrow down the middle. The hollowed part of the propleuræ bears a few striæ; the mesopleuræ coarsely rugose, the punctures running into oblique striæ towards the apex; the metapleuræ above closely, strongly, obliquely striated, the base below is minutely punctured, the apex coarsely closely reticulated. The four anterior legs are blue; the tibiæ and tarsi darker coloured; the hinder femora red, narrowly purple at the base and apex. Wings uniformly fuscous hyaline, highly iridescent and with a violaceous tint; the stigma and nervures are fuscous. Abdomen bright metallic blue, very smooth, and shining.

Allied to *P. blanda* and *P. prophetica*, from both of which it may be known by the strongly and closely punctured head and thorax, by the punctured and longitudinally striated scutellum, and by the wings being not clear hyaline. The head and thorax may have dark purple and brassy tints. With the male the anterior femora and tibiæ may be testaceous in front.

Cerceris violaceipennis, sp. n.

Black; the lower half of the inner orbits broadly, the antennal keel, a reversed crown-shaped mark below it, a broad line on the pronotum, the sides of the scutellum, the postscutellum, the base of the petiole, the apical two thirds of the third segment, and the apices of the following three segments narrowly, rufous; the legs black, the apices of the four front femora and the four anterior tibiæ in front yellow; the wings smoky, darker in front, the nervures and stigma black. ♂.

Long. 8 mm.

Scape of antennæ for the greater part yellow; the base of the flagellum broadly, the apex narrowly beneath, brownish. Head closely and distinctly punctured; the face and clypeus thickly covered with silvery pubescence. Clypeus broadly roundly projecting, the lower inner orbits, a large mark, transverse at the base, becoming obliquely narrowed below and ending in the middle in a rounded point, and the antennal keel are yellow. Thorax black; a broad band on the pronotum behind, the tegulæ, the sides of the scutellum, and

the postscutellum reddish. The area on the median segment is closely and uniformly punctured; the rest of the segment more strongly and deeply punctured all over. The segment is more thickly and uniformly covered with fuscous pubescence than the rest of the thorax. Abdomen closely punctured; the base of the first segment broadly, a small mark in the centre of the second segment on the apex, the apical two thirds or so of the third, and the apices of the three following segments narrowly red. Pygidium coarsely, but not very closely, punctured. There is an elongated mark on the sides of the second ventral segment and a small one on the sides of the fifth.

The wings have a distinct violaceous tinge and are highly iridescent. The foveæ on the median segment are large; the metapleuræ are shining and only slightly punctured compared with the mesopleuræ; the propleuræ are stoutly obliquely striated. In coloration the species agrees closely with *C. bimaculata*, Cam., but is abundantly distinct otherwise.

Cerceris latibalteata, sp. n.

Black; a broad line, obliquely narrowed above, on the lower inner orbits, the antennal keel, the basal half of the mandibles, a line on the hinder part of the pronotum, the scutellum, postscutellum, the greater part of the third abdominal segment, and a line on the apex of the fifth yellow; the wings fuscous, the radial and the front of the cubital cellules smoky; the stigma and nervures black. ♀.

Long. 7 mm.

Antennæ black; the flagellum broadly brownish beneath. Head entirely black; above the antennæ closely punctured; the apex of the clypeus projects broadly, is transverse, and is more shining than the face. The thorax is not strongly or very distinctly punctured; an irregular line on the apex of the pronotum, the base of the tegulæ, and the scutellums are yellow. The area on the median segment is shining, is indistinctly finely punctured, and has a narrow furrow down the centre. Propleuræ obscurely striated; the mesopleuræ punctured, and with a wide and deep longitudinal furrow in the centre. Metapleuræ shining, obsoletely punctured, and obscurely striated under the wings. Legs black; the front tibiæ anteriorly and the tarsi yellowish. The greater part of the third and the apex of the fifth segments are reddish; the pygidium irregularly shagreened and punctured.

Larra bicolorata, sp. n.

Nigra, nitida, pruinosa; femoribus posticis rufis; alis fusco-violaceis, stigmatibus nigro, nervis fuscis. ♀.

Long. 12 mm.

Scape of antennæ and pedicle bare, smooth, and shining; the flagellum opaque, covered with a microscopic pubescence. Head shining; the front and vertex bare, sparsely minutely punctured; the ocellar region is depressed; the raised part in front of the ocelli is furrowed down the middle; the middle of the front is deeply furrowed; the sides are more broadly and not so deeply furrowed. Face and clypeus closely punctured and thickly covered with pale pubescence; the labrum is fringed with long rufous hair. The base of the mandibles closely punctured and covered with white pubescence, the middle broadly rufous; the palpi black, fuscous towards the apex, and thickly covered with white pubescence. Pro- and mesonotum closely and distinctly punctured and covered with a short down, having a fulvous hue on the latter, which is broadly depressed in the middle at the base and on the sides towards the apex. Median segment closely and distinctly punctured on the sides, which are slightly depressed; the central part closely, transversely, irregularly striated; the middle is slightly furrowed and keeled down the centre of the furrow; the keel is fainter towards the apex; the apical part has an oblique slope, is closely punctured, the sides above transversely striated; on the apex are a few longitudinal striæ; the central furrow is deep and extends to the top of the apical fourth of the segment. Propleuræ closely punctured, obscurely striated in the middle below; the mesopleuræ are more distinctly punctured; the tubercles are large and depressed at the base; behind they are bordered by a thick band of white pubescence; the basal perpendicular and the upper longitudinal furrows are deep and obscurely striated. Metapleuræ closely punctured. Mesosternum closely and distinctly punctured, furrowed down the middle, and there is a transverse furrow before the middle coxæ; the metasternum is opaque, alutaceous, keeled round the sides, the base and apex are rounded, there is a distinct furrow down the middle. Wings fuscous violaceous; the first cubital cellule at the top is half the length of the second; both the recurrent nervures are received behind the middle of the cellule. Legs thickly pruinose; the hinder femora bright red; the tibiæ and tarsi thickly spinose; the tarsal spines and the claws rufous. Abdomen very smooth

and shining; the apices of the segments pruinose; the pygidium has a few scattered punctures and hairs; the epipygium is more closely and distinctly punctured and has a shallow furrow on either side at the apex.

Larra pygidialis, sp. n.

Nigra, femoribus posticis rufis; alis fusco-violaceis, cellula cubitali 2^a duplo longiore quam 1^a. ♀.
Long. 17-18 mm.

The scape of the antennæ sparsely, the flagellum thickly, covered with white hair; the second joint shining, sparsely haired. Head shining, the front sparsely punctured and covered with white hair. The face and clypeus closely punctured (except on the apex of the latter) and thickly covered with white pubescence. The tooth of the mandibles and a large space before their apex rufous, and fringed below with long pale golden hair. The palpi brownish and thickly covered with white hair. Pro- and mesonotum minutely punctured; the mesonotum thickly covered with fuscous pubescence. Median segment minutely punctured; its middle from the base to the top of the apical furrow closely transversely striated. Pleuræ shining; the furrows on the mesopleuræ distinct, the basal perpendicular one striated. The metasternal area is thickly pilose; there is a central keel which reaches to the apex and is much stouter at the base; there is a narrower lateral keel which reaches to the middle only. Legs thickly covered with white pubescence; the tarsal spines are rufous, as is also the base of the hinder calcaria; the hinder femora are red, black at the extreme apex. The costa and stigma are black; the nervures are fuscous; the apical abscissa of the radius is very slightly oblique; the first cubital cellule is half the length of the second; the second recurrent nervure is roundly curved and is received in the middle. Abdomen shining, pruinose; the apices of the middle three segments depressed; the pygidium sparsely haired; strongly irregularly punctured, the basal punctures smaller, those on the middle and apex almost running into striæ; the sides are furrowed; the outer edge is sharply raised; the sides of the segments are punctured (except below) and are sparsely covered with brownish hairs.

This is a larger species than *L. bicolorata*, with which it agrees in coloration; it may be known from it by the furrow on the apex of the median segment not reaching to the apex, nor originating at the top, by the middle of the basal part

not having a keel, by the mesopleuræ not being so strongly punctured, and by the abdomen being shorter compared with the head and thorax—it being shorter than these united, whereas in *L. pygidialis* it is distinctly longer.

Tachytes rufipalpis, sp. n.

Nigra, facie tibiisque dense aureo pilosis; abdomine argenteo lineato; alis flavo-hyalinis, nervis flavis. ♀.

Long. 17 mm.

Scape of antennæ densely covered with pale golden pubescence; beneath aciculated and thickly covered with long pale hair; the flagellum, especially at the base, thickly covered with silvery pile. The vertex is closely and distinctly punctured and covered with long, soft, fuscous hair; behind the ocelli is a large semicircular, almost triangular, deep depression; round the inner side of the hinder ocelli is a smooth shining keel, which is continued halfway down the outer side of the ocellar region; the ocelli are placed thus ••; the face below the ocelli is thickly covered with bright golden pubescence; the clypeus is closely and distinctly punctured, its upper part thickly covered with golden hair, its apex depressed, smooth, and shining. The mandibles closely punctured at the base, opaque, the rest smooth and shining; the palpi are rufo-testaceous. The base of the pronotum bears a pale golden pile; mesonotum alutaceous and thickly covered with fuscous pubescence; the scutellum is more strongly and distinctly punctured. Median segment thickly covered with long fuscous pubescence, alutaceous. Pleuræ alutaceous; the mesopleuræ thickly covered with golden pile and less thickly with fuscous pubescence. Mesosternum closely punctured and thickly covered with long pale pubescence; the area between the middle coxæ is keeled laterally and down the middle. Legs densely pruinose; the tibiæ thickly covered on the outer side with bright golden pubescence; the tibial and tarsal spines are bright rufous; the calcaria are dark rufous, darker at the base. Wings yellowish, more hyaline and without a yellow tint at the apex; the nervures are bright yellow; the upper two thirds of the first transverse cubital nervure is roundly curved, the lower part is straight, oblique; the first recurrent nervure is received at slightly less than the length of the top of the second cubital cellule from the first transverse cubital nervure, the second distinctly before the middle. Abdomen black, the basal four segments broadly banded with silvery pubescence; the

pygidium is densely covered with bright golden stiff pubescence; the hypopygium is sparsely punctured near the apex; the sides at the apex are stoutly keeled.

Comes near to *T. Saundersi* in Bingham's work, but is abundantly distinct.

Tachytes assamensis, sp. n.

Nigra, palpis, femoribus dimidio apicali, tibiis tarsisque rufis; alis fulvo-hyalinis, nervis stigmatæque rufis. ♀.
Long. 17 mm.

Antennæ black; the scape beneath thickly covered with long pale fulvous hair. The front, face, and clypeus thickly covered with bright rufous pubescence and long fulvous hair; the vertex alutaceous and covered with long dark fulvous hair. Apex of clypeus bare, smooth. Mandibles with the basal half rufous above; the base thickly covered with golden pubescence. Palpi rufo-testaceous. Thorax thickly covered with longish bright rufous pubescence, the pubescence on the pleuræ and breast sparser, not hiding the colour of the skin; the hair on the scutellum and median segment is longer. Legs rufous; the coxæ, trochanters, and base of femora black. The apex of the wings want the yellowish tint; the radial cellule is infuscated; the first cubital cellule is slightly shorter than the second; the first transverse cubital nervure is roundly curved; the first recurrent nervure is received near the basal third, the second shortly beyond the middle. Abdomen black, shining; the basal segment covered with long dark fulvous hair; the apical and basal segments are sparsely covered with long black hair; the pygidium thickly covered with stiff rufous hair; the hypopygium has the sides and apex punctured; the middle bare, smooth, and shining.

Tachytes fulvo-pilosa, sp. n.

Nigra, dense aureo hirta; alis flavo-hyalinis, nervis stigmatæque flavis; scapo antennarum dense aureo piloso. ♀.
Long. 20 mm.

Scape of antennæ densely covered with golden pubescence; the flagellum opaque, covered closely with a microscopic pile. Head densely covered with bright golden pubescence. Eyes converging above, where they are separated by the length of the fourth antennal joint. Clypeus (except at the base) closely punctured, the apex

smooth and bare; the base of the mandibles covered with golden pubescence; the palpi are covered with a pale pile. Pro- and mesothorax thickly covered with bright golden depressed pubescence; the median segment with pale fulvous hair. The basal portion of the median segment is closely transversely striated; the transverse striæ are irregularly intersected by longitudinal ones; on the basal half in the centre is a longitudinal one; the apex has an oblique slope, is irregularly transversely striated, in the middle is a deep furrow. Propleuræ shagreened, covered with pale fulvous pubescence; the mesopleuræ closely punctured and thickly covered with rufo-fulvous pubescence, intermixed with long pale fuscous hair, as are also the metapleuræ and the mesosternum. The mesosternal furrow is narrow and shallow; the transverse furrow at the middle coxæ is deeper and wider; the metasternal process is narrowly, but distinctly, furrowed down the middle; the apex is divided into two somewhat triangular processes. Legs densely covered with a golden pile; the hinder tibiæ are distinctly keeled in the middle behind; the calcaria black; the tibial and tarsal spines bright rufous. Wings yellowish hyaline, the apex slightly infuscated; the nervures and stigma yellow; the first cubital cellule at the top is hardly one third of the length of the second; the first transverse cubital nervure is broadly curved; the two recurrent nervures are united near the top, shortly appendiculated, and are received near the apex of the basal third. The basal three abdominal segments are covered with depressed golden pubescence; the pygidial area black, sparsely covered with golden hair; the hypopygium is closely and distinctly, the penultimate segment sparsely, punctured. The lateral folds on the inner orbits are prominent; the sculpture of the front and vertex is hid by the dense pubescence; the frontal furrow appears to be wide and shallow.

Allied to *T. Saundersi* and *T. Rothneyi*, but is quite distinct.

Tachytes fulvo-vestita, sp. n.

Long. 15 mm.

Shape of antennæ (except above) thickly covered with pale fulvous pubescence and more sparsely with pale fulvous hairs; the flagellum with a pale down. Vertex alutaceous, sparsely covered with long fuscous hair; the front, face, and clypeus thickly with long golden pubescence; the apex

of the clypeus almost bare, sparsely punctured. Mandibles black, broadly rufous in the middle and above to near the base; the latter is thickly covered with golden pubescence; palpi rufo-testaceous; the basal joint black at the base. The eyes at the top are separated by the length of the third antennal joint; the ocellus is round, not dilated before or behind. Thorax thickly covered with long bright hair, which is thickest on the mesonotum. The metasternal area is flat at the base and narrowly keeled in the middle; the apex has the sides raised, the raised part becoming higher towards the apex, which has a slightly oblique slope; the middle is narrow and deep at the bottom. Legs rufo-testaceous; the coxæ, trochanters, and base of femora are black, which is broadest on the anterior, narrowest on the posterior pair; the spines are few, stout, and rufous; there are none on the metatarsus. Wings yellowish hyaline, the apex fuscous; the first cubital cellule above is about one fourth longer than the second; the second recurrent nervure is received shortly, but distinctly, beyond the middle; the second is received the length of the top of the second cubital cellule from the base, the space between the two is a little greater than the length of the first cubital cellule above. Abdomen shining; the petiole covered with long pale hairs, the pygidium with stiff rufous hairs.

Comes near to *T. fulvopilosa*; may be known from it by the hinder tibiæ not being so stout, by the metatarsus being more slender and without spines, by the eyes at the top not being so widely separated, and by the different form of the metasternal area.

Tachytes maculipennis, sp. n.

Nigra, femoribus late, tibiis tarsisque rufo-testaceis; capite thoraceque pallide fulvo-pilosis; alis hyalinis, fusco maculatis. ♂.

Long. 12-13 mm.

Antennæ black, the scape broadly testaceous below; the scape beneath thickly covered with pale fulvous hair; the flagellum with a pale down; the front, face, and clypeus thickly covered with golden pubescence; the ocellar region and vertex alutaceous, covered with long pale fulvous hair; the hinder ocelli are more distinct than usual and are placed near each other; there is a narrow furrow in the middle of the vertex. The basal third of the mandibles pallid yellow; the middle rufous, the apex black; the base is covered with pale golden pubescence; the palpi rufo-testaceous. The

thorax is thickly covered with golden pubescence and with long pale fulvous hair. The pronotum is deeply and distinctly separated from the mesonotum, which is closely punctured. The hair on the postscutellum and the median segment is long and thick; on the apex of the basal region of the latter is a small, smooth, triangular space. The propleuræ are rather bare; in the middle is a curved, smooth and shining, narrow furrow. The pubescence on the meso- and metapleuræ is dense; the hair is long and paler. Legs rufous; the coxæ, trochanters, the four anterior femora broadly behind to near the apex, and the hinder at the base above and more broadly below, black; the front femora behind are covered with golden, the posterior four with pale, pubescence. Wings hyaline; along the nervures suffused with fulvous clouds; the lower third of the first transverse cubital nervure is straight, the upper part is oblique; the first recurrent nervure is received nearly the length of the second cubital cellule from the base of the cellule, the second shortly beyond the middle. Abdomen shining, smooth; the segments banded with silvery pubescence; the pygidium is densely covered with silvery pubescence; the hypopygium is roundly and deeply incised on the apex.

Liris violaceipennis, sp. n.

Niger, dense argenteo pilosus; alis fusco-violaceis. ♀.

Long. 13 mm.

The middle of the scape brownish beneath, thickly covered with silvery pubescence; the flagellum with a pale pile. Front and vertex alutaceous, opaque; the ocellus has a triangular process in front; behind the ocellar region is a deep triangular depression; there is a longitudinal shallow furrow behind the ocellus. The cheeks and clypeus are thickly covered with silvery pubescence; palpi thickly covered with white pubescence. Pro- and mesonotum thickly covered with a pale down; on the centre the down has a fulvous tint. Median segment opaque, alutaceous; the apical slope has a narrow shallow furrow in the middle; the sides are obscurely transversely striated. Metapleuræ obscurely irregularly striated. Sternal process large, distinctly keeled down the middle; its apical lobes rounded. Wings with a distinct violaceous tint; the second cubital cellule at the top is nearly four times longer than the first; the upper half of the first transverse cubital nervure has, above the middle, a different slope from the lower half; the

second recurrent nervure is received near the apex of the basal third of the cellule; the two recurrent nervures are separated by the length of the top of the first cubital cellule from each other. Legs pruinose; the spines and calcaria black. Abdomen with the segments banded with silvery pubescence; the pile on the pygidium is dark golden in certain lights; the hypopygium is slightly triangularly depressed at the apex.

Comes near to *L. nigripennis*, Cam.; that may be known from it by the head and thorax having a golden pile, by the pile on the pygidium being golden, by the apex of the median segment being more closely and uniformly transversely striated, by the femora having golden hair, and it is altogether a larger and stouter insect.

Tachysphex tinctipennis, sp. n.

Niger, capite thoraceque dense albo pilosis; alis hyalinis, cellula cubitali 1^a duplo longiore quam 2^a. ♀.
Long. fere 10 mm.

Scape of antennæ shining, densely covered with silvery pubescence, the flagellum with a pale pile; the pedicel densely pilose. Front and vertex closely punctured, the vertex less closely behind the ocelli, the front densely covered with white pubescence, the ocellar region raised, a shallow furrow down the middle; the depression behind them is deep in the middle. The apex of the clypeus is shining, bare, slightly wrinkled. The mandibles behind the tooth are finely rugose, pilose; palpi dark testaceous. Mesonotum densely punctured and thickly covered with fuscous pubescence. Scutellum shining, less closely punctured; postscutellum finely rugose. The basal part of the median segment is irregularly longitudinally striated, the apical closely finely reticulated; the apex has an almost perpendicular slope and is transversely striated. Propleuræ shining; mesopleuræ closely and distinctly punctured, the tubercles behind thickly banded with silvery pubescence, the perpendicular furrow is crenulated; the metapleuræ closely, slightly obliquely, striated. Mesosternum closely punctured, thickly covered with white pubescence; the metasternal process is depressed at the base, raised at the apex; there is a stout keel in the middle at the base. The first cubital cellule is double the length of the second on the top, the first transverse cubital nervure has an oblique slope near the middle; the second recurrent nervure is received shortly behind the middle. Legs thickly

covered with a silvery pile; the tibial and tarsal spines are silvery white. Abdominal segments with silvery bands; the pygidium bare, shining, and bearing a few scattered punctures.

This species comes close to *T. bengalensis*; it has not the wings clear hyaline, they having a distinct fuscous tinge. In *T. bengalensis* the second recurrent nervure is received distinctly beyond the middle, in the present species distinctly behind it; the median segment is not so distinctly reticulated; the basal half is more distinctly longitudinally striated; and it is a smaller and more slenderly built species.

Larra apicepennis, sp. n.

Nigra, mandibulis late rufis, basi metanoti reticulata, apice striolato; alis hyalinis, apice fumatis. ♀.

Long. 7 mm.

Head above the antennæ coarsely aciculated, the furrow below the single ocellus deep; the clypeus shining at the apex, semicircularly depressed above and closely punctured; pro- and mesothorax closely punctured; scutellum more shining and with the punctures more widely separated. The basal part of the metanotum is closely and finely reticulated, the reticulations becoming finer and closer towards the apex; the apex has an oblique slope and is finely and closely transversely striated, the striæ being much stronger on the apical half; the middle furrow is deep. Legs black, pruinose, the tibiæ and tarsi strongly spined. Wings hyaline and iridescent to the base of the stigma, the rest slightly, but distinctly, smoky; the apical abscissa of the radius is oblique and is as long as the top of the first cubital cellule, which is above nearly twice the length of the second; the upper and middle parts of the third transverse cubital nervure have oblique slopes, the lower part is roundly curved. Abdomen pruinose, shining; the basal third of the pygidial area is smooth, bare, and shining, the rest is closely punctured and covered with a rufous pile; the hypopygium is strongly, but not very closely, punctured. The metapleuræ are obscurely obliquely striated.

The wings have a steel-blue reflection in certain lights.

Apidæ.

Halictus carinifrons, sp. n.

Black, the flagellum of the antennæ brownish beneath;

the hair is white, on the underside of the tarsi fulvous; the wings hyaline, the nervures and stigma black. ♀.

Long. 6-7 mm.

Head smooth and shining, sparsely haired, the mouth fringed with longish rufous hair; there is a distinct longitudinal keel on the lower half of the front. Mandibles piceous towards the apex. The area on the median segment is closely irregularly reticulated; at the sides it bears some longitudinal keels; its apical slope is straight and slightly oblique; on the apical half is a large, somewhat oval, deep fovea; its sides and top are keeled, but not strongly. The spines on the calcaria are as long as the thickness of the spur; they extend to near the apex and become gradually shorter from the base to the apex. Abdomen smooth and impunctate, above it is almost bare; below the hair-fringes on the basal five segments are broad, long, and white; the apices of the segments are brownish, the anal fimbria is distinct, rounded behind, and rufous in colour. The labrum is entire, rounded, and slightly narrowed towards the apex. The pleural tubercle is broadly fringed behind with white hair.