

2-22-1897

IV. Hymenoptera Orientalia, or Contributions to a Knowledge of the Hymenoptera of the Oriental Zoological Region. Part V

Peter Cameron

Follow this and additional works at: https://digitalcommons.usu.edu/bee_lab_bu



Part of the [Entomology Commons](#)

Recommended Citation

Cameron, Peter, "IV. Hymenoptera Orientalia, or Contributions to a Knowledge of the Hymenoptera of the Oriental Zoological Region. Part V" (1897). *Bu*. Paper 174.

https://digitalcommons.usu.edu/bee_lab_bu/174

This Conference Paper is brought to you for free and open access by the Bee Lab at DigitalCommons@USU. It has been accepted for inclusion in Bu by an authorized administrator of DigitalCommons@USU. For more information, please contact digitalcommons@usu.edu.



Cameron-1877

[From Volume 41, Part II., of "MEMOIRS AND PROCEEDINGS OF THE MANCHESTER
LITERARY AND PHILOSOPHICAL SOCIETY," Session 1896-7.]

Hymenoptera Orientalia, or Contributions
to a Knowledge of the Hymenoptera
of the Oriental Zoological Region.
Part V.

BY

PETER CAMERON.

W. E. LaBerge

MANCHESTER:
36, GEORGE STREET.

1897.

IV. Hymenoptera Orientalia, or Contributions to a knowledge of the Hymenoptera of the Oriental Zoological Region. Part V.

By PETER CAMERON.

[Communicated by J. Cosmo Melvill, M.A., F.L.S.]

Received November 9th. Read November 17th, 1896.

In view of the fact that Colonel C. T. Bingham is at present engaged on a Monograph of the Indian Hymenoptera, I deem it advisable to give in this part of my paper descriptions of new species only, leaving the information I possess regarding the distribution and habits of the known species to be dealt with in another paper.

Compared with the immense number of parasitic Hymenoptera (Ichneumonidæ, Braconidæ, &c.) known from the Nearctic and Palæarctic zoological regions they are but feebly represented, in fact they are almost absent in the southern parts of the Indian Peninsula; but they appear to be more numerous in Ceylon, and are probably not uncommon in the Himalayas.

ICHNEUMONIDÆ.

ICHNEUMON CLOTHO, *sp. nov.* (Pl. 3, f. 1).

Niger, abdomine cæruleo; linea antennarum, orbitis oculorum, scutello, post-scutelloque albis; alis fusco-hyalinis.
♀. Long. 15 mm.

Hab. Missouri (Rothney).

Head black, shining, the face strongly, the front and vertex much less strongly punctured; the orbits on the top and bottom and on the inner side, on the bottom very

Feb. 22nd, 1897.

broadly; on the sides narrowly, and dilated in the middle, especially at the top, yellow; the mandibles thickly covered with dull fulvous hair; rufous before the apex. Antennæ stout; 7-8 joints near the middle on the underside yellowish-white; the scape punctured; on the underside covered with pale golden hair. Thorax black; the edge of the pronotum, scutellum and post-scutellum yellow, the mesonotum closely punctured; thickly covered with a short, dull fulvous pubescence; the scutellum punctured; the post-scutellum hardly so; the sides of the former smooth, shining, and impunctate; the depression at the side of the post-scutellum also smooth and shining and with a distinct margin; the median segment coarsely irregularly striolated at the base; the middle of the apex closely transversely striated; the sides much more strongly transversely striated; all the areæ clearly defined. The lower part of the propleuræ irregularly obliquely striated. The mesopleuræ closely punctured; the middle with some irregular longitudinal striations; the meta-pleuræ closely punctured, running into irregular striations at the apex. Legs covered with pale pubescence; the outer and lower half of the four anterior coxæ, the hinder coxæ entirely black, except a yellow spot in the middle above; the front femora are rufo-testaceous on the underside, the middle pair towards the apex only; the front tibiæ testaceous in front; the middle pair rufo-testaceous towards the apex; the hinder pair quite black and both the hinder pairs have a broad white mark near the base; the four anterior tarsi dull testaceous, the hinder pair dark, with the third and fourth joints white. Abdomen shining, bright blue, except the petiole, which is darker; shining, almost glabrous; the petiole at the apex before the gastrocœli with a strongly punctured spot; the gastrocœli shallow, large, the base with some striations; the apex flesh-coloured.

ICHNEUMON TAPROBANÆ, *sp. nov.*

Niger, pedibus flavis: coxis trochanteribusque nigris, alis fulvo-hyalinis, stigmatе fusco. ♂. Long. 11 mm.

Hab. Ceylon (Rothney).

Head bearing a white down; closely punctured, the clypeus with the punctures widely separated; the palpi testaceous. Thorax closely punctured; the depression at the base of the scutellum wide, deep; the scutellum finely punctured, shining; the centre fuscous; its apex finely longitudinally striated; the post scutellum finely rugose; the median segment rugose; there are two straight keels at the base, forming an almost square area; the lateral keels end in stout, blunt spines; the apex oblique, with two straight keels down the centre. The propleuræ finely longitudinally striated at the base; the mesopleuræ punctured, an oblique band of fine striations in the middle; the metapleuræ longitudinally striated, indistinctly at the base, much stronger at the apex. The front coxæ on the lower side are thickly covered with fulvous hair; the middle femora are fuscous on the underside at the base. At the top the areolet is narrowed, being there as long as the space bounded by the second transverse cubital and the recurrent nervures. Abdomen black; the apex of the petiole finely rugose, keeled down the sides; the gastrocœli finely striated at the base.

ICHNEUMON INTAMINATUS, *sp. nov.*

Niger; femoribus posticis rufis; alis hyalinis, nervis stigmatеque nigris. ♂. Long. 9 mm.

Hab. Mussouri (Rothney).

Head entirely black; the front and vertex very shining, sparsely covered with white hair; the face and clypeus almost impunctate, covered with long white hair; the mandibles and palpi black. Antennæ as long as the body, black, the scape with longish pale hair. Thorax shining,

the pleuræ and sternum with long white hair; the median segment with an oblique slope at the apex; its base smooth, the rest rough, the apex with a few irregular striations; the apical part of the propleuræ near the middle with a few striations; the rest of the pleuræ obscurely punctured; the mesopleuræ and the metapleuræ at the apex on the lower side striolated. Legs thickly covered with short white hair; black, including the calcaria; the hinder femora red. The areolet is a little narrowed at the top, being there as wide as the space bounded by the first transverse cubital and the recurrent nervures. Petiole coarsely aciculated, keeled down the centre and the sides; the apex smooth, shining; the other segments smooth and shining.

ICHNEUMON VACILLANS, *sp. nov.*

Niger; tibiis tarsisque anterioribus, femoribus basique tibiarum posticarum, rufis; alis hyalinis, nervis fuscis. ♂.
Long. 11 mm.

Hab. Missouri (*Rothney*).

Head black, thickly covered with moderately long white hair, closely but not strongly punctured; the palpi black. Antennæ entirely black; the scape with a longish, the flagellum thickly with a microscopic pile. Thorax entirely black; thickly covered with short fuscous pubescence. Metapleuræ much more strongly punctured than the mesonotum and more opaque; the apex with a gradually rounded slope; obscurely striolated in the middle; a shallow furrow leads down from the spiracles; the pleuræ uniformly punctured. Wings hyaline; the nervures at the base and the stigma in the middle testaceous. Legs: the apical third of the anterior femora, the tibiæ and tarsi, the middle legs except the coxæ and trochanters, the hinder femora except the knees, and the basal third of the tibiæ, red; the calcaria pale rufous. Abdomen black, shining, impunctate.

ICHNEUMON APPROPINQUANS, *sp. nov.*

Niger; multo albo-maculato; pedibus rufis, basi nigris; alis fulvo-hyalinis, stigmatibus fulvo. ♀. Long. 15 mm.

Hab. Missouri (Rothney).

Head black; strongly punctured; the vertex transversely striolated; the inner orbits from the clypeus to the hinder ocelli broadly yellow, narrowed towards the eyes; at the outer side at the foot of the eyes is a large yellow mark; and on each side of the clypeus is a crescent-shaped mark; palpi pale fulvous. Antennæ black, the upper side beyond the middle broadly white. Thorax closely punctured, covered with a pale short down; the edge of the pronotum, tegulæ, tubercles, scutellum, post-scutellum, two large marks on the median segment at the tubercles; and a large mark on the mesopleura, clear yellow. The apex of the pro- and meso-pleuræ crenulated; on the median segment are only the basal areæ; the apex oblique; at its top are some stout longitudinal keels; the centre coarsely rugosely punctured; the sides with stout transverse keels. The four front coxæ are broadly white at the base in front; the hinder pair have a large white mark at the base above; the trochanters black; the four anterior white at the apex; the hinder with a small white mark above; the apex of the fore femora, the tibiæ and the base of the tarsi white in front; the tarsi black, paler at the base. Wings fulvo-hyaline, the nervures fuscous, paler towards the apex; the stigma fulvous; the areolet at the top nearly as long as the space bounded by the recurrent and second transverse cubital nervures. Abdomen black; the apex of the petiole and a large mark on each side of all the other segments, white. Petiole smooth, shining, longitudinally striolated in the middle before the white; gastrocœli broad; their base roughly and irregularly striolated.

ICHNEUMON HYPOCRITA, *sp. nov.*

Niger, annulo antennarum, facie, scutello, coxis, trochanteribus tarsisque posticis albis; pedibus fulvis; trochanteribus posticis tarsisque posticis late nigris; alis fusco-hyalinis. ♂. Long. 10 mm.

Hab. Missouri (Rothney).

Head black, closely punctured; the face thickly covered with short white hair; below the antennæ entirely white, including the oral organs. Antennæ black, the scape beneath, and a broad belt (9 joints) beyond the middle, white. Thorax black; the tegulæ, tubercles, scutellum, and post-scutellum white; closely punctured; the scutellum with widely separated punctures; at the sides of the post-scutellum is a row of stout keels; the areæ on the median segment clearly defined; the supra median longer than broad, bulging out at the sides; the lateral wider than it and impunctate; the rest of the segment transversely striated. Pleuræ strongly punctured; the lower part of the propleuræ strongly striated; the metapleuræ rugosely punctured. The four anterior coxæ and trochanters white; the rest of them fulvous; the hind coxæ black; the hind femora black except at the extreme base; the hind tibiæ broadly black at the apex; the hind tarsi white except at the base. Wings hyaline, with a faint fuscous tinge; the stigma and nervures black; the areolet a little longer than broad; the transverse cubital nervures straight, parallel; the recurrent nervure is received shortly beyond the middle. Abdomen black, shining, smooth; the second and third segments at the apex fulvous.

ICHNEUMON ROTHNEYI, *sp. nov.* (Pl. 3, f. 2).

Niger; abdominis segmentis 2—6 ferrugineis; tibiis tarsisque sordide testaceis; alis flavo-hyalinis, stigmatate fulvo. ♂. Long. 17—18 mm.

Hab. Missouri (Rothney).

Head black, strongly and closely punctured; thickly covered with short grey hair; the mandibles piceous before the apex. Antennæ black, 7—8 of the middle joints yellowish-white. Thorax black, closely punctured; a line on the pronotum and the scutellum yellow; the latter smooth and almost impunctate; its apex black. The median segment rugosæ; thickly covered with short white hair, its apex hollowed in the centre; its sides with stout keels; there are two central keels widely separated; the space between these and the bordering keel stoutly transversely striated, it being also striolated obscurely on the innerside of the central keel; the basal area is a little wider than long. All the coxæ and trochanters are black and thickly covered with a pale down; the anterior femora slightly; the middle pair even more so and the hinder pair still more so, the apex of the hinder tibiæ and the apical joints of the tarsi, blackish. Wings hyaline, but with a distinct fulvous tinge; the stigma clear fulvous; the nervures fuscous, darker towards the base; the top of the areolet is a little less in length than the space bounded by the second transverse cubital and the recurrent nervures. Abdomen ferruginous; the petiole and the base of the second segment, black; the petiole smooth at the base; the sides at the apex coarsely punctured; the raised central part closely longitudinally striated. Gastrocœli large, deep, with a few stout, irregular keels; the second segment between longitudinally striated; the apical segments are smooth and impunctate.

ICHNEUMON BUDDHA, *sp. nov.*

Niger, scutello flavo; flagello antennarum medio late albo; pedibus rufis; apice tibiæ posticarum tarsisque posticis nigris; abdomine late rufo, apice albo. ♀. Long. 8 mm.

Hab. Mussouri (Rothney).

Head black, the sides of the clypeus and the greater part of the mandibles in middle rufous; the eyes very distinctly margined on the inner side; the front and vertex closely punctured; the clypeus, except at the base, with very few punctures. Antennæ stout, sparsely and shortly pilose; the middle of the flagellum broadly white beneath and at the sides. Thorax black; the pronotum yellowish in the middle; the mesonotum coarsely alutaceous; the scutellum shining; post-scutellum narrowed towards the base; the part at the sides of the scutellum behind with strong, stout keels, which become wider from the inner to the outer side; the part at the sides of the post-scutellum crenulated. Median segment large; the apex with an oblique slope, roundly excavated in the centre; coarsely punctured; the sides at the apex irregularly obliquely striated; all the areæ completely defined; the central coarsely transversely striated; there are two stout keels bordering the central depression on the apical part. Propleuræ at the apex strongly striolated; the part above this coarsely punctured, the puncturing becoming finer towards the top; above the front coxæ are two stout, sharp keels, forming between them a sharp channel. All the coxæ and base of trochanters black; the apex of the hind tibiæ and the tarsi black; the middle tarsi fuscous. The basal half of the petiole black; the apical rufous; coarsely punctured; and with two sharp keels down the middle. The second and third segments entirely rufous; the apical two cream white above, except at the side of the penultimate; the ventral surface broadly rufous at the base; gastrocœli striated at the base.

ICHNEUMON VISHNU, *sp. nov.*

Long. fere 10 mm. ♂.

Hab. Missouri (*Rothney*).

A species very like the above described species. It

seems to differ from it in too many points of colouration and structure to be its ♂. For example, the supra-median area on the median segment here is rounder and completely separated from the base, which is not the case with the other species; it is, further, fully larger, while if it were the ♂, it should be smaller.

Antennæ as long as the body, the scape covered with long fuscous hair; a white band of six joints beyond the middle. Head black; strongly punctured; the clypeus with only a few punctures on its apical margin. The orbits, except at the top, yellow, the inner band being the wider, especially at the bottom; the mandibles broadly yellow in the middle; the labrum fringed densely with golden hair. Thorax black; the edge of the pronotum, but not completely, the tegulæ, tubercles, and scutellum broadly at the sides, but not uniting at the apex, a line at the sides in front of it, and the post-scutellum, yellow. Pro- and meso-thorax closely punctured; the scutellum thickly covered with brownish hair; at the sides of the post-scutellum there are some stout keels. The median segment has an oblique slope at the apex; the central area complete, rounded at the base, almost transverse at the apex; the other nervures are not so clearly defined; the apex is transversely striated. Legs rufous; the coxæ, trochanters, apex of the hinder tibiæ and the posterior tarsi, black; the fore coxæ yellowish white at the apex. The areolet is much narrowed at the top; the transverse cubital nervures almost meeting there. Petiole black, a yellow band across its apex; the second and third segments rufous; the apical two segments white above; beneath the 2—4th segments are rufous.

ICHNEUMON CONFUSANEUS, *sp. nov.*

Niger, flagello antennarum albo; tibiis tarsisque anticis testaceis; abdomine late rufo; alis hyalinis, stigmate fusco.
♀. Long. 6 mm.

Hab. Trincomali, Ceylon (*Yerbury*).

Antennæ black, the 8—14th joints clear white beneath. Head closely punctured all over; the clypeus with the punctures more widely separated; the mandibles before the teeth rufous. Pro- and meso-notum closely and rather strongly punctured; the scutellum with the punctures smaller and more widely separated. Median segment with the areas complete; coarsely punctured; the apex in the middle closely transversely striated. The apex of the propleuræ strongly longitudinally striolated; on the mesopleuræ there is a shining impunctate spot below the hind wings. The middle tibiæ are darker coloured than the anterior, especially in front. The areolet is narrowed at the top, being there not much wider than the space bounded by the recurrent and the transverse cubital nervures; the recurrent being received nearly in the middle of the cellule. Petiole shining, black; the apex, except in the middle, with some distinctly separated punctures; the second, third, and base of the fourth segment ferruginous; gastrocœli smooth.

ICHNEUMON INQUIETUS, *sp. nov.*

Long. 6 mm.

Hab. Trincomali, Ceylon (*Yerbury*).

Is nearly related to *I. confusaneus*; but differs in having the legs without black, except on the apex of the hinder femora and tibiæ; the propleuræ more completely and strongly striolated, and the second abdominal segment closely longitudinally striated.

Head closely punctured, immediately over the antennæ obscurely striated transversely; the clypeus more shining, with the punctures much more widely separated; the mandibles pale yellow, piceous before the apex. Antennæ black; the 9—12th joints clear white. Mesonotum closely punctured; the scutellum shining; sparsely punc-

tured, especially at the base. Median segment coarsely punctured; the apex in the middle transversely striolated. The mesonotum punctured; the pro- and meta-pleuræ on the lower part longitudinally striolated. The four anterior legs fulvous; the coxæ and trochanters yellow; the hinder legs have a more reddish tint, including the coxæ and trochanters; a spot on the underside of the coxæ, the apex of the femora and the tibiæ black. Petiole black, shining; the second and third segment rufous; the base of the second depressed and with an interrupted transverse smooth shallow furrow at the apex of the depression; strongly longitudinally striolated, the striæ becoming very faint towards the apex, especially in the middle, which is aciculated.

ICHNEUMON INTEGRATUS, *sp. nov.*

Niger, facie, scutello, maculis 2 metanoti abdominisque segmentis late, flavis; alis fulvo-fumatis, stigmat fulvo.
Long. 15 mm.

Hab. Missouri (Rothney).

Head black, densely covered with white, behind with fulvous hair; the face below the antennæ yellow; fulvous in the middle (perhaps through discoloration); the apex of the clypeus black; the mandibles reddish towards the apex; the base densely covered with fulvous hair; the palpi fulvous. Thorax thickly covered with pale pubescence; the tubercles, tegulæ, a short line in front of them, scutellum, a line on the post-scutellum, and two triangular marks on the median segment near the spiracles, yellow. Propleuræ irregularly striated towards the apex below. The median segment has only the basal area clearly defined; it is broader than long, rough; the centre with four stout keels, converging towards the apex; the apex has an abrupt slope; the central area closely and roughly transversely striated; the lateral areæ

with the transverse keels much stouter, more widely separated, and they are divided into two by a stouter keel. Coxæ black; the four hinder broadly yellow at the base; the apical joint of the four anterior trochanters pale; of the hinder pair entirely rufous; the apex of the hinder femora and of the hinder tibiæ black; the hair is fulvous on the coxæ. The alar nervures fuscous, pale at the base; at the top the areolet is as wide as the space bounded by the second transverse cubital and the recurrent nervure. Petiole shining at the base; the apex closely longitudinally striolated; the gastrocæli shining; the base with some stout keels; the yellow on the second and third segments, broad; the apical segments entirely rufous, the fourth and fifth only rufous at the base.

ICHNEUMON NUMERICUS, *sp. nov.*

Long. 15 mm. ♂.

Hab. Missouri (*Rothney*).

Resembles *I. integratus*; but has the yellow markings much more expanded on the thorax; the pleuræ having two large marks; the apex of the median segment yellow, and the antennæ yellow, broadly black at the apex.

Head rather strongly punctured, the lower part densely covered with white, above the antennæ with longer fuscous hair; below the antennæ entirely yellow; the inner orbits broadly to the hinder ocelli, and the outer to near the level of the lower, this latter belt becoming gradually narrowed to the top, yellow. The front in the middle transversely striated; the mandibles and palpi yellow; the former piceous at the apex; palpi yellow. Antennæ as long as the body, rufous-yellow, the apex broadly black; the three basal joints black above. Thorax closely punctured; thickly covered with short hair, which is darker on the mesonotum, whiter on the rest; a broad band on the pronotum; the scutellum,

post-scutellum, the apex of the median segment, except a small black mark in the middle at the apex, a triangular mark on the lower part of the propleuræ, a large mark on the lower side of the mesopleuræ, and an oblique one on the metapleura, yellow. On the median segment only the basal area is defined; it is longer than broad, smooth; the apex with four stout longitudinal keels, its extreme apex, yellow; the sides at the base rugosely punctured; the apex transversely striated, more strongly at the sides; the central keels stout, straight. The four front coxæ entirely yellow; the hinder black; the apex broadly rufous; the four front legs entirely rufous, yellower in front; the hinder rufous; the apex of the tarsi broadly black. Petiole black; the sides margined; stoutly keeled at the apex, which is strongly longitudinally striolated, raised at the middle, depressed at the sides; the base of the second segment striated; the gastrocœli shallow; the black bands on the second and third segments broad, triangularly produced in the middle at the base; in the centre of the fourth segment at the apex is a black mark, triangularly produced at the base.

ICHNEUMON AGRAENSIS, *sp. nov.*

Fulvus, pedibus posticis nigro-maculatis; alis fulvo-hyalinis, stigmatibus fuscis. ♂. Long. 13 mm.

Hab. Agra (Rothney).

Head luteous, the orbits paler; covered with a white microscopic pubescence; the face closely covered with shallow punctures; the apex of the clypeus rounded; the tips of the mandibles blackish. Scape of antennæ luteous; the flagellum, brownish beneath, darker above. Mesonotum of a darker tint than the rest of the body; rough in texture; the scutellum with large punctures; and covered with long fuscous hair, large, raised above the level of the mesonotum; a deep depression at its

base; its apex oblique. Median segment closely rugosely punctured; the base with the punctures larger and more widely separated; the extreme base impunctate. There is a central pear-shaped area, and two wide lateral ones; the apex is rounded and transversely striolated in the middle. The lower part of the propleuræ shining, impunctate; the upper with shallow punctures, the meso- and metapleuræ closely punctured; an impunctate spot on the mesopleuræ near its apex. Legs fulvous; the apex of the hind femora, of the hinder tibiæ and the hinder tarsi except at the base, black. The areolet at the top is as wide as the space bounded by the recurrent and the second transverse cubital nervures. Except at the base the abdomen is closely punctured, the apex of the petiole, depressed at the sides; the gastrocœli large, the innerside at the base striolated, the outer punctured, the space between longitudinally striated; the sixth joint entirely, the seventh, black with a large white mark in the middle at the apex; the two apical segments entirely black beneath.

CRYPTUS INFERNALIS, *sp. nov.*

Ferrugineus, capite, antennis, abdominisque apice late nigris; flagello antennarum annulo late albo; alis hyalinis, nervis fuscis. Long. 7 mm.

Hab. Agra (Rothney).

Head black; the orbits from the top of the frontal depression to the occiput, white, the white mark narrowed at base and apex; the frontal depression transversely striated; the palpi testaceous. Antennæ black, the middle of the flagellum broadly white. Thorax entirely red; the pro-mesonotum and scutellum shining; almost impunctate; the depression at the base of the scutellum crenulated. Median segment closely rugosely punctured; the base laterally shining and impunctate; at the base and at the top of the flat part is a

transverse keel which bulges backwards in the middle, the basal one being rounded, the apical transverse at the base; the apex has an oblique slope; the pleuræ closely punctured; the propleuræ at the base more shining and obscurely striolated. The four anterior legs rufous; the hinder femora and the coxæ black, except at the base and apex; the hinder tibiæ and tarsi black, the former only black behind. The petiole is broadly black at the base; smooth and shining, the apex without keels and not raised in the centre at the apex; its apex and the second segment ferruginous; the other segments black except the last, which is milk-white above. Gastrocœli absent. Areolet almost square.

CRYPTUS INDICUS, *sp. nov.*

Niger, albo-maculatus; pedibus anterioribus pallidis; coxis, trochanteribus femoribusque posticis rufis; tibiis tarsisque posticis nigris, basi albis; alis hyalinis, apice fumatis. ♂.
Long. 8—9 mm.

Hab. Mussouri (Rothney).

Head shining, the front sparsely punctured; below the antennæ, including the oral organs and the inner orbits to the ocelli broadly, white; the tips of the mandibles black; the basal portion of the antennæ white beneath; the apical brownish. Thorax black, shining, minutely punctured; the prothorax in front, a curved mark narrowest on the outerside, on the side of the meso-notum at the base, the tubercles, tegulæ, scutellum, and a mark on the apex of the metapleuræ over the coxæ, white. Pro- and meso-notum punctured; the scutellum impunctate, the median segment much more strongly punctured and without any keels. The four front legs are entirely pallid yellow; the hind coxæ, trochanters, and femora red; the apex of the hind femora, tibiæ, and tarsi, black; the base of the hind tibiæ and the greater part of the

metatarsus at the base, white. Wings clear hyaline, the apices of both wings smoky; the nervures fuscous; the areolet shortly appendiculated at the top; the recurrent nervure received in the basal third of the cellule. Abdomen very smooth, shining; the petiole entirely white on the basal half; its apex narrowly, the base of the second segment, its apex narrowly, the base and apex of the third and fourth, broadly, white; the ventral surface for the greater part white.

CRYPTUS ORIENTALIS, *sp. nov.*

Niger, pedibus abdomineque late rufis; alis fusco-hyalinis, nervis testaceis. ♀. Long. 12; terebra 4 mm.

Hab. Mussouri (*Rothney*).

Head black; the apex of the clypeus, the orbits narrowly, except near the top behind, the base of the mandibles, a line at their base joined to the eyes, pale testaceous; the palpi fuscous, testaceous at the base. Antennæ black; the 6—8 joints pale testaceous beneath. Thorax black; closely punctured; the lower half of the propleuræ strongly longitudinally striolated; the parapsidal furrows complete, deep, broadest at the base; the scutellum closely punctured; the post-scutellum shining, and bearing a few scattered punctures; on the base of the median segment are two large areas, curved; truncated at the sides, the space enclosed being finely rugose; between the basal and the apical keels the front is strongly irregularly striolated; the central keels being the larger and most regular; the spines large, somewhat triangular. The apex has an oblique slope; the centre coarsely coriaceous; the sides with stout transverse striations. Coxæ and trochanters black; the anterior trochanters testaceous at the apex; the hinder tibiæ infuscated, especially towards the apex; the hind tarsi rufo-testaceous, the metatarsus except at the apex, and the apex of the terminal joint black. At the top the

areolet is as wide as the space bounded by the second transverse cubital and the recurrent nervure. Abdomen shining, impunctate; bare; black; the apex of the petiole, the apex and sides of the second segment, the third segment except at the base and the others almost entirely, rufous.

HEMITELES VEDA, *sp. nov.*

Ferrugineus, thorace nigro-maculato; alis fulvis. Long. 15; terebra 4 mm.

Hab. Trincomali, Ceylon (Yerbury).

Head ferruginous, the part above the antennæ, and a triangular mark leading down to it from the ocelli, black, the part enclosing the ocelli being also black; strongly punctured, the clypeus and the part immediately over the antennæ, smooth; the inner orbits below the antennæ obscure yellow; the inner orbits above the antennæ distinctly margined; the clypeus near the base of the mandibles, black. Antennæ bare; from the thirteenth joint brownish beneath, blackish above. Thorax rufous; a small mark on the propleuræ, the mesopleuræ broadly at the base, narrowly at the top and down the apex, the metapleuræ except a mark in the centre leading into a smaller one at the side, black; the extreme base of the median segment, its apex and two oblique marks there, black; the metanotal keels almost obsolete at the base; towards the apex there are two straight central and an oblique lateral fairly well indicated; the lower side of the propleuræ obliquely striolated; the base and apex of the mesopleuræ narrowly longitudinally striated; the base of the metapleuræ crenulated, and on the lower side there is a stout curved keel. Legs ferruginous, the tips of the tarsi and a large mark on the hinder side of the posterior coxæ, black. Wings fulvous, lighter coloured at the apex; the stigma and costa fulvous; the nervures blackish; the areolet wider than long,

narrower at the bottom than at the top through the first transverse cubital nervure being sharply, the second slightly, oblique; the recurrent nervure is received in the basal third of the cellule. Petiole shining, the apex finely punctured, and with an elongated depression; the base broadly black; the rest of the abdomen shagreened.

MESOSTENUS HIMALAYENSIS, *sp. nov.*

Niger, albo-maculatus; pedibus fulvis; coxis anterioribus albis, basi tibiæ tarsorumque posticorum late nigris; alis hyalinis; nervis fuscis. ♂. Long. 9 mm.

Hab. Himalayas.

Antennæ as long as the body; black; the scape beneath and a broad band beyond the middle, white. Head shining; the face closely punctured; the front obscurely striolated; below the antennæ, the oral region except the apices of the mandibles, the orbits except near the top of the eyes, white. Thorax black; the mesonotum closely punctured; a broad line on the pronotum, tegulæ, tubercles, a mark on the centre of the mesonotum, scutellum, post-scutellum, three marks on the median segment in a triangle, a mark at the base of the mesopleura, a smaller one at the apex nearer the breast, a somewhat triangular mark below the hind wings, a large pear-shaped mark on the metapleura and the greater part of the mesosternum, white. Median segment with a gradually rounded slope, coarsely punctured; the basal white mark is longer and narrower than the apical. The four front coxæ and trochanters white; the hinder red like the femora; the basal joint of the trochanters blackish; the apex of the second, the third, and the fourth tarsal joints are white. Wings hyaline, the areolet quadrangular; the recurrent nervure received at its apex. Abdomen black, shining, impunctate; all the segments broadly white at the base above and beneath.

ROTHNEYIA, *gen. nov.*

Differs from all known Ichneumonidæ by having only three visible abdominal segments, the third ending at the apex in a semicircle which forms at each side a stout tooth; the scutellum projects at each side in a stout triangular tooth; there are two large spines on the centre of the median segment at the side. Antennæ 25-jointed. Legs and wings as in *Ichneumon*.

This genus does not fit well into any of the subtribes of *Ichneumonides*. The alar neuration is quite as in *Ichneumon*; but otherwise the genus differs completely; and, as regards the abdomen, it can only be compared with some Braconidæ such as *Chelonus*. The form of the spiracles I cannot determine from the roughness of the median segment.

ROTHNEYIA WROUGHTONI, *sp. nov.* (Pl. 3, f. 3).

Nigra, petiolo ferrugineo; pedibus rufis; geniculis, tibiis tarsisque posticis, nigris; alis hyalinis, basi antennarum late rufis. ♀. Long. 5 mm.

Hab. Missouri (*Rothney*).

Antennæ black; the 5—6 basal joints of the flagellum brownish; closely covered with a microscopic down, the scape with white hair. Head black; below the antennæ thickly covered with long white hair; the front and vertex punctured, more sparsely covered with fuscous hair. Mandibles depressed at the base; piceous in the middle; the palpi white. Thorax black; the mesonotum more strongly in the centre, which is broadly raised; the scutellum rugosely punctured; the sides raised; the apex between the teeth depressed; the apex of the teeth rufous. The middle of the metanotum between the teeth stoutly bordered or margined all round; the top longitudinally, the apex irregularly transversely striolated; with a semicircular keel at the extreme apex. Pleuræ

shining; the lower part strongly transversely striolated; the mesopleuræ at the top punctured, on the lower part more closely punctured; the central part impunctate and with a few striations. Wings hyaline, the nervures fuscous; the cubitus a little narrowed at the top, being there as wide as the space bounded by the second transverse cubital and the recurrent nervures, which, as is also the second transverse cubital, are widely bullated. Legs rufo-testaceous; the apex of the hinder femora and the hinder tibiæ and tarsi, black. Abdomen black; the petiole rufous; covered closely with short white hair; closely and strongly punctured; petiole with the sides strongly keeled; the keels at the dilated apex being continued slightly obliquely to the apex down the middle; the genital armature white.

PIMPLIDES.

PIMPLA PULCHRIMACULATA, *sp. nov.*

Nigra, late flavo-maculata; pedibus fulvis; alis hyalinis, apice violaceo-maculatis. ♀. Long. 14 mm.

Hab. Trincomali, Ceylon (*Yerbury*).

Head smooth, shining; yellow; the ocellar region, a band leading down from it to a broad transverse band over the antennæ, and the occiput broadly, black. Antennæ nearly as long as the body, black. Palpi testaceous. Pronotum narrowly edged with yellow; the mesonotum black, with two lines in the middle running from the base to the tegulæ, becoming gradually narrower as they do so; the scutellum, except at the apex; post-scutellum and two broad curved lines on the sides of the median segment; the base of the propleuræ, a large mark on the mesopleuræ much narrowed on the lower side, the tubercles, a mark before the middle coxæ, and the metapleuræ, except a black oblique line leading to the spiracles, yellow. A broad black mark, narrowed

in the middle down the centre of the median segment. Legs fulvous, the coxæ yellow; a large mark in front of the hind pair and a smaller mark behind, joined together by a broad band at the top, black. Petiole smooth and shining; a broad band in the middle ending before the apex in a large semicircle; the other segments closely punctured; the terminal segments are brownish; the oblique depression on the 2—4th segments distinct; the second segment broadly depressed at the sides at the base, the segment at the outer side of the depression being yellow. The outer half of the cubitus curved; the areolet oblique, shortly appendiculated at the top; the cloud at the apex extends from the costa to about the same distance below the cubital nervure.

PIMPLA TAPROBANÆ, sp. nov.

Nigra, pedibus flavis, coxis trochanteribusque nigris; alis fulvo-hyalinis. ♀. Long. 13 mm.

Hab. Ceylon.

Head closely punctured, covered with a short white pubescence; the face projecting, at top forming almost a triangle; clypeus forming a semicircle at the top, where it is obscurely punctured; the apex almost perpendicular; the labrum piceous, fringed with long golden hair; palpi and mandibles entirely black. Pro- and meso-notum thickly covered with fuscous hair; obscurely shagreened; a large square spot on the scutellum and a long one on the post-scutellum, yellow; the median segment broadly raised in the middle at the base; the centre raised; strongly, the sides finely transversely, striated; the centre at the apex with an oblique slope; the sides rather acute at the top. Pro- and meso-pleuræ shining, impunctate, thickly covered with short whitish pubescence; and having a plumbeous tinge. Legs almost bare; the fore trochanters beneath and at the apex all round, yellow. Wings fulvo-hyaline; the stigma testaceous in the middle;

the tegulæ black. Abdomen entirely black; shining, impunctate; the petiole at the base depressed in the middle; oblique; its top somewhat triangularly, its sides much more widely depressed; gastrocœli oblique, smooth, raised in the centre; and from them an oblique furrow leads to the apex of the segment; the oblique furrows on the third segment moderately deep and wide; on the fourth they are shallower.

PIMPLA LAOTHOE, *sp. nov.*

Nigra, pedibus rufis; coxis, trochanteribus, apice tibiæ posticarum tarsisque posticis, nigris; alis fulvo-hyalinis; nervis fuscis, stigmatibus fulvo. ♀. Long. 13 mm.; terebra 3—5 mm.

Hab. Moussouri (Rothney).

Head black, thickly covered with pale fulvous hair, especially long and thick below the antennæ, where there is in the centre a shining, impunctate line; the front broadly but not deeply depressed; the front ocellus surrounded by a furrow, which is continued down the front to the antennæ; the front with the punctures shallow, especially towards the eyes. Thorax entirely black; the pro- and meso-notum closely punctured, thickly covered with short fuscous hair; scutellum shining, smooth; the punctures shallow, widely separated, the sides much more strongly and closely punctured, except at the base; post-scutellum rugosely punctured; the median segment with a gradually rounded slope, rugose; the centre transversely striated. Propleuræ at the bottom longitudinally striated; at the top are two stout longitudinal keels. All the coxæ and trochanters black; the coxæ beneath thickly covered with fulvous hair, as are also the tibiæ and tarsi; the hinder tarsi black. Abdomen entirely black; above closely, strongly, and uniformly punctured, except at the apices of the segments, which are smooth and shining; the base of the petiole widely depressed, smooth and almost impunctate.

PIMPLA NEPE, *sp. nov.* (Pl. 3, f. 4).

Long. 13 mm.; terebra 4 mm.

Hab. Mussouri (*Rothney*).

Almost identical in coloration with *P. laothoe*, but may be known from it by the absence of the furrow on the front and of the keels on the propleuræ; by the scutellum being more closely and strongly punctured and pale yellow in the centre.

Head closely and strongly punctured below the antennæ; the front widely depressed, impunctate, shining; the palpi dirty testaceous. Pro- and meso-notum strongly and closely punctured, thickly covered with short pale hair; the scutellum thickly punctured behind, more sparsely in front; the top with a pale orange mark; the post-scutellum strongly longitudinally striolated. Median segment with a gradually rounded slope from the base to the apex; coarsely rugosely punctured; the centre broadly raised in the middle towards the apex. Pleuræ and sternum punctured. All the coxæ and trochanters are black; the former on the lower side thickly covered with fulvous hair; the hinder tarsi black, except at the apex. The petiole with a deep impunctate excavation at the base; the other segments closely and somewhat strongly punctured, except at the extreme apex.

OPHIONIDES.

ENICOSPILUS CEYLONICUS, *sp. nov.*

Flavus; alis hyalinis, stigmatibus fulvo. ♀. Long. 15 mm.

Hab. Ceylon, Trincomali (*Yerbury*).

Antennæ longer than the body, uniformly fulvous; the scape bare, the flagellum with a close microscopic pile. Head fulvous, the face paler, more yellowish; the tips of the mandibles black; the palpi testaceous; the ocelli very large, raised above the level of the eyes,

which the hinder almost touch. Mesonotum shining; the scutellum pallid yellow; the base of the median segment depressed in the middle; a stout transverse keel behind it; behind this keel the segment is coarsely shagreened and with an indistinct furrow down the centre; the pleuræ coarsely shagreened. Legs uniformly fulvous, almost bare; wings clear hyaline; the stigma fulvous; the clear bare space contains one large horny mark, with a distinct dark border; above it is a curved spot, and behind two smaller spots. Abdomen darker towards the apex. The cubital nervure is much thickened at the base.

Enicospilus, or *Henicospilus* as the purists would have it, differs from *Ophion* proper in the fore wings having a clear space, which usually contains one or more horny points; and, the stump of the cubital nervure, found well developed in *Ophion*, is absent. In some cases the smooth space is present without having horny points in it, or they are very faint. In either case I believe it will be found that the base of the cubital nervure is thickened, which is not the case with *Ophion*, *sensu str.* In view of the great similarity of the species of *Ophion*, it seems to me desirable to adopt *Enicospilus* as a distinct genus. Species belonging to it are found in all parts of the world.

ANOMALON DECORUM, *sp. nov.*

Nigrum, facie, orbitis oculorum, ore, palpis, linea pronoti, tegulis, scutello, coxis trochanteribusque, flavis; alis hyalinis.
♀. Long. 10 mm.; terebra 3 mm.

Hab. Trincomali, Ceylon (Yerbury).

The scape yellowish beneath; the flagellum absent. Head shining, sparsely covered with white hair; yellow; the centre of the vertex broadly (the black narrowed towards the bottom), and the occiput, except at the edges, black; the tips of the mandibles black; the eyes

largely converging at the bottom, they being there not separated by much more than twice the width of the scape. Thorax black; the pronotum broadly, tegulæ and tubercles yellow. Mesonotum opaque; the central lobe raised; the scutellum yellow; the median segment reticulated; the pro- and meso-pleuræ longitudinally striolated, closely above, more widely below; the meta-pleuræ reticulated. The four front legs yellow; the tibiæ and femora infuscated beneath; the tarsi at the apex black. The wings reach to the middle of the abdomen. Petiole black, smooth and shining, the apical third dilated; its top with an elongated depression; the other segments testaceous beneath.

ANOMALON BRACHYPTERUM, *sp. nov.*

Nigrum, pedibus anterioribus, trochanteribusque posticis, pallidis; alis brevibus, hyalinis; abdomine testacco, apice nigro. ♂. Long. 9 mm.

Hab. Trincomali, Ceylon (Yerbury).

Antennæ black, the scape yellow beneath; the flagellum covered with a microscopic down. Head black; closely punctured; the face densely covered with white hair; the mandibles testaceous, the palpi white. Thorax black, rough; in front sparsely, behind thickly, covered with white hair; the median segment with a gradual slope. Wings short, not reaching much beyond the apex of the petiole; the nervures black. The front four legs whitish yellow; the posterior black, the trochanters, knees, and spurs whitish-yellow (the front four legs are vermilion, but this is probably owing to discoloration with chemicals). Abdomen more than twice the length of the head; the petiole longer than the second segment, nodose at the apex; the base black; the apex brownish; the rest rufo-testaceous; the second segment testaceous, black above; the apical two segments black above.

ANOMALON MUSSOURIENSE, *sp. nov.*

Nigrum; flagello antennarum, pedibus abdomineque fulvis; alis fulvo-fumatis. ♀. Long. 17—18 mm.

Hab. Missouri (Rothney).

Antennæ fulvous; the basal two joints entirely, and the third above, black. Head black; thickly covered with long fulvous hair, palest on the face; the lower three-fourths of the inner orbits, broadly in front, narrowed behind, the front and vertex coarsely, rugosely punctured; the face below the antennæ, the clypeus, labrum, and the mandibles, except at base and apex, fulvous-yellow; the palpi rufous; the face and clypeus coarsely punctured, depressed at the sides. Thorax strongly punctured; thickly covered with short fuscous hair; the scutellum yellow; a fulvous mark on the apex of the mesopleuræ and an oval one on the metapleura, rufo-fulvous; the suture on the apex of the mesopleura, yellow. The median segment coarsely reticulated; depressed in the middle; the apex in the centre with stout curved transverse keels. Legs rufous; the anterior paler, of a more yellowish tinge; the four posterior coxæ black, rufous at the base; the apex of the hinder femora and of the hinder tibiæ, black. A line on the top of the second and on the top of the fifth and sixth and the third to sixth abdominal segments, broadly at the sides on the lower part, black. The wings are uniformly fulvous smoky; the stigma and costa fulvous; the other nervures fuscous.

CAMPOPLEX BUDDHA, *sp. nov.*

Niger, tibiis tarsisque anticis flavis; abdominis medio late rufo; alis hyalinis; nervis stigmatique nigris. ♀. Long. 14 mm.

Hab. Missouri (Rothney).

Antennæ black, shining, sparsely covered with long white hair. Head closely and almost uniformly punctured,

the face thickly covered with white hair; the hair on the top is equally thick and somewhat longer. Palpi testaceous, black at the base. Thorax closely punctured, thickly covered with white hair, short on the mesonotum, longer on the rest of the thorax; scutellum distinctly margined at the sides; the median segment longitudinally rugulose; the apex more coarsely transversely striolated. Propleuræ on the lower side irregularly obliquely striolated; the apex of the mesopleuræ shining, almost impunctate; the meta-pleuræ opaque, finely rugose. Legs covered with a white down; the anterior knees, tibiæ, and tarsi yellow; the middle knees testaceous; the calcaria white. Abdomen shining; the third and fourth and the lower half of the fifth segments rufous.

CAMPOPLEX SPECIOSUS, *sp. nov.*

Long. 12 mm.

Hab. Ceylon.

Is very near to *C. buddha*; but may be known from it by the base of the median segment having a clearly defined large triangular keel.

Head closely and uniformly punctured; thickly covered with glistening white hair; the mandibles yellow, the teeth piceous. Antennæ entirely black, longer than the body. Thorax black, closely punctured, thickly covered with short white hair; in the centre of the mesonotum is a longitudinal furrow; the median segment in the middle in the part below the triangular keel is irregularly striated; the apex with the striæ more apart, and it is more shining. The mesopleuræ have the punctures more distinctly separated than the others. The anterior coxæ and trochanters entirely, the apex of the middle coxæ and the basal joint of the middle trochanters and the underside of the four anterior femora, bright lemon yellow; the anterior tibiæ and tarsi entirely and the

middle tibiæ in front whitish-yellow; the coxæ thickly covered with long glistening white hair; the calcaria white. Wings clear hyaline; the costa and nervures black. Abdomen black; the third to fifth segment red.

CAMPOPLEX SUMPTUOSUS, *sp. nov.*

Hab. Ceylon.

Is similarly coloured to the preceding two species, but is much smaller (7 mm.), and otherwise may be readily separated by the two keels at the base of the median segment being roundly curved.

Black; the apex of the second segment, the third and fourth and the base of the fifth segments red; wings clear hyaline. Head black, closely and uniformly punctured, thickly covered with short white hair, darkest and shortest on the vertex; mandibles and palpi black. Scape of antennæ sparsely covered with white hair; the flagellum with a close, black, microscopic down. Thorax closely punctured, the propleuræ strongly obliquely striolated at the bottom; the raised part on the mesopleuræ below the tegulæ finely transversely striated. Median segment broadly, but not deeply depressed in the middle, the basal keel roundly curved. Legs thickly covered with white microscopic down; the calcaria black. The areolet oblique, triangular at the top; the recurrent nervure received near the apical third of the areolet.

LIMNERIA CEYLONICA, *sp. nov.*

Nigra, abdominis apice late rufo; trochanteribus, tibiis, tarsisque anticis, rufis; alis hyalinis, stigmatе nigro. ♂. Long. 7—8 mm.

Hab. Ceylon (*Rothney*).

Head very closely and rather strongly punctured all over; the face somewhat thickly covered with short white hair; the mandibles ferruginous, black at the base; the

palpi testaceous, paler towards the apex. Antennæ entirely black, covered with a dark microscopic down. Thorax entirely black, alutaceous; thickly covered with white hair; the propleuræ shining, obliquely striated; strongly at the base, much finer at the apex; the mesopleuræ punctured; in the centre above to near the middle transversely striolated; the metapleuræ alutaceous; all thickly covered with short white hair; the median segment has a gradually rounded slope, and is thickly covered with white hair. Anterior coxæ black, white at the apex; the base of the trochanters and the anterior femora tibiæ and tarsi fulvous; the apex of the middle femora and base of tibiæ, rufous; all the spurs pale. Wings clear hyaline, slightly infuscated towards the apex; the areolet shortly appendiculated at the top; the nervures slightly curved, the lower side sharply angled in the middle. The basal segment of the abdomen entirely black; the second segment black, except the apex above and a mark on the side of the apex which are rufous like the rest of the abdomen.

LIMNERIA AGRAENSIS, *sp. nov.*

Nigra, pedibus rufis; apice tibiæ posticarum tarsisque nigris; alis hyalinis, stigmatibus testaceo; tegulis flavis. ♀. Long. 7—8 mm.; terebra 3 mm.

Hab. Agra (Rothney).

Head alutaceous, except on the vertex very thickly covered with white hair; the mandibles testaceous, thickly covered with golden hair; the teeth black, the part in front of them piceous; the palpi yellow. Thorax black; closely punctured, thickly covered with white hair; the middle of the mesopleuræ transversely striated, and with a smooth spot at the apex of the striated part; the basal area of the median segment larger, longer than broad; the keel straight, forming an acute angle in the

centre; the apex of the apical area bulges into it as a triangle from the sides of which a keel goes round the edge of the segment; there is a short, stout, oblique keel outside the spiracles, beyond which it curves round to the apex of the segment, but is much thinner than the basal branch. Legs rufous; the base of the anterior pair yellow; the apex of the hind tibiæ and the tarsi black; the latter thickly covered with a white down, the spurs pale yellow. Wings clear hyaline; the stigma and nervures dark testaceous. Abdomen black; the second and third segments pale testaceous beneath; the petiole with an elongated area at the base of the thickened part; the apices of the second and third segments obscure rufous.

LIMNERIA MOROSA, *sp. nov.*

Nigra, palpis tegulisque albis; pedibus rufo-testaceis, abdominis segmentis testaceo-maculatis; alis hyalinis. ♀.
Long. 5 mm.

Hab. Trincomali, Ceylon (*Yerbury*).

Antennæ entirely black, thickly covered with a pale microscopic pubescence. Head closely punctured, the face thickly covered with white pubescence; the mandibles and palpi white. Thorax shagreened, opaque, sparsely covered with minute pale hair; the three basal areæ on the median segment distinct; the others not clearly defined, the apex finely transversely striated. The four anterior legs pale testaceous; the femora with a more reddish hue; the coxæ broadly black at the base; the hinder entirely black; the apex of the hinder tibiæ and tarsi fuscous. Petiole black, shagreened, the base flat, very smooth and shining; the other segments black, broadly rufo-testaceous at the apex and at the sides; the ventral segments of a paler more yellowish testaceous colour. The stigma testaceous on the lowerside; the areolet distinctly petiolated.

PANISEUS CEYLONICUS, *sp. nov.*

Long. 19 mm.; terebra 4 mm.

Hab. Trincomali, Ceylon (*Yerbury*).

Comes near to *P. lincatus*, Bé. from Bengal, but that has the mesonotum marked with brownish lines; the alar nervures brownish at the base, reddish at the apex, while here they are uniformly black, and no mention is made of the dark antennæ.

Antennæ as long as the body; the scape testaceous; the flagellum black, dark brownish on the underside beyond the middle. Head clear yellow, the occiput in the middle of a more fulvous line; the teeth of the mandibles black, rufous at their base. Thorax bearing a microscopic white down; the median segment finely and closely but distinctly transversely striated. The hinder tarsi pale yellow. Abdomen infuscated towards the apex. The second transverse cubital nervure is interrupted on the lower side.

TRYPHONIDES.

EXOCHUS AITKINI, *sp. nov.*

Niger, pedibus strammeis; coxis tarsisque posticis nigris; alis hyalinis, stigmatibus fuscis. ♂. Long. 7 mm.

Hab. Bengal (*E. H. Aitkin*).

Head shining, closely covered with short black hair; below the antennæ closely and somewhat strongly punctured; a semicircular furrow in front of the ocelli, the palpi, yellow; the mandibles before the apex piceous. Antennæ bearing a close fuscous pile; the flagellum, especially towards the base, brownish. Pro- and mesonotum sparsely covered with fuscous pubescence; the supramedian area on the median segment a little longer than broad; the keels at its base curved outwardly to shortly beyond the middle, when they become straight and oblique; the apical keel transverse. Pro-, meso-,

and base of the meta-pleuræ shining and impunctate; the latter with a curved keel on the innerside of the spiracle, beyond which the segment is shagreened. The base of the petiole depressed; the depression margined, the margin continued shortly beyond it as blunt keels; the apex of the segment obscurely punctured.

The areolet is petiolated to near the bottom, where there is formed a minute cellule, not much wider than the transverse cubital nervure; its outer nervure is faint, and is interstitial with the recurrent.

BRACONIDÆ.

BRACON CEYLONICUS, *sp. nov.* (Pl. 3, f. 5).

Niger, pro-meso-thoraceque rufis; pedibus anticis testaceis; alis fere hyalinis. ♀. Long. fere 7 mm.; terebra fere 2 mm.

Hab. Ceylon (Yerbury).

Head black, shining, impunctate, the oral region (including clypeus) rufo-testaceous; the tips of the mandibles black; the palpi pallid testaceous. Antennæ longer than the body, entirely black. Thorax shining, impunctate, sparsely covered with white pubescence; the prosternum black; the metapleuræ and the median segment at the apex infuscated. Wings longer than the body; the lower side of the stigma fuscous. The middle legs, except at the base, infuscated; the hinder coxæ, femora, tibiæ, and tarsi, black; the trochanters fuscous. Abdomen black; the basal three ventral segments white, with a black spot in the centre of each. Petiole broadly depressed at the base and down the sides; the rest rugosely longitudinally punctured. The other dorsal segments coarsely rugosely punctured; the second with a raised somewhat triangular space in the centre at the base, from which a sharp keel runs to near the apex; at its side is an oblique furrow, with a sharp border on the inner side; the suturiform articulation longitudinally striated.

BRACON TRICARINATUS, *sp. nov.*

Niger, capite, prothorace, scutello, abdominis basi et apice pallide luteis; alis fere hyalinis. ♀. Long. 7 mm.; terebra 3 mm.

Hab. Ceylon (Yerbury).

Head testaceous-yellow, except at the orbits; shining, impunctate; the tips of the mandibles black and piceous; a deep, wide furrow leads down from the ocelli. The scape of the antennæ black; the flagellum broken off. Pro- and meso-notum smooth, shining, impunctate; in the centre of the latter is a large black mark reaching from the extreme base to near the middle, and two equally large lateral ones reaching from near the base to the apex; the scutellum luteous; the mesonotum at its sides and apex, black. Median segment entirely black; at the base in the centre is a depression which is finely longitudinally striated. Meso- and meta-sternum black; the metapleuræ and the mesopleuræ from the end of the oblique furrow, black. The front legs are entirely testaceous; the middle pair testaceous except the coxæ and trochanters; the posterior pair entirely black. The petiole testaceous; its raised centre black; the raised central part is narrowed gradually towards the apex, where it is a little less than the width of the lateral parts; at the apex it is stoutly keeled in the centre with the sides depressed; the base of the depression sharply keeled; the lateral depression on the inner side obliquely striated; its sides keeled down the centre. The second segment in the centre irregularly reticulated; the sides rugosely punctured; in the centre is a straight, stout keel, triangularly dilated at the base, this part being aciculated; the latter keels are equally stout, not dilated at the base and oblique; the third segment is longitudinally rugose, except at its sides at the apex, where it is smooth and shining; in the centre

is a keel; the other segments are only black down the centre and at the sides; the ventral segments black, the base testaceous, sharply produced in the middle.

BRACON ITEA, *sp. nov.*

Long. 4—5 mm.; terebra 2 mm.

Hab. Trincomali (*Yerbury*).

Head testaceous, shining, the face, except in the centre, aciculated; the palpi pale; antennæ black; the second joint obscure testaceous. Thorax testaceous, the median segment infuscated in the middle, where there is a shallow furrow. The legs pallid testaceous; the hinder femora and tibiæ infuscated, the former above and beneath. The raised central part of the petiole aciculated; the second and third segments rather strongly rugosely punctured; keeled down the centre; the dilated base of the keel on the second segment aciculated; the suturiform articulation finely longitudinally striolated; the third and fourth segments with a transverse furrow, oblique at the sides and longitudinally striolated; the second, third, and fourth segments broadly black in the middle; the black suffused with piceous on the third; the third with a distinct, the fourth with a less distinct longitudinal furrow; the ventral segments yellowish-testaceous.

BRACON AGRAENSIS, *sp. nov.* (Pl. 3, f. 6).

Flavus, vertice antennisque nigris; alis fuliginosis, basilate flavo. ♀. Long. 13 mm.; terebra 2 mm.

Hab. Agra (*Rothney*).

Antennæ as long as the body, black, almost glabrous. Head shining, thickly covered with long fulvous hair; the sides of the clypeus with an oblique, the base with a straight furrow; the apices of the mandibles black; behind the black extends to near the middle of the eyes. Thorax entirely yellow, smooth; a broad, curved furrow across the mesopleuræ. Legs entirely yellow. The raised

part of the petiole strongly longitudinally striolated; the second segment inside the oblique furrows strongly longitudinally striolated; the base at the sides smooth; the furrows striolated; the suturiform articulation longitudinally striolated, broadened at the sides. The wings are yellow to near the base of the first cubital cellule; the first cubital cellule is hyaline above and beneath and at the base; and there is a clearer hyaline spot below the transverse cubital nervure. The stigma is broadly yellow at the base.

BRACON INGRATUS, *sp. nov.*

Long. fere 10 mm.

Hab. Agra (*Rothney*).

Head shining; the tips of the mandibles black; a broad furrow leads down from the ocelli. Thorax shining, impunctate; the curved furrow on the mesopleuræ wide; the median segment with a gradual slope, very smooth and shining. On the metapleuræ is a broad oblique furrow. Legs entirely luteous, the tibiæ thickly covered with pale hair. Wings bright yellow to near the stigma, which is luteous, black at base and apex; the first cubital cellule with a large somewhat triangular hyaline spot, and there is a smaller one below the first transverse cubital nervure. Petiole smooth; the apex in the centre with a few stout longitudinal keels; the lateral furrows wide. The other segments strongly rugosely punctured; the second segment with a stout keel in the centre reaching near to the apex; at the sides is a broad slightly curved depression, stoutly keeled on the innerside; the other segments have a stout transverse keel at the base, which become wider at the sides, and are crenulated.

In coloration it agrees exactly with *Bracon agraensis*; but may be at once separated from it by the strongly punctured abdomen with the longitudinal keel on the second segment.

BRACON ROTHNEYI, *sp. nov.*

Fulvus; alis fuscis, basi flavo; antennis nigris. Long. 6.5 mm.

Hab. Agra (*Rothney*).

Head entirely yellow, except the tips of the mandibles, which are black; the front and vertex shining, impunctate; below the antennæ it is obscurely rugose; furrowed down the centre; the clypeus shining, impunctate. Antennæ entirely black. Thorax above entirely smooth, shining, impunctate, very sparsely haired. Pleuræ smooth and shining; the metapleuræ with an oblique furrow. Legs entirely luteous, sparsely covered with white hair. Wings uniformly dark fuscous; the costa, except before the stigma, and the latter at the base, fulvous. Abdomen rugosely punctured; the raised part of the petiole with a double keel, open at the base, rounded at the apex. At the base of the second segment is a shining, smooth, raised area from which a stout keel proceeds to near the apex; at the side is a large oblique Λ -shaped space, acutely margined on the innerside and obliquely striolated; there are indistinct depressions on the sides of the third and fourth segments.

BRACON YERBURYI, *sp. nov.*

Niger, orbitis oculorum, pro- et meso-thorace rufo-testaceis; tibiis, tarsis anterioribus, femoribusque anticis, testaceis; alis fere hyalinis. ♀. Long. 4 mm.; terebra fere 1 mm.

Hab. Ceylon, Trincomali (*Yerbury*).

Antennæ black; the flagellum covered with a very microscopic pile. Head obscure dark testaceous, darker on the face and on the vertex; the face with a distinct longitudinal keel. Thorax dark rufo-testaceous; the metathorax much darker; the mesopleura with an oblique deep wide furrow at the top. The hinder legs are entirely black and thickly covered with white microscopic

pubescence; the middle tibiæ are obscure testaceous at the base; the rest of it and the tarsi black. The lower side of the stigma and the apical nervures are testaceous. The petiole obscure brown; the raised central part finely longitudinally striated; the second and third rather coarsely longitudinally striated; the second much more strongly than the third; and it has also its sides depressed and finely and irregularly striated; both have a smoother longitudinal line down the middle; the other segments are obscure brownish and aciculated.

SPINARIA NIGRICEPS, *sp. nov.* (Pl. 3, f. 7).

Nigra, thorace abdominisque basi rufis; pedibus anterioribus pallide flavis; alis fuscis. Long. 7 mm.

Hab. Ceylon (Yerbury).

Head black, the oral region and organs testaceous; a broad furrow leads down from the ocelli and there is a curved one over each antennæ. Antennæ longer than the body, black, the flagellum covered with a close microscopic pile. Thorax bare, shining; the sutures crenulated; a broad curved crenulated depression on the lower part of the mesosternum, which is black for the greater part; the median segment bears large shallow punctures. Legs covered with white hair; the four anterior entirely pallid yellow; the hinder black, the apices of the coxæ and the trochanters pale. Wings longer than the body; fusco-hyaline; the nervures and stigma blackish; the former paler towards the apex. Abdomen shining, base longitudinally striolated; the base with a large distinctly margined (rounded at the apex) space, which is smooth, except for a few scattered punctures; at the end of the metapleura over the apex of the hind coxa is a sharp tooth; the apical segment in the middle ends in two large sharp teeth, the part between them at their base being rounded; at their side is a

shorter tooth about one-fourth of their length; the two proceeding segments end at the sides in large, sharp teeth. The basal segment is pallid fulvous, except for a black band in the middle; the second and third segments black, except the side of the second broadly and a triangular mark on the side of the third; the fourth segment is pallid rufo-fulvous except at the base and the sides; the terminal spines pale fulvous; the others deep black; the basal half of the ventral surface testaceous; the apical blackish.

The above described species comes nearest in form to *S. leucomelana*, West., as also in its general coloration; but Westwood's species may be known from it by the black thorax.

APANTELES TAPROBANÆ, *sp. nov.*

Niger, pedibus abdominisque subtus rufo-testaceis; alis hyalinis. ♀. Long. 2 mm.

Hab. Trincomali, Ceylon (*Yerbury*).

Antennæ longer than the body, the scape testaceous, the flagellum obscure brownish beneath. Head black; the mandibles and palpi testaceous; the face finely punctured; its centre raised, the raised part becoming gradually wider towards the apex. Thorax above thickly covered with a pale pubescence; the median segment rugosely punctured; the propleuræ, the mesopleuræ in front of the depression, and the sternum finely punctured; the apex of the metapleuræ more closely and coarsely punctured; the legs rufo-testaceous except the base of the fore coxæ and the whole of the hinder coxæ, which are black; the latter coarsely punctured. The stigma fuscous; the nervures pale white, the basal two segments of the abdomen closely punctured; the sides of the second segment narrowly, the others broadly, and the ventral surface rufo-testaceous.

CHALCIDIDÆ.

CHALCIS BENGALENSIS, *sp. nov.* (Pl. 3, f. 9).

Nigra, pedibus anterioribus albis, basi late nigro; coxis trochanteribus femoribusque posticis, rufis; tibiis posticis albis, anticis nigris; tarsis posticis albis; alis hyalinis, nervis nigris; tegulis albis. ♀. Long. 2 mm.

Hab. Barrackpore (Rothney).

Antennæ 11-jointed, placed in the middle of the face; black; the scape bare, shining; the flagellum with a pale microscopic pile; the scape not reaching to the hinder ocelli; the antennal depression deep, sharply bordered; at the apex produced roundly in the middle; the vertex rough; the cheeks and clypeus covered thickly with long glistening white hair; the apex rounded at the top, smooth, and shining; the mandibles with the three teeth piceous. Thorax above coarsely punctured; covered sparsely with white hair; the sides and apex of the scutellum thickly covered with long silvery hair; the apex of the scutellum rounded; the median segment with an abruptly oblique slope; strongly reticulated. The lower part of the propleuræ coarsely, the upper part finely punctured; mesopleuræ coarsely punctured; the depression at its base wide, deep, strongly longitudinally striolated; the metapleuræ strongly irregularly reticulated, the reticulations much closer at the base. The four anterior coxæ and trochanters entirely black; the front femora black at the base; the middle black with the apex white; the hind coxæ (except at the base where they are black) trochanters and femora red; the tibiæ white, black in front; the tarsi white except at the apex; the femoral teeth, black, short, stout, closely pressed together at the apex, over a dozen in number.

CHALCIS ECCENTRICA, *sp. nov.*

Long. 5 mm.

Hab. Bombay (Rothney).

Very similar in coloration to *C. bengalensis*; but has

the scape of the antennæ reddish beneath; the thorax almost bare, the scutellum wanting the thick mass of white hair at the apex entirely; while the apex looked at from above is seen to be stoutly bidentate; instead of being uniformly rugosely punctured, the punctures are all widely separated, while at the base in the middle there is a large shining impunctate space.

Head rugosely punctured, sparsely covered with white hair; the clypeus shining, impunctate, glabrous, with two elongated punctures on either side of the middle; and there is a shining, impunctate spot above it. Base of mandibles finely longitudinally striated; the centre broadly rufous. Scape of antennæ rufous, darker at the apex; the flagellum stout, thickly covered with short white hair. Pro- and meso-notum with large deep punctures; the scutellum also strongly punctured; the centre at the base with a large smooth, impunctate space, surrounded by large shallow widely separated punctures; its apex ending in large teeth, rounded at the points; the median segment strongly reticulated. Propleuræ at top finely shagreened; its lower part and sides behind irregularly reticulated; the mesopleuræ shining; at the base on the lower side with some large deep punctures, this basal part being separated from the larger posterior by a distinct keel; the metapleuræ coarsely rugosely punctured, and in front thickly covered with long white hairs. Legs: the four anterior coxæ and trochanters, black; the four anterior femora broadly black at the base; the apex white; the tibiæ and tarsi white; the former broadly lined with black at the base; the hind coxæ, trochanters and femora red. The tibiæ and tarsi white, like the anterior, the tibiæ broadly black in the middle; the femora with 10 minute black teeth. Abdomen very smooth and shining; the penultimate segment aciculate, and bearing large deep round punctures.

HALTICELLA ERYTHROPUS, *sp. nov.*

Nigra, pedibus rufis, coxis, tibiis tarsisque posticis nigris; alis hyalinis. Long. 5 mm.

Hab. Agra (Rothney).

Head coarsely punctured; above sparsely covered with silvery hair; the face from the bottom of the eyes on either side of the antennal groove thickly covered with pale golden hair; the sides of the head stoutly margined. Antennæ long, slender, bare, the apex of the second joint rufous. Thorax strongly punctured, the punctures on the mesonotum much finer and closer at the base, and there is a smooth, impunctate spot on the sides. Median segment areolated, the base fringed with long pale golden hair; the basal central area elongated pyriform, transversely striolated. Propleuræ strongly punctured; the mesopleuræ hollowed, bare, stoutly longitudinally striolated; metapleuræ coarsely rugosely punctured, thickly covered with long fulvo-silvery hair. Fore coxæ with the edges on the outer side margined; the hind coxæ very smooth and shining, thickly covered with long silvery hair in front; the femora slightly, the tibiæ and tarsi thickly covered with silvery hair. Abdomen very smooth; the second segment at the top and apex laterally thickly and the other segments more sparsely covered with long silvery hair. Wings hyaline, a faint fuscous cloud under the costa; the nervures fuscous; tegulæ rufo-testaceous.

The parapsidal furrows are obsolete; the apex of the scutellum without teeth; the antennæ are 11-jointed, long, slender; the scape reaches to the ocelli; the hind coxæ have a large stout tooth at the apex. The fore tibiæ may be infuscated, and the hinder rufous behind; the median segment at the sides near the apex projects into a stout, large tooth.

This species agrees best with *Euchalcis* as defined by Kirby (*Journ. Linn. Soc. (Zool.)* xvii., 63).

TEMNATA, *gen. nov.*

Antennæ 12-jointed, situated immediately over the mouth. Face broadly, but not deeply, excavated. Mesonotum without parapsidal furrows. Scutellum at the apex narrowed, and projecting at the sides into two oblique triangular teeth. At the base of the metapleuræ near the hind wings are two stout keels almost united on the outer border and forming a somewhat horseshoe-shaped area; on the side beyond this are two stout spines widely separated. Ovipositor short.

Comes nearest to Kirby's genus *Megalocolus* (*Journ. Linn. Soc. (Zool.)* xvii., 61), which differs from it in having the antennæ inserted in the middle of the face; the hind coxæ have a leaf-like projection on the upperside, and the ovipositor is as long as the abdomen itself.

TEMNATA MACULIPENNIS, *sp. nov.* (Pl. 3, f. 10).

Nigra, argenteo-pilosa; alis fumatis, albo-fasciatis. ♀.
Long. 6 mm.

Hab. Agra (*Rothney*).

Head strongly punctured, very sparsely covered with a microscopic pile, which gives it a greyish appearance. From the middle of the lower side of the cheek a distinct keel runs to the eyes. Pro- and mesonotum closely punctured; the scutellum with the punctuation equally strong, but closer; the apical teeth are not twice longer than wide and rounded at the apex. Median segment with keels all over from the base to the apex; the two central straight, the others more oblique; the sides at the apex thickly covered with long silvery hair. Pro- and metapleura coarsely and uniformly punctured; the mesopleuræ with longitudinal keels rather widely separated; the upper side at the apex rugosely punctured. Legs black, sparsely covered with a silvery pile. Abdomen shining; the apex opaque, shagreened; the fore wings to the base of the

stigma hyaline; there is then a narrow fuscous stripe, followed by a hyaline one extending a little beyond the cubitus; the rest of the wing smoky, lighter at the apex.

PROCTOTRUPIDÆ.

EPYRIS AMATORIUS, *sp. nov.* (Pl. 3, f. 8).

Long. 7 mm. ♂.

Hab. Barrackpore (*Rothney*).

Head strongly punctured, more widely separated behind the ocelli, the clypeus stoutly keeled down the middle, and a curved keel on either side of this united to the central at the base; the mandibles with large punctures; the four basal teeth brownish. Antennæ entirely black; the scape sparsely; the flagellum more closely covered with pale fuscous hair, nearly as long as the thickness of the joints. Pro- and meso-notum thickly covered with long fuscous hairs; the base of the pronotum closely transversely striolated; the rest of it coarsely irregularly rugosely punctured, except at the apex, the smooth apical part being separated by a distinct keel from the rest; the mesonotum with scattered punctures; the parapsidal furrows reaching not quite to the apex; the scutellum almost impunctate. The median segment transversely, more widely at the base, where there is in the centre a somewhat triangular area; the apex is more strongly and closely transversely striolated. Propleuræ shining, smooth; the mesopleuræ covered with large, distinctly separated punctures, except a smooth, elongated, slightly raised space under the wings; the metapleuræ punctured at the top and round the apex; the top at the base with two longitudinal keels, between which are two perpendicular ones. Legs black, the joints testaceous; the femora and tibiæ sparsely, the tarsi more thickly covered with shorter white hair. Wings hyaline, with a very faint fulvous tinge; the stigma black; the

nervures testaceous. Abdomen shining; the apex sparsely covered with long pale hair; at the base is a distinctly bordered longitudinal furrow.

Except the radius, the alar nervures are obsolete.

SCOLIIDÆ.

TIPHIA TARSATA, *sp. nov.*

Nigra, tibiis tarsisque anticis rufis; alis fusco-hyalinis.

♂. Long. 9 mm.

Hab. Missouri (*Rothney*).

Head shining, strongly punctured; the punctures widely separated on the vertex; the front and vertex covered with longish pale hair; the clypeus and lower part of the cheeks thickly covered with long white hair; the base and the apex of the mandibles broadly in the centre, ferruginous. The scape of the antennæ strongly punctured beneath and sparsely covered with long white hair; the flagellum obscure brownish beneath. Pronotum punctured, except at the apex; and rather thickly covered with long pale hairs; the mesonotum with a broad fringe of large punctures round the sides; the scutellum with large punctures all over, which are much closer towards the apex. Median segment alutaceous; with three complete keels down the centre; the apex at the sides shining, smooth. Propleuræ obscurely punctured round the edges; the rest finely obliquely striated; the mesopleuræ strongly punctured; the metapleuræ obliquely, somewhat irregularly striated, the striæ widely separated. Legs thickly covered with white hairs; the fore knees, femora, and tarsi rufous; the tarsi pale; the apex of the middle tibiæ and the middle tarsi testaceous, as are also the apices of the basal two joints and the third joint of the posterior tarsi. Abdomen shining, thickly covered with long white hair, especially towards the apex, where it has a fulvous hue.

TIPHIA MAGRETTII, *sp. nov.*

Nigra, nitida, femoribus posticis rufis; alis fusco-hyalinis.

Long. 10 mm.

Hab. Missouri (Rothney).

Black, shining, sparsely covered with longish glistening white hair. Antennæ entirely black; the scape shining, bearing a few large punctures and long white hairs; the flagellum opaque, covered with a dull microscopic pile. Head covered with long glistening white hair and bearing large moderately deep punctures; the mandibles shining, grooved, and broadly red towards the middle. Pro- and meso-notum shining, bearing long white hairs; and widely separated punctures; the scutellum irregularly punctured round the sides and apex; those on the latter being the larger; the apex of the post-scutellum with scattered punctures. Median segment shagreened; the base almost glabrous, with two complete keels in the centre, and having between them one which is only three-fourths of their length; the apex slightly hollowed towards the centre, which has a straight keel; sparsely covered with long white hair. Propleuræ smooth, shining above; the lower part obscurely transversely striated; the mesopleuræ projecting at the base; almost straight, smooth and impunctate; the sides rather strongly punctured, but with the punctures all distinctly separated; sparsely covered with long white hairs; the metapleuræ strongly obliquely punctured. Legs thickly covered with stiff white hairs; the short thick spines on the hind tibiæ and the calcaria pallid testaceous. From the stigma the wings have a decided smoky tinge; and are traversed by four white lines (two above and two below the cubital nervure) like nervures. Abdomen black, shining, and covered, especially towards the apex, with long white hairs; the sides of the basal segments sparsely; the apical more closely and thickly covered with long white

hairs; the last segment more or less piceous; the ventral segments shining, sparsely covered with long white hairs.

This can hardly be *Tiphia rufofemorata* Sm., for the head with "numerous fine punctures," "the apical half of the mandibles ferruginous," the scutellum "strongly punctured" cannot apply to our species; nor is there any mention of the metasternum being striolated. It is very like the well-known European species *Tiphia femorata*; but differs in having the hinder tibiæ black; the apex of the clypeus more sharply projecting and more deeply incised, and the second abdominal segment not depressed and crenulated at the base.

Tiphia femorata is recorded by Magretti from Burmah. (*Ann. Mus. Civ. Genova*, XII. p. 52.)

TIPHIA CASSIOPE, *sp. nov.*

♀. Long. 7 mm.

Hab. Missouri (*Rothney*).

Resembles *T. Magrettii* in coloration, but is smaller and the clypeus is not distinctly projecting and incised in the middle as it is in *T. Magrettii*.

Head shining, sparsely punctured, and bearing some long white hairs behind; the clypeus punctured, transverse, the apex smooth; the apical three-fourths of the mandibles rufous, the extreme apex black. Antennæ black; the apex of the scape piceous; bearing a few large punctures and some longish pale golden hairs. Pro- and meso-notum shining; the former with the basal three-fourths punctured, the punctures being closer together at the base; the sides in the middle and the apex, impunctate; the mesonotum with moderately large punctures in the middle, the sides with a few widely separated punctures; the scutellum punctured at the apex and sides. Median segment shining, slightly shagreened at the base; the three longitudinal keels complete. The lower half of

the propleuræ finely longitudinally striated; the mesopleuræ with scattered punctures and sparsely covered with long white hairs; the metapleuræ finely and closely longitudinally striated. Legs thickly covered with long white hairs, the four hinder trochanters and femora bright rufous; the fore femora and tibiæ underneath more or less dull rufous. Wings hyaline, slightly suffused with fuscous. Abdomen shining, the apex of the first segment with a transverse row of punctures; the apical half of the last segment shining, dull piceous.

The three species here described with red on the legs may be separated as follows:—

- | | |
|---|------------------|
| 1 (4) Femora red, wings smoky. | |
| 2 (3) Clypeus incised, projecting. | <i>Magrettii</i> |
| 3 (2) „ transverse, not projecting. | <i>cassiope</i> |
| 4 (1) Femora black; anterior tibiæ and tarsi
rufous. | <i>tarsata</i> |

TIPHIA CLYPEALIS, sp. nov.

Nigra, clypeo, tibiis anticis, tarsisque anterioribus, rufis; alis hyalinis, nervis fuscis. ♀. Long. 7 mm.

Hab. Missouri (*Rothney*).

Head shining, punctured; covered with long silvery hairs, which are densest below the antennæ; the clypeus rufous; punctured; the apex smooth, impunctate, and slightly curved; mandibles broadly rufous in the middle. Antennæ ferruginous beneath towards the apex, the last joint entirely so. Pronotum shining, punctured; the mesonotum with the punctures more widely separated; the sides being free from them, and being there too more widely separated than they are on the sides; the scutellum with large, widely separated punctures all over. Median segment coarsely in the middle, the sides much more finely aciculated. Propleuræ finely obliquely striated throughout. Legs thickly covered with white hairs; the

anterior knees, tibiæ, and tarsi, the base and apex of the middle tibiæ and the apices of the hinder tarsal joints, rufous. Radial cellule closed; the second recurrent nervure received in the apical third of the cellule. Basal segment of the abdomen except a belt at the apex, with only a few scattered indistinct punctures; the apices of the others closely punctured; and sparsely covered with long white hairs; the apical ventral segment strongly aciculated, rufous at the apex; there is a distinct curved keel on either side of the penultimate segment.

TIPHIA FUSCINERVIS, *sp. nov.*

Nigra, tarsi anticis rufis; abdominis apice longe fulvo-hirto; alis hyalinis, nervis stigmatæque fuscis. ♀. Long. fere 8 mm.

Hab. Missouri (*Rothney*).

Head densely covered with long fuscous hairs; shining, strongly punctured, the mandibles broadly ferruginous before the apex; the palpi dark testaceous. Antennæ obscure brownish towards the apex, covered with a pale microscopic pile, the scape shining, coarsely punctured on the inner side. Pronotum closely punctured; the mesonotum with the punctures larger and more widely separated; the scutellum with a wide belt of punctures at the apex, a narrower one at the sides and base, and a somewhat broader one down the middle; the post-scutellum finely rugose. Median segment coarsely alutaceous; the keels straight, a little converging towards the apex; an interrupted keel down the middle at the base; the apex with an oblique slope. The lower part of the propleuræ obliquely striolated; the upper part obliquely aciculated; the mesopleuræ strongly punctured. Legs thickly covered with longish white hairs; the calcaria pale luteous. Wings hyaline; the stigma dark piceous; the nervures pale testaceous. The basal seg-

ment of the abdomen very smooth and shining, sparsely punctured in the middle; the third and following segments punctured, thickly covered with long pale fulvous hairs, which are more silvery towards the apex.

TIPHIA INCISA, sp. nov.

Nigra, longe argenteo-pilosa; apice clypei incisa; alis hyalinis, nervis fuscis. ♂. Long. 9—10 mm.

Hab. Missouri (Rothney).

Head black, thickly covered with cinereous pubescence; rather strongly punctured; the clypeus closely punctured; the apex smooth, roundly incised. Antennæ thick, the scape with a few large punctures and with longish white hairs; the flagellum closely covered with a pale microscopic down. Pronotum closely punctured, the extreme apex only impunctate; the mesonotum strongly punctured but not closely; the scutellum more closely punctured all over, this being also the case with the post scutellum; the median segment short, finely rugose, opaque, the base sparsely, the apex much more densely covered with long white hairs; at the base are two straight keels, with an indistinct one in the centre, the two forming an area nearly as broad as long; the apex has an oblique slope and has an indistinct keel down the centre. Propleuræ aciculated, obscurely striated at the bottom; mesopleuræ punctured; the metapleuræ with about eight semi-oblique keels at the top. Wings hyaline, the nervures and stigma black; the radial cellule closed at the apex. Legs entirely black except the calcaria, which are pale fulvous; the tarsi with a fulvous pubescence beneath. Abdomen covered with longish white hairs; the basal segment with widely separated punctures all over, its apex depressed; the apical more closely and strongly punctured than the middle segments.

TIPHIA IMPLICATA, *sp. nov.*

Long. 9 mm.

Hab. Missouri (*Rothney*).

Head densely covered all over with long white hair; opaque, the clypeus largely produced and projecting; the sides oblique, the apex transverse; the mandibles entirely black, covered with long white hairs; the base punctured. Pro- and meso-notum closely punctured all over; the latter more strongly than the former, and more sparsely towards the middle; the scutellum punctured all over like the mesonotum; the post-scutellum closely finely rugosely punctured. The median segment finely rugosely punctured, towards the apical keel irregularly striolated; the two outer keels curving inwardly; the central straight, not reaching quite to the apex. The apex of the segment sharply oblique. Propleuræ strongly transversely striolated, except at the extreme apex, which is shining and impunctate; the mesopleura alutaceous; the metapleura depressed at the base, closely longitudinally striolated. Legs black, thickly covered with long pale hairs, the hairs on the underside of the tarsi pale golden; the calcaria and the tibial and tarsal spines pale fulvous. The wings hyaline, infuscated towards the apex; the radial cellule is not appendiculated; the second recurrent nervure is received shortly beyond the middle of the cellule. Abdomen shining, impunctate at the base, more opaque and thickly haired towards the apex; the basal segment above with a long shallow depression; the ventral segments sparsely covered with long pale hairs.

TIPHIA ERYTHROCERA, *sp. nov.*

Nigra, mandibulis, tibiis, tarsis anticis, flagelloque antenarum rufis; alis hyalinis. ♀. Long. 8 mm.

Hab. Missouri (*Rothney*).

Antennæ rufous, covered with a pale microscopic pile;

the base of the scape black; covered with long golden hairs on the underside. Head shining, sparsely haired; covered with large distinctly separated punctures; the mandibles ferruginous; sparsely covered on the lower side with long golden hairs; the teeth are black. Pro- and meso-notum with scattered punctures except at the apices; the scutellum with a few punctures at the apex. Median segment alutaceous; the three keels complete. Propleuræ alutaceous, smooth and shining above; the mesopleuræ punctured, alutaceous at the top; the metapleuræ striolated throughout, much more finely at the base. Legs thickly covered with white hairs; the tibial spines pale; the four anterior tarsi; the front tibiæ behind and the middle tibiæ entirely ferruginous; the hinder tarsi ferruginous; the calcaria and tarsal spines pale fulvous. Wings hyaline, suffused with fuscous; the nervures fuscous; the stigma black; the second recurrent nervure received in the apical third of the cellule. Abdomen shining, sparsely covered with long white hairs; the transverse depression on the apex of the petiole closely and coarsely punctured at the sides, more widely and sparsely at the middle; the puncturing on the dorsal segments becomes closer and coarser towards the apical; the last shining, impunctate, piceous broadly at the apex.

METHOCA.

Smith described two Indian species of *Methoca*, under the same name—*orientalis*—(Cat. Hym. III., 66) from Northern India and another, renamed *Smithii* by Magretti (*Anq. Mus. Civ. Genova*, xxxii., p. 259), taken by Mr. Rothney at Barrackpore (*Trans. Ent. Soc.*, 1875, p. 35). Both were described from males; and represent, so far as can be judged from the descriptions, different species. The undernoted female is, I should say, quite distinct from either.

METHOCA BICOLOR, *sp. nov.* (Pl. 4, f. 12).

Nigra, nitida, thorace basique abdominis rufis. ♀. Long. 5 mm.

Hab. Barrackpore (*Rothney*).

Antennæ stout, the four basal joints of the antennæ rufous, sparsely covered with white hairs, becoming slightly and very gradually thickened towards the apex. Head shining, impunctate. Thorax shining, impunctate, except at the base of the scutellar region where it is transversely striated; the mesonotum at the sides of the scutellum is also somewhat obliquely strongly striated. The basal segment of the abdomen is rufous, except at the extreme apex; the other segments shining, impunctate; the apical segment obscure rufous. Legs black, the tarsi obscure testaceous, the femora sparsely haired; the tibiæ covered with stiff hairs.

METHOCA RUGOSA, *sp. nov.* (Pl. 4, f. 11).

Nigra, basi flagello antennarum late, femoribus tarsisque anticis rufis; alis violaceis, basi hyalinis. ♂. Long. 15 mm.

Hab. Ceylon.

Antennæ stout, almost bare, the basal three joints and the base of the fourth rufous. Head black; the mandibles broadly rufous in the centre; the front strongly punctured, almost reticulated, thickly covered with fuscous hairs; the vertex more shining, less pilose; the punctures shallower and more widely separated, especially at the side of the ocelli. Thorax black, the pronotum, except a smooth, impunctate band at the apex, coarsely transversely striolated; the mesonotum much more strongly and irregularly transversely striolated; scutellum strongly irregularly reticulated; the sides towards the apex impunctate; in the centre of the metanotum is a pear-shaped area, with four stout transverse keels, the two central being the longest; at the side of this are stout

semi-longitudinal keels; the apex at the top is stoutly margined; at the top is a triangular area, the sides with stout oblique keels, meeting in the centre; the pleura coarsely irregularly reticulated, the sternum irregularly transversely striolated; its side stoutly keeled with a sharp margin at the edge, the pleura at the side of this being hollowed; the sternum widely hollowed, the hollow becoming gradually wider towards the apex. Abdomen shining, impunctate; the base stoutly longitudinally striated; the basal ventral segment strongly reticulated; keeled down the middle to near the apex; the other segments with punctures at the apex, these being fewer on the middle and more numerous on the apical segments.

MUTILLIDÆ.

Since my paper on the Indian Mutillidæ (*Manchester Memoirs*, V., 1892) was published, some additional species have come into my possession from Mr. Rothney and from Col. Yerbury. The collection from the last-named gentleman is of especial value, as it enables us to unite the sexes of a few species.

The discovery by Mr. Rothney of an apterous ♂ *Mutilla*, although not unique, is of interest. It is remarkable that the four known apterous species of ♂ *Mutilla* have the thorax emarginate, as it often is with ♀ *Mutilla*, while it never is so in the winged males.

a. Males. *Wingless, thorax incised.*

MUTILLA ŒDIPUS, *sp. nov.* (Pl. 4, f. 13. ♂.)

Ferruginea, aptera, abdomine nigro, albo maculato; pedibus nigris; thorace late inciso. ♂. Long. fere 9 mm.

Hab. Barrackpore (Rothney).

Head large, wider than the thorax, the part behind the eyes more than twice their length; coarsely punctured, closely covered with white pubescence; black, ferruginous

from shortly above the antennal tubercles to the top of the eyes; the black above the outer side of the eyes being oblique. Antennæ entirely black; the scape thickly covered with stiff white pubescence, the black part of the head densely covered with glistening white pubescence; the vertex and occiput with the pubescence longer, darker, and more erect. Thorax not twice the length of the head; gradually narrowed to the metathorax, which bulges out, so that it is as wide as the prothorax. Above, the thorax is coarsely rugose and covered with long fuscous hairs; the apex of the median segment is oblique and has a sharp spine in the centre. The pleuræ are shining, impunctate; covered with white pubescence; black; the upper part of the pro-, the upper third of the meso-, and the meta-pleuræ above the oblique furrow, rufous. The sides of the median segment with three large and one short spine. The legs black; covered densely with white hairs; the tibiæ almost spineless. The abdomen longer than the head and thorax united, velvety black, covered with long black hairs; a square spot on the centre of the first segment; three large oval ones at the apex of the second; a small one in the centre of the third, a larger one in the centre of the fourth, both narrowed and rounded at the base; and the greater part of the fifth, white. Ventral segments black; the second strongly punctured, sparsely covered with white hairs; the others are fringed with long pale hair.

The genital armature is normal.

b. Winged, thorax not incised.

Fore wings with only one recurrent nervure; three transverse cubital nervures; stigma elongate; apex of abdomen bispinose, middle tibiæ with two spines. Petiole serrate beneath, elongate, nodose at apex. Eyes very large, oval, entire; ocelli large.

The precise generic position of this species must stand over for further study in connection with its unknown ♀. It is very closely related to the *Photopsis* section of the American genus *Sphærophthalma*. In general form and appearance it is very like *Mutilla obliterated* Sm., which is, however, abundantly distinct otherwise. It differs from *Mutilla* proper in the eyes being entire in the ♂.

MUTILLA APICIPENNIS, sp. nov.

Thorace capiteque ferrugineis; abdomine nigro, basi ferrugineo; pedibus pallide testaceis; alis hyalinis, apice fumatis.
♂. Long. 10 mm.

Hab. Trincomali (Yerbury).

Head as wide as the thorax, shining, glabrous; the mandibles with long fulvous hairs; their teeth deep black; a slight depression on the front above the antennæ; the eyes and ocelli large; the head behind the eyes not half their length. Antennæ thick, uniformly fulvous, covered with a close white pubescence. Thorax uniformly fulvous, shining; the mesonotum obscurely punctured; the scutellum rugosely punctured; the median segment with a gradually rounded slope; reticulated uniformly, sparsely covered with long white hairs. Pro- and meso-pleuræ rugosely punctured; the edges of the former crenulated; the metapleuræ reticulated. Legs pale testaceous, covered with long pale hairs; the hinder femora broadly infuscated towards the apex. Petiole elongated, gradually dilated, and strongly punctured, especially towards the apex; where there is a black band; beneath it is hollow, shining, the edges rough, the other segments shining, their apices obscure testaceous; covered with long pale hairs. The wings, which do not reach to the apex of the abdomen, are milk-white. The nervures pale testaceous. The apex from the third transverse cubital nervure smoky; the two basal transverse cubital nervures curved; the third sharply

angled; the first recurrent nervure received in the basal third of the cellule; the second completely obliterated.

The ocelli are larger than usual; the second abdominal segment unarmed beneath. On the mesonotum the two parapsidal furrows are complete; the last dorsal abdominal segment rufous and punctured at the apex.

In appearance this species resembles the American genus *Photopsis*. It is apparently closely related to *M. pedunculata* from Arabia and Egypt.

A. Descriptions of species known in both sexes.

The following species belongs to a group the species of which, being so similarly coloured, are very difficult to identify; and I should not have ventured to describe it if I had not got both sexes.

MUTILLA ACIDALIA, sp. nov.

♀. Black, thorax above ferruginous. Head as wide as the thorax, coarsely punctured; the head behind the eyes developed a little less than the length of these latter; covered with a short, sparse, white pubescence. Antennæ stout, covered with a white down; the basal joint reddish at the apex. Thorax above, coarsely punctured, sparsely covered with fuscous hairs; the median segment with an abrupt slope, coarsely punctured, covered with long white hairs. Abdomen not much longer than the head and thorax united; black; sparsely covered with long fuscous hairs; the hypopygium rather strongly longitudinally striated; on the second segment are two oval, on the third and fourth segments two square marks of silvery pubescence; the basal ventral segment is ferruginous; the others obscure testaceous at their apices; and marked with long white hairs. Legs black, the tibiæ and tarsi with white hairs; the tibial spines stout, fuscous; the calcaria pale.

♂. Head and thorax black, the former in front and the pronotum thickly covered with long white silvery hairs; abdomen ferruginous, except the apical segment, which is black above and beneath; wings fuscous, paler at the base. Antennæ elongate, slender, tapering towards the apex; the scape grooved laterally, sparsely covered with long white hair; the flagellum covered with a sparse down; the third joint nearly twice the length of the fourth. Head not much narrower than the thorax; behind the eyes it is a little longer than their width; the front and vertex strongly punctured. Prothorax strongly punctured, the pronotum thickly covered with grey pubescence; the mesonotum strongly punctured, the punctures deep and clearly separated; down the sides run two deep furrows; the median segment with a somewhat abrupt rounded slope; reticulated; in the centre is an elongated area reaching from the base to shortly beyond the middle, the base being dilated. Propleuræ obliquely striolated, smooth behind; the mesopleuræ coriaceous, projecting in the middle, where they are thickly covered with long white hairs. Legs covered with longish white hairs; the calcaria pale. Radial cellule elongate; the basal abscissa of the radius sharply oblique, the apical more rounded; the first transverse cubital nervure oblique; the second broadly and roundly curved; the third sharply angled above the middle; both the recurrent nervures are received shortly beyond the middle. Keel on basal ventral segment stout, black.

MUTILLA OPULENTA, Smith.

The ♀ of this species is probably *M. soror*, Sauss. (*Ann. Soc. Ent. Fr.*, vii., 1867, 354, t. 8, f. 3.) As Smith's name is the older one, it will have to be adopted should *soror* prove to be a variety.

Col. Yerbury has taken the sexes together. The ♀ however has the thorax black, while in the typical *M. soror*

it is reddish; but in other respects the two agree, except that the hinder femora have more black. It may, however, be as well to give a description of the ♀ *M. opulenta* in case *M. soror* may be different.

Head as wide as the thorax; red, coarsely and rugosely punctured, shining, bare, behind the eyes the vertex almost as long as the width of the eyes. Scape of the antennæ rufous, darker at the apex and beneath, and bearing large punctures; the flagellum black, thickly covered with fuscous pile. Thorax black, twice the length of the head; the sides almost parallel, not dilated towards the apex, very coarsely rugosely punctured; the apex of the median segment with a very slight oblique slope; above coarsely punctured, the rest finely and uniformly rugose; the lower part covered with long golden hairs. The pleuræ smooth; the base of the pronotum and the metapleuræ coarsely punctured; the lower portion of the metapleuræ thickly covered with pale golden pubescence. Petiole black, the apex (probably the whole in fresh examples) fringed with golden hairs; on the base of the second segment are two large oval golden marks; its apex has a golden band, broadly narrowed in the centre; the third segment is entirely golden; the pygidium coriaceous, fringed at the sides with long golden hairs. The second ventral segment has large, somewhat shallow, clearly separated punctures; all the segments fringed with long golden hairs. The front four legs red, the knees black, sparsely covered with golden hairs, especially the tarsi; the apical three-fourths of the hind femora are black; the tibiæ and tarsi thickly covered with golden hair.

The form of the spots on the second abdominal segment varies. In one example on the inner side at the apex they are rounded; in another they are there truncated as figured by Saussure in his *M. humbertiana*; in another they are more as he figures them in *M. soror*, but the

band on the fourth segment is as in *M. humbertiana*; in *M. soror* it is figured as straight at the base. *M. insularis* Cam., may be known from it by the thorax being red; by the metapleuræ not being coarsely punctured throughout, only at the extreme apex, the band on the third segment complete, not incised at the base.

MUTILLA PERELEGANS, *sp. nov.*

This is the supposed variety of *M. pulchrina* figured by me (*Manchester Memoirs*, V., 1892, pl. 1, f. 6), but which I now regard as quite distinct; and, thanks to Col. Yerbury, I am enabled to describe the male, as well as the female, in detail.

♀. Head very slightly narrower than the thorax; stoutly keeled on the sides behind, ferruginous, coarsely rugosely punctured; covered sparsely with longish black hairs; almost transverse behind, where it is developed the length of the eyes. Mandibles black. Scape of the antennæ deep black, shining, glabrous; the flagellum thick; the third joint twice the length of the fourth; brownish beneath. Thorax a little narrowed from the middle to the apex; above coarsely rugosely punctured, the punctures elongated; sparsely covered with long black hairs, but very thickly on the pronotum, while the median segment is thickly covered with long pale golden hairs, and has a somewhat oblique slope. Pro- and meso-pleura shining, impunctate; except a broad punctured projection down the mesopleuræ, the projection itself being covered with long pale golden hairs; and, above, it forms a projecting tooth, behind which is another slightly larger and rounder one. Legs black; the femora slightly, the tibiæ and tarsi thickly covered with long golden hairs. Abdomen longer than head and thorax together; black; an orange-coloured mark of hairs, broader than long and with the sides rounded, in the centre of the second seg-

ment; the sides of the second segment above broadly fringed with pale golden hairs; the third segment entirely covered with golden hairs; the rest of the abdomen with black stiff hairs; the third and fourth ventral segments covered with golden hairs; the fifth and sixth slightly fringed with golden hairs; the apical segment with a dense tuft of golden hairs at the end.

Length, 12 mm.

♂ much larger (17 mm.) has the head and thorax red; the abdomen with the apex of the third and the fourth, and the fifth segments entirely covered with golden pubescence. Head distinctly narrower than the thorax, coarsely rugosely punctured; sparsely covered with long black hair; below the antennæ the hairs are longer and fulvous; behind rounded at the sides, about one half the length of the eyes; the apical half of the mandibles black. Antennæ short, thick; but tapering very considerably towards the apex; the basal two joints red; the rest black and almost bare; the scape with a few long hairs; and strongly punctured above. Pro- and meso-notum coarsely rugosely punctured; thickly covered with long black hairs; scutellum flat, the sides and apex projecting; covered with long black hairs, except at the apex, where they are longer and pale fulvous in colour; this being also the case with the post-scutellum. Median segment strongly reticulated; the apex roundly emarginate; the sides projecting into stout teeth. Pro- and meso-pleuræ coarsely rugosely punctured except the lower part of the former. The fore legs are reddish like the thorax; the four hinder legs are entirely black, except the coxæ at the base; they have the femora slightly, the tibiæ and tarsi densely covered with long pale golden hairs. Wings fusco-violaceous; the base much lighter, almost hyaline; the basal and apical abscissæ of the radius are oblique and, at the base of the latter, it projects a little; the first

and second transverse cubital nervures are curved; the third is obliterated entirely, while the cubital nervure itself terminates at the second transverse cubital. The abdomen has the basal two segments strongly punctured; golden band on the apex of the second segment is interrupted in the middle; the basal ventral segment is more or less rufous, and projects at the apex into a sharp, triangular plate; at the base in the middle it is semi-circularly incised.

B. Species described from males only.

a. Fore wings with only two transverse cubital nervures.

MUTILLA PERVERSA, *sp. nov.*

Nigra, thorace rufo, sterno nigro; alis subfumatis, nervis fuscis. ♂. Long. 5 mm.

Hab. Barrackpore (Rothney).

Head black, shining, sparsely covered with longish pale hairs. Vertex behind the eyes equal to their length, and not much narrowed; the mandibles dark piceous, the teeth black; the palpi fuscous. The antennal scape not furrowed beneath, sparsely haired; the flagellum stout, covered with a microscopic down. Thorax above entirely obscure ferruginous, punctured, but not strongly; sparsely covered with long white hairs; the median segment with a gradually rounded slope. Propleuræ almost black; the mesopleuræ obscurely punctured in front; the metapleuræ impunctate at the base; the apex strongly reticulated. Legs covered with long soft hairs; the calcaria white. Alar nervures fuscous; the first abscissa of the radius oblique; the apical small, almost straight; the first transverse cubital nervure straight, oblique; the second curved and largely bullated at the bottom; the first recurrent nervure is received shortly beyond the middle of the cellule. Abdomen shining, almost impunctate covered, especially towards the apex, with long soft

white hairs. The basal abdominal segment without a keel sharply separated from the second, which is gradually raised to the obliquely depressed apex, thus leaving a sharp depression between the two.

b. Fore wings normal, with three transverse cubital nervures.

MUTILLA INDEFENSA, *sp. nov.*

Nigra, vertice fulvo-hirta; collare late abdomineque ferrugineis; abdominis basi apiceque nigris; alis fuliginosis. ♂.
Long. 17 mm.

Hab. Bombay District (*Wroughton*).

Head a little narrower than the thorax; the vertex and front densely covered with fulvous pubescence, intermixed with long fuscous hair; the clypeus sharply keeled in the middle; the mandibles entirely black, fringed with long golden hairs. Antennæ entirely black, the scape widely grooved; sparsely covered with long fuscous hairs. The head behind the eyes is rapidly narrowed, and is not half the length of the eyes. The pronotum is broadly covered with thick orange pubescence; the pleuræ at the base coarsely punctured; the rest is longitudinally striolated. Mesonotum coarsely punctured especially towards the apex; there are two moderately wide longitudinal furrows. Scutellum pyramidal; coarsely rugosely punctured; and, like the mesonotum, thickly covered with long black hairs. Median segment coarsely reticulated; its base thickly covered with golden hairs; the centre with an elongated area reaching to the edge of the slope, which is oblique. Mesopleuræ coarsely punctured, covered with silvery pubescence; the apex impunctate; the base of the metapleuræ impunctate; the apex coarsely reticulated. Legs black; the calcaria white; the femora, tibiæ, and tarsi thickly covered with long white hairs. Wings fusco-violaceous, paler at the base; the basal abscissa of the

radius oblique and twice the length of the apical; the second cubital cellule elongate, its lower side twice the length of the third; the first recurrent nervure is received shortly beyond the middle; the second in the apical third of the cellule. Abdomen thickly covered with long rufo-fulvous hairs; the petiole black; the sides with large deep punctures; the keel blunt; the second segment indistinctly punctured; the last two segments black; the apices of the others fringed with long orange hairs; the last segment is more strongly punctured; and is stoutly keeled at the sides.

MUTILLA DILECTA, *sp. nov.*

Nigra, thorace rufo, mesopleuris nigris; alis fusco-hyalinis. ♂. Long. 8 mm.

Hab. Barrackpore (*Rothney*).

Head black, coarsely punctured, covered densely with white pubescence and more sparsely with long fuscous hairs; a furrow leads down to the antennæ; head rounded and narrowed behind the eyes, the vertex less than half the length of the eyes; an indistinct furrow at the sides of the ocelli; mandibles entirely black; palpi pale. Antennæ stout, the flagellum covered with pale down; the scape sparsely haired. Prothorax large, red, except a somewhat triangular black mark on the lower part of the propleuræ; in front it is transverse; the sides above straight, very slightly widened and straight towards the tegulæ. Mesonotum coarsely punctured, as also the scutellum; the median segment strongly reticulated; the reticulations large and all well defined, the central reticulation at the base being the largest, with the sides straight, and the apex triangular. The apex of the median segment is obliquely truncated. The propleuræ are coarsely longitudinally striolated; the mesopleuræ somewhat strongly punctured except at the base and the apex, the latter

being excavated, smooth, shining, and impunctate; the metapleuræ coarsely reticulated. The basal abdominal segment is a little longer than broad, strongly punctured, bearing long pale fuscous hairs, and, at the apex, pale golden hairs; the second segment is not quite so strongly punctured as the apex of the first; the other segments are less strongly, but more closely, punctured, than the second; the apical is more strongly punctured than the penultimate. The basal ventral segment is keeled down the middle. Legs entirely black, and covered with white hairs; the calcaria pale. Tegulæ densely covered with long white hairs. The basal abscissa of the radius straight, oblique; the apical roundly curved; the first recurrent nervure received in the middle; the second in the apical fourth of the cellule. The nervures are dark fuscous.

MUTILLA DISCRETA, *sp. nov.*

Nigra, longe argenteo-pilosa; alis fusco-violaceis. ♂.
Long. fere 9 mm.

Hab. Barrackpore (*Rothney*).

Head densely covered with silvery pubescence; that between the ocelli and the antennæ completely hiding the texture; that on the vertex intermixed with long grey hair; vertex behind the eyes rounded and narrowed a little more than the length of the eyes. Antennal tubercles acute, piceous; the middle of the mandibles piceous. Antennæ black, the flagellum with a short pile; the scape with long hairs, and apparently more deeply excavated beneath than usual. Sides of the pronotum rounded, closely punctured and covered with long pale hairs. Mesonotum bearing large, round, deep punctures, the scutellum also with large deep punctures; at its base is a wide deep distinct furrow, behind which is a longer narrower one. The median segment has a gradually rounded slope, and is strongly reticulated.

Pleuræ strongly punctured; the apex of the propleuræ strongly crenulated; the base and apex of the mesopleuræ excavated, shining, impunctate, except on the lower part; the propleuræ reticulated, except at the base. The base of the abdomen excavated, projecting at the sides; the other segments punctured, but the punctation becoming weaker towards the apex; all the segments fringed with long white hairs. The keel on the basal ventral segment stout, a little curved, and a little projecting at the apex; the second segment has the punctures large and deep; the others have the base impunctate; the apex closely punctured, and with the oblique lateral furrows distinct; the apical half of the hypopygium roundly depressed. Legs densely covered with white hairs. The first transverse cubital nervure curved and bent at the lower third; the second sharply elbowed a little above the middle; both the recurrent nervures are received shortly beyond the middle of the cellule.

MUTILLA RUFODORSATA, *sp. nov.*

Nigra, dense argenteo-hirta; mesonoto rufo; abdomine nigro-cæruleo; alis fusco-violaceis. ♂. Long. 13 mm.

Hab. Agra (Rothney).

Head narrower than the thorax, rugosely punctured, densely covered with silvery hairs all over; the mandibles before the tips piceous. Antennæ entirely black; the basal two joints covered thickly with silvery hairs; the flagellum with an indistinct down. Thorax densely covered with silvery hairs all over, black; the mesonotum and basal half of scutellum rufous. Pronotum and mesonotum coarsely punctured, almost reticulated; the scutellum very coarsely irregularly reticulated; the apex of the median segment has a sharp oblique slope; coarsely reticulated; the base thickly covered with silvery pubescence. The pleuræ coarsely punctured, except the base

and apex of the mesopleuræ; the metapleuræ coarsely reticulated. The legs are thickly covered with white hair. The basal two segments of the abdomen above are somewhat strongly punctured; the punctations becoming weaker towards their apices; all the segments at their apices are fringed with silvery hairs. The apical dorsal segment terminates in the middle in a triangular depression, with raised stout lateral keels, and with a central keel not half the width of the lateral ones. The second ventral segment is coarsely punctured; the sides at the base depressed, and with an indistinct keel between; the keel on the basal segment broad; the basal part the longest. Tegulæ large, rather strongly punctured. The wings are strongly fusco-violaceous, more lightly coloured at the base; the basal abscissa of the radius sharply oblique, the apical curved; the first transverse cubital nervure oblique, the second almost straight; the third sharply angled in the middle; the first recurrent nervure is received shortly before, the second at a slightly greater distance beyond the middle of the cellule.

MUTILLA PROVIDA, *sp. nov.*

Nigra, pro-meso-thorace mesonotoque rufis; alis fere fumatis. ♂. Long. fere 7 mm.

Hab. Bombay Presidency (*Wroughton*).

Comes very near to *M. dilecta*; but is easily known from it by the black scutellum and metathorax.

Head as wide as the mesothorax; entirely black, except the antennal tubercles, which are rufous; densely covered all over with long soft white hairs; rounded behind, where it is as long as the eyes; the palpi fuscous; the mandibles before the teeth rufous. Antennæ black; the scape with some white hairs; the flagellum with a fuscous down. Pro- and mesothorax coarsely punctured, covered with long white hairs; ferruginous,

except the lower part of the propleuræ and the prosternum. Scutellum black; covered with long white hairs; the base and centre of the median segments with large, the sides with smaller reticulations, and having a gradually rounded slope. The propleuræ are coarsely punctured, almost reticulated; the mesopleuræ coarsely punctured and densely covered with long white hair; the upper part of the metapleuræ reticulated, the lower smooth. Legs black, densely covered with long white soft hairs; the calcaria pale. The alar nervures testaceous, slightly darker at the base; radial cellule wide; the basal abscissa of the radius oblique, straight, shorter than the apical which is curved, almost angled in the middle; the first transverse cubital nervure is oblique, slightly curved; the second is curved and bullated beneath hardly oblique; the third is sharply angled in the middle; the first recurrent nervure is received in the middle, the second in the apical third of the wing. Abdomen at the base rather strongly punctured, towards the apex, the punctation becomes weaker; covered, especially at the apices of the segments, with long white hairs. The basal abdominal segment coarsely punctured; the central keel, moderately strongly developed and hardly raised at the apex; the second segment strongly, the others much more weakly punctured; their apices fringed with long white hairs; the apical segment entire, not depressed, punctured throughout.

C. Species described from females only.

MUTILLA LUXURIOSA, *sp. nov.*

Nigra, thorace supra obscure ferrugineo; abdomine albosetumaculato. ♀. Long. 7—8 mm.

Hab. Ceylon (Yerbury).

Head not broader than the thorax; black; the mandibles in the middle, clypeus and the antennal tubercles

rufous; coarsely punctured, covered with longish and white and fuscous hairs; behind the eyes less than their length; narrowed and rounded. Antennal scape covered with long pale hairs, not grooved; the flagellum obscure fuscous beneath; covered with an indistinct microscopic down; the third joint nearly twice the length of the fourth. Mandibles grooved on the outer side. Thorax a very little dilated gradually towards the apex; the pronotum coarsely shagreened; mesonotum coarsely rugosely punctured; median segment at the apex with an abruptly oblique slope; the propleuræ obscurely, the metapleuræ coarsely rugosely reticulated, its outer edge spinose; the mesopleuræ shining, a little excavated, smooth, shining, and glabrous. Legs thickly haired; the spines thick, pale and black on the tibiæ, rufous on the tarsi. Basal abdominal segment gradually dilated towards the apex, not distinctly separated from the second; on the latter are two oval whitish fulvous marks near the base; the third and fourth have two marks of the same colour; those on the latter the smaller; the apical is fringed laterally with pale long hairs, and is closely aciculated or shagreened. The basal ventral segment is obscure rufous; the keel in the middle has a longer and a shorter blunt tooth; the second segment has widely scattered punctures; the others are finely transversely striated at the base; the apex with scattered punctures and covered with long pale fulvous hairs.

Resembles closely *M. aulica* Sm., in coloration, but wants the large spot of silvery pubescence on the vertex, and otherwise is easily known from *M. aulica* by having the pronotum at the base transverse, with the sides acute; while *M. aulica* has the sides broadly narrowed and the base not transverse. In one of my examples of *M. aulica* there are only four white spots on the abdomen.

MUTILLA REMOTA, *sp. nov.*

Long. 15 mm. ♀.

Hab. Trincomali (Yerbury).

Comes very near to *M. egregia* Sauss., in the coloration of the abdomen and in the sides of the thorax having a stout spine; but differs in having the head and thorax entirely black, not red.

Head narrower than the thorax, deep black, coarsely rugosely punctured, thickly covered with long black, intermixed on the front with shorter golden hairs; the orbits on the outer side narrowly rufous. Antennal scape rufous, covered with long golden hairs. Thorax at the base narrower than the head, becoming gradually wider to the spines, then becoming rather abruptly narrower to the apex; coarsely rugosely punctured, sparsely covered with long black hairs; the apex of the median segment with an abrupt oblique slope; coarsely rugosely punctured; the hairs long; on the upper part black, on the lower golden. The pro- and meso-pleuræ rugosely punctured; the latter projecting in the middle and ending at the top in a stout rufous spine; the space beyond the spine a little hollowed and finely transversely striated; the metapleuræ entirely rugosely punctured. The legs black; the tibiæ rufous; the femora covered with long black hairs; the tibiæ and tarsi more thickly with long golden hairs. The petiole narrow at the base, gradually dilated to the apex; thickly covered with long golden fulvous hairs, broadly at the apex, narrowly at the base; the intermediate space covered with long black hairs. Second segment coarsely punctured; covered with short black hairs; the apex with a belt of golden pubescence; the fourth segment covered with golden pubescence; the other segments covered with long black hairs. The basal two ventral segments covered with fuscous; the third and fourth covered with golden pubescence.

MUTILLA MANDERSI, *sp. nov.*

Nigra, thorace rufo; abdomine fulvo-sexmaculato; basi femorum late rufo. ♀. Long. 17 mm.

Hab. Shan States (*Manders*).

Comes very close to *M. fumaria*, but differs from it in its longer and, as compared with the head, somewhat narrower thorax, which is further entirely rufous, besides being less strongly punctured; and by the legs being broadly rufous at the base. It comes near also to *M. sexmaculata*, but that has the thorax more thickened towards the apex, with its sides entirely black, while the marks on the abdomen are much more elongated on the second segment.

Head as wide as the thorax, black, coarsely rugosely punctured, covered with fuscous and golden hairs; behind the eyes it is rounded, and is there somewhat shorter than the length of the eyes; the mandibles are rufous in the middle. Scape of the antennæ covered sparsely with long silvery hairs; the flagellum with an obscure down; the third joint twice the length of the fourth. Palpi black. Thorax more than twice the length of the head; the sides almost straight; hardly dilated towards the apex; above closely and strongly punctured; covered with longish fuscous hairs; the apex with a semi-abrupt slope, rounded at the top; the pleuræ smooth, shining, beneath covered with a silvery down; the base and apex obscurely punctured. Abdomen with the basal three segments as long as the head and thorax united; the top covered thickly with black; the sides and ventral surface more sparsely with longer silvery hairs; velvety; the basal segment gradually dilated towards the apex; the two marks on the second segment are oval, large; on the third they are more than twice broader than long; on the fourth they are not much longer than broad; there are none on the fifth; the pygidium is densely covered at the sides with long fulvo-

aureous hairs. The basal ventral segment is coarsely punctured, and has in the middle a projection, which rises a little towards the apex, which is a very little curved; the second segment has distinctly separated punctures; the others are finely and closely punctured on the apical half and thickly clothed with long pale fulvous hairs. The legs are moderately pilose; the tibial spines fulvous or pale; the fore femora are rufous at the sides and beneath in the middle; the two hinder pairs rufous, except at the base and apex, where they are black.

In size and form it comes near to *M. sex-maculata*, but may be known from it by the thorax being entirely red; and by the third and fourth abdominal segments having interrupted white bands instead of spots; the marks on the second segment, too, being oval and not elongate.

MUTILLA VALIDA, *sp. nov.*

Nigra, thorace supra rufo, abdomine albo-bimaculato, basi longe fulvo-hirto. ♀. Long. 8 mm.

Hab. Barrackpore (Rothney).

Head slightly wider than the thorax; thickly covered with long, the sides more thickly with silvery pubescence; behind the eyes it is developed twice the length of the eyes. Scape covered with long white hairs; the flagellum with fuscous down. Thorax about one half longer than the head, its sides straight; the pronotum and the apical three-fourths of the median segment black; the rest reddish; strongly punctured, almost reticulated; the apex with an oblique slope; slightly hollowed, smooth; the pro- and meta-pleuræ coarsely reticulated, the mesopleuræ impunctate, smooth; the lower part thickly covered with white hairs. The basal segment of the abdomen smooth, obscurely shagreened, the apex with a broad, thick band of rich fulvous hair; the second segment with two oval marks of pale fulvous hairs; the apex with a broad

fulvous belt of thick hairs; the third covered with thick hair, laterally pale, in the middle rufo-fulvous; the other segments fringed with pale fulvous hair. Ventral segments sparsely covered with pale hairs; the second strongly punctured.

MUTILLA HUMILIS, *sp. nov.*

Nigra; capite et thorace rufis; abdomine argenteo 4-maculato; pedibus anticis obscure rufis. ♀. Long. 4 mm.

Hab. Barrackpore (*Rothney*).

Head wider than the thorax, rufous; the orbits broadly black; the vertex and front obscurely longitudinally striolated; the oral region and the palpi testaceous; the mandibles piceous before the apex. Thorax above ferruginous, the sides all round the top, bordered with black and irregularly longitudinally striolated; the edges irregular, rough; with a few teeth which are more numerous on the sides of the median segment, which has a gradually rounded slope, and has at the top a large tooth. Pleuræ shining, impunctate, glabrous. Legs black; the anterior tibiæ and tarsi obscure rufo-testaceous. Abdomen black, sparsely covered with long black hairs; on basal segment is a square of silvery pubescence; on the apex of the second segment are three oval silvery marks; the other segments are marked with silvery pubescence in the middle.

MUTILLA LAETA, *sp. nov.*

Nigra, thorace supra rufo; abdomine argenteo 4-maculato. ♀. Long. 9 mm.

Hab. Barrackpore (*Rothney*).

Head hardly wider than the thorax, very coarsely rugosely punctured, covered with long glistening hair; a rufous mark in the centre of the vertex. Scape of the antennæ covered with long glistening hairs; the flagellum with a distinct down; the thorax is not quite twice the

length of the head; the sides looked at from above are straight; but the mesopleuræ are slightly excavated; above coarsely uniformly punctured; the propleuræ entirely black, coarsely punctured; the mesopleuræ smooth shining, separated from the propleuræ by a keel; black, rufous above, the lower part densely covered with silvery pubescence; the metapleuræ coarsely reticulated, rufous above, black below. The median segment has at the apex a sharp oblique slope. Abdomen black, covered with black hairs, two elongated oval marks of silvery pubescence on the second segment near the middle; the third and fourth segments with silvery pubescence at the sides above; the other segments fringed with silvery pile. The ventral segments covered with silvery hairs; the second segment strongly punctured, the punctures distinctly separated. Legs entirely black, densely covered with stout hairs; the tibial spines stout, longish.

MUTILLA PUERILIS, *sp. nov.*

Ferruginea, sparse longe albo-hirta; abdomine nigro. ♀.
Long. fere 8 mm.

Hab. Ceylon (Yerbury).

Antennæ ferruginous, the scape shining, sparsely covered with longish white hairs; the flagellum closely covered with short white down. Head shining, sparsely covered with longish white hairs; the tips of the mandibles and an elongated mark extending from the antennal tubercles to the eyes, becoming narrowed as it approaches them, black. Thorax above coarsely rugose, becoming somewhat reticulated towards the median segment; the mesothorax hardly narrowed towards the middle. The propleuræ a little shagreened; the base of the mesopleuræ a little aciculated and hollowed; the rest very shining and impunctate; the apical part of the metapleuræ with distinctly separated punctures. The median segment is

rounded at the top; the apex semi-oblique; abdomen shining, closely and minutely punctured; sparsely covered with long pale hairs; the base of the first to third segments in the middle bearing long pale golden hairs; the hypopygium covered with long pale golden hairs and closely punctured; the ventral segments black, sparsely covered with long white hair; the second segment bearing large, widely separated punctures; the other segments more closely and finely punctured at the apex. Legs covered with long stiff whitish hairs; the anterior tibiæ and femora slightly infuscated.

MUTILLA ARIEL, *sp. nov.*

Ferruginea; abdomine cæruleo, argenteo-maculato; antennis pedibusque nigris; basi antennarum ferrugineo. ♀. Long. 11 mm.

Antennæ black, sparsely pilose; the basal two joints and the greater part of the third rufous. Head ferruginous; above the antennæ blackish; coarsely punctured; sparsely covered with long fuscous hairs. Thorax ferruginous, not half the length of the abdomen, the sides rounded at base and apex; the latter with an oblique slope, broadly rounded at the top; above coarsely punctured, sparsely covered with long blackish hairs, which become silvery white on the median segment, there is a large pale golden spot on the base of the mesonotum; the sides are slightly and gradually narrowed from the base of the mesothorax to the apex. The mesopleuræ a little hollowed in the centre, infuscated; the lower part densely covered with pale golden hair; the pro- and meta-pleuræ coarsely punctured. The abdomen is metallic blue, shining, sparsely covered with long black hairs; there is a spot of silvery pubescence on either side of the basal segment, an oblong or oval one in the middle of the second; the second segment at the apex has a broad band of silvery pubescence, dilated, broadly and

roundly in the middle; the other segments above in the middle bear silvery spots; the ventral segments are somewhat thickly covered with long silvery pubescence. The legs are covered with longish stiff silvery hairs; the tibial spines stout; the calcaria pale testaceous.

Comes nearest to *M. regia* Sm., of which it may be a variety, but is larger judging by the examples at my disposal; the latter has the flagellum rufous, not black; the legs for the greater part rufous, and the thorax more dilated at the base. The head and thorax want the metallic brassy tint of *M. metallica* and *M. pulchriventris*.

MUTILLA DIVES, *sp. nov.*

Nigra; thorace supra ferrugineo; abdomine argenteo-maculato. ♀. Long. 8 mm.

Hab. Barrackpore (*Rothney*).

Antennæ entirely black, stout, as long as the head and thorax united. Head a very little narrower than the thorax, coarsely punctured, sparsely covered with fuscous hairs, thorax coarsely rugosely punctured; the base rounded, the sides not contracted as seen from above; the mesopleuræ excavated, shining, impunctate; densely covered with long silvery hairs. The median segment sharply oblique; the metapleuræ coarsely rugose; the propleuræ with shallow punctures. Abdomen a little longer than the head and thorax united, deep black, velvety, the base of the second segment with silvery pubescence in the middle; a somewhat roundish spot above in the middle, and a slightly smaller one at the apex; the third segment is covered entirely with silvery pubescence; and the apical segment is fringed with long silvery hairs. Legs entirely black, densely covered with long white hairs.

Is not unlike *M. taprobanæ* but is longer, and has the pleuræ entirely black.

MUTILLA PEREGRINA, *sp. nov.*

Long. 7 mm.

Hab. Barrackpore (*Rothney*).

A smaller and more slender species than *M. discreta*, from which it may be known by the mesonotum being more coarsely punctured and having besides two stout longitudinal furrows.

Head distinctly narrower than the thorax; the part behind the eyes, almost less than their length; strongly punctured; thickly covered with long white hairs; the mandibles ferruginous before the teeth; the palpi dark fuscous. Antennæ stout; the scape grooved beneath; sparsely covered with long pale hair; the flagellum thickly covered with fuscous down. Pronotum strongly and closely punctured; the mesonotum strongly punctured; and with the punctures more widely separated; the longitudinal furrows wide and continuous; the scutellum less strongly punctured than the mesonotum; the median segment with a gradually rounded slope; strongly reticulated. Pleuræ coarsely punctured; the base of the metapleuræ impunctate, the apex reticulated. The basal abdominal segment very coarsely punctured; the second less strongly, the other segments almost impunctate, and rather densely covered with long white hairs. The basal ventral segment coarsely punctured, without a keel; the second rather strongly punctured; the others finely and closely punctured at the apex; the apical segment closely punctured, without any depression.

MUTILLA COTESII, *sp. nov.*

Nigra; thorace capiteque argenteo-maculatis; pedibus nigris, basi rufis. ♀. Long. 8 mm.

Hab. Barrackpore (*Rothney*).

Head large, wider than the thorax, but not much; black; a large somewhat roundish mark of silvery

pubescence on the centre of the vertex, the edge of the occiput rufous; the vertex strongly longitudinally striolated; the front strongly striolated; the antennal tubercles shining, rufous; the middle of the mandibles broadly rufous. Antennæ covered with white pubescence; the flagellum for the greater part rufous beneath. Thorax not one-half longer than the head; very slightly widened towards the apex; the edges at the top irregular; those of the median segment with four large pale rufous teeth, the apex of the median segment oblique, but not sharply. The pleuræ shining, impunctate, black, except the apices of the metapleuræ which are rufous; the mesopleuræ are hollowed at base and apex. Legs black, covered with white hair; the tibial spines long, pale rufous. The coxæ, trochanters, and base of femora (the hinder broadly) rufous. Abdomen not much longer than the head and thorax united; the basal segment at the base obliquely truncated, and at the apex distinctly separated from the second; and with a square mark of silvery pubescence in the centre at the apex; the second segment has at the apex three somewhat oval marks of silvery pubescence; the fourth and fifth segments have silvery pubescence at the apex. The keel on the basal ventral segment ends in the centre in two teeth, the basal being twice the length of the apical; the second segment bears large, round deep punctures; the centre is a little raised, and the raised part ends before the apex in a blunt raised, somewhat triangular tooth. The other segments are more closely punctured, except at the base; and all are covered with long pale soft hairs.

MUTILLA ROTHNEYI, *sp. nov.* (Pl. 4, f. 14).

Capite thoraceque supra ferrugineis, abdomine nigro, argenteo 5-maculato. ♀. Long. 8 mm.

Hab. Barrackpore (Rothney).

In coloration and form of the head and thorax like

M. ædipus, but the latter is easily known from it by the thorax being contracted in the middle.

Head large, a little broader than the thorax; coarsely longitudinally striolated; the striæ running into reticulations towards the antennæ; black; the front and vertex broadly ferruginous; the ferruginous colour extending to a little below the bottom of the eyes; the antennal tubercles and a stripe on the mandibles ferruginous. The scape of the antennæ covered with long silvery hairs, the flagellum sparsely with a pale down. Thorax short, not much longer than the head; coarsely rugosely punctured, sparsely covered with black hairs; the apex of the median segment oblique; the pleuræ excavated, shining, impunctate; the base and apex a little pilose; at the top in the middle the median segment ends in a sharp spine. Abdomen a little longer than the head and thorax united; the base obliquely truncated, with a narrow margin at its apex, and with a spot of pale golden pubescence in its centre above; at the apex of the second segment there is a central and a lateral somewhat larger oval mark of pale golden pubescence; the other segments have a somewhat squarish mark in the middle of the same colour. The ventral segments punctured, the basal segment much more strongly than the others; they are fringed with fulvous hairs. Legs entirely black, bearing white hair.

The present species may, of course, be the ♀ of my *M. ædipus*, but this is a point which can only be decided by direct observation. The head in *M. Rothneyi* is wider compared to the prothorax; the mesothorax is stoutly spined; the front and vertex strongly longitudinally striated all over, while in *M. ædipus* it is only punctured; the head behind the eyes in *M. ædipus* is much more thickly covered with white hairs. There is no appreciable difference in the form and coloration of the two; in *M. Rothneyi* the sides of the median segment are

stoutly spined all over; in *M. ædipus* there are only five large, stout, widely separated spines, these becoming larger from the base to the apex; in *M. Rothneyi* the second basal abdominal segment is stoutly produced in the middle towards the apex, which is not the case in *M. ædipus*.

FOSSORES.

OXYBELUS CEYLONICUS, *sp. nov.*

Long. 7 mm.

Hab. Trincomali, Ceylon (*Yerbury*).

Approaches nearest to *O. squamosus* Sm., with which it agrees best in the form of the squama; but *O. squamosus* may be known from it by the hinder tibiæ and tarsi being yellow, while here they are black.

Head closely punctured, covered, with short white pubescence, especially above, where it assumes a fulvous hue. The scape of the antennæ black above, yellowish beneath; the flagellum fulvous; its base yellowish, blackish above. The clypeus projects and is thickly covered with longish silvery hairs; the mandibles yellowish at the base, black at the apex, and piceous between. Thorax black; a line on the pronotum behind; the tegulæ, tubercles, sides of the scutellum, and the squamæ on the post-scutellum yellow. Mesonotum closely punctured, the punctures more widely separated towards its apex; the suture at the base of the scutellum crenulated; the scutellar punctures large, widely separated, more numerous at the apex, where there is, in the middle, a stout projection. Post scutellar squamæ curved on the outer side, ending in a curved triangular tooth; the squama large, curved at the base, where there is a stout longitudinal keel; the rest of it with stout striations all clearly separated; the apex roundly incised; the ends rounded; the segment at the side of the squama is smooth except for a few striations,

and is for the most part pale brownish; its outer side aciculated and with a few stout striations; the apex has in the middle two stout keels, which form a large triangular space rough in the centre and depressed at the apex; the keels prolonged as one to the apex; the sides obliquely aciculated. The mesopleuræ punctured, the metapleuræ obliquely striated; the striations widely separated. Legs: the coxæ and the base of the fore femora black; the fore femora yellowish; the four posterior ferruginous, the fore tibiæ yellowish; the middle ferruginous; the hinder blackish; the tarsi blackish; the anterior testaceous, yellowish at the base; the hind tibiæ strongly spined, the spines white, the spurs of a more testaceous hue; the apex of the middle femora and the four hinder tibiæ at the base, yellow. Wings clear hyaline, the nervures dark fuscous. Abdomen black, strongly punctured, the sides with a broad yellow line on the four basal segments; the pygidial area thickly covered with longish fulvous hairs.

ASTATA TARDA, *sp. nov.*

Nigra; abdomine rufo late balteato; alis hyalinis, fere fumatis; stigmatе testaceo. ♂. Long. 10 mm.

Hab. Ceylon (Yerbury).

Resembles *A. agilis* Sm., but is larger, and has not the wings distinctly smoky at the apex; the radial cellule at the top much longer than the stigma, while in *A. agilis* it is only about its length; the third cubital cellule much longer compared to the second; and the median segments with no distinct longitudinal keels. Head closely punctured; the sides and clypeus thickly covered with long white hairs; a furrow leads down to the antennæ, the space between the latter smooth and shining, as is also the space in front of the ocelli. Scape of the antennæ covered with long white hairs.

Thorax covered with long white hairs; the mesonotum closely punctured; the scutellum at the base smooth, impunctate; post-scutellum rugose; the median segment reticulated; its top on the oblique apex with a deep oval, impunctate depression; a wide deep oblique depression on the mesopleura. The basal segment of the abdomen black; its apex, the second segment and the base of the third, ferruginous; the base and apex thickly covered with long white hair; the basal ventral segment ferruginous at the sides.

PISON (PARAPISON) ROTHNEYI, *sp. nov.* (Pl. 4, f. 15).

Nigrum, argenteo-pilosum; mandibulis geniculis, tibiisque anticis rufis; alis hyalinis. ♀. Long. 6—7 mm.

Hab. Barrackpore (Rothney).

Black, shining, covered with silvery pubescence. Head finely punctured, covered with short fuscous pubescence, except at the incision of the eyes; the cheeks thickly and the clypeus more sparsely covered with silvery pubescence; an indistinct shallow longitudinal furrow below the ocelli; the mandibles and palpi rufous. Antennæ black; the apical three joints rufous beneath; covered with sparse fuscous pubescence. Thorax shining, impunctate; sparsely covered with white pubescence, especially at the sides and base; the median segment with a broad longitudinal furrow extending from the base to the middle of the segment. Pleuræ sparsely covered with short white hairs; the apex of the propleuræ brownish and surrounded by a fringe of silvery pubescence; in the centre of the mesopleura is a deep short depression, a little longer than wide; the sternum deeply and widely excavated. Legs black, thickly covered with short silvery pubescence; the apical third of the fore femora, the front tibiæ entirely, the hinder side of the middle, the basal three-fourths of the hinder, the hinder knees and the calcaria, rufous.

testaceous. Wings hyaline, the costa and nervures black, the latter paler towards the apex of the wing; the second cubital cellule is much narrowed towards the top, the space there bounded by the transverse cubital nervures being less than that bounded by the first recurrent and the first transverse cubital nervure; the second recurrent nervure is almost interstitial nervure. Abdomen shining, impunctate; sparsely covered towards the apex with a silvery pile; the apical segments at the apices testaceous.

Parapison was erected by Smith (*Trans. Ent. Soc.*, 1869, p. 298) for those species, otherwise agreeing with *Pison*, which have only two transverse cubital nervures. Kohl (*Die Gattungen und Arten der Lariden*, *Verh. z.-b. Ges. Wien*, xxxiv.) regards it as only a section of *Pison*.

PISON STRIOLATUM, *sp. nov.*

Nigrum; facie argenteo-pilosa; alis hyalinis. ♀. Long. 8 mm.

Hab. Missouri (*Rothney*).

Has the typical neururation of *Pison* as figured by Kohl, (*Verh. z.-b. Ges. Wien*, xxxiv., t. 8, f. 1,) *i.e.*, the recurrent nervures are both interstitial.

Head in front opaque, coarsely rugose, behind the ocelli the vertex more shining, and with the punctures more distinct and much more widely separated; below the centre of the eye incision thickly covered with silvery pubescence; the apex of the clypeus gradually brought to a sharp point. Thorax black; sparsely covered with fuscous, the median segment with longer white hairs; the sides with oblique, the centre with curved striæ; the base with a short straight keel at the base; the apex is broadly depressed. Pleuræ strongly punctured; a wide longitudinal furrow on the mesopleura; the metapleuræ smooth; covered sparsely with long hair. Tibiæ and tarsi thickly covered with white pubescence, which gives

them a whitish appearance. The two recurrent nervures are completely interstitial; the pedicle of the second recurrent nervure is longer than the lower cellule. Abdomen smooth, shining, impunctate; the apex sparsely covered with white hairs.

CEMONUS.

Neither this genus (or subgenus according to some authors) nor its type *Pemphredon* has been recorded hitherto from the Oriental Region.

CEMONUS FUSCIPENNIS, *sp. nov.* (Pl. 4, f. 16).

Niger, nitidus, sparse albo-hirsutus; alis fumatis, basifere hyalinis. ♀. Long. 8—9 mm.

Hab. Missouri (*Rothney*).

Head very shining, the front closely, the vertex much more sparsely covered with shallow punctures; sparsely covered with long fuscous hairs; the cheeks and clypeus at the sides much more thickly covered with long white hairs; the clypeus with a few punctures in the middle; mandibles entirely black. Antennæ entirely black; almost bare. Thorax shining; the pronotum coarsely punctured; the mesonotum shining, smooth; in front with a few widely separated punctures; and an indistinct, shallow, longitudinal furrow; and there is a more distinct lateral one. The smooth area in the base of the median segment is stoutly crenulated; and there is a distinct longish longitudinal furrow in the centre; and the sides (but not at their extreme edges) have some shallow punctures. The propleuræ at the base are strongly aciculated; the centre smooth, almost impunctate, the mesopleuræ strongly punctured; the metapleuræ obliquely striolated, almost reticulated. Legs black; the femora and tibiæ sparsely covered with long white hair; the

tibiæ also with a pale pubescence; the tarsi have the hairs thicker and shorter. Wings, nervures, and stigma black; the second recurrent nervure received shortly before the first transverse cubital. Petiole rugosely punctured; covered with long white hair; the rest of the abdomen very smooth and shining, almost glabrous, except at the apex, where there are a few pale hairs.

POMPILIDÆ.

CEROPALES ALBOVARIEGATA, *sp. nov.*

Lutea; capite thoraceque albo-maculatis; vertice, pronoto basique mesonoti, nigris; alis hyalinis. ♂. Long. 8 mm.

Hab. Trincomali, Ceylon (Yerbury).

Antennæ black; the basal two joints of the flagellum brownish beneath; the scape yellowish beneath; the flagellum thickly covered with short pubescence. Head shining, impunctate; the front, vertex and occiput, except at the sides, black; the rest white; the labrum brownish; the tips of the mandibles black; the antennal tubercles largely projecting above the antennæ, clear white; oval, deeply triangularly cleft down the middle; the anterior ocellus in a depression from which runs a furrow. Thorax smooth, shining, impunctate, glabrous; the pronotum black, lined with white at the apex; its sides at the base projecting beneath, clear white; the mesonotum black to the scutellum, in front of which it is white, it having also a white line at the tegulæ; there is a white mark under the tegulæ, a smaller one under the hind wings; a large mark at the base of the mesopleuræ on the lowerside, and a narrow line opposite it at the apex, a small triangular oblique mark and a curved one over the hind coxæ, clear white; legs fulvous; the anterior coxæ white beneath; the hind tarsi fuscous. Wings clear hyaline; the stigma and nervures black.

POMPILUS ICHNEUMONIFORMIS, *sp. nov.*

Fulvus; capite, thorace apiceque antennarum nigro-maculatis; alis fulvo-hyalinis, stigmatibus fusco. ♀. Long. 13—14 mm.

Hab. Missouri (*Rothney*).

Head fulvous; a broad black band with straight sides, extending from the ocelli to near the eyes; the vertex sparsely covered with fuscous; the clypeus much more densely with longer fulvous, hairs; the apex of the clypeus transverse, smooth, and shining; the orbits have a yellower tint than the clypeus; mandibles yellow, black at the apex. Antennæ fulvous; the apical five joints black; thorax fulvous; the base of the pronotum, of the mesonotum, two broad black lines on it extending from the base to the scutellum, the sides at the post-scutellum, the base of the median segment, the pleural sutures and the sternum, black. Legs entirely fulvous; the coxæ with a more yellowish hue. Wings fulvous, the apex with a smoky violaceous hue; the second cubital cellule at the top is a little longer, at bottom shorter than the third; the first recurrent nervure is received shortly before, the second in, the basal third of the cellule. Abdomen fulvous; the extreme base black; where there is a deep triangular depression.

DIPLOPTERA.

RHYNCHIUM BASIMACULA, *sp. nov.* (Pl. 4, f. 17.)

Nigrum; facie abdomineque flavo-lineatis; alis violaceis. Long. 16 mm. ♀.

Hab. Barrackpore (*Rothney*).

Black; the apex of the first and of the second abdominal segment much more narrowly, and a short line behind the eyes, white; the wings violaceous. Front and vertex with large, clearly separated punctures; the

clypeus with the punctures obscure; its apex depressed; slightly curved; the base of the clypeus, and the inner orbits to the top of the incision, white; the mandibles deeply grooved. Antennæ entirely black. Thorax opaque; black; the edge of the pronotum white behind; the pro- and meso-notum strongly, but not very deeply punctured. Scutellum and post-scutellum more rugosely punctured than the mesonotum. Pro- and meso-notum more strongly punctured than the metapleuræ, of which the punctures are more widely separated and not so deep. Legs black, covered with a white down. Abdomen shining, impunctate; the apex of the basal segment with a broad white band of equal width; the second with a much narrower band, dilated slightly at the sides. Wings violaceous; the second cubital cellule at the top is as long as the space bounded by the second recurrent and the second transverse cubital nervures.

The ♂ is very similar to the ♀; the clypeus is entirely pale yellow, with a mushroom-like black mark at the apex; the line on the orbits is broader; the scape is for the greater part yellow, beneath.

This species was recognised by the late Mr. F. Smith as an undescribed species; but it has not, so far as I know, been described.

EUMENES BUDDHA, *sp. nov.*

Nigra; clypeo, lineis pronoti, tibiisque anterioribus flavis; alis fusco-violaceis. ♀. Long. 15 mm.

Hab. Barrackpore (*Rothney*).

Head black; the clypeus, and a narrow line dilated at the top reaching from it to near the ocelli, lemon yellow; the clypeus triangularly cleft in the middle at the apex forming two straight teeth; the part behind these being oblique; the teeth and apex of the mandibles rufous; front and vertex strongly punctured, sparsely covered

with white down; there is a short yellow line behind, and close to, the eyes above the middle. Antennæ black, except the terminal hook and the two joints in front of it which are fulvous; the hook sharply curved. Thorax coarsely punctured all over, sparsely covered with white pubescence; a very narrow line on the side of the propleuræ joined to a larger one on the mesopleura, a line on the apex of the prothorax, one in the centre of the post-scutellum and a line on the apex of the first and second abdominal segments, lemon-yellow. Propleuræ shining, impunctate, deeply obliquely excavated; there is a short longitudinal furrow in the centre of the mesopleura; the oblique space below the hind wing smooth shining, impunctate, except the lower half at the base, which is strongly punctured; the upper edge at the apex crenulated. The median segments at the apex roundly depressed. Legs black, covered with a white down; the hair on the under side of the front tarsi is fulvous.

EUMENES ADVENA, *sp. nov.*

Nigra; tegulis pedibusque rufis; alis fusco-violaceis.
Long. 15 mm. ♀.

Hab. Barrackpore (*Rothney*).

Antennæ entirely black; the scape shining, the flagellum coarse, opaque. Punctures of the head, close, especially on the front where they run into reticulations; the clypeus very thickly, the rest of the head more sparsely covered with silvery hairs; the front somewhat triangularly produced between the antennæ. Mandibles with two deep, wide longitudinal grooves on the apical half, the grooves being piceous towards the apex. Thorax coarsely punctured, more sparsely in the middle of the mesonotum, and still more sparsely on the scutellum; the parapsidal grooves are deep, wide, and run from base to apex. The propleuræ are coarsely irregularly obliquely striolated, on

the lower half the striations being stout; the rest of it, being irregularly punctured and on the lower part irregularly striolated; the mesopleuræ strongly punctured; the punctures widely separated; shortly beyond the centre is a wide deep depression bearing some stout irregular keels; the hinder part of the mesopleuræ strongly aciculated. Scutellum shining; the middle at the apex a little depressed; at the base is a wide depression with five stout keels; and at its apex is a deep wide depression with oblique median segment depressed in the middle; the sides of the depression oblique and meeting at the bottom, and irregularly, somewhat obliquely striolated, the bottom and sides with a sharp keel; the lower part outside this central depression strongly irregularly reticulated. Legs red, covered sparsely with white hairs; the greater part of the fore coxæ and the base of the middle pair above, black. Abdomen black; covered with white hairs; a long depression, keeled in the centre, down the middle at the base; the second segment punctured; the other segments also punctured, but with the punctures closer together; and covered with long white hair.

ANTHOPHILA.

ANDRENIDÆ.

As will be seen, the Andrenidæ are almost exclusively confined to the northern parts, and more particularly to the mountainous regions of India.

PROSOPIS.

Only one species of *Prosopis* has been recorded from the Indian Peninsula; but several are known from the Australian portion of the Malay Archipelago. The new species here described may be separated as follows:—

- 1 (2) Front strongly longitudinally striated (only the hinder tibiæ yellow at the base). *striatifrons*

- 2 (1) Front not longitudinally striated.
- 3 (4) Tibiæ not annulated with white. *leucotarsis*
- 4 (3) Tibiæ annulated with white at the base.
- 5 (6) The keel on the median segment rounded inwardly
in the middle at the apex and not running into a
central furrow. *strenua*
- 6 (5) The keel on the median segment not rounded inwardly
in the middle at the apex.
- 7 (8) The middle of the median segment raised and sepa-
rated from the sides, which are not striated, base
of tibiæ black. *obsoleta*
- 8 (7) The middle of the median segment not raised and
separated from the sides and uniformly rugose;
base of tibiæ white. *bellicosa*

PROSOPIS STRIATIFRONS, *sp. nov.*

Nigra; orbitis oculorum infra lineaque pronoti flavis; alis hyalinis. ♀. Long. 7 mm.

Hab. Barrackpore (*Rothney*).

Comes near to *P. obsoleta*; but is larger and stouter; the front is stoutly longitudinally striated; the median segment longitudinally striated.

Head black; the inner orbits yellow, the yellow dilated towards the middle, gradually at the bottom, more sharply and obliquely at the top. The front and clypeus longitudinally striated; the front raised, its sides with a stout border; the vertex finely punctured, very sparsely and shortly haired. Antennæ stout, the flagellum obscure brownish beneath. Thorax closely punctured, the mesonotum rather strongly punctured; the scutellum with the punctures finer and more widely separated. Centre of median segment at the base irregularly and somewhat strongly reticulated; this reticulated part being surrounded by a distinct border; the rest of the segment coarsely aciculated; the apex with a furrow down the

centre. Mesopleuræ more strongly punctured than the mesonotum; the oblique furrow obscurely crenulated. In the front of the pronotum is an interrupted yellow line; the tegulæ are yellow in front, fuscous behind, and below them is a yellow mark. Wings hyaline; the costa and stigma black; the nervures more fuscous in tint; the first recurrent nervure is received shortly in front of the transverse, almost interstitial; the second interstitial. Legs covered with white hairs; the fore tibiæ broadly obscure rufous (perhaps discoloured) in front; the basal third is lined with yellow behind; the base of the hind tibiæ clear yellow. Abdomen shining, glabrous, impunctate.

PROSOPIS LEUCOTARSIS, *sp. nov.*

Nigra; clypeo, tegulis tarsisque flavis; alis hyalinis, nervis stigmatæque pallidis. ♀. Long. 5 mm.

Hab. Ceylon (Rothney).

Head nearly as wide as the thorax; shining, impunctate; the front and vertex sparsely covered with long pale hairs; the clypeus and labrum yellowish-white, immaculate. Antennæ black, sparsely microscopically pilose; the scape sparsely covered with fuscous hair. Thorax black, shining, bearing longish white hairs; the base of the median segment somewhat flat, aciculate; the apex with an oblique slope; covered with long pale hairs. Pleuræ shining, impunctate, thickly covered with longish pale hairs, and having a bronzy tinge. Legs black, with a greenish tinge, sparsely haired; the tarsi rufo-testaceous, thickly covered with white hairs. The second recurrent nervure is straight, oblique; the second is, at the top, curved towards the first; the cellule at the top being there not much more than half the length it is at the bottom; the first recurrent nervure is almost interstitial; the second recurrent nervure is received very shortly in front of the second transverse cubital.

PROSOPIS STRENUA, *sp. nov.*

Long. 6 mm. ♀.

Hab. Barrackpore (*Rothney*).

Head as wide as the thorax, closely, but not very strongly, punctured; sparsely covered with pale hairs; a square mark on the clypeus, a line on the inner orbits extending from the base of the mandibles to near the level of the front ocellus, and becoming gradually wider in the middle, bright yellow; the labrum and tips of the mandibles piceous; the palpi testaceous. The front raised and stoutly keeled laterally over the antennæ. Antennæ covered with a fuscous pubescence; the base of the scape and the second and third joints, obscure rufous; the flagellum obscure testaceous beneath. Thorax black; a line on the base of the pronotum, narrowed in front, the tegulæ at the base and a mark in front of them, lemon-yellow. Mesonotum closely and rather strongly punctured; the scutellum with the punctures, if anything, larger, but more widely separated. Middle of the median segment raised, the raised parts forming a rugose triangle, bordered by a smooth space semicircular at the apex, which again is bordered by a distinct keel; its apex has a straight abrupt slope; the base in the middle excavated; the apex transversely rugose. Pleuræ rather strongly punctured; a wide furrow running down from the tegulæ to the sternum, which is strongly punctured and slightly hollowed in the middle. Legs black, slightly covered with white pile; the anterior greater part of the fore tibiæ, the base of the middle, the basal half of the hinder, and the greater part of the basal joint of the hinder tarsi, bright yellow; the front four tarsi testaceous, obscure yellow at the base, black at base behind. Wings hyaline; the nervures fuscous, the stigma and costa darker; the two recurrent nervures interstitial. Abdomen black, shining, the ventral segments obscurely punctured at the base; the apex bearing fuscous hairs.

PROSOPIS ABSOLUTA, *sp. nov.*

Long. 5 mm. ♀.

Hab. Barrackpore (*Rothney*).

Resembles *P. strenua*; but may be known by the base of the median segment wanting the smooth space and the curved keels.

Head scarcely so wide as the thorax, strongly punctured, almost rugose; thickly covered with short white hairs; a mark rounded at the base and broader than long at the apex of the clypeus; an elongate somewhat triangular spot, extending from the base of the clypeus to near the front ocellus, the apex of its dilated part being at the top of the clypeus, and the lines are united there by a yellow mark, which is truncated at the bottom, rounded at the top. Flagellum brownish beneath, covered with a microscopic down. Thorax black, strongly punctured; covered with short white pubescence; the median segment broadly and coarsely rugose in the middle, the rugose part triangular, and at the apex bearing stout transverse irregular keels; the sides and apex of the median segment alutaceous, covered with a pale microscopic down. Mesopleuræ rather strongly punctured, the punctures all distinctly separated; the metapleuræ coarsely alutaceous. Legs covered with white pubescence; the greater part of the fore tibiæ and the hinder four broadly white at the base; the front pair piceous behind; the calcaria white; the tips of the tarsi testaceous. Wings hyaline, the stigma and nervures dark fuscous; the first recurrent nervure received in front of the transverse cubital; the second interstitial. Abdomen entirely black; a spot of white pubescence on the side of the second segment.

PROSOPIS BELLICOSA, *sp. nov.*

Long. 6 mm.

Hab. Barrackpore (*Rothney*).

May be known from the other species by the central

part of the median segment being distinctly raised and separated from the lateral; these are smooth, shining, and impunctate; the surrounding keel is stout and piceous in colour.

Antennæ black; the flagellum brownish beneath, and bearing a slight white microscopic down. Head coarsely punctured; bearing short white microscopic pubescence; the inner orbits to near the lower ocellus, and dilated below the antennæ and narrower at the bottom than at the top, and a large mark on the clypeus, broad at the base and gradually narrowed to the top, yellow; the upper part of the mandibles yellow, the apical piceous. Thorax black; the pro- and meso-notum punctured; the median segment at the base with a large somewhat square coarsely rugose space, surrounded by a smooth impunctate area, bordered by a stout, semicircular piceous keel; the apex without a distinct furrow and thickly covered with white hairs. Pleuræ and sternum strongly punctured; a line on the pronotum at the apex, the tubercles and the base of the tegulæ yellow, the apex of the tegulæ, piceous. Legs black, covered with white pubescence; the anterior knees, tibiæ and tarsi, the middle tibiæ broadly at the base and slightly at the apex, the hinder tibiæ broadly at the apex and the metatarsi, yellow; the hinder femora incline to piceous beneath; and the yellow is suffused at the base or apex with brownish. Abdomen shining, the sides sparsely covered with white pubescence.

The size of the yellow mark on the clypeus varies.

HALICTUS.

a. Species with the abdomen more or less reddish.

HALICTUS WROUGHTONI, *sp. nov.*

Niger; longe dense pallide hirtus; abdominis basi late rufo; pedibus nigris, femoribus fere piceis, longe albo-pilosis; alis hyalinis, stigmatе piceo, nervis pallidis. ♀. Long. 8mm.

Hab. Bombay Presidency (*Wroughton*).

Head black, very densely covered with grey pubescence, longer and slightly sparser in front; short and very dense behind, completely hiding the surface; the labrum fringed with long golden pubescence; the mandibles ferruginous at the apex, their base, on the outer side, covered with short, close, white pubescence. Antennæ black, slender, the scape sparsely covered with short white hairs. Thorax densely covered with soft white hairs; the mesonotum closely but not deeply punctured; the hairs on the post-scutellum shorter and covering it entirely; the base of the median segment closely, irregularly striolated; the hairs on the pleuræ long and thick. Legs black; the femora dark piceous; covered with long white hairs, those on the hinder femora being especially long; on the hinder tibiæ and tarsi they have a fulvous tinge. The third cubital cellule is nearly twice the length of the second at top and bottom. Abdomen shining, impunctate; the basal segment and the basal half of the second red; the basal segment at the base covered with long white hairs; the others fringed with white pubescence; the ventral segments red; the apical two black; thickly covered with long pale hairs.

HALICTUS DECORUS, *sp. nov.*

Niger; abdominis basi late rufo; tarsis testaceis; alis hyalinis. ♀. Long. fere 5 mm.

Hab. Mussouri (Rothney).

Head with a slight greenish tinge; the clypeus and the lower part of the front thickly covered with white pubescence; the vertex with longer, sparser fuscous hairs; the mandibles ferruginous, the teeth blackish; their base sparsely covered with pale hairs. Antennæ black, brownish beneath from the fifth joint. Thorax black, almost impunctate; the pronotum thickly covered with white hairs; as is also the post-scutellum and the sides of

the scutellum; the median segment has an elongated semicircular area, the base raised, rugosely punctured; the rest of it smooth, with a distinct central and a few incomplete longitudinal keels, there being also a transverse keel before the apex. Behind the narrow part of this area, at the sides of it, is a strongly irregularly obliquely keeled area; the apex of the segment semi-oblique, strongly aciculated. Meso- and meta-pleuræ thickly covered with white hairs; the latter obliquely striated. Legs black, with a piceous tinge, the femora darker; the femora sparsely, the tibiæ and tarsi thickly, covered with white hairs. Tegulæ testaceous, darker behind. Wings clear hyaline, the nervures and stigma blackish; the recurrent nervures received near the apical third of the cellules. Abdomen shining, smooth; the basal three segments red above and below; the apical black, thickly covered with longish white hair.

Comes near to *H. xanthognathus* Sm., but is much smaller and otherwise quite distinct.

HALICTUS DISSIMILANDUS, *sp. nov.*

Long. fere 6 mm. ♀.

Hab. Missouri (*Rothney*).

Is very like *H. decorus* in size and coloration, but may be at once known by the base of the median segment not having a depressed semicircular area clearly defined by a keel, it being instead strongly reticulated; the legs, too, are much lighter in tint.

Antennæ black, thick, sparsely covered with white microscopic hairs; the front and vertex more sparsely with longer hairs; the vertex obscurely punctured; mandibles rufous, the tips black. Pro- and meso-notum covered with fuscous hairs; the hairs on the scutellum longer and paler; the pro- and meso-notum coarsely punctured; the scutellum not quite so strongly punc-

tured as the mesonotum; the median segment stoutly reticulated; its apex oblique shining, not reticulated. Propleuræ smooth, piceous; the base with some longitudinal keels; the apex fringed with woolly hairs; the mesopleuræ coarsely rugosely punctured; the metapleuræ with an oblique smooth space in the centre, the base and apex coarsely punctured. Legs obscure piceous; the femora darker; sparsely covered with white hairs. Wings hyaline; the nervures and stigma fuscous; the first recurrent nervure received quite close to the transverse cubital; the second in the apical third of the cellule. The basal three segments of the abdomen rufous, widely suffused with black in the middle; the apical segments sparsely covered with white hairs; the ventral segments coloured like the dorsal.

One of this species has projecting from the apex of the third dorsal segment the larvæ of one of the *Stylopida*, probably a *Halictophagus*.

HALICTUS INVIDUS, *sp. nov.*

Niger; thorace fortiter punctato; metanoto reticulato; abdominis medio ferrugineo; alis hyalinis, apice fere fumatis.
♀. Long. 7—8 mm.

Hab. Mussouri (*Rothney*).

Head rugosely punctured; below the antennæ thickly covered with white hairs; the front and vertex more sparsely covered with longer white hairs. Mandibles piceous in the middle; underneath with a few long golden hairs. Antennæ stout, the flagellum thickly covered with longish white hairs; the joints of the flagellum dilated broadly beneath; towards the apex bearing a white microscopic pile. Thorax coarsely rugosely punctured; the punctures on the apex of the mesonotum larger and more widely separated; the base of the median segment with stout longitudinal keels, irregular in the middle,

forming almost reticulations; at the apex in the middle is an area broad and rounded at the base, becoming narrowed towards the apex; forming an almost pyriform space; there is an oblique, somewhat similar, area at its side at the top; the rest has four stout slightly oblique keels, running from the centre. Pro- and meso-pleuræ coarsely strongly punctured, running into strong reticulations at the apex; the metapleuræ coarsely strongly punctured; the base coarsely obliquely striated; the punctures at the apex large, round. Legs black; the apices testaceous; the femora sparsely, the tibiæ, and especially the tarsi, covered with silvery white pubescence. The first and second transverse cubital nervures are bullated at top and bottom; the first recurrent nervure is received quite close to the transverse cubital; the second shortly before the apical third of the cellule. Abdomen shining, the basal three segments punctured; the apical smooth and shining; the ventral segments shining, broadly ferruginous in the middle; the third ferruginous in the middle.

HALICTUS SERENUS, *sp. nov.*

Niger; abdominis basi late rufo; alis hyalinis, nervis testaceis. ♂. Long. 5 mm.

Hab. Missouri (Rothney).

Head finely punctured, thickly covered with long white hair; the mandibles before the apex ferruginous; beneath with some long golden hairs. Antennæ stout, the scape with some long white hairs; the flagellum almost bare. The base of the median segment with its area irregularly striolated; the lateral striations on it straighter and more widely separated; the apex hollowed, smooth, impunctate at base, the apex rough, but without any distinctly defined keels. Pleuræ strongly aciculated, covered with long white hairs; femora clothed with some long white hairs; the tibiæ and tarsi more thickly with

golden hairs. Abdomen shining, black, the basal segment reddish, the base with longish white hairs, deeply and widely incised above; the ventral segments like the dorsal. The first recurrent nervure almost interstitial, received immediately in front of the transverse cubital nervure; the second in the apical fourth of the cellule.

b. Green or blue species.

HALICTUS GRANDICEPS, *sp. nov.*

Cupreo-viridis, longe albo-hirsutus; antennis nigris; alis flavo-hyalinis. ♀. Long. 8—9 mm.

Hab. Mussouri (Rothney).

Head large, wider than the thorax, coppery green, thickly covered with white pubescence; closely and uniformly punctured; except above, and on the clypeus, where the punctures are more widely separated; the apical half of the clypeus coppery and fringed with golden hairs. Antennæ black; very sparsely covered with microscopic pile. Thorax above closely and rather strongly punctured; the punctures wider apart and larger on the apex of the mesonotum and on the scutellum; the hairs on the mesonotum sparse; on the post-scutellum long and thick; the base of the median segment depressed, finely longitudinally striated; this part in front being bordered by a shining, smooth, glabrous space; the apex has an oblique slope; an elongated deep depression in the middle, into which run two shallow curved furrows from the top, which enclose a triangle at the top. Pleuræ closely and finely punctured; the enclosed space below strongly, the hind wings at top and bottom strongly transversely striolated; the lower part of the metapleuræ at the bottom at the base finely longitudinally striated. The four hinder tibiæ and tarsi thickly covered with long pale fulvous hairs; the femora and the fore legs with the hairs whiter and sparser; the spurs pale fulvous. Wings

hyaline but with a distinct fulvous tinge, especially towards the base; the stigma and nervures fulvous, the lower nervure of the costa blackish. Abdomen shining, shagreened, except the base of the basal segment; the apices of the segments fringed with white hairs; the last segment thickly covered with long pale golden hairs; the ventral segments shagreened and covered with long pale hairs at the apex.

HALICTUS ALEXIS, *sp. nov.*

Viridis, dense fulvo-hirtus; alis hyalinis, stigmatibus pallide flavo; pedibus longe, dense, pallide pilosis. ♀. Long. 7 mm.

Hab. Barrackpore (Rothney).

In its bronzy green coloration it agrees with *H. propinquus*; but it is larger, and the tibiae and tarsi are not yellowish-fulvous, neither are the tegulae fulvous.

Head uniformly and closely punctured all over, except on the clypeus where they are fewer and much more widely separated, densely covered with longish pale fulvous hairs; the apex of the clypeus shining, dark bronzy; the labrum covered with long pale golden hairs; the mandibles entirely black; their lower side bearing some long pale golden hairs. Antennae entirely black; the scape sparsely covered with long pale fulvous hairs; the flagellum almost glabrous. Mesonotum closely and rather strongly punctured, thickly covered with fulvous hairs; the parapsidal furrows distinct; the fulvous hairs at the apex of the scutellum and on the post-scutellum long and thick. The basal curve on the median segment finely and closely rugose; its apex shining and impunctate; the apex of the segment with an oblique slope; shagreened; furrowed down the centre. The propleurae deeply excavated; the excavation forming an oblique triangle, obscurely striated down the centre and at the apex thickly covered with white hairs; the mesopleurae strongly

and closely punctured; the hairs very long and thick; the metapleuræ finely punctured; the middle finely striated. Legs, especially the hinder, thickly covered with pale fulvous hairs; the femora with the hairs longer and much sparser; the fore femora beneath glabrous, shining, black; the tarsi ferruginous at the apex. Wings clear hyaline, the stigma and nervures yellowish-testaceous, the stigma darker; the second cubital cellule at the top somewhat shorter, at the bottom equal in length to the third at the top, which is there scarcely half the length it is at the bottom; the first recurrent nervure is almost interstitial; the second received near the apical third. Abdomen dark bluish-green; the segments fringed with pale fulvous pubescence; the apical very thickly with longer fulvous hair, except on the furrow in the centre. Ventral segments shining, thickly covered with long pale fulvous hairs.

HALICTUS DISCURSUS, *sp. nov.*

Long. fere 4 mm.

Hab. Missouri (*Rothney*).

Comes near to *H. propinquus* Sm., but may be known from it by its smaller size, by the thorax not being thickly covered with white hairs, and by the deep, wide, longitudinal furrow on the base of the mesopleuræ; and by having a short longitudinal furrow at the base of the mesonotum.

Bluish-green, metallic, shining, the knees, tibiæ and tarsi rufo-testaceous; wings clear hyaline, the stigma and nervures pallid, the stigma somewhat darker. The apex of the clypeus is bronzy; the labrum is thickly covered with long golden hairs; the mandibles and trophi testaceous; scape of the antennæ black; the flagellum brownish beneath; covered with white microscopic pile. The area at the base of the median segment finely and

closely longitudinally striated except at the apex; which has an oblique slope; the pleuræ shining, impunctate, sparsely covered with white hairs; at the base of the mesopleuræ and above its middle is a wide, deep furrow, extending from the base to the apical third; the metapleuræ finely punctured at the base. Legs thickly covered with white hairs. The second and third cubital cellules are subequal: the first recurrent nervure is interstitial; the second, the third transverse cubital and the cubital nervure from the second transverse cubital, are almost obsolete. Abdomen shining; the base with a wide, deep, longitudinal furrow; the apical segments thickly covered with long white hairs; the fifth segment on either side of the smooth dark testaceous central rima, thickly covered with long pale golden hairs; the ventral segments pale at the apices; the sides of the basal segments and the apices of the apical segments thickly covered with long white hairs; the basal segments in the middle sparsely covered with long white hairs.

c. Species entirely black; the abdomen banded with white hairs.

HALICTUS SEPULCHRALIS, *sp. nov.*

Niger; abdomine late albo-balteato; pedibus longe fulvo-hirsutis; alis hyalinis. ♀. Long. 8 mm.

Hab. Missouri (Rothney).

Head black, hardly so wide as the thorax, the face and outer orbits thickly covered with short white pubescence; the vertex and front closely punctured, sparsely covered with long fuscous hairs; the middle and apex of the mandibles piceous. Antennæ black, shining, almost glabrous. Pro- and meso-notum very shining, with only a few microscopic punctures; sparsely covered with short white hairs; the post-scutellum with long white hairs; the median segment at the base with a belt of longi-

tudinal striæ narrowed gradually towards the apex ; shining ; its apex with an oblique slope, hollowed in the centre, the sides distinctly bordered ; the pleuræ and sternum alutaceous, covered with long white hairs. The hind legs covered all over thickly with white hairs ; the front four legs less strongly and thickly haired ; the femora bare and shining in front ; the hairs on the tarsi have a more fulvous tinge ; apices of the tarsi rufous. Wings clear hyaline ; the nervures fuscous ; the stigma paler ; the costa darker ; the first recurrent nervure almost interstitial ; the second received in the apical fourth of the cellule ; the tegulæ black, piceous in the middle. Abdomen shining, impunctate ; the base of the first segment sparsely covered with longish pale hairs ; the second to fifth segments bordered at the apex with white depressed pubescence ; the apical segment finely punctured laterally ; the rima aciculate, piceous ; the ventral segments sparsely covered with long hairs, shining, the basal segments more or less piceous.

HALICTUS PICIPES.

Niger, nitidus ; pedibus piceis ; capite thoraceque long albohirtis ; alis hyalinis ; ♂ flagello antennarum subtus bronneo. ♀. Long. 6—7 mm.

Hab. Missouri (Rothney).

Head alutaceous, thickly covered with longish white hairs, which are shorter, sparser, and darker coloured on the vertex. Mandibles piceous before the teeth. Antennæ stout, the flagellum beneath, brownish, darker at the apex. Pro- and meso-notum shining, impunctate, sparsely covered with fuscous hairs ; post scutellum thickly covered with white down and with long white hairs. Base of the median segment irregularly longitudinally keeled ; those in the middle being wider apart ; its apex with an abrupt oblique slope ; shining, impunctate ; the middle hollowed widely at the top. Pro- and meso-pleuræ closely and

finely rugosely punctured; the oblique depression under the fore wings irregularly transversely striolated; the metapleuræ have a blistered appearance, and are covered with long white hairs. Wings clear hyaline; the nervures fuscous; the first recurrent nervure interstitial; the second received in the apical fourth of the cellule. Tegulæ fuscous, lighter coloured round the edges. Legs piceous; thickly covered with longish white hairs; the coxæ black. Abdomen shining, impunctate, the basal segment at the base with some long white hairs; the others fringed with white hairs at the apices; the ventral segments fringed with long white hairs; the apical segment broadly rounded; its sides acutely projecting.

HALICTUS TARDUS, *sp. nov.* (Pl. 4, f. 18).

Niger; longe albo-hirtus; tarsis fulvo-hirsutis; metanoto reticulato; alis hyalinis. ♀. Long. 8 mm.

Hab. Missouri (Rothney).

Head closely and somewhat strongly punctured; densely covered with long soft white hairs; the labrum fringed with long fulvous hairs; the mandibles piceous at the base. Antennæ stout; the scape with longish white hairs; the flagellum with sparse white down. Mesonotum and scutellum shining, bearing widely separated shallow punctures, and, as well as the post-scutellum, thickly covered with long white hairs; the median segment at the base closely longitudinally striated, the striæ not all quite straight; the apex of the striated area smooth and impunctate; the apex of the segment strongly reticulated; and with a deep and wide furrow down the centre; the sides sharply and stoutly margined. Propleuræ smooth, shining; the top bluntly triangular; the mesopleuræ rugosely punctured; the metapleuræ at the base alutaceous; the apex reticulated; but with the keels much weaker than they are on the mesonotum.

Legs black; the coxæ and femora sparsely covered with long white hairs; the tibiæ and tarsi much more thickly with fulvous hairs; those of the tarsi having a deeper fulvous tint than those of the tibiæ; the calcaria fulvous. Wings hyaline; the nervures fuscous; the costa and upper part of the stigma black; the lower part of the latter piceous; the second and third cubital cellules at the top and bottom nearly equal in length. Abdomen impunctate, shining, shagreened towards the apex; the basal segment at the base covered with long erect white hairs; the other segments, except the last, fringed with depressed white hairs; the last segment thickly covered with stiff black hair; the apical area fringed with golden hair; the ventral surface thickly covered with long white hairs.

HALICTUS FUNEBRIS, *sp. nov.*

Long. 9 mm. ♀.

Hab. Missouri (*Rothney*).

This species agrees with *H. tardus* in having the metanotum strongly striolated at the base; and in having the tarsi thickly covered with long golden hairs; but it may be at once known by the apex of the median segment not being reticulated, and having only a few oblique stout keels.

Head shagreened, the clypeus obscurely punctured; covered all over with long white hair; the mandibles piceous towards the apex, bearing beneath a few fulvous hairs. Antennæ stout, bare, the scape with a few long white hairs. Mesonotum coarsely shagreened, opaque; the lateral furrows distinct; covered, as is also the scutellum, with long pale hairs; the scutellum rough at the base, the apex irregularly reticulated; the base of the median segment longitudinally closely and stoutly carinated; the apex with a central keel, from which run a few oblique keels. Legs black, the femora and tibiæ

sparsely covered with white hairs; the hairs on the tarsi denser and golden. Wings clear hyaline, the nervures black; the second cubital cellule at the top equal in length to, at bottom shorter than, the third; the first recurrent nervure is received very shortly before the second transverse cubital; the second before the apical third of the cellule. Abdomen shining, impunctate, sparsely covered with fuscous hairs, above and below.

HALICTUS CIRIS, *sp. nov.*

Niger; clypeo, labro, scapo antennarum subtus, tibiis tarsisque, flavis; flagello antennarum subtus brunneo; alis hyalinis. ♀. Long. fere 5 mm.

Hab. Barrackpore (Rothney).

Head black, from shortly below the ocelli to the apex of the clypeus thickly covered with short white hairs. Clypeus shining, bearing large widely-separated punctures; at the top, in the middle, the yellow projects triangularly into the black. Mandibles yellow, the apex rufous; the palpi and tongue testaceous. Antennæ stout covered with a pale microscopic pile; the yellow on the under side of the scape with a black mark in the middle. Thorax black, alutaceous, not shining, sparsely covered with a short down; the edge of the pronotum in front and below the tegulæ lemon-yellow; the tegulæ yellow; the base of the median segment longitudinally striolated; the space between the striæ aciculated; the apex of the depression smooth and shining; the apex of the segment oblique; furrowed down the centre; the sides distinctly and strongly keeled. The pleuræ strongly aciculated, opaque, thickly covered with white hairs; the propleuræ excavated. Legs covered with white hairs; the apex of the fore femora and the hinder four knees rufo-testaceous; the tibiæ and tarsi yellow; the hinder tibia rufous before and behind, with a large black line in front. Wings clear

hyaline; the nervures pallid yellow; the costa darker; the first and second transverse cubital nervures bullated at the top next to the radial nervure; the first recurrent nervure interstitial; the second received in the apical fourth of the cellule.

HALICTUS VISHNU, sp. nov.

Niger; clypeo, geniculis tarsisque testaceis; alis hyalinis, nervis stigmatæque testaceis. ♀. Long. 4 mm.

Hab. Mussouri (*Rothney*).

Head thickly covered with longish fuscous hairs; the clypeus testaceous, the middle of the mandibles piceous. Antennæ almost glabrous; the flagellum brownish beneath. Mesonotum covered with longish fuscous hairs; closely punctured; the scutellum with the punctures more widely separated; post-scutellum thickly covered with long fulvous hair; the base of median segment shining, glabrous, impunctate, and marked with a few straight longitudinal keels, which do not reach to the bordering carina at the apex of the basal region; the apex has a sharp oblique slope, and is sparsely covered with long hairs. Pleuræ covered with longish white hairs. Legs covered with white hairs; the knees, anterior tibiæ in front and the tarsi testaceous. Wings hyaline, the stigma and nervures testaceous; the first recurrent nervure received in the apical third of the cellule, the second in the second shortly beyond the middle. Abdomen shining, impunctate; the segments above and beneath thickly covered with white hairs; the apical ventral segment with a distinct bordering keel.

HALICTUS SALUTATRIX, sp. nov.

Niger, nitidus; geniculis tarsisque albis; alis hyalinis. ♀ et ♂. Long. 6 mm.

Hab. Mussouri (*Rothney*).

Head black, closely and minutely punctured; thickly

covered with pale fulvous hairs; the clypeus shining, the punctures, especially towards the apex, more widely separated; the mandibles testaceous in the middle, piceous towards the apex. Antennæ black, covered with a microscopic down. Thorax shining, minutely punctured; covered with white hairs, especially long on the pleuræ, post-scutellum and apex of median segment; the area at the base of the median segment longitudinally striated; the apex at the base very shining; its central furrow not very wide. Propleuræ deeply excavated in the middle and finely striated; the apex at the top, finely striated; the meso- and meta-pleuræ opaque, shagreened, covered with long white hairs. Legs covered with long white hairs, which are especially thick on the hinder four tibiæ and tarsi; the knees of the front pair, the base of the hinder four tibiæ and the tarsi yellowish-testaceous. Wings clear hyaline, the nervures fuscous; the stigma darker at the base; the first recurrent nervure is almost interstitial; the second is received in the apical third of the cellule; the apices of the basal three segments of the abdomen pale, slightly fringed with pale hairs, the apical segments thickly covered with long fulvo-golden hair; the ventral surface, especially towards the apex, bearing long pale fuscous hairs, the apical segment for the greater part aciculated.

HALICTUS BUDDHA, *sp. nov.*

Long. 5 mm. ♀.

Hab. Missouri (*Rothney*).

Agrees closely with *H. salutatrix*, and, like it, has the base of the tibiæ and the tarsi white; but the front four tibiæ are entirely white; the clypeus broadly white at the apex, the antennæ broadly brownish beneath, the base of the median segment much more strongly striolated.

Head below and between the antennæ thickly covered with white hairs, the front and vertex more sparsely covered with long fuscous hair; the vertex opaque, coarsely shagreened; the apex of the clypeus and labrum yellowish-white; the palpi fuscous; the scape of the antennæ and the second joint entirely black; the others black above, brownish beneath. Pro- and meso-notum shagreened, bearing a short pale down; a narrow longitudinal furrow down the centre of the mesonotum at the side; the scutellum uniformly shagreened like the mesonotum; the post-scutellum rugose, covered with long pale hairs. The curved basal area on the median segment shining, irregularly longitudinally carinate, the keels less distinct in its centre. The pleuræ closely longitudinally striated; the part below the hind wings covered with long white hairs; the propleuræ and the pronotum in front shining, glabrous, impunctate; and sharply separated obliquely perpendicularly behind. Wings clear hyaline, the nervures pale yellowish; the second and third cubital cellules almost equal in length at top and bottom; the first recurrent nervure is almost interstitial; the second is received in the apical third of the cellule. Abdomen shining; the basal segment, except at the apex, covered with long white hairs and without a longitudinal furrow; the segments at the apex fringed with white depressed hairs; the ventral segments bearing long white hairs; the penultimate segment shining and smooth in the middle.

HALICTUS ALPHENUS, sp. nov.

Nigro-cæruleus; abdomine nigro; femoribus subtus piceis; pedibus longe albo-fumatis. ♂. Long. 6—7 mm.

Hab. Missouri (Rothney).

Head and thorax dark blue; the clypeus black. Head obscurely shagreened, covered with long fuscous hairs; the base of the mandibles piceous. Antennæ entirely

black, the flagellum almost bare; the scape bearing long white hairs. Pro- and meso-thorax impunctate, covered with long white hairs; the pleuræ under the wings striated; the base of the median segment obscurely longitudinally striated; its apex oblique, slightly hollowed in the centre, the sides margined. Legs black; the femora with a piceous hue; sparsely haired, the hairs on the tibiæ and tarsi much thicker, especially on the tibiæ which have a fulvo-golden hue; the spurs yellowish-testaceous. Abdomen black, shining, glabrous, except at the apex, which bears fulvous hairs; the ventral segments shining, impunctate, almost glabrous. Wings clear hyaline, the nervures fuscous; the first recurrent nervure almost interstitial; the second received in the apical fourth of the cellule.

HALICTUS GARRULUS, *sp. nov.*

Niger, pallide fulvo-hirtus; geniculis, tibiis tarsisque pallide fulvis; alis fulvo-hyalinis, stigmatè fulvo, nervis pallidis. ♂.
Long. 7 mm.

Hab. Missouri (*Rothney*).

Head black; the front and vertex coarsely alutaceous; the lower part of the face densely covered with golden-fulvous pubescence; the mandibles dark piceous, black at the base. Antennæ brownish, the upper part blackish; the scape black, sparsely covered with longish pale hairs. The edge of the pronotum, the mesonotum, fringed all round with pale fulvous hairs; the mesonotum closely and rather strongly punctured; the scutellum with the punctures more widely separated; the post-scutellum thickly covered with pale pubescence, completely hiding its surface; the base of the metanotum strongly longitudinally keeled throughout; the remainder opaque, closely punctured, furrowed in the middle at the apex and thickly covered with long white hairs. Pleuræ

opaque coarsely alutaceous; thickly covered with long white hairs. Legs thickly covered with fulvous white hairs; the femora with a piceous tinge beneath; the tibiæ and tarsi fulvous; the tarsi paler. Wings with a faint fulvous tinge; the stigma and costa fulvous; the nervures testaceous; the second transverse cubital nervure largely bullated; the recurrent nervures received shortly beyond the middle. Abdomen shining, impunctate; the segments edged with white pubescence; the ventral surface shining, the first and second segments shining, very sparsely haired; the others much more quickly covered with longish fuscous hairs.

d. Abdomen thickly banded with fulvous hairs.

HALICTUS PULCHRIVENTRIS, sp. nov.

Niger; tarsis albis; alis fere hyalinis, apice fumatis. ♂.
Long. 9 mm.

Hab. Missouri (Rothney).

Head black; in front from shortly above the antennæ, densely covered with pale fulvo-aureous pubescence, which completely hides the skin; vertex and front strongly punctured, half shining, sparsely covered with fulvous hairs. Antennæ black, the second and base of the third joint beneath rufous; the scape covered with longish pale fulvous hairs; the flagellum with a microscopic down. Thorax black, a thick band of fulvous pubescence on the pronotum, and a broader belt behind the scutellum of longer fulvous hairs; the mesonotum covered with short fuscous hairs; the median segment from shortly below the basal area covered with long pale fulvous hairs. Mesonotum strongly punctured; a short shallow longitudinal furrow on each side of the mesonotum, originating at the base and reaching to the middle. The basal area of the median segment longitudinally striolated except at the apex, where it has some widely separated punctures

on either side of the base of the furrow; the sides of the segment at the area are impunctate; the rest of it with distinctly separated punctures. The mesopleuræ, except at base and apex, thickly covered with long pale fulvous hairs; the metapleuræ covered with a pale fulvous down and more sparsely with long pale fulvous hairs. Wings hyaline, with a slight fuscous tinge; the apex from the apex of the radial cellule smoky; the nervures fuscous; the stigma darker at the top; both the recurrent nervures are received about the same relative distance beyond the middle. Legs thickly covered with longish fulvous hairs, the tarsi and the anterior tibiæ in front testaceous. Abdomen punctured, strongly towards the base, more weakly towards the apex; the segments shining at the base, sparsely covered with long fuscous hair; the fourth segment thickly covered with depressed fulvous pubescence; the fifth obliquely depressed; covered with long fulvous hair; the last segment ferruginous.

HALICTUS TAPROBANÆ, *sp. nov.*

Long. 6 mm.

Hab. Ceylon (*Rothney*).

Agrees very closely in form and coloration with *H. pulchriventris*, but is much smaller; and otherwise easily separated by the striated area of the median segment being distinctly and triangularly produced at the apex, which is not the case in *H. pulchriventris*; it is also not hollowed at the apex.

Antennæ black, the flagellum brownish on the under-side, covered with a pale microscopic down. The face below the antennæ and the sides as high as the lower ocellus, thickly covered with pale fulvo-aureous pubescence; the mandibles broadly ferruginous in the middle. Thorax black; the mesonotum and scutellum closely punctured, the edge of the pronotum behind and a belt

behind the scutellum thickly covered with long pale fulvous pubescence; the mesonotum covered with short, the scutellum with long, dark fulvous hairs. The area on the median segment triangularly produced in the middle, and longitudinally striolated; the central striæ not reaching to the apex; the area bare, the rest of the segment covered with long pale fuscous hairs. Mesopleuræ thickly covered with fulvous hairs; the hairs on the metapleuræ sparser and longer. The front femora entirely, beneath and above, and the four posterior entirely on the under side, obscure testaceous, as are also the apices of the tibiæ; the basal joint of the tarsi white; the others white, but with a testaceous tinge. Wings hyaline, the apex slightly infuscated, the stigma and nervures testaceous, the former black at the extreme base. The first recurrent nervure is received shortly before, the second shortly beyond, the middle of the cellule. Abdomen shining, the segments shagreened; their apices thickly fringed with pale hairs; the last segment testaceous. Ventral segments shining, sparsely covered with long hairs, their apices white; the last testaceous; the penultimate with a shallow depression, wide at base, becoming gradually narrower towards the apex.

ANDRENA ROTHNEYI, *sp. nov.*

Nigra; abdominis basi late rufo; capite thoraceque rufis; alis hyalinis. Long. 10—11 mm.

Hab. Missouri (*Rothney*).

Antennæ entirely black; the scape sparsely covered with long fuscous hairs; the flagellum with an obscure microscopic pile. Head covered with long pale fulvous hairs, more sparsely on the centre of the clypeus and of the vertex; the inner orbits of the eyes bordered with a band of pale fulvous depressed pubescence; the apex of the clypeus fringed with golden hairs; the clypeus sparsely; the inner orbits more closely punctured; the

vertex finely and closely longitudinally striated from the hinder ocelli, behind which it is smoother and shining; the occiput thickly covered with long pale golden hairs. The mandibles are piceous before the middle; the joints of the palpi are white at the base. Thorax bearing pubescence of moderate length; fulvous above; that on the pleuræ paler; finely punctured; a longitudinal furrow on either side of the mesonotum, a very indistinct one down the middle of the scutellum, which at the apex is fringed with long fulvous hairs. The middle of the median segment bearing a large somewhat triangular opaque shagreened space not uniting with the apex; the sides shining and smoother, and bearing long fulvous hairs; the apex being similarly clothed. The pleuræ shagreened, somewhat shining; the apex of the pro- and of the meta-pleuræ thickly covered with long pale fulvous hairs; the sternum sparsely covered with long pale fulvous hairs. Legs black; the hairs pale fulvous. Abdomen with the basal two segments ferruginous above and beneath; shining, impunctate, almost glabrous; the other segments black, their apices fringed with pale fulvous hairs; the hypopygium aciculated, the sides sharply bordered; the centre with an elongated raised space, sharply pointed towards the apex; the ventral segments covered, but not very thickly, with long fulvous hairs, which are longest towards the apex. Wings with a faint fuscous tinge; the nervures black.

Andrena communis Sm. ("North India, Masuri; taken at an elevation of 7,000 ft."), resembles this species in coloration; but it has the antennæ fuscous beneath; the apical margin only of the first abdominal segment is ferruginous, which colour also extends to the third. Both, as also the following species, resemble the European *Andrena cetti*. Smith points out this resemblance in regard to his *A. communis* (Descr. New Sp. Hym. p. 51).

ANDRENA MALIGNA, *sp. nov.*

Long. 9 mm. ♂.

Hab. Missouri (*Rothney*).

Agrees with *A. Rothneyi* generally in coloration; but the basal abdominal segment is only ferruginous at the apex, while the third is entirely ferruginous; the hairs on the head and thorax much thicker and longer and uniformly distributed; the pleuræ much more strongly punctured, the mesopleuræ also being obliquely striolated behind. Judging from the description it can hardly be the ♂ of *A. communis*.

Antennæ entirely black, the scape sparsely covered with long fuscous hairs; the flagellum opaque, almost glabrous. Head large, distinctly wider than the thorax; black; thickly covered with long fulvous hairs; the vertex except at the sides and behind, closely, somewhat obliquely, striated; the clypeus with large, clearly separated, punctures; tips of mandibles piceous. Thorax densely covered all over with long fulvous hairs; propleuræ deeply excavated; the mesopleuræ opaque; the base obscurely punctured, the apex obliquely striated; the base of the metapleuræ with a deep shining, oblique depression. Legs densely covered with long pale fulvous hairs. Wings hyaline, but with a distinct fuscous tinge; the first and second transverse cubital nervures are distinctly bullated at the base and apex and roundly curved, the third on the lower side. Abdomen thickly covered with longish fulvous hairs; the first segment black, except at the apex; the second ferruginous, except a black stripe before the apex; the third is entirely ferruginous; the apical three segments thickly covered with long fuscous hairs; the basal five ventral segments ferruginous; the two basal segments with a black line in the centre which bifurcates on the third to fifth; the sixth and seventh black; the seventh thickly covered with long fulvous hairs.

ANDRENA RETICULATA, *sp. nov.*

Nigra; capite thoraceque pallide fusco-hirsutis; metathorace reticulato; alis hyalinis, nervis fuscis. ♀. Long. 12 mm.

Hab. Missouri (*Rothney*).

Head black; covered with long cinereous hairs, except on the clypeus; and having them sparser on the front; the clypeus strongly punctured all over; the extreme apex transverse, shining, impunctate; immediately below the antennæ is a clearly defined space, a little longer than broad, the apex transverse, the sides straight, smooth, and shining. Mandibles deeply grooved; the tips piceous. Antennæ black, covered at the apex with a pale down. Thorax covered all over with pale fulvous hairs, which are paler and longer and thicker on the pleuræ and sternum. Mesonotum strongly punctured, the punctures in the middle more widely separated than on the sides; the scutellum punctured; the punctures smaller than on the mesonotum, and very sparse in the middle at the base; the base of the median segment with stout distinctly separated longitudinal striæ, those in the middle being more widely separated than those at the sides; the apex on either side of the central hollow, strongly transversely striated. Pleuræ with the punctures somewhat less in size than they are on the mesonotum. Femora covered with longish pale hair; the hair on the tibiæ and tarsi shorter and thicker, the spurs rufo-testaceous. Wings hyaline, the nervures blackish. Abdomen shining, impunctate; the segments narrowly lined with silvery hairs.

ANDRENA SÆVISSIMA, *sp. nov.*

Long. 12 mm. ♂.

Hab. Missouri (*Rothney*).

A larger and stouter species than *A. phædra*, which agrees with it in the structure of the median segment; but the present species differs from it in being larger and

stouter; the base of the median segment is more strongly reticulated, the central fovea larger and deeper; and the apex is strongly transversely striolated.

Head black; the front and vertex sparsely covered with long pale fulvous hairs; the clypeus almost bare; the vertex closely punctured; the clypeus with the punctures larger and more distinctly punctured below; projecting between the antennæ is a raised space, very smooth, shining, and triangular at the top; transverse at the bottom and with a few large punctures. Antennæ black, almost glabrous. Thorax densely covered with long pale fulvous hairs; the median segment at the base almost glabrous; the triangular space in the middle at the base aciculate, the apex shining, impunctate; the sides more strongly aciculated. Pleuræ shining, impunctate. The hairs on the femora fulvous; on the tibiæ and tarsi blackish: the middle tarsal joints testaceous. The wings have a decided fusco-violaceous tinge beyond the transverse basal nervure; the nervures and stigma in the centre fuscous; the tegulæ pale testaceous. The basal segment of the abdomen thickly covered with long pale testaceous hairs; the other segments thickly covered with black hairs, except at the apices which are fringed with white depressed hairs; the basal half of the ventral segments smooth, glabrous; the apical fringed with longish black hairs; the pygidium glabrous, shining, impunctate; the lateral furrows wide, covered all over with long pale fulvous hairs, closely and rather strongly punctured; the punctures larger and more widely separated towards the apex; the base of the scutellum almost impunctate; the base of the median segment with short stout keels; those at the sides being longer and sharply bent in the middle; the middle before the basal keels coarsely reticulated; in front of this again is a large, somewhat pear-shaped, shining, impunctate depression;

the rest of the segment is rugosely transversely punctured. The propleuræ have a dense curve of pale fulvous hair; the propleuræ below and at the junction with the mesopleuræ are widely furrowed, the furrow being transversely keeled. Legs thickly covered with pale hairs, which are darker on the hind legs. Wings clear hyaline; the nervures fuscous; the second cubital cellule at the bottom as long as the third; the first recurrent nervure is received very shortly beyond the middle; the second in the apical third of the cellule. Abdomen shining; the segments above and beneath lined with white depressed hair; the basal segment with a deep, wide, longitudinal furrow.

The present species agrees very closely with *A. reticulata*, but it may be known from it by the deep furrow on the basal segment of the abdomen, by the large shining, deep depression at the middle of the median segment; which in *A. reticulata* is smooth, shining, and without any depression.

ANDRENA MEPHISTOPHELICA, *sp. nov.*

Long. 11—12 mm.

Hab. Missouri (Rothney).

Is related to *A. savissima*; but may be known from it by its smaller size; by the much stronger and closer punctation of the clypeus; by the hairs on the median segment being much longer, closer and fulvous in colour, differing from the hairs on the mesonotum, which are much paler.

Head, except on the clypeus, covered thickly with long hairs, pale beneath, darker on the front and vertex. Clypeus with large punctures, which are much sparser on the apex, its apex being almost clear of them and fringed with dark fulvous hairs; the base of the mandibles aciculate. The antennæ almost bare; the flagellum from the second joint brownish beneath. Pro- and meso-thorax

thickly covered with long pale fulvous hairs, the scutellum with only long hairs behind, and almost without punctures; the median segment, except a triangular space in the middle at the base, thickly covered with rufo-fulvous hairs, which completely hide the texture; the triangular bare space at the base opaque, rugosely aciculated; with an indistinct keel down its centre. The upper part of the propleuræ aciculated. Legs thickly covered with pale fulvous hairs; the calcaria white. Wings clear hyaline; the nervures dark fuscous; the first recurrent nervure is received shortly beyond the middle of the cellule; the second about the same distance from the third transverse cubital nervure. The first and second dorsal segments of the abdomen are covered with long pale fulvous hairs; the others have the hairs darker and shorter, and the second, third, and fourth are fringed at the apex with glistening white hairs; the ventral segments are broadly fringed at the apex with long pale hairs.

ANDRENA GRACILLIMA, *sp. nov.* (Pl. 4, f. 19).

Nigra; capite thorace abdominisque basi longe fulvo-hirtis; alis fumatis, basi fere hyalinis. ♀. Long. 15 mm.

Hab. Missouri (Rothney).

Head deep black; the occiput thickly covered with long fulvous hairs; the front with hairs almost as long, but somewhat shorter. The front from the hinder ocelli closely longitudinally striated; a sharp keel runs down from the ocelli; the clypeus shining, the punctures close at the base, becoming more widely separated towards the apex; which is in the middle almost free from them; the apex slightly projecting. Antennæ black; the flagellum almost glabrous; the fifth and following joints brownish beneath. Pro- and meso-thorax and the median segment punctured; the scutellum with the punctures more widely separated, especially in the middle at the base; the

median segment has an oblique slope; the extreme base has short stout longitudinal keels; below this it is reticulated; the rest strongly transversely striolated. Pleuræ rather strongly punctured, covered with long pale hairs; the hairs on the metapleuræ longer and thicker. Legs black; thickly covered with pale fulvous hairs; those on the hind legs thicker and longer. Wings hyaline, the nervures dark fuscous; the first recurrent nervure received very shortly beyond the middle of the cellule. Abdomen shining; the segments fringed with white pubescence, above and beneath; the ventral segments more strongly punctured than the dorsal.

ANDRENA MOROSA, *sp. nov.*

Nigra; capite thoraceque longe pallide hirtis; abdominis basi ferrugineo-maculato; alis hyalinis. Long. 12—13 mm.

Hab. Missouri (Rothney).

Head, except the clypeus, thickly covered with long greyish hair; opaque, and coarsely alutaceous, the front closely longitudinally striated; the clypeus shining, almost glabrous, and bearing distinctly separated punctures; the labrum broadly and roundly incised at the apex. Thorax thickly covered with long greyish hairs, more sparsely on the mesonotum; the mesonotum and scutellum shining, almost impunctate. Median segment coarsely alutaceous; the base rugosely longitudinally striolated; the centre with a shallow longitudinal furrow; the sides bare, and apex thickly covered with long grey hairs. Pleuræ alutaceous, covered with long grey hairs. Legs, especially the hinder pair, thickly covered with long greyish hairs; those on the hind legs being darker; the calcaria white. Wings hyaline, but with a slight fuscous tinge, especially in front; the nervures fuscous. Abdomen shining, impunctate; the first and second dorsal segments at the apex piceous; the second to fourth segments at the apices

fringed with pale hairs; the fifth segment with the fringe thicker and longer and dark fulvous; the sixth segment similarly clothed at the sides; the hypopygium alutaceous; the centre triangularly raised, but not sharply. The second ventral segment rufous, black in the centre, the black mark being dilated at the apex; the third and fourth black, piceous at the base.

ANDRENA PHÆDRA, *sp. nov.*

Long. 8 mm. ♂.

Hab. Missouri (*Rothney*).

This species is very closely allied to *A. reticulata*, and has, like it, the base of the median segment reticulated; but its apex is not transversely striolated; while in its centre, below the reticulated part, is a deep, shining, impunctate, and somewhat triangular space; the widest part of which is at the base.

Head densely covered with long greyish hairs; closely rugosely punctured; the clypeus strongly punctured, with the punctures more widely separated; depressed at the apex and with very few punctures; the mandibles deeply grooved; their teeth piceous. Antennæ black, towards the apex with a fuscous down. Thorax densely covered with long pale fulvous hairs; the mesonotum and scutellum bearing large, clearly-separated punctures except the former in the middle at the apex and the latter at the base; the base of the median segment with a band of short longitudinal keels; and a second band of similar keels in the middle behind the first; and from the centre of this runs a short deep, shining, somewhat triangular depression; the rest of the segment rugosely punctured. Mesopleuræ with large punctures; a curved furrow above the middle; above which is a large, smooth, impunctate space; the part immediately below the wings being coarsely punctured; the metapleuræ closely rugose.

Legs covered with long white soft hairs; especially thick and close on the tarsi. Wings clear hyaline; the nervures dark fuscous; the second and third cubital cells at the bottom almost equal in length; the first recurrent nervure is received shortly before the middle; the second in the apical third. Abdomen with the apices of the segments fringed with white hairs; the basal segment sparsely covered with long white hairs; at its base is a deep triangular depression; the ventral segments shining; their apices fringed with white hair.

ANDRENA SODALIS, *sp. nov.*

Long. 8—9 mm.

Hab. Missouri (*Rothney*).

Agrees with *A. phædra* and *A. reticulata* in having the median segment reticulated at the base; from the former it may be known by there being a triangular keel and spot in the middle of the segment at the base, in which there is no deep triangular depression; from the latter by its smaller size and by the median segment not being transversely striated.

Head densely covered with long pale fulvous hairs, hiding the sculpture; the front and vertex finely and closely rugose; the clypeus strongly punctured, the punctures distinctly separated; the mandibles deeply grooved; their teeth piceous. Antennæ black; the apex with a microscopic down. Thorax above thickly covered with fulvous hairs; the sides and head with longish pale hairs; the mesonotum closely and rather strongly punctured, less closely in the middle towards the apex; the scutellum punctured pretty much as the base of the mesonotum, and covered with longer hairs. Median segment with an oblique slope; the base with a double row of short thick keels; below these is a large wide triangular shining reticulated space; the rest of the segment rugosely punc-

tured. Legs thickly covered with white hairs; the spurs white. Wings clear hyaline; the tegulæ sordid testaceous; the nervures dark fuscous; the second and third cubital cellules at the bottom subequal; the first recurrent nervure is received shortly beyond the middle; the second in the apical third. Abdomen black; the basal segment sparsely covered with long pale hairs; the others belted with white depressed hair at the apex; the ventral segments fringed with white hair; the apical bordered with piceous.

ANDRENA ANONYMA, *sp. nov.*

Long. 11—12 mm.

Hab. Missouri (*Rothney*).

Head black; the front and vertex covered with long pale hairs, the latter alutaceous, except at the top of the eyes, where it is smooth and shining; in front of this smooth space is a spot of dark fulvous hairs; the clypeus strongly punctured, especially towards the base, the apex broadly shining, smooth, with some widely separated punctures, the centre almost impunctate. Antennæ entirely black; the flagellum almost glabrous. Thorax covered with long fulvous hairs, which are paler on the pleuræ; the mesonotum and scutellum almost impunctate, shining; the median segment alutaceous, with a gradually rounded slope; at the base is a shallow indistinct longitudinal furrow. Legs thickly covered with pale hairs. Wings clear hyaline, the stigma and nervures fuscous; the first recurrent nervure is received in the middle, the second in the apical fourth of the cellule. Abdomen shining, smooth, impunctate, the segments fringed with white hairs at their apices; the apical segments thickly covered with fuscous to dirty white hairs; the ventral segments fringed with long white hair.

APIDÆ.

NOMADA CEYLONICA, *sp. nov.*

Ferruginea; capite thoraceque late nigro-maculatis; abdomine flavo-bimaculato; alis fuscis, basi fere hyalinis. ♀.
Long. fere 6 mm.

Hab. Ceylon (*Rothney*).

Head black; the orbits narrowly, the clypeus, mandibles except at the apex, ferruginous; coarsely punctured; the front and vertex covered with long fuscous, the face more thickly with shorter, white hairs; the apex of the clypeus shining, impunctate. Antennæ rufous; almost bare; the flagellum blackish above; the front projecting sharply between the antennæ. Thorax ferruginous, coarsely punctured, rather thickly covered with white hairs; a broad central and two narrower black continuous bands on the mesonotum; the metanotum entirely, the propleuræ, except at the top, the mesopleuræ below the tegulæ, under the wings, and at the apex (but the latter with a long ferruginous mark at the top), the metapleuræ and the sternum, black. The curved furrow in front of the middle coxæ is deep, and the part enclosed by it is much less strongly punctured than the rest of the sternum. The scutellum is strongly punctured and longitudinally depressed down the middle; the post-scutellum is of a paler colour. The median segment is entirely black; the basal area almost rugose; the sides at the front of it very thickly covered with long white hairs. Legs rufous, covered with white hairs; the greater part of the hinder coxæ, the base of the hinder femora, above and beneath, and the hind tarsi, black. Wings fuscous, paler at the base; the stigma fuscous, lighter in the centre. Abdomen shining, impunctate; black. The first segment with a dull ferruginous band before the apex; the second segment

dull ferruginous, black in the centre and with a large yellow mark at the side; the ventral surface ferruginous, marked with black.

A form of what is no doubt the same species has only the central line on the mesonotum black; the median segment broadly black only down the middle; the pleuræ and sternum without black; the abdomen above almost entirely black, except the yellow marks, and the hinder femora without black.

ANTHIDIUM FLAVIVENTRE, *sp. nov.*

Flavum, nigro-maculatum; vertice nigro, flavo-maculato; pedibus flavis; alis hyalinis. Long. 5 mm.

Hab. Poona (Wroughton).

Head yellow, the vertex from the antennæ to shortly behind the eyes, the black surrounding them entirely narrowly behind; on the vertex is a large yellow mark, broader than long, in the centre between the antennæ and the ocelli; strongly punctured, sparsely covered with white pubescence. Mandibles yellow, the teeth black. Antennæ black, shining, the flagellum obscure brownish beneath. Thorax black, strongly punctured; a large mark in front of the tegulæ; on each side of the mesonotum at the base is a thick straight line which curves round the tegulæ to their end; on each side of the median segment is a large yellow mark, obliquely truncated at the apex, leaving a somewhat triangular black mark in the middle at the base, the apex of the median segment transverse, the sides oblique. Pleuræ coarsely punctured; behind covered with white hairs. Legs yellow, thickly covered with white hairs, the hinder femora broadly black at the base. Wings infuscated at the apex; the nervures black. Abdomen above black, coarsely punctured; on the basal five segments are broad yellow lines, which become gradually broader until, on

the sixth, they almost unite; ventral surface lemon-yellow, rugose, thickly covered with short white hairs.

STELIS PARVULA, *sp. nov.*

Nigra; dense albo-hirsuta; tegulis abdomineque albo-maculatis; alis hyalinis. Long. 4 mm.

Hab. Barrackpore (*Rothney*).

Head thickly covered with longish white hairs; the rest of the head covered with similar hair; but not so thickly; the tips of the mandibles piceous; punctured. Antennæ with the scape covered closely with moderately long pubescence; the flagellum with a microscopic pile. Pronotum finely, the mesonotum coarsely, punctured; the pronotum in front fringed with long white hair; the mesonotum in front is also fringed with long white hair; the rest of it has the pubescence sparser and shorter; the scutellum nearly as strongly punctured as the mesonotum; its apex entire, rounded; its sides broadly white. Mesopleuræ thickly covered with white hair; the propleuræ slightly pilose; the meta- as thickly haired as the mesopleuræ; the base of the median segment thickly covered with long white hairs; its apex hardly pilose. Legs black; thickly covered with long white hairs, the knees and apices of the tarsi rufous; the calcaria yellowish-white. Wings clear hyaline; the nervures fuscous; the stigma darker; tegulæ large, yellow, a large black mark in the centre. Abdomen thickly covered with white hairs, especially towards the apex; the sides of the segments with longish, moderately broad yellow marks; the basal two segments narrowly lined with yellow; the third to fifth segments bear two elongated yellow marks; the apical segment has an elongated mark at the sides, and two somewhat roundish ones in the centre. Ventral segments thickly covered, especially at the apices, with long white hairs; their sides lined with yellow.

COELIOXYS.

The species of this genus known to me from India may be separated as follows:—

- 1 (6) Thorax coriaceous, the punctures not distinctly separated.
- 2 (5) With metanotal spines.
- 3 (4) The metanotal spines long, sharp, curved.
basalis
- 4 (3) The spines short, blunt, straight, wings subhyaline.
apicalis
- 5 (2) Without metanotal spines.
argentifrons
- 6 (1) Thorax coarsely punctured, the punctures distinctly separated.
- 7 (8) Thorax with six marks of white pubescence, the scutellum much more finely and closely punctured than the mesonotum.
sexmaculata
- 8 (7) Thorax not maculate, the scutellum not more coarsely punctured than the mesonotum.
- 9 (10) Apex of scutellum projecting in the middle.
fuscipennis
- 10 (9) Apex of scutellum almost transverse, not projecting in the middle.
confuscus, cuneatus

COELIOXYS SEXMACULATA, *sp. nov.*,

Long. 11 mm. ♀.

Hab. Barrackpore (*Rothney*).

Head in front densely covered with white pubescence, which is thicker at the sides; the orbits behind except at the top with similarly coloured hairs; the vertex and front strongly punctured. Antennæ black, almost glabrous. Pronotum strongly punctured, lined with white pubescence; mesonotum more coarsely punctured; the scutellum more closely and finely punctured; there are two white spots on the base of the mesonotum, two on

the base of the scutellum, and a smaller one behind the tegulæ. Scutellar spines stout. Mesopleuræ and metapleuræ thickly covered with white pubescence; strongly punctured. Wings fuscous; more lightly coloured at the base. Legs black; the tarsi beneath thickly covered with golden pubescence; the spurs black. The basal segment closely and rather strongly punctured, margined with silvery white pubescence; the transverse furrow on the second and third segments rugose; the apical segment above closely punctured, keeled down the centre; the keel indistinct at the base, becoming thicker towards the apex, where it is depressed on either side of it. The ventral segments punctured; a band of white pubescence down the centre of the basal; the others transversely banded with silvery pubescence.

Comes near to *C. fuscipennis*, but that species wants the white marks on the mesonotum, which has also the punctures more distinctly separated, this being especially noticeable on the scutellum, where they are round and deep, and not, or hardly, touching each other, whereas in *C. sexmaculata* they are much coarser and closer, forming a rugose surface.

ANTHOPHORA DEIOPEA, *sp. nov.*

Nigra, longe dense pallide hirta; capite nigro ♂ facie alba. Long. 13 mm. ♀.

Hab. Missouri (*Rothney*).

Head black, thickly covered with long pale grey hairs, especially on the front and vertex; the labrum fringed with golden hairs; the mandibles ferruginous, black at the apex. The vertex behind the front ocellus bare, shining, broadly depressed. Thorax thickly covered with long grey hairs all over. Legs: the femora and tibiæ dark rufous; the former sparsely covered with long white hairs, the front four tibiæ covered densely behind with

pale fulvous hairs; the hairs on the hinder tibiæ much longer, thicker, and of a brighter fulvous tint; the tarsi rufous, thickly covered with long golden hairs at the base. Wings hyaline, with a faint fuscous tinge; the costa and nervures blackish; the first recurrent nervure is received shortly before the second transverse cubital nervure; the second is interstitial. Abdomen above and at the sides thickly covered with long pale fulvous hairs; the penultimate segment rufous at the apex; the apical ferruginous, black at the apex, the base closely transversely striated; the sides, especially towards the apex, broadly furrowed; abdominal segments black, the base and apex broadly ferruginous; the segments at the apices thickly fringed with fulvous hairs.

The ♂ is covered all over with long hoary hairs; the clypeus, except at the sides and the inner orbits, cream-yellow; the extreme apex piceous, the mandibles cream coloured; the tips black, ferruginous in front of the black; the labrum black, covered with white hairs; the ventral segments are coloured as in the ♀; this being also the case with the legs, which bear long white hairs.

MEGACHILE SAMSON, *sp. nov.*

Nigra; thorace abdominisque basi rufo-hirsutis; alis fusco-violaceis. ♂. Long. 25 mm.

Hab. Himalayas.

Head deep velvety black, opaque, coarsely alutaceous, thickly covered with black hairs, which are longest and thickest on the front and at the base of the clypeus, which is short, coloured and haired like the vertex, and projecting in the middle into a stout, large, somewhat triangular thickly-haired tooth; its apex shining, and smooth at the sides; the labrum large, as long as the space between the ocelli and the apex of the clypeus,

covered with a dull golden down and with some long black hairs; its apex bearing much longer hairs. Mandibles very large, opaque, the middle above with some elongated punctures and elongated striæ; the apical tooth large; the basal rounded in the middle. Antennæ black, glabrous. Thorax opaque, closely rugosely punctured; above thickly covered with rufous hair, this being also the case on the upper part of the pleuræ; the hairs on the lower part are much darker; on the sternum fulvous, the latter broadly depressed in the middle at the base. Wings smoky, darker and more violaceous at the apex; the base with a slight yellowish tinge; the costa, stigma, and nervures black; the last with a yellowish tinge in the middle of the wing; the recurrent nervures are both received at the same distance from the transverse cubitals. Legs thickly covered with stiff black hairs; the anterior four tibiæ end above in a large stout somewhat triangular process, which ends in a small curved point. The basal abdominal segment broadly depressed in the middle above; the sides, base, and apex thickly covered with rufous hairs; the second segment depressed at the base, fringed with fulvous hairs, this being also the case with the third at the sides; the second and following segments thickly covered with stiff black hairs. Ventral surface thickly covered with long stiff black hairs. The hinder calcaria are short and thick.

This *Megachile* is, next to *M. Pluto* Sm. (from Bachian), the largest of the species from the Oriental Region. Smith's species is 18 lines in length, that being however the length of a ♀, the only sex known to its describer (*Trans. Linn. Soc., V., 1860, 133*). Our species is also apparently related to *M. monticola* Sm., but I cannot make it agree with Smith's description.

MEGACHILE HORNEI, *sp. nov.*

Nigra; facie longe fulvo-hirta; pedibus anticis rufo-testaceis, alis fumatis. ♂. Long. 17 mm.

Hab. Missouri (Rothney).

Head large; below the antennæ and the orbits to the ocelli, densely covered with long fulvous hairs. Mandibles black, covered with long fulvous hairs, and with large clearly separated deep punctures. Antennæ black; the scape closely punctured. Thorax black, closely and rather strongly punctured; the pronotum and prosternum thickly covered with long fulvous hairs; the rest of the thorax thickly covered with black hairs, that on the mesonotum shorter, on the median segment as long as the fulvous hairs on the pronotum. On the base of the median segment is a dull impunctate area dilated into a sharp point in the middle; the rest alutaceous, obscurely punctured; the pleuræ opaque, obscurely punctured, thickly covered with long black hair. Legs: the anterior femora and tibiæ, the base of the middle femora and the lower part of the middle tibiæ in front, fulvo-testaceous; the anterior four tarsi thickly covered with pale fulvous hairs; the hinder tarsi covered with longer, thicker, and whiter hair. Wings at the apex fuscous, with a faint violaceous tinge, lighter below the stigma and at the base. Abdomen black; above closely punctured, thickly covered with black hairs, very long at the base and the apex; the base semicircularly incised; its apex very smooth, shining, and with a bluish tinge; a narrow furrow extends from the middle to the base; the apical dorsal segment deeply incised in the middle; the apex flat; triangularly incised in the middle. The ventral segments fringed with short fulvous hairs at the apex; the apical segment depressed, coarsely punctured, covered at the base with long fulvous hair.

Allied to *M. anthracina* Sm.=*M. fasciculata* Sm., ♂ cf., Horne and Smith (*Trans. Zool. Soc. vii.* (1872), p. 179). The fore coxæ are sharply triangularly produced in front.

MEGACHILE SYCOPHANTA, *sp. nov.*

Nigra; capite thoraceque longe cinereo-hirtis; abdomine subtus longe albo-hirto; alis hyalinis. ♀. Long. 13—14 mm.

Hab. Missouri (Rothney).

Head thickly covered with long hairs; fulvous above, cinereous below the antennæ. Clypeus coarsely punctured; a shining, impunctate longitudinal line down the middle; the teeth on the mandibles blunt, rounded; the inner side of the mandibles smooth; the rest irregularly striated and punctured; the lower side bearing long golden hair. Antennæ black, shining, smooth. Thorax closely and rather strongly punctured; the mesonotum (but very sparsely in the middle) with long pale fulvous hair; the scutellum almost impunctate, the post-scutellum fringed with long pale fulvous hairs; the pleuræ and sternum punctured like the mesonotum and covered with long white hairs. Legs black; the hairs of the tibiæ and tarsi on the inner side thick, deep golden; on the rest of the legs the hairs are longer, sparser, and pale silvery; the calcaria pale. Wings hyaline, the nervures blackish. Abdomen closely punctured, the basal segments thickly covered with long pale fuscous hairs; the third and following segments fringed with short silvery hairs, the third and fourth deeply depressed; the last segment coarsely and closely rugose; the ventral scopa apparently white, but the colour hidden by reddish pollen.

The ♂ is similarly coloured to the ♀; there is no spine before the front coxæ; the apical abdominal segment has no spines; it is broadly and roundly incised; this being also the case with the fourth, and, to a less extent, with the third segment; above the apical segment is depressed at the apex.

MEGACHILE IMPLICATOR, *sp. nov.*

Nigra, longe fulvo-hirta; alis hyalinis, apice fumatis. ♂.
Long. 9 mm.

Hab. Missouri (Rothney).

Antennæ black, the scape with fulvous hairs; the flagellum almost bare. Head densely covered all over with long fulvous hairs, being especially thick and long on the face and vertex. Mandibles entirely black, coarsely punctured at the base, where they have a few fulvous hairs. Thorax thickly covered all over with long fulvous hairs; the mesonotum strongly and closely punctured. Legs thickly covered all over with long pale hairs; those on the under side of the hinder tarsi inclining to fulvous; the claws piceous. The wings are almost hyaline to the end of the radial cellule, when they become fuscous; the tegulæ black. Abdomen black; the basal segment at the apex thickly; the second and third more narrowly fringed with long fulvous hairs; the apical segments with long black hairs; the ventral segments fringed at the apices with long white hairs; the apical broadly and roundly incised.

The anterior four coxæ and the base of the femora are strongly punctured; the apex of the latter very smooth and shining and with a piceous tinge.

Comes near to *M. lanata*; but, apart from the difference in coloration, the latter may be known from it by the strongly rugosely punctured pleuræ and sternum.

MEGACHILE ALBOLINEATA, *sp. nov.*

Nigra; abdomine albo-lineato; femoribus posterioribus rufis; alis hyalinis. ♀. Long. fere 10 mm.

Hab. Ceylon (Rothney).

Head rather closely punctured; the inner and outer orbits of the eyes broadly covered with white hairs; the

clypeus projecting; smooth, shining, impunctate, and slightly notched at the apex; mandibles coarsely punctured, their lower edges smooth, shining, and impunctate, and fringed with long golden hairs. Mesonotum strongly punctured, thickly covered with long fuscous pubescence; the sides, base, and apex of the tegulæ thickly with long white hairs. Base of median segment shining, impunctate; the rest of it closely punctured, and covered with long white hairs. Femora on the lower side sparsely covered with soft white hairs; the tibiæ more thickly; the tarsi still more thickly covered with fulvous pubescence, especially the hinder four. Wings clear hyaline, the nervures and stigma black. Abdomen above rather strongly and closely punctured, black; the segments at the apex densely fringed with white pubescence; the transverse furrows on the second and third segments deep, shining, impunctate. Ventral fringe long; clear white.

MEGACHILE MALIGNA, *sp. nov.*

Nigra; femoribus rufis; abdominis scopa fulva; alis hyalinis. ♀ et ♂. Long. 8—9 mm.

Hab. Missouri (*Rothney*).

Head black, the front and face thickly covered with long pale fulvous hair; the vertex closely punctured, the hairs much sparser and of a deeper fulvous tint. Mandibles strongly punctured, thickly covered at the base with long pale fulvous hairs; the apical two teeth stout; the part at their base piceous. Antennæ entirely black. Thorax coarsely alutaceous, thickly covered with white hairs, which are especially long on the sides and metanotum, where they are of a paler tint. Median segment alutaceous, its slope rather abrupt. The fore femora black; the lower side entirely and the upper side at the base above, and the hinder four pairs, rufous; the tibiæ

and tarsi thickly covered with white hairs, which have a fulvous tint on the metatarsus; the spurs pale testaceous; the apex of the hinder tibiæ piceous on the outer side. Abdomen black; above closely punctured; the segments fringed with silvery pubescence; the scopa pale fulvous; the basal ventral segment rufous.

The ♂ is similarly coloured to the ♀; except that the ventral segments are rufous, except the apical one, which is depressed broadly in the middle, and cleft slightly and roundly; on either side are three stout teeth, which become successively, but not much, shorter. On the sternum in front of the fore coxæ are two stout projecting plates, curved on the inner side, straight and slightly oblique on the outer.

MEGACHILE PULCHRIPES, *sp. nov.*

Nigra, longe argenteo-pilosa; coxis, trochanteribus, femoribus tibiisque posticis, rufis; alis hyalinis, stigmatе fusco. ♀. Long. 6 mm.

Hab. Missouri (*Rothney*).

Head coarsely punctured; the inner orbits thickly covered with white depressed pubescence; the rest of the head sparsely covered with fuscous hairs; the labrum bears some long golden hairs; a straight keel runs from the base of the antennæ to the apex of the clypeus, the part on the latter being the thinner; the mandibles furrowed on the lower side; the teeth piceous; the apical two large. Antennæ black, shining, smooth. Thorax coarsely punctured; the scutellum more strongly than the mesonotum; the scutellum at the sides projecting into triangular teeth at the apex; the rest of the apex rounded, sparsely pilose; the edge of the pronotum and the base of the scutellum thickly covered with white hairs. The median segment sharply oblique, its sides thickly covered with white woolly hairs. Propleuræ finely and closely

punctured; the mesopleuræ with the punctures much larger, those at the top being more widely separated and larger; the top, base, and apex thickly covered with white hairs. Legs thickly covered with white hairs, especially the tarsi; the base and apex of the fore femora; the hinder four femora entirely, the apex of the hind coxæ, the apex of the middle trochanters and the hinder trochanters, the hinder tibæ and the hinder tarsi broadly at the base, rufous; the hinder tibæ and base of tarsi strongly punctured; the lower part of the metatarsus covered thickly with long golden hairs; the calcaria pale golden. Abdomen closely punctured; the segments fringed with silvery hairs; interrupted on the basal segment; the abdominal segments strongly punctured; the scopa pale fulvous. Wings clear hyaline, the nervures and stigma fuscous.

MEGACHILE PARVULA, *sp. nov.*

Nigra, dense albo-pilosa; alis hyalinis, nervis nigro-fuscis. ♀. Long. fere 6 mm.

Hab. Missouri (*Rothney*).

Front and vertex strongly punctured, the former not so strongly as the latter; the clypeus more closely and not quite so strongly punctured as the front; the vertex covered with long fuscous hairs; the inner orbits and the clypeus more thickly with white pubescence, especially the orbits; the clypeus slightly projecting; its apex curved; the labrum thickly fringed with golden hairs; the mandibles closely punctured; the apical three-fourths deeply furrowed; the two stout teeth rufous. Antennæ shining, almost glabrous. Thorax strongly punctured; the pronotum and the sides of the mesonotum fringed thickly with white hairs; the post-scutellum covered with much longer hairs. The base of the median segment with short stout longitudinal keels all over; those at the sides more widely separated and a little longer; the apex

smooth, shining, impunctate, glabrous at the top; the rest of it obscurely punctured and sparsely covered with white hairs. Pleuræ coarsely punctured, and covered with long white hair; a shining, impunctate, semi-oblique furrow on the lower three-fourths of the mesopleuræ at the apex; the base of the metapleuræ finely and closely punctured. Legs thickly covered with white hairs; those on the under side of the hinder tarsi fulvous; the calcaria fulvous; the claws rufous. Wings clear hyaline; the nervures and stigma dark fuscous. Abdomen closely punctured; the base smooth and shining; the segments fringed with white hairs; the ventral scopa fulvous.

MEGACHILE CHRYSOGASTER, *sp. nov.*

Nigra; capite thoraceque albis; abdomine subtus longe aureo-hirto; alis hyalinis. ♀. Long. 7 mm.

Hab. Mussouri (Rothney).

Head strongly and closely punctured; the vertex sparsely, the front more thickly covered with long fuscous hairs; the sides of the clypeus and between the antennæ thickly covered with long white hairs; the mandibles coarsely punctured, their lower side fringed with long golden hairs. Antennæ shining, the scape slightly pilose; the flagellum glabrous. Mesonotum rather strongly punctured; sparsely covered with long fuscous hairs; the scutellum with the punctures larger and more widely separated; its apex fringed with long white hairs (longer than those on the mesonotum). The base of the median segment is coarsely crenulated, the edge being stoutly keeled; the apex with a sharp abrupt slope, and covered with long white hairs. Pleuræ strongly punctured, thickly covered with long white hairs. Abdomen shining; the basal segment with an abrupt, very slightly concave, slope; the top at the base with a distinct raised margin, the part behind this being depressed and crenulated. The

other segments covered with shallow clearly separated punctures; the basal segments bare; the apical thickly covered with silvery pubescence, especially at their apices; ventral hairs dense, aureo-fulvous; the apical segment strongly punctured, fringed at the apex with pale fulvous hairs. Legs stout, covered with long white hairs; the anterior femora and tibiæ strongly punctured, the tibiæ almost rugose; the tarsi densely covered with long golden hairs. The wings clear hyaline; the nervures black; the tegulæ black, edged with white in front; shining, impunctate.

CERATINA PROPINQUA, *sp. nov.* (Pl. 4, f. 20).

Cærulea; clypeo, geniculis tarsisque albis; alis hyalinis.
♀. Long. 4—5 mm.

Hab. Missouri (Rothney).

Head blue, an elongated shining impunctate white mark, rounded at the top, a little dilated at the apex, on the clypeus; the front in centre broadly carinate, the apex however of it being sharply margined, and from the ocelli a curved shining keel runs into it from either ocellus; the front and vertex very finely punctured; the face on either side of the white mark with large irregular punctures, which are continued up in a single row along the inner orbits. Antennæ black, brownish beneath. Mesonotum closely and finely punctured, shining; the scutellum more closely and finely punctured; the median segment finely and closely punctured, shining, except in the middle at the base; the pleuræ closely punctured. Legs thickly covered with white hairs; the anterior femora at the apex above and more broadly beneath, and the tibiæ and tarsi white; the tibiæ for the greater part fuscous behind; the hinder tibiæ fuscous, white at the base. Wings clear hyaline, the nervures fuscous, the stigma darker; the first and second transverse cubital

nervures roundly curved and meeting closely at the top, where they are separated by about the space bounded by the first recurrent and second transverse cubital nervures; the third cubital cellule at the top is twice the length of the space bounded by the second recurrent and third transverse cubital nervures. Abdomen closely shagreened, shining and impunctate at the apices of the segments above and beneath.

Differs from the other green and blue species by the very much less strongly punctured head and thorax.

CERATINA TAPROBANÆ, sp. nov.

Viridis; abdomine nigro, late flavo-balteato; pedibus flavis; alis hyalinis. Long. fere 4 mm.

Hab. Ceylon (Yerbury).

Head green, shining, sparsely covered with pale hairs, clypeus, labrum, mandibles, and palpi pale yellow; the clypeus with two black lines. Scape of the antennæ yellow; the flagellum yellow beneath, black above. Thorax green, the scutellum dark purple; the metanotum of a darker green than the mesonotum, coarsely alutaceous; the pleuræ green, very finely punctured; the edge of the pronotum and the tubercles lemon-yellow. Legs yellow; covered densely with white hairs; the coxæ, trochanters, the basal third of the anterior femora; the basal half of the middle, and the basal fourth of the hinder, black. Wings hyaline; the stigma and nervures pallid testaceous; the recurrent nervures are almost interstitial. Abdomen pallid yellow; the second and third segments broadly black in the middle; the others broadly black at the base; the ventral segments broadly banded with black.

CERATINA BEATA, *sp. nov.*

Nigra, flavo-maculata; alis hyalinis. Long. fere 5 mm.

Hab. Trincomali, Ceylon (Yerbury).

Head shining, impunctate, glabrous, lemon-yellow; a broad black line runs down to the mandibles, curving round the side of the clypeus, and continued broadly upwards till it joins a broad black mark on the vertex, enclosing two yellow marks joined at the apex above the antennæ, these two yellow marks being joined to the lower yellow one by a narrow line between the antennæ; the inner orbits are yellow; behind the eyes is a broad yellow line which reaches near to the base of the mandibles, nearing the eyes as it does so; on the top of the occiput is a yellow line dilated in the middle; the vertex behind the eyes has large shallow punctures; the mandibular teeth black. Antennæ black, rufo-testaceous beneath; the scape having a yellower line. Prothorax yellow; the mesonotum black, with two yellow longitudinal lines in the centre and two narrower ones at the sides, neither reaching the base nor apex; its base obscurely punctured. Scutellum and post-scutellum yellow; the sides and apex of the median segment shagreened. Mesopleuræ closely punctured, yellow, except a broad line, below the wings and round the apex; the metapleura black; under the wings is a raised shining spot. Legs entirely lemon-yellow; thickly covered with white hairs. Abdomen yellow, shining, minutely punctured, the segments broadly black at the base; the ventral surface yellow.

CERATINA MODERATA, *sp. nov.*

Nigra; labro, clypeo, basi tiliarum, lineisque abdominis, flavis; alis hyalinis. Long. 5 mm.

Hab. Missouri (Rothney).

Black; the labrum, clypeus, a curved line on the face close to the eyes and between the antennæ, the dilated

yellow mark on the clypeus, and a transverse mark roundly dilated in the middle above, yellow. Front and vertex sparsely covered with long fuscous hairs; the face below the antennæ with three irregular rows of round punctures; the front depressed sharply between the antennæ and with a row of punctures between the furrow, the orbits above bordered with a row of punctures; the vertex punctured, except at the sides of the ocelli, the punctures large, clearly separated. Antennæ black, shining, the scape sparsely clothed with long white hair; the flagellum bare. Thorax shining, rather closely covered with white pubescence, which is darker in front than it is at the apex; the apex of the pronotum broadly yellow; the mesonotum shining, bearing widely separated shallow punctures; the scutellum minutely punctured. The base of the median segment has an elongated finely rugose area, bordered with a shining, impunctate space, the rest of the segment obscurely shagreened, and with an indistinct shallow narrow furrow down the middle; the propleuræ shining, the mesopleuræ with large, widely separated punctures; the metapleuræ alutaceous. Legs black, thickly covered with long white hairs; the lower apical half of the fore femora, the front four tibiæ before, the hind tibiæ also, but with a black line in the centre, bright yellow; the tarsi covered thickly with long white hairs; the front pair inclining to testaceous. Wings clear hyaline, the nervures testaceous; the first transverse cubital nervure is oblique; the second gradually curved towards it at the top; the second cubital cellule at the top is not half the length of the third; the first recurrent nervure is received slightly less than the length of top of the second cubital from the second transverse cubital nervure. Abdomen shining at the base, the rest more opaque, shagreened, and clothed closely with white hair; the ventral segments closely punctured.

CERATINA ORNATIFERA, *sp. nov.*

Long. 8 mm.

Hab. Missouri (*Rothney*).

Very similar to *C. hieroglyphica*, but with the legs entirely black, except a yellow line on the tibiæ.

Head shining, sparsely covered with long fuscous hairs; the vertex with scattered punctures; a depression, narrowed towards the apex, in front of the anterior ocellus; the sides of which are flat, shining, and bear a row of punctures, there being a row of three inside of it at the apex; there is a sharp keel between the antennæ, from which the sides slope sharply and are punctured. The clypeus has widely separated punctures, except in the centre; the labrum is rugosely punctured. Antennæ entirely black, smooth, shining, the scape with a few long fuscous hairs. On the clypeus, extending from the base to the apex, is a broad yellow mark, which at its apex extends on either side to the base of the mandibles, where it is bounded by a curved furrow; on each side of the central yellow mark is a yellow mark with its apical half broadened on the inner side; and over the central yellow mark is a broad curved one which extends beyond its sides, and there are two oblique broad lines, narrowed at base and apex behind the eyes; above the antennæ are two yellow marks wider than long. Thorax black, shining; the pronotum with a broad line on either side in the centre; the tubercles, the apex of the tegulæ and a broad slightly curved mark on the scutellum, yellow; the scutellum slightly punctured at the base and apex; the median segment coarsely shagreened; the base flat, more shining in front laterally. The propleuræ at the top shining, smooth; the rest closely and strongly longitudinally shagreened; the mesopleura and sternum with large distinctly separated punctures; the metapleuræ at the base closely punctured, the rest coarsely shagreened.

Legs thickly covered with long pale hairs; a mark on the under side of the fore femora; the tibiae above yellow, the yellow becoming successively longer, but not reaching to the apex; the hairs on the hind tibiae and tarsi very long and thick. Wings clear hyaline; the nervures and stigma fuscous; the top of the second cubital cellule is as wide as the space bounded by the first recurrent and the second transverse cubital nervures. Abdomen shining, smooth; the basal segment above, with a deep wide somewhat triangular depression, but with the apex rounded; on the apex of the basal segment is a yellow line, intersected by two square black marks, the second, third, and fourth segments bordered with yellow, which is dilated at the sides. Ventral segments strongly and closely punctured, lined with yellow at the apices and covered with long white hair.

The ♂ is similar; but with the yellow markings larger; there is a curved yellow mark on the mesonotum near the scutellum and two long narrow ones down the sides; the yellow line behind the eyes much larger; that on the scutellum much larger and dilated widely in the middle at the apex; the yellow on the anterior four tibiae and tarsi more extended; and the yellow bands on the abdomen are broader above and beneath.

ANTHOPHORA ROTHNEYI, *sp. nov.*

Nigra, longe pallide hirta; abdomine pallide argenteo-fasciato; scapo antennarum, mandibularum basi oreque flavis; clypeo nigro-bimaculato; alis hyalinis, nervis nigris.
♀. Long. 10—11 mm.

Hab. Missouri (Rothney).

Head densely covered with hoary hairs, longest and thickest on the top; the labrum and clypeus yellow, obscurely punctured; the two marks on the clypeus are dilated at the apex and reach from the base to shortly

beyond the middle. Antennæ black, the scape yellow beneath, sparsely covered with long white hairs. Mandibles yellow, the apex black. Thorax covered, except on the scutellum, with long hoary hair; the scutellum closely and rather finely punctured, except in the middle. Legs black; the femora sparsely in front bearing white hairs; all the tibiæ in front and the four front tarsi in front thickly covered with silvery white hairs; the hinder tarsi thickly covered with black stiff hairs. Wings clear hyaline; the nervures black; the second cubital cellule at the top is as wide as the space bounded by the first transverse cubital and the first recurrent nervure; the second recurrent nervure is almost interstitial. Abdomen black; the ventral segments more or less piceous; the dorsal segments fringed with depressed silvery hair.

The ♂ wants the black marks on the yellow clypeus; the flagellum is brownish beneath; the apical ventral segment is deeply furrowed down the middle, and the sides are also deeply and more widely furrowed; the bounding keels being acute, stout; the space between them in the centre slightly hollowed.

Agrees with *A. cincta* in form and general coloration; but is smaller; the hairs on the head and thorax hoary, not fulvous; and the fasciæ on the abdomen are pale silvery, not blue.

SOCIALES.

TRIGONA BENGALENSIS, *sp. nov.*

Nigra, nitida; antennis flavo-testaceis; abdominis basilate brunneo; alis hyalinis. ♀. Long. 3 mm.

Hab. Barrackpore (*Rothney*), in old tree stumps.

Head black, shining, the face thickly covered with white pubescence, the mandibles and palpi rufo-testaceous. Antennæ entirely rufo-testaceous. Thorax shining, impunctate; the pleuræ thickly covered with long white

hairs, but more sparsely in the middle; the mesonotum sparsely covered with longish fuscous hairs; the semicircular depression at the base of the scutellum deep; the scutellum fringed with long fuscous hairs at the top and at the apex behind, the latter oblique, projecting at the top; the median segment very smooth, shining, glabrous, rounded. Legs covered with white hairs, shining, the apical four joints of the tarsi testaceous; the hinder femora and tibiae have a piceous tinge. Wings clear hyaline, the stigma pallid-testaceous; the radial nervure complete; the cubital only extending to the middle of the second cubital cellule; the two transverse cubital nervures very faint, almost obsolete.

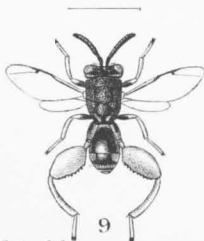
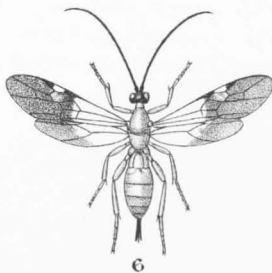
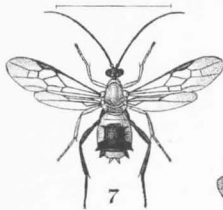
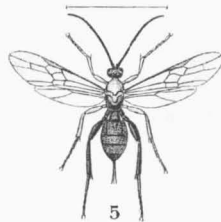
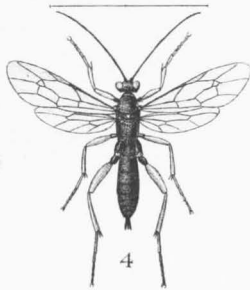
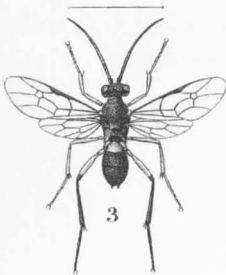
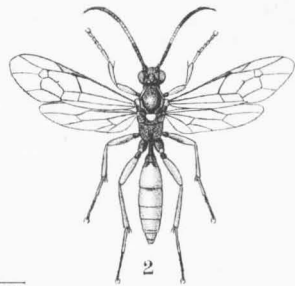
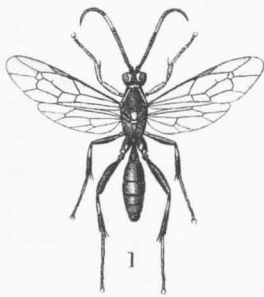
Explanation of Plates.

PLATE 3.

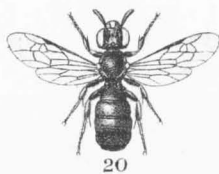
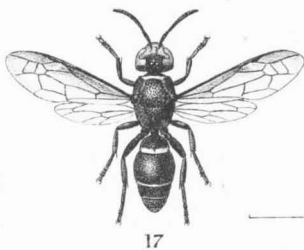
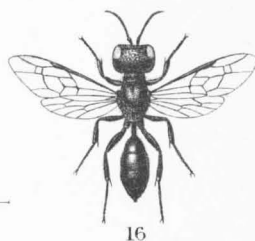
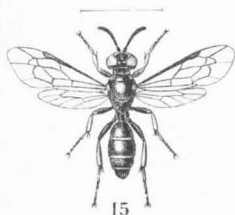
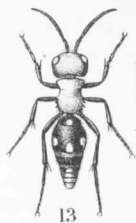
- Fig. 1. *Ichneumon clotho*.
,, 2. *Ichneumon Rothneyi*.
,, 3. *Rothneyia Wroughtoni*.
,, 4. *Pimpla nepe*.
,, 5. *Bracon ceylonicus*.
,, 6. *Bracon agraensis*.
,, 7. *Spinaria nigriceps*.
,, 8. *Epyris amatorius*.
,, 9. *Chalcis bengalensis*.
,, 10. *Temnata maculipennis*.

PLATE 4.

- Fig. 11. *Methoca* ♂ *rugosa*.
,, 12. *Methoca* ♀ *bicolor*.
,, 13. *Mutilla ædipus*.
,, 14. *Mutilla Rothneyi*.
,, 15. *Pison* (*Parapison*) *Rothneyi*.
,, 16. *Cemonus fuscipennis*.
,, 17. *Rhynchium basimacula*.
,, 18. *Halictus tardus*.
,, 19. *Andrina gracillima*.
,, 20. *Ceratina propinqua*.



W. Purkiss, del. et lith.



W. Purkiss, del. et lith.

HYMENOPTERA ORIENTALIA.

