VII. *Further additions to Mr. Marshall's Catalogue of British Ichneumonidæ.* By JOHN B. BRIDGMAN, F.L.S.

[Read March 7th, 1883.]

It is not without much hesitation that I have ventured to publish this paper, containing as it does the description of several insects which appear to me to be new: it is almost impossible, living in the country and being unable to spare time sufficient to stay in London long enough to hunt up all stray notes, to make oneself acquainted with all the descriptions that are written, to be certain that some of these insects may not have been previously named. I have described several species of the genus *Hemiteles*, Gr., which do not appear to be described in Gravenhorst, Ratzeburg, or Taschenberg; also some species of Ratzeburg's genus *Hemimachus*, which he split off from *Hemiteles*, and which appears to contain only some males of *Pezomachus*, and which genus has no right to a separate existence. I have also described two very distinct females of *Pezomachus*, and the male of *P. vagans*, which I bred, with the female, from a spider's nest. Mr. Bignell has also been fortunate enough to breed both sexes of *P. instabilis*, var., and *P. analis*, var.

I have again to thank the same gentlemen as last year, to whom I am indebted for much of the subject-matter of this paper; also to the Rev. T. A. Marshall.

ICHNEUMONIDÆ.

ICHNEUMONIDES OXYPYGI.

Ichneumon consimilis, Wesm.

Wesm., Tentamen, 22, 2, ♀; Ichn. Otia, 8, 3, ♂, ♀; Rem. Crit., 13.

I have taken both sexes of this *Ichneumon* in Norfolk. The female I have had for some years; the male I took last year at Cromer, in June. I have both the varieties of the male described by Wesm., as well as another

which has the extreme apex of the scutellum white. The female has not the tuft of pubescence on the under side of the hind coxæ.

ICHNEUMONIDES PNEUSTICI.

Herpestomus nasutus, Wesm.

Wesm., Tent., 170, ♂, ♀; Mant., 77, ♀.

I took this species in the neighbourhood of Norwich in the autumn of 1881.

Herpestomus intermedius, Wesm.

Wesm., Tent., 171, ♀; Mant., 77, ♀.

Captured by Mr. Bignell in the neighbourhoods of Plymouth and Exeter.

Herpestomus furunculus, Wesm.?

Wesm., Tent., 171, ♀.

I have taken an *Herpestomus* which comes very near this, but differs from Wesmael's description in the legs being decidedly thinner, and not stouter than *H. intermedius*, as he says. These three species are much alike. Wesmael says (Mant., 1848, 77) that probably *intermedius* is a variety of *nasutus*; if the insects which I believe to be these species are correctly named, they certainly are distinct; the puncturing of the whole body is very different.

Phæogenes homochlorus, Wesm.

Wesm., Tent., 184, ♀.

A female of this very distinct species was taken by Mr. T. R. Billups at Chobham last year.

Æthecerus dispar, Wesm.

Wesm., Tent., 203, ♂, ♀; Mant., 90, ♂, ♀.

Mr. Bignell took a female of this species at Egloskerry, near Launceston, on July 23rd last.

Æthecerus discolor, Wesm.

Wesm., Tent., 204, ♂, ♀; Mant., 91.

I took a female of this *Æthecerus* several years ago, but, from its being fastened on a card, I did not recognise it till I reset it last year. Norwich, September, 1877.

CRYPTIDÆ.

Phygadeuon Marshalli, n. s.

Phygadeuon procerus, Gr., I. E., ii. 724, var. 2, ♂.

Segmentis 2—4 fusco- aut nigro-maculatis; femoribus tibiisque rufis, posticis apice nigris.

Head not buccated behind the eyes; mesothorax trilobed; metathorax with two irregular transverse curved lines, supero-medial area not closed at the sides; head and thorax opaque, finely and closely punctured. Abdomen cylindrical; 1st segment but little wider at the apex than at the base; spiracles placed a little behind the centre, slightly projecting, puncto-aciculate; 2nd segment about twice as long as wide, remaining ones transverse, distinctly punctated, the 2nd the most strongly so. Areolet of wings pentagonal, nervelet, sometimes a trace, sometimes absent altogether; transverse anal nervure divided below the middle; legs slender.

Black; legs red, coxæ black; middle trochanters brown-stained; basal joint of hind trochanters black, as well as the apex of hind tibiæ and tarsi; 2nd and 3rd segments of the abdomen red, with a dark transverse fuscous band before the apex, the band on the 2nd broader and transversely subdivided; 4th, 5th, and 6th segments with a narrow red margin at the apex; stigma and nervures nigro-fuscous. Male. Length, 6 mm.

There are two specimens of a male *Phygadeuon* in a collection which once belonged to the Rev. T. A. Marshall, labelled "*P. procerus*, Gr., var. 2, n. sp." They agree very well with Gravenhorst's description of this variety. Taschenberg says, in his revision of the Gravenhorstian species, that var. 2 is wanting; it differs from Taschenberg's description of the genuine *procerus* in having the areæ of the metathorax incomplete, the other having complete areæ, and the abdomen is differently coloured; whilst, according to Gravenhorst, the post-petiole is wider than in *P. Marshalli*.

Taken at Bugbrooke, near Northampton.

As I believe Mr. Marshall had not described this insect, I have taken that liberty, and have named it after him.

Hemiteles obscurus, n. s.

Niger, pedibus piceis.

Head shining, transverse ; face rather protuberant in the middle ; clypeus distinctly separated from the face ; mandibles rather broad, teeth subequal, the space between the eyes and the mandibles about equal to the width of the clypeus ; a deep semicircular impressed line above the antennæ ; these latter short, flagellate, about two-thirds the length of the insect ; flagellum in one specimen 15 joints, in the other 14 ; 1st joint more slender than the rest, about three times as long as wide ; the remainder gradually decreasing in length to the last one, which is conic and about two and a half times as long as the width of the base, the four or five joints before almost of the same length, quadrate. Thorax about one-quarter longer than high, closely and distinctly punctate, opaque, trilobed, divisions deep and rather wide ; scutellum rather long, keeled at the base ; metathorax shining, with a few scattered rugosities ; superno and postero-medial united, somewhat of a broad coffin-shape, with the long end upwards ; lateral areæ divided ; lines sharply defined, terminating laterally in a short, sharp spine ; 1st segment of abdomen and basal two-thirds of the 2nd somewhat transversely rugose ; the remainder shining. Abdomen subovate ; 1st segment stout, about two and a half times as long as the width of the apex ; this twice as wide as the base ; spiracles about in the middle ; gradually sloping from the base to these, and then the sides not quite parallel ; all the remaining segments transverse, the 3rd the widest. Legs slender. Stigma of median size and shape ; areolet pentagonal, with outer nervure entirely wanting ; the recurrent discoidal nervure absent, as also is the lower half of the transverse discoidal ; the transverse ordinary not interstitial ; the lower nervures of the hind wing very faint, transverse anal not divided.

Black ; front legs ochraceo-piceous ; coxæ and trochanters black, apex of latter pale ; middle and hind legs, coxæ black ; trochanters, base dark, apex pale ; femora piceous, paler behind ; tibiæ piceous, paler at the

base ; all the tarsi piceous ; stigma and nervures piceous, base of wings pale. Male. Length, 3 mm.

This insect is, in the shape of the abdomen, somewhat like *fulvipes*, but the legs are more slender, the neurulation also is very different, and the 1st segment is not so broad, &c.

I bred two specimens, unfortunately both males, from the egg-bags of a spider which I found in a rolled-up nettle-leaf, protected by the spider herself ; one was developed from each bag. Norwich.

Hemiteles submarginatus, n. s.

Pedibus fulvis, coxis anterioribus albis, posticis nigris ; tibiis posticis apice fuscis ; marginibus segmentorum intermediarum rufescentibus ; mas, antennarum subtus basi albis.

Head transverse, slightly narrowed behind the eyes ; face between the eyes parallel ; space between the eyes and the mandibles about equal to the width of the base of the mandibles ; clypeus separated from the face, but not by a sharp line ; the teeth of mandibles subequal, the upper one a little the longer ; head somewhat shining, very finely and closely punctured, a shining depression over each antenna ; this latter in the female subfusiform, as in *H. fulvipes* ; 1st joint of the flagellum about three times as long as wide, the 2nd and 3rd of the same length, filiform in the male, a little shorter than the abdomen ; face pubescent. Thorax subopaque, finely reticulate, trilobed in front ; lines reaching to about the middle of the mesonotum ; metathorax rather short, with two transverse curved lines, with fine longitudinal aciculations ; lateral lines occasionally present, whereby a supero-medial area is formed, which, when present, is rounded in front and wider than behind ; the posterior face divided into three areas. Abdomen of female elongate-ovate, male elongate ; 1st segment of abdomen about twice as wide at the apex as at the base, and about three times as long as the width of the apex, rather wider in the female than in the male ; spiracles placed behind the middle, but not prominent ; petiole with two obsolete ridges, the whole segment aciculate ; 2nd segment finely rugose at the base ; this and remaining segments of female transverse ; 2nd of male rather

longer than wide, the 3rd subquadrate, remainder transverse; styles of male not projecting; aculeus of female about one-third the length of the abdomen. Legs slender. Areolet pentagonal; exterior nervure absent; transverse anal obsoletely divided below the middle.

Black; mouth, mandibles, except the red teeth, scape beneath more or less, front coxæ almost entirely, apex of middle ones, front and middle and part of hind trochanters, pale yellow. Legs straw-coloured; middle and hinder ones more or less infuscated; hind coxæ black; incision of 2nd and 3rd segments of the male more or less stramineous; apical margin of segments of female obsoletely pale; base of wings yellow; nervures and stigma yellowish white, the former rather the darker. Length about 3 mm.

This species I have bred from *Microgaster* cocoons taken in the neighbourhood of Norwich. I have also seen a specimen bred by Mr. G. C. Bignell, which appears to me to differ only in having the spiracles of the 1st segment more prominent; it may be another species or only a local variety.

This insect at first sight looks very like small specimens of *H. fulvipes*, both in shape and colour, but differs from it in having the 1st abdominal segment much narrower; the intermediate segments are generally slightly pale at the apex; the first three joints of the flagellum of the female are longer than in *fulvipes*; and the styles of the male do not project, in *fulvipes* they are of considerable length.

Hemiteles marginatus, n. s.

Niger, segmentis intermediis abdominis margine pallido; segmentis 1 et 2 aciculatis, pedibus maximis ex parte pallidis.

Head subbuccated, behind the eyes scarcely narrowed, shining, finely punctate; antennæ about as long as the insect, filiform, in the female the apical half slightly swollen; female, 1st and 2nd joints of the flagellum about four times as long as wide, the 3rd a little shorter; male, three first joints subequal, about three times as long as wide. Mesothorax opaque, finely and densely punctate; scutellum and metathorax shining, the former with a few scattered punctures; the latter in the female

with the two transverse lines distinct, between them fine longitudinal rugæ; in the male there are scarcely any rugæ, but the lateral lines are perceptible, forming a supero-medial area, longer than broad, wider in front than behind, rounded in front; back part with the two central longitudinal lines; thorax a little longer than high; metathorax of ordinary length, back part nearly upright. Legs slender. Wings, the outer nervure of areolet wanting, or so thin as to be hardly visible, the exterior inferior angle of the discoidal cell quite beyond the corresponding angle of the areolet, no trace of nervelet, transverse ordinary interstitial, transverse anal nervure of hind wings, before the fork, divided one-third from the bottom; emitting nervure indistinct. Abdomen, 1st segment without projecting spiracles, faint indications of them in the female, gradually widening from base to apex, finely aciculate in the female, aciculations hardly visible in the male, but in the centre of the postpetiole a distinct oval pit; 2nd segment aciculate, the aciculations caused by punctures running into one another, quadrate in the male, about one-fourth wider than long in the female; the remaining segments of both sexes transverse, the 3rd segment of the female the widest; abdomen of male cylindrical from the 2nd segment; 3rd distinctly punctate, apical margins of 1 to 3 and remaining segments entirely polished, but with fine hairs, and their pits, these not dense, a slight transverse depression before the apex of the 2nd and 3rd segments; aculeus one-third the length of the abdomen.

♀. Scape of antennæ beneath, and a distinct fine line on apical margin of all the abdominal segments, except the 1st, pale straw-colour; legs pale fulvous; front and middle coxæ, and all the trochanters, yellow; front and middle tarsi dark at the apex; intermediate knees and apex of tibiæ brownish; hind legs, coxæ black, femora slightly browned above, extreme knees, apex of hind tibiæ and tarsi black-brown; tegulæ, stigma, and base of wings pale yellow, nervures brown. Male only differs from the female in having the yellow bands of the abdomen less distinct, and the abdomen more pubescent. Length, 4—5 mm.

Taken by Mr. P. Cameron.

Hemiteles politus, n. s.

Abdomine medio, basi antennarum, pedibusque rufis; apice femorum et tibiaram posticorum nigris; basi stigmatibus alba; aculeus dimidii abdominis longiore.

This *Hemiteles* is at first sight like *oxyphimus*, but the wings have not the fuscous band, the legs are more slender, the 1st segment of the abdomen is much narrower and polished, not aciculate, and the aculeus longer.

Shining, covered with very scattered, erect, stiff hairs, more dense on the centre of the mesothorax, which is slightly wrinkled. Head transverse, sloping behind towards the neck, sides rounded; the width behind the eyes rather less than the breadth of the eyes; face transverse, inner orbits parallel, very slightly immarginate against the antennæ; face rather protuberant in the centre; clypeus distinctly separated from the face, prominent and widely rotundate at the apex. Antennæ reaching to the middle of the 3rd abdominal segment, filiform; 1st joint of scape about as long as wide; first three joints of flagellum subequal in length, about four times as long as wide, the 4th one-third shorter, the remainder gradually tapering, the penultimate joint slightly longer than wide; flagellum 18 to 19 joints (in the three specimens two had 18 and one 19 joints). Thorax rather short, about one-fourth longer than high; mesothorax faintly trilobed in front; metathorax with distinct superior area; superno-medial area longer than wide; hexagonal wider behind than in front; lateral spines prominent; intermediate lines on posterior face more or less distinct; 1st segment of abdomen gradually tapering from base to apex; spiracles distinctly projecting, about three times as wide at the apex as at the base, subcanaliculated, sometimes obsoletely rugose, rather more than twice as long as the width of the apex; remaining segments transverse, the 3rd the widest, this wider than the thorax; abdomen about as long as the head and thorax; aculeus about two-thirds the length of the abdomen and straight. Legs slender. Areolet of wings pentagonal, outer nervure wanting, exterior inferior angle of discoidal cell just beyond the same angle of the areolet, transverse ordinary nervure almost interstitial, transverse discoidal divided one-third from the bottom; transverse anal slightly *post-furcal*, divided one-third from the bottom; emitting nervure distinct.

Black; three first joints of flagellum entirely, and to the middle beneath more or less red; 2nd segment of abdomen, base of 3rd, and legs, red; base of coxæ sometimes more or less fuscous; apex of hind femora and tibiæ blackish brown; extreme base of hind tibiæ brown. Wings with a slight fuscous tinge; stigma and nervure brown; base of wings and stigma white. Length 3·75—4 mm.

Three females taken in the neighbourhood of Exeter by Mr. G. C. Bignell on September 23rd, 1882. In Rev. T. A. Marshall's collection are specimens from Sandwich, Milford Haven, and Braemar.

Since the above was written I have seen another specimen taken by the Rev. W. W. Fowler; it differs from Mr. Bignell's specimens in having the abdomen not so broad, but in no other respect. Dr. Capron has also taken this variety in the neighbourhood of Shere. This species appears to be generally distributed, and is probably not uncommon.

Hemiteles subannulatus, n. s.

Abdominis medio et pedibus rufis, antennarum annulo albo, fascia alarum fusca.

Opaque, closely and finely punctate; head, seen in front, subtriangular, narrow behind the eyes; clypeus indistinctly separated from the face; a slight protuberance below the antennæ, canaliculate above; 1st and 2nd joint of flagellum of equal length, about three times as long as wide. Mesothorax trilobed; groove before the scutellum finely aciculate; metathorax long; superomedial area hexagonal, a little wider behind than in front, about twice as long as wide; costæ fine but distinct, the posterior transverse one and those on the posterior part of the metathorax very prominent; postero-medial area well defined, and, seen sideways, the posterior lateral costa appears in the form of a distinct spine; 1st abdominal segment almost gradually tapering from base to apex, slightly more than twice as long as wide, the apex nearly three times as wide as the base, apical margin distinctly trilobed; spiracles obsolete; post-petiole marked with an oval depression; abdomen elongate, ovate; 2nd and 3rd segments of equal length; the 3rd the widest, and about twice as wide as long, this rather wider than the thorax; aculeus about as long

as the 1st segment, or one-third the length of the abdomen. Legs slender. Areolet pentagonal, wider than long, recurrent nervure received before the middle, the posterior inferior angle of the discoidal cell opposite the corresponding angle of the areolet, transverse anal nervure subopposite, distinctly divided just below the middle, nervure distinct.

Black; legs, apex of 1st, 2nd to 4th segments of abdomen, pale chestnut-red; the 3rd and 4th fuscous at the sides; apex of abdomen pale; 4th to 7th joints of flagellum more or less marked with white above, nearly ringed in the middle; 1st and 2nd joints rufo-fuscous at the base; base of wings yellowish; stigma brown, apex white; nervures fuscous; a diffused fuscous cloud running across the wing, beginning about opposite the middle of the stigma. Length, 5 mm.

Taken by Dr. Capron in the neighbourhood of Shere.

Hemiteles mixtus, n. s.

Basi antennarum, pedibus, abdominisque medio, rufis; aculeo dimidio abdomine longiore.

Head and thorax smooth and shining, with scattered white pubescence; head somewhat buccated behind the eyes; apex of clypeus rounded, separated from the face. Antennæ short and stout, as in *Phygadeuon*, rather more than half the length of the insect; 1st joint of flagellum about three times as long as wide, the 2nd a little longer than wide; thorax a little longer than high; mesothorax faintly trilobed in front; upper part of metathorax shorter than the back part; areæ distinct; supero-medial area an irregular transverse hexagon, the posterior transverse line terminating laterally in a distinct spine; posterior part of metathorax with a defined postero-medial area. Abdomen smooth and shining; 1st segment elongate; sides of petiole parallel; spiracles slightly projecting from this point to apex of segment, gradually widening to about twice the width of the petiole; the segment is a little longer than the hind coxæ and trochanters; abdomen ovate, the base of the 3rd segment the widest, the 2nd and remaining segments transverse; the apical half of the abdomen with long erect hairs, very much scattered; aculeus two-thirds the length of the abdomen; legs slender. Wings, outer nervure of areolet incomplete, the exterior inferior angle

of discoidal cell opposite the middle of the areolet, the nervure straight, transverse anal divided just below the middle.

Black; mouth, mandibles, antennæ to just beyond the middle, legs, the 2nd and 3rd segments of abdomen, red; the latter brown in the middle; stigma and nervures brown; base of wing pale. ♀. Length, 3.5 mm.

Var. 1. 3rd segment of abdomen red only at the base; hind femora brownish to the middle; apical joint of all the tarsi and apex of joints of hind tarsi brown.

This insect has the antennæ of *Phygadeuon*, but the legs and wings of *Hemiteles*. I have taken one specimen at Brundall; Dr. Capron has taken one at Shere; and another, the var. 1, was taken at Tunbridge Wells early in September, 1881, by Jonkheer J. W. May.

Hemiteles ruficaudatus, n. s.

Pedibus abdominisque apice rufis.

Head, thorax, and abdomen smooth and shining, with very fine rather dense pubescence; head above transverse, scarcely slanting behind the eyes; antennæ two-thirds the length of the insect; 1st joint of flagellum about four times as long as wide, remainder gradually decreasing in length; apical joints quadrate. Thorax a little longer than high; mesothorax trilobed in front, lines distinctly impressed; metathorax short, the upper part shorter than the back part; areæ distinct, supero-medial transverse, postero-medial area defined; this again divided by a central longitudinal line; the thorax scarcely wider than the head. Abdomen fusiform; 1st segment elongate, with scarcely projecting spiracles, gradually tapering from base to apex, which is about twice the width of the base, more than three times as long as the width of the apex; post-petiole with a central groove, this sometimes extending on to the petiole; 2nd segment nearly as long as the width of the apex, which is the widest part; remainder transverse; aculeus one-fourth the length of the abdomen. Legs slender. Wings, exterior nervure of areolet wanting, or almost so; transverse anal divided one-third from the bottom.

Black; 1st joint of flagellum and greater part of the 2nd red. Legs red; apex of hind tibiæ and tarsi brown, sometimes hind knees browned. Abdomen red; 1st

segment and a bifurcate blotch at the apex of 2nd black; apex of abdomen slightly piceous; nervures and stigma dark brown; base of wings and tegulæ pale. Length, 4—5.5 mm.

Dr. Capron has taken several females of this insect in the neighbourhood of Shere, and to him I am indebted for specimens.

Hemiteles vicinus, Gr.

Gravenhorst described the female only. Pastor M. Kawall bred the male, which he recorded in Stett. Ent. Zeit., xvi., 230, but does not describe it, contenting himself with saying that it is much like *H. melanarius*, Gr.

The male in structure is very like the female, but the abdomen is not quite so wide, and is quite black. Legs black; front femora red, base black; intermediate one black, apex red; hind one entirely black; tibiæ red; apical third of hind one black; apical margin of segments smooth and shining. Taschenberg says the posterior face of the metathorax is without the intermediate lines.

Mr. Bignell bred two males and sixteen females (and from which this description is taken) on July 8th, 1882, from a pupa of *Argynnis Paphia* from the New Forest; these have the lines more or less distinct.

Hemiteles incisus, n. s.

Abdominis medio, pedibusque rufis, alis fasciis fuscis.

Head somewhat shining, with very fine, somewhat scattered, punctures. Antennæ rather more than half the length of the insect, reaching to the apex of the 2nd segment, filiform; two first joints of the flagellum subequal in length, about four times as long as wide, the remainder gradually diminishing in length, the space between the eyes slightly narrower above than below; head transverse. Thorax as wide as the head, a little longer than high; mesothorax rather wider than long, trilobed, divisions not deep, extending to the centre, lateral lobes distinctly punctured; punctures not very close; front half of middle lobe scabriculous, posterior half aciculate, interstices smooth and shining; scutellum smooth and shining, with a few scattered punctures;

metathorax shining, rather coarsely rugose, the two transverse lines very distinct and prominent, the lateral lines not so distinct, being confounded with longitudinal rugosities between the transverse lines; middle area an irregular hexagon twice as wide in front as behind, the boundaries of the upper lateral area twice as long as those of the lower lateral area; back part of metathorax without central lines, so that a postero-medial area is not defined, the lateral area terminating laterally in a subacute process. Abdomen rather longer than head and thorax; 1st segment of abdomen distinctly aciculate; basal half of the 2nd finely aciculate; remainder smooth and shining, with stiff scattered pubescence; 1st segment gradually sloping from base to apex; sides of post-petiole slightly rounding, about twice as long as the width of the apex, this about four times as wide as the base; remaining segments transverse; apex of 2nd the widest; from here gradually sloping to the apex; incisions between the segments very distinct; aculeus rather more than one-fourth the length of the abdomen. Legs moderate. Areolet of wings pentagonal; outer nervure wanting; exterior inferior angle of discoidal cell beyond the corresponding angle of areolet; transverse anal divided below the centre; nervures of front wing and stigma dark brown, the latter white at the apex; base of wing and first division of the costa pale, a dark fuscous cloud running across the wing from the stigma; 1st, 2nd, and greater part of 3rd joints of antennæ, legs, apex of 1st, 2nd to 4th segments of abdomen, red. Male. Length, 5.5 mm.

A female taken by Mr. Billups at Chobham.

Hemiteles distinctus, n. s.

Abdominis medio pedibusque rufis, segmentis primo et secundo aciculato.

Head and thorax finely reticulate; head transverse, inner orbits parallel, face transverse, cheeks not buccated, clypeus not distinctly separated from the face. Antennæ slender, rather swollen before the apex; 1st joint of flagellum about four times as long as wide, remainder gradually decreasing in length; 9th quadrate; antennæ almost as long as the body. Thorax about one-half longer than high; metathorax with the two transverse lines only moderately pubescent, slanting part with the

two central lines. Abdomen about as long and as wide as the head and thorax; 1st segment gradually tapering to the spiracles, which are situated just behind the middle and not prominent; post-petiole longer than wide, sides almost parallel, about twice as wide as the petiole, the segment two and a half times as long as the width of the apex, distinctly but finely aciculate; the 2nd rather longer than wide, faintly but decidedly aciculate, the remainder transverse; the whole abdomen with moderately scattered stiff pubescence, as is the crown of the head; aculeus about one-fourth of the abdomen. Legs slender. Areolet pentagonal; transverse ordinary nervure interstitial; transverse discoidal divided just below the middle; transverse anal subopposite, divided one-third from the bottom.

Black; legs, 2nd and 3rd segments of abdomen, pale chestnut; these latter have a little darker spot on each side; hind coxæ black-brown, apex pale; apical half of hind femora stained with fuscous; base and apex of hind tibiæ and all the tarsi the same colour. Stigma and nervures piceous; base of wings yellowish. Length, 4 mm.

One female taken by Mr. G. C. Bignell in the neighbourhood of Exeter on September 23rd, 1882.

The structure of the metathorax and sculpture of the abdomen are different from any description that I have seen.

Theroscopus niger, n. s.

Niger, pedibus rufis, coxis posticis piceis.

Head shining, with a few scattered white hairs, hardly wider than the thorax, narrow behind the eyes, seen from above somewhat globose. Antennæ shorter than the insect; 1st and 2nd joints of flagellum about equal in length, about four times as long as wide; the 5th twice as long as wide. Thorax rather longer than high; mesothorax trilobed, punctate, punctures on the middle lobe running into longitudinal aciculations; metathorax with finely divided but distinct areæ; supero-medial hexagonal, the lower lateral borders shorter than the upper ones; the posterior face without the lines defining a postero-medial area; the whole metathorax finely rugose and of normal length. Abdomen elongate-ovate, longer than the head and thorax, but not wider; 1st segment without projecting spiracles, about twice as

long as the width of the apex,—this about four times as wide as the base, aciculate, as is the basal half of the 2nd segment; remaining segments transverse, and covered with scattered pubescence; aculeus about one-half the length of the abdomen. Legs moderate. Remains of wings barely visible.

Black; the last three segments have the apical margin pale; legs brownish red; hind coxæ brown; apical half of hind femora, a ring before the base, apex of middle and hind tibiæ, and apex of tarsal joints of hinder legs, slightly fuscous. Female. Length, 4.5 mm.

One female taken by Mr. Cameron at Kingussie.

This appears to be a very distinct species, and, according to Foerster's definition, hardly belongs to this genus, it having the metathorax furnished with complete areæ. Several of his genera do not appear at all satisfactory; this species and *Aptesis hemiptera* might go into the division having the metathorax with areæ, as might also Mr. Marshall's two species; then *Aptesis hemiptera* might be a *Theroscopus* by the structure of its 1st abdominal segment. *Catalytus*, again metathorax without areæ, contains one species or variety which has the wings of *Aptesis*, and which I unfortunately was led into describing as a new species (*vide* Trans. Ent. Soc. Lond., 1882, p. 141), *Aptesis Foersteri* = *Catalytus Mangeri* = ? *C. fulveolatus*, var. = ? *C. longipennis*, var.

Hemimachus piceus, n. s.

Niger, pedibus maximis ex parte piceo-rufis.

Head, thorax, and 1st segment of abdomen opaque, finely reticulate; remainder of the abdomen smooth, but densely covered with fine pubescence. Head above transverse, slightly sloping behind the eyes; face longer than wide; cheeks slightly buccated; clypeus separated from the face; apex widely rotundate; mandibular teeth subequal. Antennæ rather more than three-fourths the length of the body; the first three or four joints of the flagellum subequal in length, about three times as long as wide; the 1st joint of the scape hardly so long as wide; antennæ and face pubescent. Thorax about one-third longer than high; mesothorax trilobed, the lines reaching to the middle of the disc; scutellum convex, a little higher than the mesothorax, keels only just

reaching to the base ; metathorax rather long, the areæ indicated by very fine lines ; supero-medial area hexagonal, longer than wide, not closed above, or rarely so ; lateral areæ divided, posterior transverse line slightly defined ; postero-medial area not defined. Abdomen elongate, cylindrical, not wider than the thorax, and as long as the head and thorax ; the 3rd and 4th segments slightly the widest ; 1st segment tapering from base to apex, varying in width at the apex from twice to three times the width of the base, the segment of normal length, the spiracles projecting, situated in the centre of the segment, a shallow groove in the middle, with faint keels not extending to the apex ; 2nd segment rather longer than wide ; 3rd subquadrate ; the remainder transverse. Legs slender. Areolet of wings pentagonal, when the outer nervure is present longer than wide, rather narrow above ; external inferior angle of the discoidal cell opposite the corresponding angle of the areolet, if not a little beyond ; stigma rather short, twice as long as wide ; radial cell short and deep ; transverse ordinary nervure not interstitial ; transverse discoidal divided nearly one-third from the bottom ; transverse anal nervure of hind wing nearly straight, interrupted below the middle ; emitting nervure subobsolete.

Black ; legs red ; front coxæ sometimes entirely red, or the base black ; middle coxæ red, or more or less black ; hind ones entirely black, or apex red ; all the trochanters more or less marked with brown ; middle femora sometimes with a fuscous stain above at the apex ; hind femora with a more or less distinct fuscous line above ; hind tibiæ with the apical half more or less distinctly stained with fuscous above, less so beneath, and a fuscous mark above before the base, this sometimes almost entirely absent ; middle and hind tarsi fuscous, sometimes apex of front ones ; mouth and under side of scape of antennæ sometimes piceous-red ; stigma fuscous ; nervures of front wings fuscous, hind ones pale ; base of wings and tegulæ pale. Length, 4.5 mm.

These males I took by sweeping in the beginning of August, 1882, at Mousehold, near Norwich, but unfortunately took no female that might belong to the same species ; they had evidently only just emerged from the pupa. I have no doubt but that they are males of one of the black *Pezomachus*, two species of which, with

the same leg-coloration, are not uncommon in the same neighbourhood.

Hemimachus hyponomeutæ, n. s.

Pedibus rufis; segmento secundo abdominis rufis, fascia media nigra.

Finely reticulate, opaque; head transverse, slanting behind the eyes; 1st joint of flagellum rather more than four times as long as wide; following joints gradually tapering to about the middle; the remaining ones subequal. Antennæ as long as the insect. Mesothorax trilobed, the lines reaching to the middle of the disc; metathorax without superior areæ, the transverse line strongly projecting without interruption; 1st segment of the abdomen gradually tapering, nearly twice as wide at the apex as at the base; spiracles very prominent; post-petiole about one and a half times as long as wide; 2nd segment about one-fourth longer than wide; remainder transverse. Abdomen about as wide as the thorax; apex of 3rd segment the widest. Legs slender. Areolet of wings pentagonal; outer nervures wanting; transverse anal nervure divided below the middle.

Scape and 1st joint of flagellum red, the former stained with brown; apical third of 1st segment of abdomen, base and apex of 2nd segment, red; the black band in the middle of this latter segment rather more than one-third the width of the segment. Legs red; apical half of hind femora slightly stained with brown, as also is apex of hind tibiæ and apical portion of the tarsal joints. Base of wings pale; nervures and stigma fuscous, the latter white at the base. Length, 5 mm.

Bred from *Hyponomeuta evonymellus* by Mr. Mosley.

This insect at first sight is very much like *Pezomachus zonatus*, but the head is narrower behind the eyes; the 1st abdominal segment, although the same shape, is stouter, and the spiracles much more prominent; the metathorax has no areæ, and the coxæ are red.

Hemimachus rufotinctus, n. s.

Prothorace, scutelli apice, abdominis medio, pedibusque castaneo-rufis, posticis coxis femoribus piceis.

Opaque, reticulate; head rather wider than the thorax,

buccated, seen from above the portion behind the eyes about equal to one-half the width of the eyes; 1st joint of flagellum the longest, about four times as long as wide, the remainder gradually decreasing in length, filiform, a little shorter than the insect. Thorax longer than high; mesothorax trilobed, the lines distinctly impressed in front; metathorax of ordinary length, sloping in a curve almost from base to apex, with indications of an elongate pentagonal supero-medial area, not closed behind; posterior transverse line only defined at the sides. Abdomen ovate, about as long as the head and thorax, and a little wider than the latter; the 1st segment is slightly longer than three times the width of the base; spiracles very prominent; post-petiole about one-fourth longer than wide, and not quite twice the width of the petiole; 2nd segment subquadrate, *i. e.*, as long as the width of the apex; remainder transverse, the 3rd and 4th the widest, and of about equal width; the apical half of the abdomen covered with pubescence, about midway between dense and very scattered. Legs slender. Wings, outer nervure of areolet wanting, recurrent nervure curved towards the apex of the wing, transverse ordinary interstitial, no nervelet, transverse anal opposite, divided one-third from the bottom, emitting nervure distinct.

Scape and base of 1st joint of flagellum partly pale chestnut-red; collar and apex of scutellum dull red; apex of 1st segment of abdomen, 2nd and 3rd, pale chestnut-red, the 2nd with a transverse fuscous stain in the middle, the 3rd with a large brownish black mark which occupies almost the entire segment. Legs pale chestnut-red; front femora behind, intermediate ones in front, with a fuscous line; hind coxæ, hind femora, except the base, fuscous; apex of middle and hind tibiæ slightly stained. Wings stained with a slightly darker band across the wing before the stigma, and another from the middle of the stigma to the apex of the wing, an irregular white line running along the recurrent discoidal nervure; both the radial nervure and stigma brown, the latter white at the base. Length, 4.5 mm.

Male taken at Felthorpe, near Norwich.

This insect, which I have little doubt is the male of one of the *Pezomachus* group, appears to me to be undescribed. In many respects it agrees very well with

H. variabilis, Ratz., but from the meagre description (Die Ichneumoniden, vol. iii., p. 158) it would be impossible to say it was not that species; Hr. Brischke, in Schrift. d. natur. Gesell. in. Danzig, 1876, says that *H. variabilis*, Ratz., is the male of *Pezomachus cursitans*, Gr., and is the male of *Hemiteles palpator*, Gr., and confirms the statement in *l. c.*, 1878, p. 202, but in neither gives any description of the abdomen generally. Gravenhorst (Ich. Eur., vol. ii., p. 819) says:—"Abdomen capitis thoracisque longitudine, maris thorace paulo angustius, oblongum"; in *rufocinctus* it is rather wider than the thorax.

Hemimachus rufipes, n. s.

Basi antennarum, pedibus, abdominisque basi rufis.

Subopaque, densely and finely reticulate; head transverse, narrow behind the eyes; cheeks not buccated; face slightly protuberant, transverse, inner orbits parallel. Clypeus separated from the face; apex rotundate; mandibular teeth subequal. Antennæ about as long as the insect; 1st and 2nd joints of flagellum of about equal length, about four times as long as wide. Thorax nearly one-third longer than high; anterior part of mesothorax indistinctly trilobed; upper part of metathorax about as long as the back part, with two transverse curved lines, but no horizontal lines defining a superomedial area; 1st abdominal segment rather long and slender; post-petiole one-third longer than wide; spiracles rather prominent, one-third wider than the petiole, and a little shorter than it; 2nd segment rather longer than wide; remainder transverse, the 4th segment the widest. Legs slender. Areolet imperfect; transverse anal nervure scarcely *ante-furcal*, divided about one-third from the bottom; no trace of nervelet in cubito-discoidal nervure.

Mouth, base of antennæ, and legs red; two small red spots on upper part of collar; 1st abdominal segment red, sides to middle of post-petiole stained with brown; 2nd segment entirely red; 3rd red, more or less marked with a transverse central brown band, sometimes almost obsolete; apical margin of remaining segments sometimes pale; stigma fuscous; nervures rather faint. Length, 4 mm. Male.

I have two males taken in the neighbourhood of Norwich in July.

Hemimachus ovatus, n. s.

Abdomine ovato, basi antennarum, abdomine medio pedibusque rufis.

Head, thorax, and abdomen finely and densely reticulate, opaque. Head narrow behind the eyes; face slightly protuberant, subquadrate, a little longer than wide; sides parallel; cheeks not buccated. Antennæ about as long as the body; 1st and 2nd joints of flagellum subequal, about four times as long as wide. Thorax rather longer than high; mesothorax distinctly trilobed, the depressions between the lobes extending to the scutellum; metathorax short, without areæ, the hinder transverse line only present, and that feeble; 1st abdominal segment rather short; petiole scarcely longer than the post-petiole, which is quadrate, rather more than twice as wide as the petiole; spiracles projecting and very prominent. Abdomen oblong-ovate, rather wider than the thorax, and about as long as the head and thorax; 2nd and remaining segments transverse, apex of 2nd and 3rd the widest. Legs slender. Wings clear; stigma fuscous, the imperfect areolet very small; cubito-discoidal nervure with a trace of nervelet, the transverse anal nervure *ante-furcal*, and divided one-third from the bottom.

Mouth, base of antennæ, and legs red; 1st segment of abdomen red; base and sides of petiole dark brown, a fuscous stain across the middle of the post-petiole; 2nd segment red, with a faint fuscous stain across the middle; 3rd red, with a wide brown irregular mark across the segment, nearly obliterating the red; stigma and nervures fuscous; base of wings pale. Length, 4.5 mm.

One male taken at Brundall, Sept. 15th, 1881.

Hemimachus rufocinctus.

Under the above name, in a collection that belonged to Mr. Marshall, are four male insects which do not agree either with Taschenberg's description of *Hemiteles rufocinctus*, Gr., nor to Hr. Brischke's description of *Hemimachus rufocinctus*, Ratz., which is the male of Foerster's *Pezomachus instabilis*. Taschenberg says that *H. rufocinctus*, Gr., has on the metathorax two transverse lines longitudinally wrinkled between them, but no

supero-medial area laterally defined. Hr. Brischke says that *H. rufocinctus*, Ratz., is the male of *P. instabilis*, and is different from *H. rufocinctus*, Gr., and that it has an elongated pentagonal supero-medial area on the metathorax. Mr. Marshall's insect does not belong to either of these; the metathorax is very short, has no trace of supero-medial area, and but part of one transverse line is present, and that only at the sides; the true *Hemimachus rufocinctus*, like *P. instabilis*, has the abdomen covered with scattered hairs, whilst Mr. Marshall's insect is densely covered with pubescence.

Mr. Bignell has bred two females and a male which may be a variety of *Hemimachus rufocinctus*, but they are smaller than this insect generally is; the male has only a flattened depression indicating the supero-medial area, and the female has the legs almost entirely black-brown, and not the greater part red, as is generally the case. I have seen this variety from Dr. Capron and Mr. Billups, and have taken it myself. As I have seen no insect described at all like Mr. Marshall's males, I have added a description and suggest that it should be named *H. confusus*. Dr. Capron has kindly given me a specimen of this insect.

Apex of 1st segment of abdomen, base and apex of 2nd, and base of 3rd, reddish; greater part of front legs, all the tibiæ and tarsi, reddish; stigma fuscous. Antennæ about three-fourths the length of the insect; joints of flagellum shorter than usual; 1st joint rather more than three times as long as wide; 2nd and 3rd subequal in length, rather shorter than the 1st, gradually decreasing in length, none of the joints exactly quadrate, the whole antennæ pilose; head somewhat buccated behind the eyes, a little wider than the thorax. Thorax about as long as high; mesothorax not trilobed; metathorax very short, almost inclining from base to apex, rough, no trace of supero-medial area; posterior transverse line defined only at the sides; 1st segment of abdomen elongate, tapering from base to apex; tubercles more or less distinct; post-petiole nearly one-half longer than wide. Abdomen elongate-ovate, the 3rd segment the widest, the whole abdomen covered with dense pubescence; 2nd segment nearly as long as the width of the apex; remaining ones transverse. Areolet of wings imperfect; transverse anal nervure divided one-third from the bottom. The whole insect is opaque, finely reticulate. Male. Length, 3·5—4 mm.

Hemimachus annulicornis, Marsh. MS.

? = *Pezomachus juvenilis*, Foerst., Mon. d. Gat. Pez., 136, 72, ♀.

In the 'Entomologist's Annual,' 1874, p. 127, the Rev. T. A. Marshall mentions the male and female of a small *Pezomachus*, which he took in numbers at Milford Haven. I have lately had an opportunity of examining these insects: the female I believe to be *Pezomachus juvenilis*, Foerst., an insect named and described from a single specimen, as the majority of Foerster's species were.

Mr. Bignell has taken this same species in plenty in the neighbourhood of Plymouth, and I find, although there is no variation in structure, the depth of colour and the size vary much. The length given by Foerster appears to be the minimum; in a series from Mr. Bignell now before me I find they vary from 2 mm. to nearly 4 mm. in length; in some instances the head is nearly as light coloured as the thorax, while in others it is quite dark red. The fuscous bands on the 3rd and 4th abdominal segments also vary in intensity. The male being undescribed, I have ventured to add a description of it:—

Basi abdominis, pedibus, et basi antennarum, rufis.

Antennæ long and slender, rather longer than the insect; 1st joint of flagellum about five times as long as wide, 2nd rather shorter, gradually decreasing in length, none exactly quadrate; head subglobose, much wider than the thorax. Thorax about one-third longer than high, narrow; mesothorax not trilobed; upper part of metathorax slightly longer than the back part; transverse ridge distinct, but without supero-medial area; 1st segment of abdomen somewhat elongate, gradually tapering to the region of the spiracles; from thence sides parallel; post-petiole not quite one-half longer than wide. Abdomen about as wide as the thorax; the 4th segment the widest; the 2nd one-third longer than wide; the remainder transverse. The wings vary from normal size to more or less abbreviated; the neuration towards the apex imperfect.

Head black; base of antennæ more or less red or piceous. Thorax pale piceous; 1st, 2nd, and greater

part of 3rd segment ochraceous or pale piceous-red ; legs of the same colour, as well as stigma and nervures. Length, 2 mm. or a little more.

Aptesis Foersteri.

Last year I described this species as new. I now find it is only a very short-winged *Catalytus*, a genus I had not then seen. This appears to be *C. Mangeri*, Gr. Last summer I took a male with almost fully-developed wings, and have seen a female of *C. fulveolatus*, Gr., and, except the length of the wings, could detect no difference between them. It seems to me that *Catalytus* is a very weak genus ; in fact there seems no distinct generic characters to separate *Catalytus*, *Aptesis*, and *Theroscopus* from one another, and they might fairly be included in one genus ; perhaps *Oresbius*, Marshall, would not be much out of place if associated with them.

Pezomachus dubitator, Foerst.

In a previous paper (Trans. Ent. Soc. Lond., 1881, p. 156), under the above heading, I noticed a *Pezomachus* which I thought might be the above species. I have now but little doubt that they do not belong to this species, but are small dark varieties of *Pezomachus analis*, Foerst., having only the first two segments red, and sometimes the 2nd is deeply stained with brown. I find in almost all the species of *Pezomachus* that I have seen in any number that colour cannot be depended on for specific distinction. The one under discussion varies from having only the 1st segment of the abdomen red to those having the abdomen almost entirely red, only one or two of the apical segments being stained with brown.

Mr. Bignell has been fortunate enough to breed the dark variety, and with this three males which agree exactly with Foerster's description of *P. conveniens*, Mon. Pez., 231, 195. Of these three, two are rather darker than the description whilst the other is as described by Foerster. They were bred from *Zygæna filipendulæ*.

Pezomachus brevis, n. s.

Niger, pedibus piceis.

This species comes in Foerster's division A. II. a. yy., next to *P. pumilus*, but is much larger, and the 7th joint of the antennæ is only a little longer than broad. Foerster says the thorax is of ordinary length, with the metathorax short; in this the meso- and metathorax are of the same length, and very short; 2nd joint of flagellum a little longer than the 1st, this about two and a half times as long as broad; 5th rather longer than wide; head transverse, much wider than the thorax; meso- and metathorax of about equal length, very short; metathorax with no trace of the transverse line. Thorax much higher than long; back part of metathorax flat and slanting. Abdomen ovate; spiracles scarcely protruding; post-petiole broad; abdomen covered with scattered hairs; aculeus not quite so long as the 1st segment.

Black; scape and 1st joint of flagellum reddish brown; mouth and legs brownish red, four anterior femora towards the base rather darker; hind femora reddish brown, as is the extreme apex of hind tibiæ below; incisions of anterior segments of the abdomen slightly pale; 6th segment entirely pale. Length about 4 mm.

Taken by Mr. F. P. Pascoe at Dover.

Pezomachus hieracii, n. s.

Niger, pedibus piceis.

This *Pezomachus* belongs to Foerster's division A. I. h., and comes next to *P. tener*.

Head transverse, rather slanting behind the eyes. Antennæ moderate; 1st and 2nd joints of flagellum subequal in length, about three times as long as wide, the 5th rather longer than wide; mesothorax short; meso- and metathorax of equal length, the back part of the latter slanting and flat, without the transverse ridge; 1st segment of abdomen broad at the apex; spiracles not projecting; the remaining segments transverse; the 2nd and 3rd much shorter than usual, scarcely so deep as the width of the apex of the 1st segment, densely and uniformly covered with pubescence; aculeus a little longer than the 1st segment.

Black; base of 1st joint of flagellum pale; apex of 1st abdominal piceous; legs lighter or darker piceous; trochanters pale; apex of front and middle femora reddish; front tibiæ and tarsi reddish; base of middle tibiæ, middle and apex of hind tibiæ, and tarsi, reddish; apical joints of tarsi dark. Length, 2·75—3·5 mm.

The smaller of these was taken by Mr. Billups at Burford Bridge, Sept., 1881; the larger ones were bred by Mr. Billups and Mr. Bignell from galls of *Aulax hieracii*.

Pezomachus vagans, Oliv.

In the middle of July I bred both sexes of this *Pezomachus* from a spider's nest, and, as I believe the male is undescribed, I here give a description.

Niger, abdominis medio pedibusque rufis, femoribus et tibiis posticis piceis; alis completis.

Subopaque, finely and densely punctured; head seen above somewhat square, seen in front subrotund, rather wider than long; cheeks slightly rounded, not descending below the base of the mandibles; clypeus separated from the face, rounded at the apex, a moderate protuberance between the clypeus and the antennæ in the middle of the face, a distinctly impressed line in the centre, reaching from the antennæ to the anterior ocellus, the space between the eyes wider below than above. Antennæ slender, slightly swollen from just before the middle, a little thinner again at the apex; 1st and 2nd joints of flagellum of equal length, the 1st about four times as long as wide, all the joints longer than wide; the 7th one-third wider than the 1st; antennæ about as long as the insect. Thorax elongate, about one-third longer than high; mesothorax a regular diamond in shape, parapsides faintly defined, a well-marked depression running from the scutellum to almost the middle of the mesothorax; metathorax, seen from above the upper part is not quite so long as the width between the spiracles, without areæ, posterior transverse line strongly developed, the punctures or reticulations running transversely backward from the centre, forming wavy delicate rugosities; back part slightly sloping, with no perpendicular lines, but a distinct costa at the bottom; 1st segment of abdomen about as long or a little longer than the hind coxæ; spiracles about in the middle and rather

prominent; post-petiole but slightly wider than the petiole; the 4th segment the widest; the 2nd as long as the width of the apex; remainder transverse; the 4th and following segments with short, rather scattered, hairs. Legs slender. Wings of normal length, but narrow; stigma elongate; radial cell almost parallel; areolet pentagonal, outer nervure wanting; posterior inferior angle of discoidal cell about opposite to the corresponding angle of the areolet; cubito-discoidal nervure without a trace of nervelet; transverse discoidal divided far above the middle; transverse anal slightly geniculated below the centre, but without emitting nervure.

Black; apex of 1st abdominal segment, 2nd and 3rd, red, sides of the latter sometimes piceous. Legs rufo-testaceous; middle femora slightly piceous in the middle; hind femora nigro-piceous, base red; middle tibiæ, apex slightly piceous; hind tibiæ, apex and outside almost to the base nigro-piceous; hind tarsi and apex of front and middle ones slightly browned; base of hind coxæ sometimes the same. Wings slightly smoky; nervures and stigma brown, apex of latter white; base of wings pale. Length, 3 mm.

OPHIONIDÆ.

Anomalon perspicuum, Wesm.

Wesm., Bull. d. Belgique, xvi., 127, 7; Holm., Consp. Anom. Suec., 176, 10; Holm., Mon. Oph. Suec., 22, 11.

Mr. E. Atmore, of Lynn, bred this *Anomalon* from *Cleora lichenaria* in June last year.

Sagaritis raptor, Zett.

Porizon raptor, Zett., Ins. Lapp., 396, 4.

Sagaritis raptor, Holm., Mon. Oph. Suec., 44, 2, ♂, ♀.

I took a female *Sagaritis* at Brundall, near Norwich, in July, which agrees almost exactly with Holmgren's description of *S. raptor*; the only differences are that the supero-medial area of the metathorax is hardly transverse, the 2nd segment of the abdomen is almost entirely red, and the hind tibiæ entirely so.

Sagaritis incisa, n. s.

Niger, femoribus, tibiis tarsisque maxima ex parte rufis, post-petiolo scrobiculis tribus, segmento secundo transversim impresso; aculeo segmento primo dimidio brevior.

Face subquadrate; mandibular teeth subequal. Antennæ a little shorter than the thorax and abdomen; head transverse, narrow behind the eyes, rather wider than the thorax, with very fine white pubescence. Thorax rather longer than high, parapsides rather distinct, extending to the middle of the mesothorax; supero-medial area of metathorax subhexagonal, sometimes closed behind, sometimes not; lateral area imperfectly divided or not at all; postero-medial area wide, not concave. Legs moderate. Abdomen rather short and wide; post-petiole rather longer than wide; sides almost parallel, about three times as wide as the petiole and a little shorter than it; in a line with the spiracles are three very distinct pits, one in the middle and one on each side; 2nd segment a little longer than wide, with a wide obsolete transverse depression just below the base, and a very distinct deep one before the apex; 3rd and remaining segments transverse; aculeus one-half the length of the 1st segment. Wings, areolet rhomboidal, the shape of the areolet in *Mesochorus* but smaller; recurrent nervure received before the centre; transverse ordinary nervure almost interstitial; transverse anal interrupted below the middle, with scarcely a trace of nervure proceeding from it; stigma long and narrow.

Black; palpi reddish yellow; legs red; coxæ, base of front and middle trochanters, black; base and apex of hind tibiæ, towards the apex of front and middle tarsi and hind one entirely fuscous; stigma and nervures fuscous; base of wing and tegulæ yellow. Length, 5 mm.

Two females bred by Mrs. F. Norgate. The host is uncertain; the cocoon is elongate, and of uniform tawny brown.

I can find no description of a *Sagaritis* which agrees with this very marked species, and the only *Limneria* which appears to me to come near it is *C. seniculus*, Gr., I. E., iii., 473, male. This species Gravenhorst notes as having three pits on the post-petiole, just as Mrs.

Norgate's has, but the areolet is differently shaped; and Ratzeburg and Brischke have assigned a very different female to it.

Nemeritis rufipes, n. s.

Niger, pedibus rufis.

This insect comes next to *N. macrocentra*, but differs in having the legs entirely red, and the segments of the abdomen longer.

Head transverse, narrow behind the eyes. Antennæ about three-fourths the length of the insect. Thorax longer than high; metathorax with five areæ; superomedial area longer than wide; back part of metathorax concave. Abdomen long and slender, nearly twice as long as the head and thorax; 1st segment longer than the hind coxæ and trochanters; 2nd segment nearly three times as long as wide; the 3rd not quite twice as long as wide; 4th and 5th subquadrate; 6th slightly transverse; abdomen covered with fine white pubescence; aculeus about two-thirds the length of the abdomen, very slightly curved upwards. Areolet of wings petiolated; recurrent nervure received beyond the middle; the transverse anal nervure not interrupted. Legs slender.

Black; legs red; extreme apex of tarsi fuscous; base of wings pale straw-colour; stigma pale piceous. Female. Length, 7 mm.

This very distinct species has been taken by Dr. Capron at Shere, who kindly gave me the specimen from which this description is taken.

Mesochorus pectinipes, n. s.

Niger; facie, segmentis tertii medio, pedibusque rufis, coxis posticis nigris.

Head behind the eyes subbuccated; face transverse, a little narrower above than below; mandibular teeth of equal length; clypeus distinctly separated from the face, widely rotundate, smooth, with a few scattered punctures; face distinctly and rather coarsely punctured, becoming finer and closer towards the centre; from the centre of the clypeus to the antennæ runs a distinct ridge, and from this transversely below the antennæ, slightly inclining upwards exteriorly, is another line, which together

resemble a capital T; a slight impression above each antenna; forehead smooth, with only the hair pits. Antennæ longer than the insect; 1st joint of flagellum a little longer than the 2nd and 3rd combined, which are subequal in length, and about three times as long as wide; head and thorax covered with dirty white pubescence, longer on the metathorax. Thorax longer than high; mesothorax trilobed, covered with fine, regularly scattered, punctures; apex of scutellum pointed; metathorax with distinct areæ; supero-medial area elongate, coffin-shaped; postero-medial complete, about as wide as long, curved upwards above and below. Claws of tarsi furnished with long close pectinations to the extreme apex. Abdomen longer than the head and thorax, and a little narrower; 1st segment as long or a little longer than the hind coxæ and trochanters; spiracles situated just beyond the middle, between these and the apex, the sides slightly curved inwards; sides without keels; the apex one-third wider than across the spiracles, and rather more than twice the width of the petiole; just before the apex a transverse line of faint aciculations; 2nd segment one-fourth longer than wide, the 3rd rather longer than wide, remainder transverse. Wings, transverse ordinary nervure interstitial; recurrent nervure received one-third from base of areolet; transverse anal not divided.

Mouth, face, cheeks, all the orbits, and base of antennæ, pitchy red; margin of collar, extreme apex of 2nd abdominal segment, back of 3rd, and a spot at the base of 4th, pale pitchy. Legs rufo-testaceous; hind coxæ black; extreme base and apex of hind tibiæ scarcely clouded; 5th tarsal joint and claws dark; stigma fuscous, base pale; base of wings straw-coloured. Male. Length, 6 mm.

This species, which appears to me to be undescribed, belongs to the same division of Holmgren's as *M. thoracicus*, distinguished by the tarsal claws being pectinated to the apex.

One male taken in the neighbourhood of Norwich at the beginning of May.

Mesochorus hirsutus, n. s.

Facie pedibusque flavidis, pectore, scutello, et dorso mesothoracis rufis.

Head transverse, behind the eyes narrow; teeth of mandibles of equal length; face subtransverse; head smooth and shining; 1st joint of flagellum one-third longer than the 2nd, about six times as long as wide. Thorax longer than high, finely punctate, covered with fine pubescence; metathorax with five subdistinct areæ. 1st segment of abdomen a little longer than the posterior coxæ and trochanters; petiole rather longer than the post-petiole, about one-third the width; the sides of the post-petiole almost parallel, margined at the sides, this, as well as the rest of the abdomen, smooth and shining; 2nd and remaining segments clothed with regularly dispersed pubescence; 2nd segment slightly longer than wide; 3rd subquadrate; remainder transverse; styles shorter than usual, about one-third the length of the 1st segment. Legs moderate; claws pectinated to about the middle, pectinations not close. External radial nervure almost straight; transverse ordinary not quite interstitial; recurrent nervure received before the middle; transverse anal nervure divided below the middle. Aculeus of female about as long as the 1st segment.

♂. Black; face, cheeks, and mouth yellowish. Antennæ rufo-fuscous, palest at base of flagellum; breast and sides of mesothorax testaceous; scutellum and two streaks at base of mesothorax dull red. Legs reddish straw-colour; hind coxæ and hind femora more red; extreme apex of hind tibiæ and apical joints of all the tarsi brownish black; stigma and nervures piceous. Length, 8 mm. Male and female.

The female differs from the male only in being generally darker, the scutellum having only a trace of red, and the face black or blackish.

This fine species was taken by Dr. Capron in the neighbourhood of Shere, and to him I am indebted for a specimen. It comes in Section I. C. a. ** of Holmgren's divisions of *Mesochorus*.

Miomeris æquisgranensis, Foerst.

Uebersicht d. Gatt. u. Art. d. Fam. d. Plectiscoiden, 92, ♂, ♀.

A male of this species has been taken by Mr. E. Parfitt in the neighbourhood of Exeter.

Dicolus pectoralis, Foerst.

L. c., 97, ♂, ♀.

This species is added to our list on the strength of a female which was sent to me by the Rev. T. A. Marshall. These last two insects belong to the *Plectiscus* group, which Foerster has divided into many genera; both species are very distinct and easily recognised.

TRYPHONIDÆ.

Erromenus analis, Brischke.

Brischke, D. Ich. d. Prov. W. u. O. Preus., p. 101, ♂, ♀.

Mr. J. E. Fletcher has bred a male of this species from *Nematus crassulus*; it differs slightly from the description in having the margins of the middle segments of the abdomen not pale marked, and there is a fuscous spot above on the hind tibiæ before the base, and the hind and intermediate tarsi are brownish stained towards their apical half.

This species is very like an *Exochus*, as Hr. Brischke has remarked; the greater part of the legs are red, and the apex of the abdomen is red.

Cteniscus Dahlbomi, Holm.

Mon. Try. Suec., 242, 40, ♀.

I captured a specimen of this species at Horning Ferry, Norfolk, at the end of June. Mr. Bignell has also taken a female in the neighbourhood of Plymouth.

Exochus niger, n. s.

Niger, tibiis tarsisque rufis.

Head subquadrate, slanting behind the eyes; transverse impressions below the anterior ocellus very faint; head shining, with a few scattered punctures; meso-

thorax evenly punctured almost all over the disc; metathorax with three areæ; head, thorax, and abdomen with fine scattered white pubescence; the middle of the 2nd and 3rd abdominal segments free from the pubescence; middle of the abdomen entirely free from punctures, very smooth and shining; 2nd segment longer than wide; the 3rd subquadrate. Legs stout. Wings without areolet; transverse anal nervure divided below the centre.

Black; mouth, antennæ beneath and base of flagellum, tibiæ, tarsi, apex of front femora, and extreme apex of intermediate and hind femora, brownish red; base of wings and tegulæ the same colour, stigma and nervures black. Length, 5 mm.

This *Exochus* would come between h. and hh. of Holmgren's division B. aa. f., and differs from them in the red tibiæ.

One female taken the beginning of August, 1882, in the neighbourhood of Norwich.

Exochus pictus, Holm.

Holm., Mon. Try. Suec., 312, 9, ♂, ♀; Holm., Dip. Meth. Exoch. Scand., 66, 6, ♂, ♀.

A female of this species has been received from Mr. Cameron taken at Thornhill.

Bassus tibialis, n. s.

Niger, pedibus rufis, tibiis posticis basi albo; scutelli lateribus albo, areola nulla.

Shining; a distinct rounded projection below the antennæ; apex of clypeus truncate, the middle slightly raised, with a circular depression on each side; a distinct fovea above each antenna, with a groove between them; antennæ filiform and hairy, reaching to about the apex of the 1st segment; 1st joint of flagellum one-third longer than the 2nd, from this gradually tapering to the apical joint, which is conical; the 2nd one-third longer than wide; supero-medial area of metathorax subquadrate; back part of metathorax somewhat coarsely rugose, upper part distinctly so; 1st segment of abdomen about one-fourth longer than wide, sides almost parallel, slightly bowed, coarsely longitudinally rugose, canaliculated; base of 2nd segment the same sculpture,

with two short transverse diagonal impressions on each side at the base and towards the middle of the segment, one-third longer than wide; 3rd rather longer than wide, compressed towards the apex; remaining segments much compressed. Legs a little stouter than usual in this genus. Wings without an areolet; transverse cubital subobsolete, as in *Xylonomus*; nervelet present; transverse anal nervure divided a little below the middle.

Black; mandibles at the base, a triangular mark on clypeus, shoulders, tegulæ, sides of scutellum, base of hind tibiæ, base of 1st joint of hind tarsi, yellowish white; apex of mandibles, sides of clypeus, and legs, red; stigma piceous, extreme base pale; base of wings pale. Length, 7 mm. Female.

One specimen was given to me by Mr. F. Norgate, locality uncertain; and two have been bred by Mr. J. E. Fletcher, from pupæ of some dipteron dug up at Worcester, May 22nd, 1872.

Bridgman, John B. 1883. "VII. Further additions to Mr. Marshall's Catalogue of British Ichneumonidæ." *Transactions of the Entomological Society of London* 31, 139–171. <https://doi.org/10.1111/j.1365-2311.1883.tb02943.x>.

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