

XXIII. *Descriptions of ten new species of Nematus from Britain.* By P. CAMERON.

[Read December 6th, 1882.]

THE GROUP OF *N. MOLLIS*.

A REVISION of my material in this distinct group of *Nematus* has enabled me to identify seven British species. I give below a table of those of which I have females, and have added a description of a new species:—

- 1 (2). Mesonotum smooth, shining, impunctate; antennæ shorter than abdomen, brownish beneath .. *scoticus*.
- 2 (1). Mesonotum punctured, opaque or semiopaque; antennæ black.
- 3 (4). Frontal area distinct; 3rd cubital cellule considerably dilated at the apex; stigma fuscous .. *mollis*.
- 4 (3). Frontal area indistinct; 3rd cubital cellule scarcely dilated at the apex; stigma testaceous.
- 5 (6). Antennæ as long as the thorax and abdomen in ♀; as long as the body in ♂; clypeus white .. *breadalbanensis*.
- 6 (5). Antennæ not longer than abdomen in ♂ and ♀; clypeus black.
- 7 (8). Labrum white; spurs half the length of metatarsus; wings not much longer than body .. *carinatus*.
- 8 (7). Labrum black; spurs one-third of length of metatarsus; wings longer than body .. .. *lativentris*.

*Nematus breadalbanensis*, n. s.

Black; apex of clypeus, labrum, and palpi, white; legs pale testaceous; the coxæ, except at extreme apex, the trochanters in part, the basal two-thirds of anterior femora and posterior femora, almost wholly black; with the apex of the hinder tibiæ and tarsi fuscous. Head roughly punctured, opaque, slightly pilose, scarcely broader than the mesothorax; vertex thick, front projecting; labrum subquadrate; mandibles piceous; thorax black, scarcely shining, covered with a sparse pubescence, minutely punctured; pleuræ punctured, opaque, and covered with a close short pile; the edge of the pronotum and tegulæ are pale testaceous; the cenchri



are of moderate size. Abdomen longer than head and thorax; anal segment testaceous. Antennæ as long as the body, stout, black, the 3rd and 4th joints about equal, the 3rd slightly curved, longer than the longitudinal diameter of the eye. Wings hyaline; nervures testaceous at base, black at apex of wing; costa and stigma testaceous-white. Calcaria one-third of the length of the metatarsus; 2nd tarsal joint longer than 5th.

The female has the antennæ as long as the thorax and abdomen, and they are more slender than in the male; the black on the apex of posterior tibiæ is less (in male it sometimes extends to the base of the tibiæ, while, it may be added, in other specimens it scarcely exists at all); the anal segment is dirty white above. The size of the 3rd cubital cellule varies, it being sometimes as long as broad, while it may be much longer than broad. The 2nd recurrent nervure is in most of the females I have seen joined to the 3rd transverse cubital nervure, or nearly so; but in one or two specimens it is at some distance from it, which is its normal position with most males. The testaceous colour on the pronotum varies in extent, and may be entirely absent.

This species comes near to *N. pallipes*, Fall., and at first sight, when I had only males, I considered it identical with that species. It would seem to differ, *pallipes* being a broader and stouter insect, the posterior tarsi are blacker, the band on the pronotum broader, the apical abdominal segments are dirty testaceous, the coxæ are testaceous, the femora have only a thin black line, and the spurs reach to the middle of the metatarsus.

Not uncommon on the Scotch mountains at an elevation of 3000 feet and upwards. *N. pallipes*, according to Thomson, is found "in forest tracts." I have a German specimen of it.

The two other British species of the group are *N. Whitei*, Cam. (which, by the way, has nothing to do with *N. lativentris*, Thoms., as stated by André, *Species des Hymén. i.*, Cat., p. 15); and *N. brevicornis*, Thoms., Opus. 622, 18; *Hymen. Scand. i.*, 100, 25. The latter species I bred from a green larva marked with orange and black spots, which fed on birch, but unfortunately it spun up before a description of it could be taken.



*Nematus carinatus*.

Hartig, Blattw., 199, 28.

As the female of this species has not been described, I give a description of it here.

Black, thick. Head as broad as the thorax. Antennæ thick, as long as the abdomen; the 3rd and 4th joints about equal; the apical joints thinner; labrum white; mandibles piceous; palpi dirty white; apex of abdomen, cerci, tegulæ, and a thin line on pronotum close to tegulæ, brownish-testaceous. Wings hyaline; costa and stigma yellowish-white; nervures pale at base of wing, darker at apex. Legs black; apical half of anterior femora, the knees of posterior, and tibiæ and tarsi, brownish-testaceous; apex of hinder tibiæ and the tarsi fuscous-black; the extreme apex of coxæ and the trochanters on under side testaceous. Cerci as long as 2nd joint of posterior tarsi; sheath of saw pilose, projecting. Length,  $3\frac{1}{2}$  lines.

This insect is much broader than *breadalbanensis*; the head is much thicker, clypeus black, cenchri larger, while the coloration of the legs is darker, and the clypeus is not so sharply truncated at the apex. The furrow on the middle lobe of the mesonotum is very deep, while there is a raised ridge running down the centre of the scutellum, which is not visible in *breadalbanensis*; in the latter, too, there is a transverse furrow which goes across the apical third, dividing the scutellum, as it were, in two. *Pallipes* again has the antennæ as long as the thorax and abdomen, the pronotum is almost entirely pale, the cerci are shorter, the abdomen "almost cylindrical"; while in *carinatus* it is broad and flat, broader in the middle than the thorax, and ending in a blunt point at the apex, the testaceous colour at the apex, too, being much less.

Thomson (Hymen. Scand. i., 97) quotes *carinatus* doubtfully as a synonym of *pallipes*.

*Nematus caledonicus*, n. s.

Reddish-yellow; two black longitudinal marks on mesonotum; the dorsum of the abdomen with black transverse marks, interrupted in the middle; metanotum with two short black marks at the sides. Wings yellowish; stigma testaceous, black at the base. Antennæ as long as the abdomen and half of the thorax; the 3rd



joint shorter than the 4th, but longer than the long diameter of the eye; the four basal joints are black above. The 3rd cubital cellule is nearly one-fourth shorter than the 2nd; the recurrent nervure is received close to the 2nd transverse cubital. The spurs reach to near the middle of the metatarsus, and are nearly as long as the cerci. Extreme apex of sheath black. Length,  $2\frac{3}{4}$  lines.

Belongs to the *luteus* group. It differs from *N. bilineatus* in its longer and clearer coloured antennæ, less sharply incised clypeus, in the lighter tint of the body coloration, narrower head and abdomen, longer spurs, clearer and more yellowish wings, longer 3rd cubital cellule; by the narrower black bands on mesonotum and on breast, where the black is much narrower, and by the black marks on the abdomen. In the last peculiarity it approaches *N. acuminatus*, Thoms., as it does in body form, but the apex of the abdomen is broader, the body stouter, broader, the mouth and tibiæ are not white, the 2nd and 3rd cubital cellules are longer, the recurrent nervures received nearer the transverse cubital, and the recurrent nervure in hinder wings is not interstitial.

Claddich, Loch Awe, in June.

*Nematus collinus*, n. s.

Luteous; the head (mouth excepted), antennæ, the breast, metapleura more or less, three longitudinal marks on mesonotum, scutellum, metanotum in centre, apex of posterior tibiæ and tarsi, black; apex of clypeus, labrum, coxæ, trochanters, tibiæ, and greater part of four anterior metatarsi, white. Wings hyaline; costa testaceous at base; apex fuscous; stigma black; 3rd cubital cellule much longer than broad, and much wider at apex than at base; recurrent nervures in hind wings received close to each other. Antennæ shorter than thorax, and abdomen stout, tapering at apex; the 3rd joint shorter than 4th. Clypeus slightly and broadly incised. Spurs more than one-third of the length of metatarsus, and a little longer than the cerci. Sheath of saw black at apex. Length,  $3\frac{1}{2}$ — $3\frac{3}{4}$  lines.

Similar to *melanocephalus*, but smaller. Antennæ, if anything, longer; the mesonotum not entirely black; 3rd cubital cellule much longer and narrower at base compared to width at apex; spurs a little longer and



sharper at apex; recurrent nervures in hind wings received closer to each other; clypeus almost transverse, &c. It has a superficial resemblance to *ribesii*; but that species is readily separated from it by the pale antennæ. The black marks on lateral lobes of mesonotum are sometimes united to scutellum, which may be entirely black, or its apex may be luteous; and the metanotum may also be black, or only the space surrounding the cenchri. The amount of black colour on the breast and sides also varies.

Rare; on birch in June. Craig Dhu, Kingussie; Claddich, Loch Awe.

*Nematus glenelgensis*, n. s.

Dark brownish-red; the antennæ, the space surrounding the ocelli, breast, a mark on middle lobe of mesonotum, the greater part of the lateral lobes, apex of scutellum, metanotum, base of abdomen, a broad transverse mark on the four apical segments, cerci and sheath of saw, deep black. Labrum and clypeus dirty white. Legs pallid testaceous; coxæ at base, the basal fourth of anterior femora, basal half of middle and the whole of the posterior pair, lined above and beneath with black; all the tarsi, apex of anterior tibiæ, apical half of middle and the whole of posterior pair, black. Wings hyaline, with a very slight griseous tinge. Costa and stigma fuscous-testaceous, the latter griseous in the middle. Length,  $3\frac{1}{4}$  lines.

I sent a specimen of the above-described species to the late Prof. Zaddach, who returned it as probably a variety of *histrion*, but I believe myself it is a distinct species. It is smaller by a line than the ordinary form of *histrion*; the ground colour is very much darker, the legs especially being almost entirely black; the antennæ are longer, thinner, and taper more towards the apex, and the saw differs, its apical division being bent in the middle, while with *histrion* it is straight.

I bred it from larvæ which I got feeding on *Salix aurita* at Glenelg, Inverness-shire, and these larvæ appear to agree very closely with those of *histrion*, but were smaller and more slender. The head was light green; mouth dark brown. Legs light green; claws brown. Body dark green; the segmental divisions are marked with white lines. Down the back runs a dark green



line, bordered on either side by a narrower white one. On the side runs another white line ; all the lines end on the 2nd last segment, which with the last is of a lighter green colour, and bear a broad white mark on the top. The skin is beset with numerous little black points.

*Nematus glottianus*, n. s.

Dark reddish-luteous ; the hinder edge of vertex and a longitudinal line on each of the lateral lobes of the mesonotum black. Antennæ pale testaceous, not much longer than the abdomen ; metathorax stout, attenuated at the apex ; the 3rd and 4th joints equal ; the apical joints are slightly fuscous ; mesonotum finely punctured. Wings yellowish hyaline ; stigma and costa testaceous ; 3rd cubital cellule one-fourth longer than broad. Tarsi nearly as long as the tibiæ, extreme apex of all the joints fuscous ; metatarsus not double the length of the 2nd joints ; spurs one-third of the length of the metatarsus. Length, 3 lines.

The larvæ feed gregariously on the leaves of *Salix cinerea* in the autumn. The head is a little narrower than the 2nd segment, is intensely black and slightly punctured ; the sides of the mouth are greenish. Legs glassy white, slightly tinged with green ; claws black ; claspers light green. The body is of a beautiful dark sea-green. On the sides are ten large oval orange spots, divided by a fold of the skin in two, but still remaining continuous. Below there is a line of roundish, irregular black dots, and below these again and over each clasper is a longish, oblong, black spot ; while there are two rows of small black dots, these, however, forming the commencement of the middle line of black dots. Over the orange marks is a line of close continuous black dots, irregular in shape, but, if anything, oblong, and which proceed from the 2nd to the 12th segment. On the back are, at the termination of each segment, two rather small roundish dots. Directly over the anal segment is a large round black mark, much larger than any of the others. The first orange spot is directly over the 2nd pair of legs. Length about  $1\frac{1}{4}$  inch.

The cocoon is of the usual form and colour, is double, and is spun in the earth.

Seemingly a rare species. I have only met with the larvæ once in the autumn near Port Glasgow.



This is the form mentioned (E. M. M. xii., 128) as feeding on willow, and which I then referred to *N. cadderensis*, Cam. The description of the larva given (*l. c.*) refers to *glottianus*; that of *cadderensis* will be described in vol. ii. of *Phyto.-Hym.*, and is figured in vol. i., pl. iv., fig. 10.

*Nematus v-flavum*, n. s.

Black, shining; labrum white; pronotum, tegulæ, the greater part of mesopleura in front, metapleura in part, the edges of the middle lobe of mesonotum (forming a V-shaped mark), abdomen and legs, orange-yellow; the base of abdomen with two small transverse black marks. Antennæ not much longer than metathorax and abdomen; the 3rd joint the length of 4th; black, dull brown beneath. Clypeus truncated at apex. Spurs scarcely reaching to middle of metatarsus; claws almost bifid. Wings hyaline; costa and stigma testaceous; 3rd cubital cellule nearly one-fourth longer than broad. The anal segment is large and considerably developed above, where it ends in a slope, as in the *luteus* group; the cerci are nearly as long as the spurs. Female. Length,  $2\frac{3}{4}$  lines.

Allied to *conjugatus*, but is of a longer and broader body form. The stigma is more uniformly coloured, the 3rd cubital cellule longer and nearly as broad at the base as at the apex, the spurs are shorter, metatarsus longer, and the apex of the tibiæ and tarsi are not black, nor are the tibiæ whitish; the cerci are longer, and the sheath of saw is not so black, nor so hairy; the labrum is longer, and the clypeus entirely black. From *N. sub-bifidus*, Thoms., it is readily known by its black clypeus, shorter antennæ, testaceous stigma, longer 3rd cubital cellule, testaceous tarsi, and longer spurs. The colour, too, is paler, not being so orange.

In Shuckard's collection.

*Nematus pulchellus*, n. s.

Black, shining, smooth, covered with a close white pubescence; labrum, clypeus, pronotum broadly, the metapleura, the sides, apex and lower side of abdomen with the legs, pale yellowish-white; a small fuscous spot on the base of coxæ behind. Antennæ nearly as long as the body, filiform, covered with a microscopic pubescence;



the 3rd joint distinctly shorter than 4th. Frontal area distinct, bluntly rounded at the apical angle, almost oval, the apex very slightly indented by the large deep and well-defined antennal fovea. Front sharply projecting; clypeus broadly but not deeply incised. Spurs as long as the cerci. Posterior tarsi and apex of tibiæ infuscated. The blotch is very large. Wings hyaline; costa and stigma yellowish-white; tegulæ of the same colour; 3rd cubital cellule much longer than broad, and nearly double the width of the base at the apex. Claws sub-bifid. Length,  $2\frac{3}{4}$  lines.

The only British species with which it has any resemblance in coloration is *leucogaster*, but that species may be known from it by its shorter, thicker antennæ, punctured head, black metapleura, base of coxæ, and fuscous stigma.

Rare. Clydesdale, on rose.

*Nematus maculiger*, n. s.

*Nematus lacteus*, var. b., Thoms., Hymen. Scand. i., 155, 88.

Pale yellowish-white; head darker, more testaceous; a large mark on vertex extending to base of antennæ, a large mark on breast, and the whole of meso-metanotum and back of abdomen (except at junction of segments), black; apex of hinder tibiæ and tarsi blackish. Antennæ short, filiform, black above, brownish beneath; the 3rd and 4th joints subequal. Spurs about one-third of the length of metatarsus, and not much longer than cerci.

The male has thicker, more pilose, and longer antennæ; the mark on vertex is larger, more extended laterally and behind; the mesothorax is entirely black, as well as the whole upper part of the body. The basal half of hind tibiæ and tarsi black; stigma griseous. Length,  $2\frac{3}{4}$ — $3\frac{1}{2}$  lines.

Very closely allied to *N. lacteus*, Thoms., but somewhat smaller; the antennæ are shorter, with the 3rd joint shorter compared to the 4th, and they are lighter coloured on lower side; the black mark on vertex is wider at the sides, and continued on either side to the antennæ and in the middle to the antennal fovea; behind it is usually more distinctly narrowed than the middle portion; the breast is black; the spurs shorter; the head, too, is more narrowed behind the eyes.



The males of the two species are not readily separated, but *maculiger* has the antennæ more rufescent, the 3rd joint longer compared to the 4th, the mark on vertex is larger, the front is not so sharply pointed between the antennæ (this refers also to the female). In both sexes the amount of black on posterior tibiæ and tarsi and on the back of abdomen varies.

The larva has been found by Mr. J. E. Fletcher; it is very like that of *lacteus*, and is of similar habits. For figure of the larva of the latter, see Monogr. Phyto.-Hym., vol. i., pl. 6, fig. 8.

Rare and local; Clydesdale, Worcester. *N. lacteus* I have not yet found in Scotland.

*Nematus oblongus*, n. s.

Black; labrum, tegulæ, and the greater part of upper lobe of pronotum, anal segment above and valves, dirty white; coxæ, except at extreme base, trochanters, anterior tarsi and tibiæ, pale yellow; femora reddish yellow; apex of posterior tibiæ and tarsi black. Antennæ thick, as long as abdomen and metathorax, tapering somewhat towards the apex, the joints not clearly separated at the base, more sharply separated at the apex. Wings hyaline; basal third of costa white, the rest of it and stigma fuscous; 1st transverse cubital nervure pellucid; 3rd cubital cellule a little longer than broad, slightly dilated at the apex. Head thick, not dilated behind the eyes; vertical and frontal sutures obsolete, as is also the pentagonal area; clypeus truncated at apex; head, mesonotum, and upper half of pleura finely punctured. The spurs are not much more than one-third of the length of the metatarsus. Length, scarcely  $2\frac{1}{4}$  lines.

Closely allied to *N. appendiculatus*, but is smaller, broader, the antennæ are thicker and shorter, vertex thicker, and with the sutures obsolete or nearly so. It comes very near to *aquilinæ*, Voll., but that species would appear to have the pronotum entirely black, as well as the apex of abdomen, and the 1st transverse cubital nervure is quite absent.

England.



*Nematus Thomsoni*, n. s.

*Nematus hyperboreus*, Cameron, Fauna of Scot., Hym., i., 32, non Thomson.

Black; labrum, anal segments, tegulæ, edge of pronotum, legs, costa and stigma, white; anterior femora largely, posterior nearly all, black. Antennæ a little longer than half the length of the body, setaceous, decreasing in thickness towards the apex; the 3rd and 4th joints equal, the rest shorter. Head a little narrower than the thorax, slightly rounded inwardly behind, black, shining, covered with a longish pubescence; labrum dull white; palpi dark fuscous; front and vertex slightly rugose; sutures and foveæ not deep; pentagonal area obsolete. Thorax shining, smooth, covered with a longish scattered greyish pubescence; the posterior edge of the pronotum and tegulæ are white; cenchri large, white. Abdomen oblong, broad, truncated at the apex, black, smooth, shining, very minutely punctured; anal segment sordid white; cerci long, white, the apices pointing towards each other; saw black, hairy, shortly exserted. Legs dirty white; the coxæ at the base, about a third of the anterior femora, posterior almost entirely, anterior tarsi at apex, the posterior entirely, and the apex of the hinder tibiæ, black; the spurs are short. Wings hyaline; costa and stigma white; nervures blackish; the 3rd cubital cellule is double the width of the base at the apex. Length,  $3\frac{3}{4}$  lines.

Differs from *N. hyperboreus*, Thoms. = *clibrichellus*, Cam., male, in the thorax being less strongly punctured, in the tegulæ and edge of pronotum being white, in being somewhat smaller and broader compared to the length, in the posterior tarsi not being black, &c.

I have ventured to name this species after the distinguished Swedish Entomologist, whose works have been of such signal service to British Entomologists.

Taken at Braemar by Dr. Sharp.





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