

**New Genera and Species of Trichogrammidae
with Remarks upon the Genus *Asynacta*
(Hym. Trichogr.).**

By

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Neocentrobia nov. gen.

Antennæ of male 10-jointed, consisting of scape, pedicellus, two subequal anelli and six funicles of which the basal five are large and subequal and the terminal one very small.

Antennæ of female 9-jointed: scape, pedicellus, two subequal anelli, two sessile funicles, the terminal one of which shows decided signs of segmentation, and a 3-jointed club.

Head sub-rectangular, as wide as the thorax. Eyes large, oval; ocelli placed in a right-angled triangle on the vertex.

Thorax ovate, nearly twice as long as its width. Abdomen in the female ovate acuminate slightly compressed, a little longer than the head and thorax together; in the male it is subcylindrical, as long as the head and thorax together. The ovipositor very stout and powerful. The head and thorax have a prominent reticulated sculpture, the abdomen and femora show signs of this also. Front wings broad, subcostal nerve long, nearly one-third of the wing length, marginal nerve short, about one-eighth

of the wing length, radius long, as long as the marginal. Marginal cilia short, surface of wings with hairs mostly in regular lines. Hind wings of usual shape, with three rows of surface hairs, their marginal cilia long on the posterior border, more than twice as long as the greatest wing breadth. Legs of the usual size and form.

Genotype: *N. hirticornis* n. sp.

***Neocentrobia hirticornis* n. sp. (Fig. 1 and 7).**

Dark brown in colour, the legs and antennæ a shade lighter, eyes and ocelli very dark brown.

Male: Antennæ long, the scape longer than the head, slightly thickened centrally, but almost cylindrical. Pedicellus long, about three fifths of the length of the scape, elongate-cyathiform. Two small anelli. The first two funicles are equal in length, each about half the length of the pedicellus, cylindrical, and equal the pedicellus in width. The third funicle is shorter — a shade more than three-quarters the length of the preceding one, it is almost cylindrical, but centrally a little dilated. The fourth funicle is equal to the first in length but is centrally thickened. The fifth funicle is noticeably longer — half as long again as the third and is fusiform in outline. The terminal funicle is a small irregular node, in length one-fifth of the preceding, and one-third as wide. From all the funicles spring long curved erect spines in irregular whorls. There are no evident special sensoria. The sexual organs are well developed, but not prominent.

Female: Antennæ shorter and stouter than in the male. Scape elongate-fusiform in shape, about as long as the head. Pedicellus slightly more than half the length of the scape, pear-shaped. Two small anelli. Funicle composed of two (perhaps three) joints, of which the first is about half the length of the second viewed dorsally, but from beneath seems much shorter, owing to the oblique suture. The larger outer funicle is obliquely api-

cally truncate, and running diagonally across this segment is also a dechitinized line which clearly indicates the position of an articulation here. On the oblique ventral terminal aspect of the last funicle is placed the triarticulated clavus, the basal joint of which is about half as long as the pedicellus, the other two equal joints together as long as the scape. The two terminal joints of the clavus have several large ridged sense-organs, and the entire clavus has a fair number of rather strong, long, adpressed hairs. The ovipositor just reaches beyond the apex of abdomen.

Female: length of head in mm .12, thorax .30, abdomen .45. The ovipositor projects .05. Length of fore wing to stigma .32, to the tip .60, greatest width .36, longest ciliæ .03. Length of hind wing to jugum .25, entire length .52, longest cilia .07. — Length of the whole insect about .87 mm. The antennal joints are of following ratio in mm: .08, .06, .0035, .0035, .06 (the two funicle joints together), .03, .045, .06.

Male antennal joints are of the following ratio in mm: .1, .0575, .0035, .0035, .03, .035, .04, .045, .045, .01.

Biology unknown.

Was caught from June 1st to August 12th at Kings Weston Down and Brockley Combe, near Bristol, also at Brockenhurst (New Forest, Hampshire). It seems to inhabit dry meadow land.

Could only be confused with *Centròbia*, from which it may be distinguished by the long radial nerve, the pronounced reticulation of the body, and in the male by the different antennæ.

Type: 2 slides (♂ and ♀) in British Museum (Nat. Hist.) London. — Specimens in Zool. Mus. Copenhagen.

Monorthochaeta nov. gen.

Antennæ 9-jointed in the female, apparently 8-jointed in the male, consisting of scape, pedicellus, two anelli,

two sessile funicles, and a clavus, which is 3-jointed in the female and appears 2-jointed in the male.

Head rounded, slightly excavated behind, wider than the thorax in the male, and about as wide as the thorax, perhaps a shade wider, in the female. Eyes larger, ocelli forming a very obtuse angle on the vertex. Thorax quadrate, short and broad, almost as wide as its length in the female, in the male narrower. Abdomen of female little longer than the head and thorax together, ovate, acuminate. The male abdomen is round. Wings (the female only is winged, the male being apterous): fore wings broad and strong, longer than the whole insect. Subcostal nerve one-quarter of the length of the wing. Marginal nerve half as long. Radius short, Marginal cilia very short. Surface of wings evenly covered with short and rather coarse hairs. From the radial foveolæ the hairs form one straight line running towards the apex of the front of the wing, the rest of the surface hairs evenly distributed, except towards the posterior margin, where there are very slight traces of regularity. Hind wings rather broad and oar-shaped, with three rows of surface hairs, the marginal cilia short on the anterior border, very long on the posterior, nearly twice as long as the greatest width of the wing. Legs rather short, and stout, all tibiæ longer than their tarsi. The first tarsal joint on all legs rather long. Ovipositor stout and powerful, very slightly protruding beyond the apex of the abdomen.

Genotype: *M. nigra* n. sp.

***Monorthochaeta nigra* n. sp.** (Fig. 3-4, and 8).

Head yellow-brown on the vertex, occiput and frons; a dark patch contains the ocelli, cheeks black. Eyes dark red, ocelli black, antennæ, thorax, abdomen and legs black, with the articulations of the latter lighter. Head and thorax finely reticulated. Wings of the female hyaline except

for a broad band of brownish infuscation in front of the marginal nerve, which reaches to the posterior border.

Male: Antennæ short and thick, with some coarse hairs. Scape not as long as the head, thick, almost ovoid. Pedicellus stout and pear-shaped, as wide as the scape and five-eighths of its length. Two anelli. Two funicles which together equal the pedicellus in length and width, these are joined immovably together, the basal joint being longer, especially dorsally. The clavus which is short and stout is equal to about one-quarter of the antennal length. Thorax ovate, a little longer than wide — not nearly as wide as the head, but almost twice as long. Wings rudimentary. Legs powerful, but not specially long. Abdomen round, slightly wider than the head, and as long as the head and thorax together. Sexual organs not large. — This sex at first glance resembles a small *Psocus*, or a member of the springtail group *Smythuridae*.

Female: Antennæ thick, much longer than in the male, covered with scanty, but long and fine hairs. Scape a shade longer than the head. Pedicellus pear-shaped, about one-third of the length of the scape. Two anelli, the second hidden in the base of the first flagellar joint and hardly to see. Two sessile funicles, which together equal the pedicellus in length, wider than the pedicellus, and inflated on the dorsal aspect. And a large pointed clavus which is slightly longer than the scape, composed of three segments. The basal one shorter than the terminal one, the middle one the longest. The basal segment of the clavus has oval sense-organs, the central joint has long sensory ridges as well as oval organs, and on the apical joint are several very pronounced ridges, which project beyond the antennal end. Ovipositor stout and powerful, just protruded beyond the apex of the abdomen. Wings infumated from base to end of marginal nerve.

Female: length of head in mm .15, of thorax .25, of abdomen .5, ovipositor is protruding .04. Length of fore

wing .75, to stigma .35, greatest width .3, longest cilia .05. Length of hind wing .6, to the jugum .26, longest cilia .08. — Length of the whole insect about .8 mm. The antennal joints are in the following ratio in mm: .12, .06, .008, .005, .045 (the two funicle joints together), .045, .06, .054.

Male: length of head .12, thorax .25, abdomen .35, the whole insect .725. The antennal joints are of the following ratio in mm: .1, .05, .008, .005, .035 (the two funicles together), .02, .05.

Biology unknown.

Caught on several occasions in early spring, from April 17th to the end of July, on high, dry grass land — Kings Weston Down near Bristol; also Strødam (Denmark) June 29th.

Could only be confused with *Brachista*, from which it may be distinguished by the 2-jointed funicle, and the lack of the very strong dorsal hairs.

Type: 3 slides (♀ + ♂♂) in British Museum (Nat. Hist.) London. — Specimens in Zool. Mus. Copenhagen.

Trachocera nov. gen.

Female: antennæ 8-jointed, consisting of scape, pedicellus, a small anellus, two long, moveable funicles, and a 3-jointed clavus.

Head triangular, almost broader than the thorax, slightly excavated behind eyes, large, oval in outline, with a very fine, erect pilation, ocelli in a small right-angled triangle on the vertex. Thorax rather long, the parapsidal furrows well marked, the scutellum rather small. Abdomen ovate, acuminate. The head and thorax with a fine reticulated sculpture, the abdomen almost smooth. Fore wings broad, submarginal nerve long, marginal nerve short, just touching the anterior border of the wing, radius long, as long as the marginal, arching into the wing, and ending in a small dilatation. Marginal cilia

short. Surface of wings evenly covered with fine, rather closely placed hairs, except on the basal third, which is without hair. The hairs show regularity in three lines, the first line from the radial foveolæ, arching in a line convex anteriorly to the anterior border of the wing, the second regular line starts from the tip of the radius, and runs with a convexity backwards, towards the centre of the external border of the wing. The third regular line starts above the outer end of the retinaculum or wing-joint groove, and runs with its convexity forward to the postero-external edge of the wing. Hind wings of the usual shape, their posterior cilia about half as long again as the wing at its widest point. Legs rather slender, but of usual length.

Genotype: *T. longicauda* n. sp.

***Trachocera longicauda* n. sp.** (Fig. 2, and 9).

Female: Head dark brown, eyes and ocelli black, antennæ dark brown, thorax and abdomen also dark brown, with the legs a shade lighter. The thorax is covered with a fine reticulation, which becomes more elongate posteriorly and this reticulation is also found on the femora, where it is also long and narrow. Head deeper than wide – it is the same width, or just a trifle wider than the thorax. Eyes large.

The female antennæ rather long, inserted close together in the centre of the frons. Scape long, as long as the head, cylindrical, with fine irregular encircling ridges. Pedicellus cyathiform, not quite half as long as the scape, covered with closer encircling ridges, which give it the appearance of a fir-cone. One small anellus, two funicles, as wide as the scape, subcylindrical, the basal one three-quarters of the length of the pedicellus, the apical one two-thirds of the length of the pedicellus. These two have no sculpture, but have hairs of moderate length, without apparent sense organs. The clavus is long and

narrow, its length equals that of the scape and pedicellus together. The basal joint of the clavus equals one quarter of its entire length, the other two joints are of equal length. The second joint of the clavus has several long sense organs, and also an apical circular one, the terminal joint has several long, and several circular sense organs. The antennæ are not hairy, a moderate number of fine hairs are present. Thorax rather long and narrow, nearly half as long again as wide, oval in outline, with no outstanding features. The rather small scutellum has two lateral hairs on each side. Inside and a little behind these, and about as far from the border as they are from each other, are two rather large clear pustules. The Propodeon is rather long, and has two rather large oval spiracles. Wings hyaline. Fore wings wide and well formed about twice as long as wide, surrounded by short cilia, and evenly covered with fine hairs, except at the basal third. The three rows which show regularity have been noted above. The marginal and radial nervures of equal length, the latter arching well into the wing. There is no post-marginal. The hind wing of usual shape, the posterior cilia hardly half as long again as the greatest wing breadth. Legs of the usual shape and size, but rather slender, the tarsal joints decreasing in length from base to apex. Abdomen long and tapering, slightly longer than the head and thorax together, covered with an extremely faint network pattern, a few adpressed hairs at the posterior margin of each segment. The ovipositor is extruded to a length equal to about one-third of the length of the abdomen.

Length of head in mm .12, length of thorax .28, length of abdomen .6, of ovipositor .22. Length of fore wing to stigma .42, of the whole fore wing .75, greatest width .38, longest cilia .05. Length of hind wing .58, to the jugum .3, longest cilia .08. Length of the whole

insect 1 mm. The antennal joints are of the following ratio in mm: .11, .055, .0035, .035, .03, .04, .07, .07.

Biology unknown.

Described from one female caught at the side of a moist ditch, at Shapwick Fen, Somerset, England, on August 22th 1922.

Cannot easily be confused with any other genus, the two long moveable funicles, and the lined pedicellus are quite distinctive.

Type: 1 slide (♀) in British Museum (Nat. Hist.) London.

Orthoneura nov. gen.

Antennæ of male 9-jointed, consisting of scape, pedicellus, two small anelli, and a 5-jointed clavus. Antennæ of female 7-jointed, consisting of scape, pedicellus, two small anelli, and a 3-jointed clavus.

Head rectangular, not as wide as the thorax. Eyes large, ocelli very large, forming an obtuse angle on the vertex. Thorax oval, about half as long again as its width. Abdomen subcylindrical, as wide as the thorax and longer than the head and thorax together. Ovipositor very small and weak, not protruded. Fore wings broad and large, as long as the whole insect. Subcostal nerve three times as long as marginal nerve, together about three-seventh of the wing's length. Radius almost wanting, a slight thickening at the outer end of the marginal nerve. Marginal cilia short, surface hairs short, and rather thinly scattered over the wing, with no trace of regularity. Hind wings rather wide and well formed, with two rows of surface hairs, the posterior row down the centre line of the wing, the anterior row near the front border. Marginal cilia short on the anterior border, on the posterior border the longest cilia are twice as long as the greatest wing breadth.

Genotype: *O. bimaculata* n. sp.

***Orthonera bimaculata* n. sp.** (Fig. 5, and 12).

Head yellow, slightly darker to brown on the frons, cheeks brown. Eyes red. Ocelli dark brown. Thorax dorsally yellow, the sides and ventral surface darker. The mesothoracic scutum has two large reniform dark brown marks, one on each side of the central line, with their convex borders outward, and nearly contiguous, internally, especially at their anterior end. Scutellum yellow, slightly darker at its tip and sides. The colour gradually darkens to brown toward the back of the thorax. The abdomen is brown, lighter to brownish yellow across the middle third, the apex is also again lighter. Legs brown, the middle and posterior knees and tarsi yellow-brown. Wings hyaline, the nervure light brown. Chætotaxy of the whole insect very fine and scarce.

Male: antennæ rather stout, the scape fusiform, ventrally a little dilated, about as long as the head. Pedicellus cyathiform, about half as long as the scape, and the same width. Two small subequal anelli, the clavus is long and wide, as long, and quite twice as wide as the scape. The clavus is composed of five joints which appear subequal if viewed dorsally, but if seen from the side the two apical joints slope backward, so as to appear longer. There are no noticeable sense organs, and the antennæ are well clothed with short fine hairs. Sexual organs very small.

Female: Antennæ as in the male, except that the terminal clavus is composed of three joints, the first occupies one-fifth of the total length of the clavus, the second joint is just a trifle longer, the remaining three-fifths being in one piece, on which are seen several long sensory ridges. On the apex is a slightly curved sense-rod, with a small terminal bulb, this rod is about one-fifth of the clavus in length. The hairs of the antennæ are slightly longer and stouter than in the male. Ovipositor very small and weak, not protruded.

Female length of head .12, of thorax .23, of abdomen .45. Length of fore wing .75, to the stigma .3, greatest width .3, longest cilia .05. Length of hind wing .55, to the jugum .24, longest cilia .08. Length of the whole insect .8 mm. The antennal joints are in the following ratio in mm: .09, .059, .003, .003, .01, .018, .055, .03 (sense rod).

The male antennal joints are of the following ratio in mm: .08, .06, .003, .003, .015, .02, .02, .022.

Biology unknown, but it was found among large numbers of immature frog-hoppers.

Caught from May 7th to the end of July on the high, dry grass land — Kings Weston Down, near Bristol.

Cannot easily be confused with any other species, as the colouring, antennæ, and marginal nervure are quite characteristic.

Type: 2 slides (♀ + ♂) in the British Museum (Nat. Hist.) London. — Specimens in Zool. Mus. Copenhagen.

Diaclava nov. gen.

Male: antennæ 6-jointed, consisting of scape, pedicellus, two anelli and a 2-jointed clavus.

Head rectangular, wider than thorax, eyes large oval, ocelli large in an obtuse triangle on the vertex. Thorax a little longer than wide. Abdomen about as long as thorax and head together, tapering to a blunt point. Fore wing long and narrow, submarginal nerve one-third of the whole length of the wing, marginal nerve one-third of the submarginal, together reaching four-ninths of the length of the wing. No radius nor any stigma, but from the end of the marginal nerve a narrow hyaline band reaches to the foveola. Marginal cilia few and well separated, surface hairs irregular dispersed over the whole surface excepting the base. Hind wings of usual shape with one row of surface hairs down the middle, near

the tip a second row towards the front edge, marginal cilia of moderate length.

Genotype: *D. waterhousei* n. sp.

***Diaclava waterhousei* n. sp.** (Fig. 6, and 11).

Male: Colour pitchy brown; scape, pedicellus and first clavus joint pale yellow, terminal clavus joint black. Eyes and ocelli dark brown. Antennæ short, scape not as long as the head, about one-third of the whole antenna, pedicellus shorter than the scape, two well developed anelli. Two clavus joints of about equal length. Sense-hairs strong, but few in number.

Length of head in mm .1, thorax .15, abdomen .22, the whole insect .48. Length of fore wing .4, to end of marginal nerve .18, greatest width .1, longest cilia .05. Length of hind wing .28, to jugum .12, longest cilia .04. The antennal joints are in the following ratio in mm: .08, .05, .005, .005, .4, .05.

One male swept at Burnham Beeches (England) near the stream on July 14th 1913 (C. Waterhouse leg.).

Type: 1 slide (♂) in the British Museum (Nat. Hist.) London.

Notes upon *Asynacta exigua* Nees (Fig. 10).

Mr. Bakkendorf of Copenhagen one day told one of us that *Asynacta* in his belief was synonymous to *Poropoea*. As we were just preparing this little paper about Trichogrammids and we very much wished to give the question about *Asynacta* a final decision, we wrote to Dr. Ruschka in Weyer (Ober-Oesterreich) and asked him if possible to get a loan of one of the type specimens in the Museum of Vienna. Dr. Ruschka showed the extraordinary great interest for the sake so that he went to Vienna and borrowed from the Museum 1) the slides of *Asynacta* which the late Dr. Kohl has made, and 2) a type specimen of *Asynacta* fixed by gum on

a cartoon, to which latter belong 4 labels viz 1) Förster's label marked *Or-Ex*, 2) a label marked *As. nigra. Försters type* written by Mayr, 3) a label marked *Asynacta exigua N.* in Mayr's handwriting, and 4) a label merked *Collect. G. Mayr* put on by the Vienna Museum.

The slide showed 2 fore wings and 1 hind wing, dry, without balsam, under a cover glass. This was the slide which Dr. Kohl himself had made from one of the specimens from Mayr's collection in Vienna, and it was the same one from which Dr. Kohl had drawn the wing for the work of mine (*The European Trichogramminæ* 1918 p. 339). Though the slide is not a perfect one, there is no doubt that Kohl's drawing is well made, and that it will be possible to recognize *Asynacta* on account of the fore wing.

The Vienna Museum kindly permitted us to try to prepare the dried specimen. On the needle was a small label marked: *Or-Ex.* written by Förster; as Dr. Ruschka tells me, this indicates that the specimen really originates from Nees himself. The specimen then must be about one hundred years old. By help of the binocular microscope it was very difficult to solve the question if it was possible to mount the animal in balsam. Three days in boiled water however loosened the gum — and the specimen proved to be complete, only a few hairs from the wing's surface were broken during the years. Some drops of Acetic acid in water made it so soft that it was possible to place it on a slide in Canada balsam with antennæ, wings and legs stretched out. During the mounting unfortunately a tarsal joint was broken off and it was impossible to find it again. For the rest the mounted specimen is all right, and all the 4 labels are placed on the slide.

To the description of Mayr (*Verh. zool. bot. Ges. Wien* IV p. 589–92, reprinted in the paper p. 340) the following may be added:

Antennæ 8-jointed, consisting of scape, pedicellus, 1 anellus, 2 funiculi and a 3-jointed clavus. In the said paper p. 339 was put query at the assertion of 2 anelli; the mounted specimen very distinctly shows but one. Abdomen very much shrivelled, it looks like a small truncate cone. Ovipositor very distinct, protruding one-third of the length of abdomen. It is difficult to see if the ovipositor is unbroken at the mounted specimen. The antenna with strong and powerful hairs, especially the funicle and the clavus. Antenna shrivelled with many lists of folding. The picture (fig. 10) does not take these lists into consideration. Head very thin. Thorax large and stout. At the hindmost border of the crown of the head there seems to be a bundle of 4 or 5 stout hairs. Legs long and stout. Marginal vein of fore wing for a short distance parallel to the border (more distinctly parallel to the border than in *Poropoea*). The surface hairs of the fore wings evenly dispersed on most parts of the surface. In places there seems to be some tendency for these hairs to be arranged in rows specially at I, II, III, and IV (see the figure), but the rows are not always regular or unbroken (B-C). Hind wing broad and stout, just as in *Poropoea*. Surface richly covered with hairs. Two rows of hairs along the anterior margin. Marginal vein long and conspicuous stout.

The genus must in the future surely be placed near the genus *Poropoea*.

Bristol and Gentofte, April 1928.

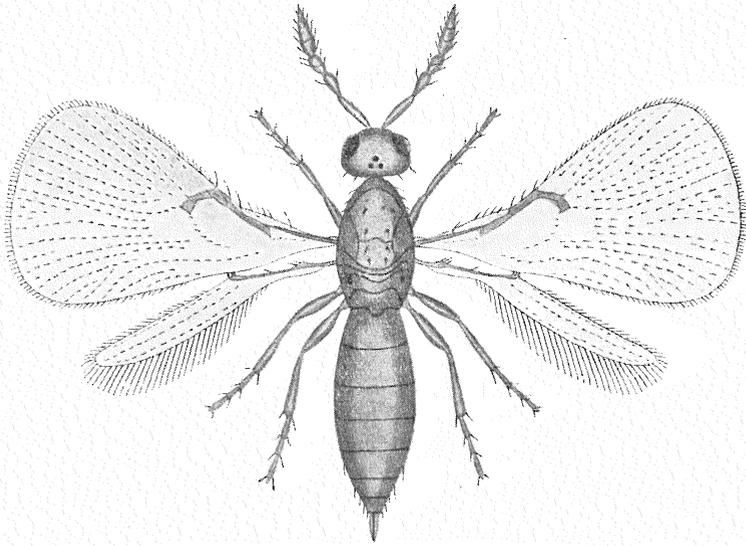


Fig. 1. *Neocentrobia hirticornis* n. sp. ♀.

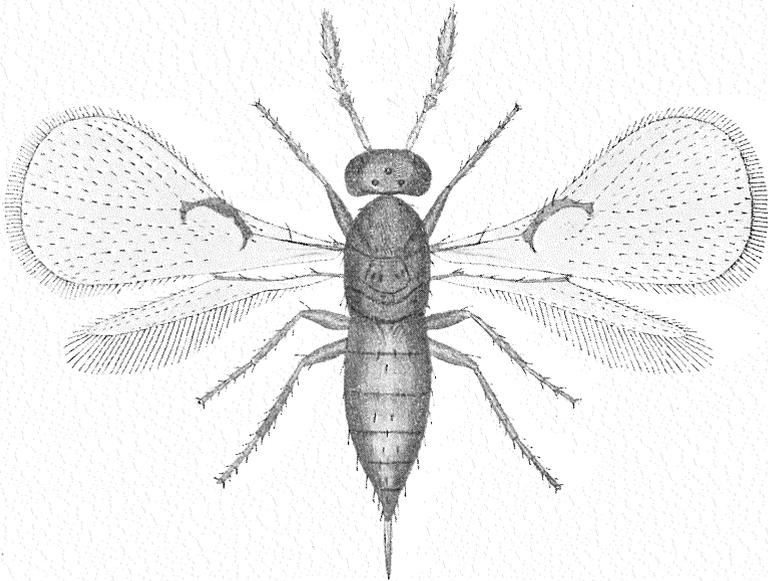


Fig. 2. *Trachocera longicauda* n. sp. ♀.

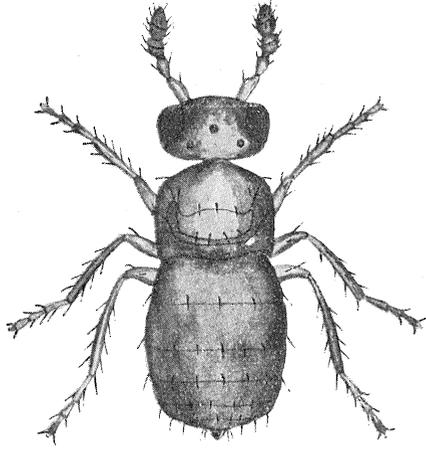


Fig. 3. *Monorthochaeta nigra* n. sp. ♂.

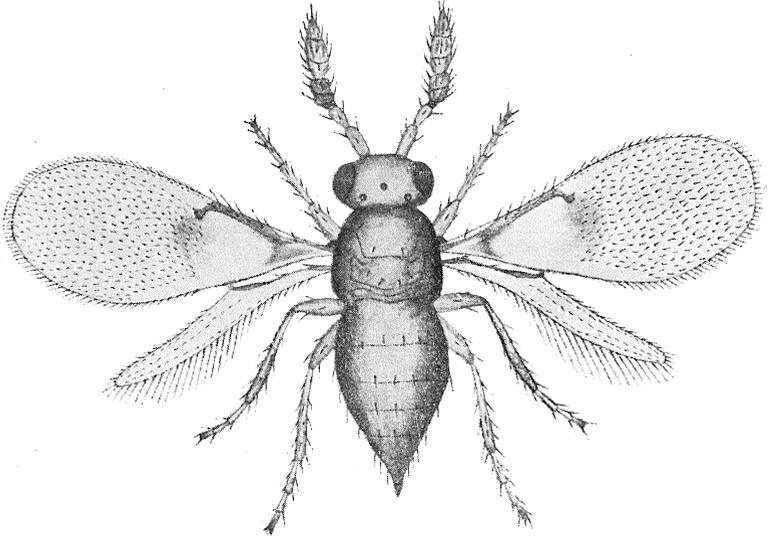


Fig. 4. *Monorthochaeta nigra* n. sp. ♀.

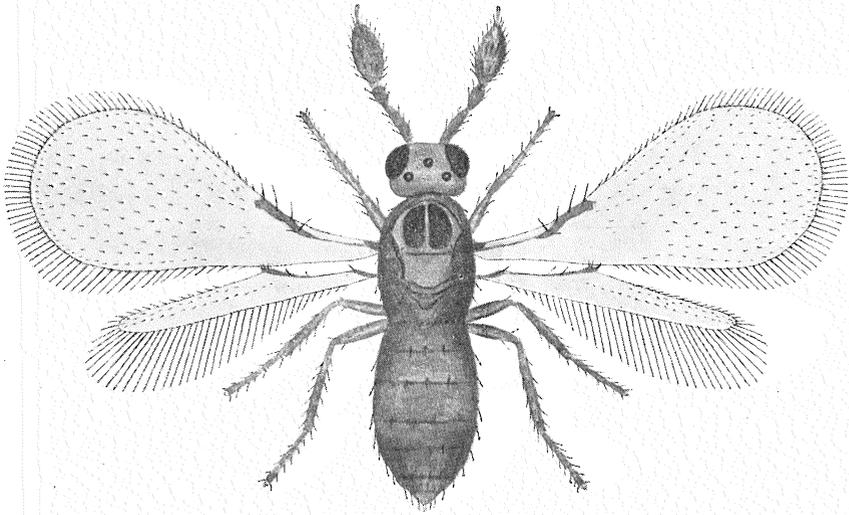


Fig. 5. *Orthoneura bimaculata* n. sp. ♂.

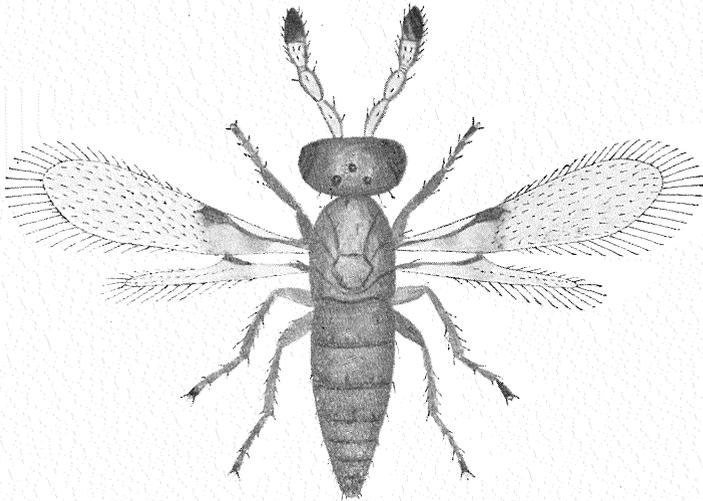


Fig. 6. *Diaclava waterhousei* n. sp. ♂.

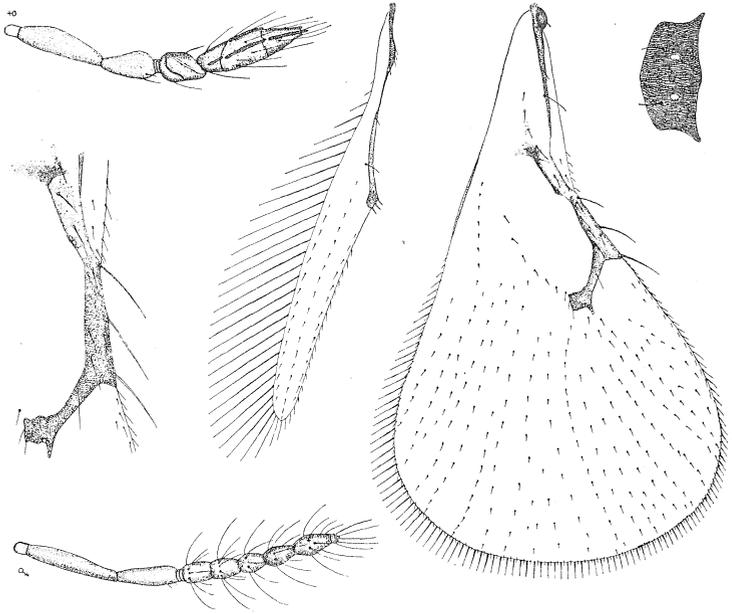


Fig. 7. *Neocentrobia hirticornis* n. sp.
Details.

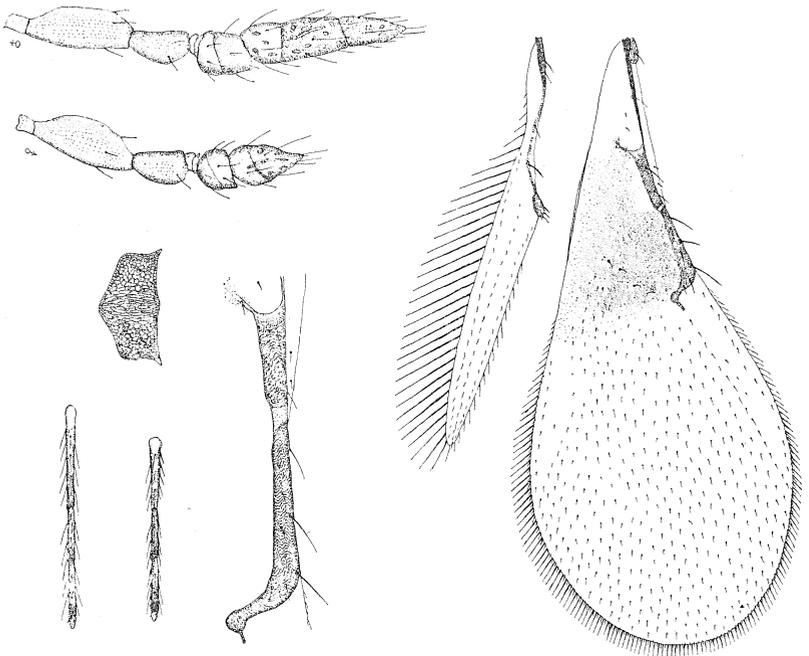


Fig. 8. *Monorthochaeta nigra* n. sp.
Details.

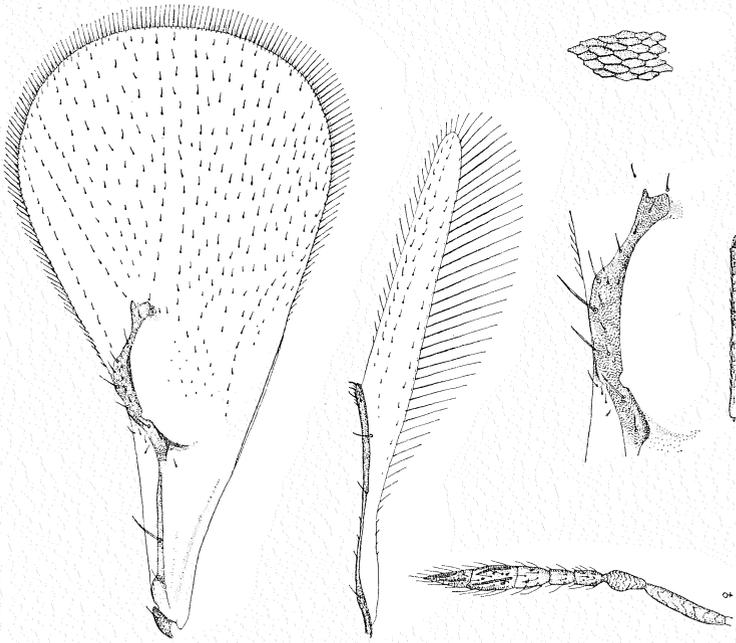


Fig. 9. *Trachocera longicauda* n. sp.
Details.

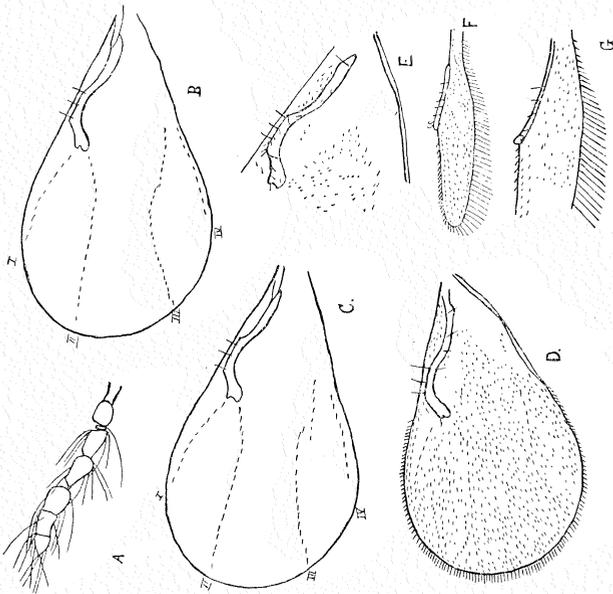


Fig. 10. *Asynacta exigua* Nees.
Details.

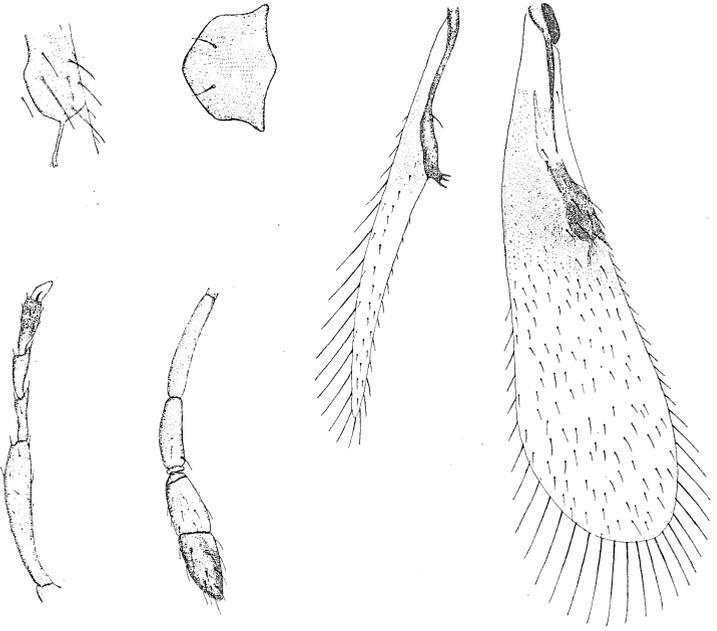


Fig. 11. *Diadava waterhousei* n. sp.
Details.

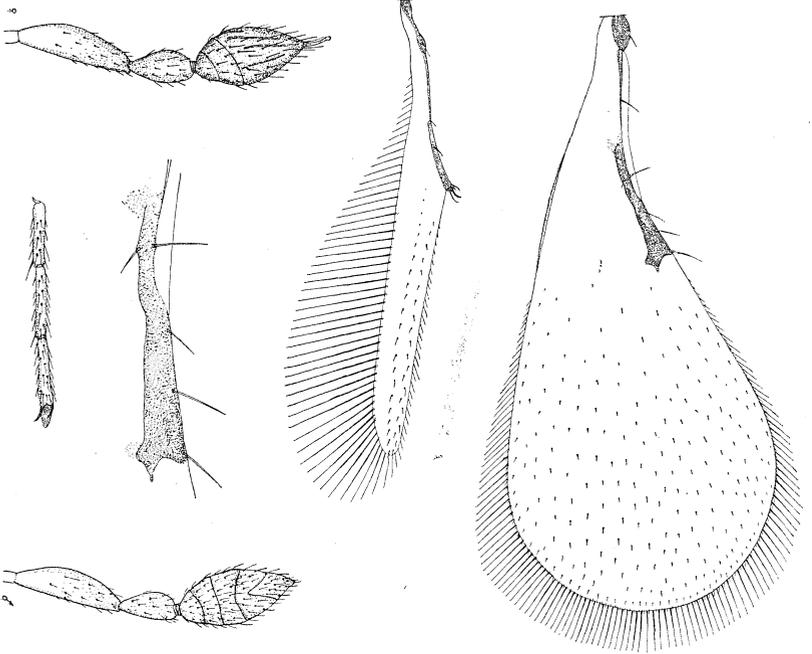


Fig. 12. *Orthoneura bimaculata* n. sp.
Details.