

## Notes on Chalcids II.<sup>1)</sup>

By  
J. P. Kryger.

### **Asynacta Förster.**

*Asynacta exiguus* Nees. Hym. Stud. II, 1856 p. 87 & 89.

*Asynacta exigua* Kryger. European Trichogram. Ent. Medd.  
12. B. 1918 p. 339.

In my above-mentioned paper I published some details about Förster's genus *Asynacta* (= *Eulophus exiguus*

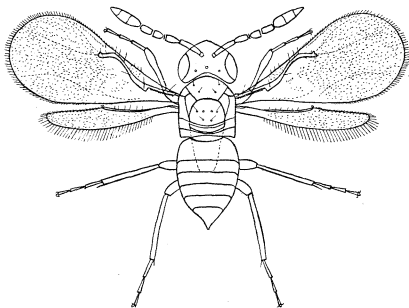


Fig. 1. *Asynacta* Först.

Nees) and gave a full description of the female. No male was known up to then. Blood & Kryger have later on (Ent. Medd. 16. B. 1928 p. 214) given some more details and a better picture of the wing of the female.

In 1931 I got a male and I am therefore able to give here the description of this sex.

### **Asynacta exigua** Nees.

♂: Similar to the female. Antennal joints more sparingly provided with sense hairs and sense organs.



Fig. 2.  
*Asynacta*  
Först.  
Male antenna.

<sup>1)</sup> Notes on Chalcids I is found in Ent. Medd. XXII 1943 p. 360.

As the genus has not been pictured, I here give a picture of the male.

Denmark. Funder Valley.

Swept on heather in a heath with fir, aspen, and numerous low plants.  $\frac{9}{8}$  1931.

Type: 1 ♂ mounted in balsam.

Zool. Mus. Copenhagen.

### **Cercobelus Walk.**

In 1838 Walker described this species, on the basis of the female sex only (The Entomological Magazine

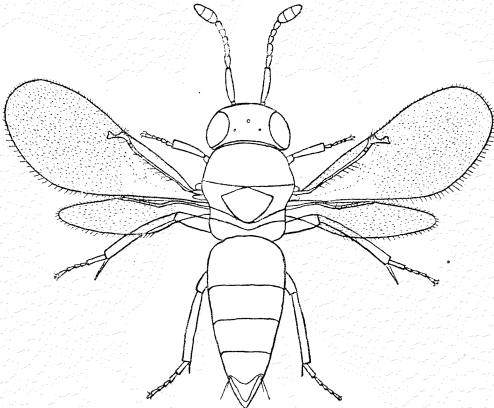


Fig. 3. *Cercobelus* Walker.

Vol. V 1838 p. 48) and in 1840 he gave it the generic name (The Entomologist vol. I 1840 p. VI). Neither Förster, Mayr, nor Mercet mention it in their books; and Ashmead has not seen it either. Thomson records it from Sweden (Hym. Scand. IV p. 170: rare, swept in May near Lund); in the Thomson-collection at Lund only one ♀-specimen is present, no doubt that on which his description is based.

Thus it is most likely that it has only been found once since the time of Walker. However, my friend

Mr. Bakkendorf and I have several times swept it in Denmark, males as well as females, and as Thomson's description is written in Latin, I give here a description of the species in English, accompanied by some figures.

**Cercobelus jugaeus** Walk.

Female: Antennae 9-jointed, consisting of scape, pedicel, 4-jointed funicle, and 3-jointed clavus. Scape

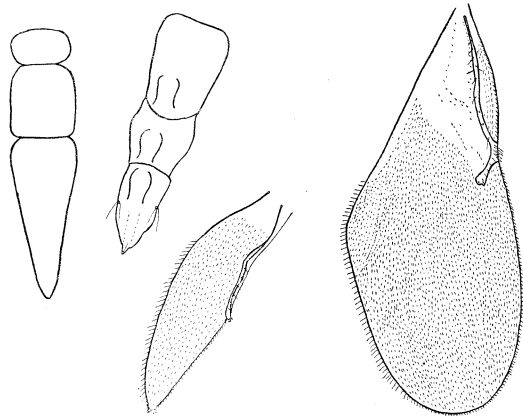


Fig. 4. *Cercobelus* Walker.

Contour-drawing of imago; tip of female abdomen, pushed out; hind-wing, and fore-wing.

rather long, pedicel and 1st funicular joint nearly equal in length, 2nd—4th funicular joints smaller, a little more than half the length of the pedicel. Club longer than the last three funicular joints together; club joints subequal in length. Funicle and club with numerous, but very short setae and with few, but strong sense organs.

Head large and rounded; eyes small, ocelli in a very obtuse-angled triangle.

Thorax long, rectangular; pronotum small, mesothorax and scutellum of equal length, metathorax small. Axillae touching each other.

Abdomen as long as thorax, striated, which is easily seen, in transmitted light, on the soft-skinned hind part. The abdomen shows a remarkable structure which I cannot fully explain. The tip bears a pair of very short sheaths, between which a diminutive ovipositor is hardly

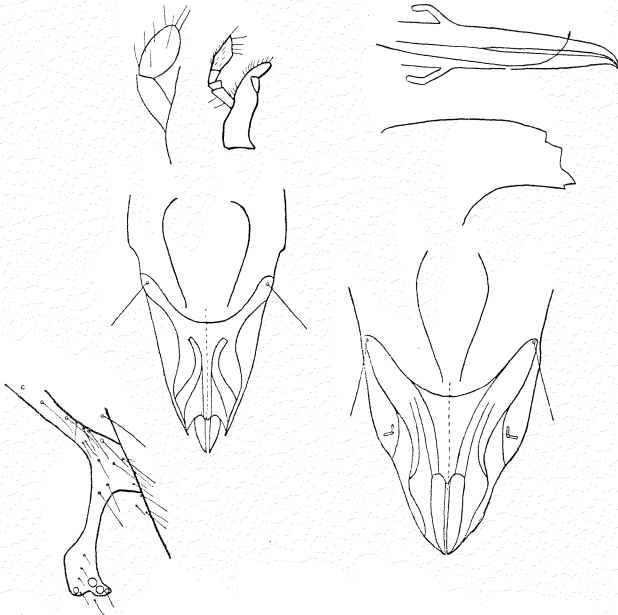


Fig. 5. *Cercobelus* Walker.

Above, from left: labial palp, maxillary palp, ovipositor, and mandible. Below wing-venation, and tip of female abdomen pushed out and pulled in.

visible. The base of the ovipositor itself, which in many chalcid flies is very conspicuous, is only little prominent in this genus. It would seem, however, that the posterior 3 or 4 abdominal segments are very soft-skinned and can be bent forwards in below the basal segments. The explanation is perhaps that the whole posterior part of the abdomen is active during the depositing of the eggs in fissures or crevices. While I prepared a specimen in

water for mounting it in balsam, the soft-skinned parts swelled to such a great degree that the abdomen appeared twice as long as in the living animal; now as the specimen lies enclosed in balsam on a slide, three pairs of crescent-shaped organs can be seen within the soft-skinned parts; the object of these organs is perhaps to transfer the blood pressure from the phragma to the tip of the abdomen when oviposition is about to take place. Some details will be seen in the figures.

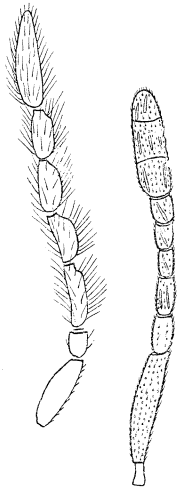


Fig. 6. *Cerco-  
belus* Walker.  
Male (left) and  
female antenna.

Ovipositor slightly protruding.

Fore-wing: Subcosta long, marginal vein very short, radius longer than marginal vein. Stigma large. Marginal cilia short. Wing surface from end of subcosta evenly covered with short setae. Base of wing with few scattered hairs.

Hind-wing: Venation long. Surface uniformly covered with short hairs.

Legs: Spur of middle tibia long, longer than the 1st tarsal joint and longer than half of the whole tarsus.

Colour: Scape dark brown, remaining part of antenna paler brown, head and thorax dark green, dull, very finely reticulated. Abdomen dark, dull, with very fine longitudinal striae. Veins of wing brown. Legs dark, knees and tarsal joints paler.

Male: Antenna apparently 7-jointed, consisting of scape, pedicel, 4-jointed funicle, and 1-jointed clavus; further, a minute annellus can be traced. Funicle and clavus with strong hairs but without sense organs. 1st funicular joint as long as scape, 2nd and 4th shorter but equal in length, 3rd a trifle longer, but shorter than 1st. Clavus long and slender, as long as the last two funicular joints together.

Wings, legs, size and colour like those of the female, but apparently the last abdominal segments are hardly able to be bent in below the basal segments, as in the female.

Female:	Length of animal	1.5 mm.
	" " animal, abdomen extended	2.5 mm.
	" " antenna	0.75 mm.
	" " fore-wing	1.25 "
	" " hind-wing	1.00 "
Male:	Length of animal	1.5 mm.
	" " antenna	0.8 "
	" " fore-wing	1.25 "
	" " hind-wing	1.00 "

All the specimens were swept in the spring on rather damp soil in woods, among Anemones, Larkspur, Orchids, and other spring flowers beneath Hazeltrees and Birches. Females caught in Ermelunden, Boserup, and Sorø (Bakkendorf); Holmegaards Mose and Boserup (Kryger); males caught at Boserup (Kryger).

Dates of capture: Middle of May—beginning of June (male: May 18th).

### **Dorcatomophaga n. g.**

In the spring of 1932 Mr. A. West handed over to me some few chalcid flies which he had reared from wood of an old oak-tree in Dyrehaven infested with larvae of *Dorcatoma* (Coleoptera). Next year he pointed out to me the oak-tree from which he had reared the beetle and the chalcid fly. I secured some of the infested wood for rearing and placed it in a large glass-jar. I was fortunate enough to rear a large number of the same fly. The dates were as follows: wood collected on April 14th and one day at the beginning of May; the flies bred from  $^{20}/_5$ — $^5/_7$  of the same year. No other insects than the *Dorcatoma* and the fly were reared from the wood, so the chalcid must without doubt be a parasite in the beetle-larva.

The fly proved to be a new genus belonging to the family *Miscogasteridae*, subfamily *Tridyminae*. The description follows below:

**Dorcatomophaga n. g.**

Antennae in both sexes 13-jointed, viz scape, pedicel, 2 annelli, 6-jointed funicle, and 3-jointed clavus. No visible difference between the antennae in the two sexes. Only the microscope reveals (transmitted light) that the funicle and clavus in the female are more sparingly

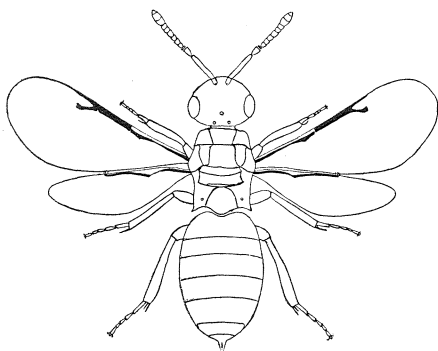


Fig. 7. *Dorcatomophaga westi* n. gen. n. sp.

provided with sense hairs than the funicle and clavus in the male. There seems to be some variation in the number of antennal joints in both sexes. I have ♂♂ and one ♀ with 5-jointed funicle, one ♀ with 1st and 2nd funicle-joints nearly fused, one ♂ with 5-jointed funicle and the two annelli nearly united, and one ♀ with one antenna with 2 annelli and 5-jointed funicle and the other one with the 2 annelli and the 1st funicle nearly fused (see fig. 8).—Head large, as wide as thorax. Eyes of common size, ocelli in a right-angled triangle, mandibles 4- and 3-toothed. Max. palpi 4-jointed, labial palpi 3-jointed. Thorax long, pronotum large, mesonotum rather short, but longer than pronotum, scutellum large. Hind angles of thorax acute. Parapsidal furrows very deep and dis-

tinct. Abdomen longer than thorax; ovipositor slightly protruding. Head and thorax reticulated. Fore-wings: Subcosta and marginal vein of equal length; postmarginal vein more than half as long as the marginal vein, radius shorter than postmarginal vein. Marginal vein rather wide. Fringe short. Surface of wing from beginning of marginal vein evenly covered with short hairs.

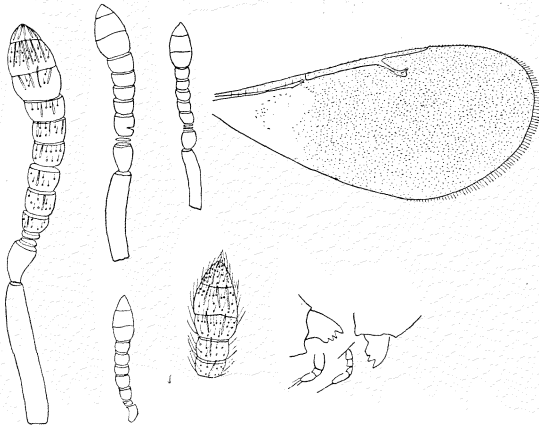


Fig. 8. *Dorcatomophaga westi* n. gen. n. sp.

To the left normal female antenna, then, above, abnormal female and male antenna, below abnormal and normal male antenna; to the right fore wing and mouth-parts.

Base of wing with few hairs. Hind-wings: Rather short, spade-shaped, venation strong; marginal fringe short.

Legs rather short, middle legs with one strong and long tibial spur, hind legs with two tibial spurs.

***Dorcatomophaga westi* n. sp.**

♀: Blackish-brown, shining; scape, pedicel, tip of clavus, tibiae, and tarsi lighter brown; venation of wings brown, darker than tibiae and tarsi.

Scape long, nearly as long as funicle; pedicel short, pear-shaped; funicular joints subequal in length, the 1st the shortest, all wider than long, widening towards the



club. Club short, wider than the last funicular joint, 2nd joint the longest, 3rd joint shorter than the two preceding joints. Funicular joints and club sparingly covered with sense hairs and sense ridges. Head as wide as thorax; thorax three times as long as head, rectangular; abdomen wide, wider and longer than thorax, oval.

♂: Colours as in the ♀. In all essentials like the ♀, only the abdomen much more narrow than in the ♀, and the funicle and club more richly provided with sense organs. Abdomen rectangular.

Hab. Dyrehaven, Denmark.

Date:  $20/5-5/7$ .

Parasitic in larvae of *Dorcatoma* in old oak-trees.

The species is named in honour of the eminent Danish Coleopterologist Aug. West.

### **Lathromeris Förster.**

*Lathromeris scutellaris* Förster. Hym. Stud. II 1856 p. 87 & 89.

*Lathromeris scutellaris* Kryger. Europ. Trichogram. Ent. Medd. 12. Bd. 1918 p. 299.

Förster described the species in 1856. Since that time it has only been found a few times (Denmark). I have myself swept about 10 specimens, all ♂♂, in different parts of Seeland, always in open ground near the border of a forest or in open spots in the forests. Neither Förster nor I myself have seen the female, and apparently the female has never been found.

In the summer of 1931, however, I succeeded in getting one female by sweeping in tall grass in a small dry ditch at the border of the wood Nordskoven, Dyrnæs, Jægerspris, Denmark.

The female bears a close resemblance to the male, I have never seen a genus with such small differences between the sexes. Unless one is able to examine the underside of the abdomen, it is impossible to settle the question: male or female. Not even the antennal club

seems to present any differences in respect to sense organs or sense hairs. But the underside of the ♀ abdomen will at once expose the rather long ovipositor.

♀: Similar to the male. Ovipositor not protruding;  $\frac{2}{3}$  of the length of the abdomen. Some of the abdominal segments striated.

As the genus has never been pictured, I shall give a drawing of the female here.

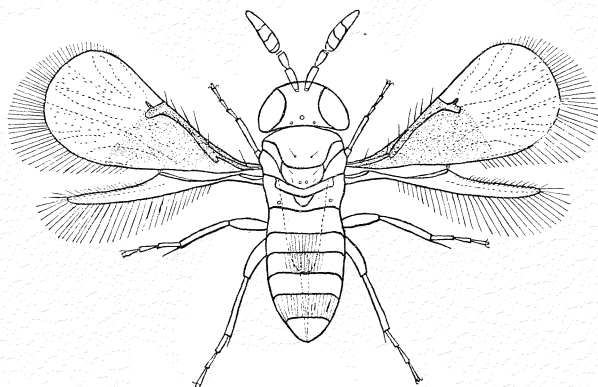


Fig. 9. *Lathromeris* Först. ♀.

Denmark: Dyrnæs, Jægerspris.  $\frac{26}{8}$  1931.

Type: 1 ♀ on a slide mounted in Canada balsam.  
Zool. Mus. Copenhagen.

### **Leptomastix histrio Mayr.**

*Some remarks on the male and female antennae.*

Förster describes the genus *Leptomastix* (Hym. Stud. II H. 1856 p. 34 & 37), but he does not mention any species. His specimens — only ♀♀ — were natives of Austria. Förster's description, as is always the case with his generic descriptions, is correct and complete. In his later work Förster does not revert to the genus, and it may therefore be supposed that he has never since had an opportunity to examine any specimens.

His original specimens would seem to have disappeared, for in 1875 when Mayr (Verh. K. K. zool.-bot. Ges. Wien XXV p. 729—730) wrote about *Leptomastix* and described the single hitherto known species *histrion*, he did not at all mention Förster's specimens, but adds: "Ich kenne nur ein von Haliday in Italien gesammeltes, Leptoma-

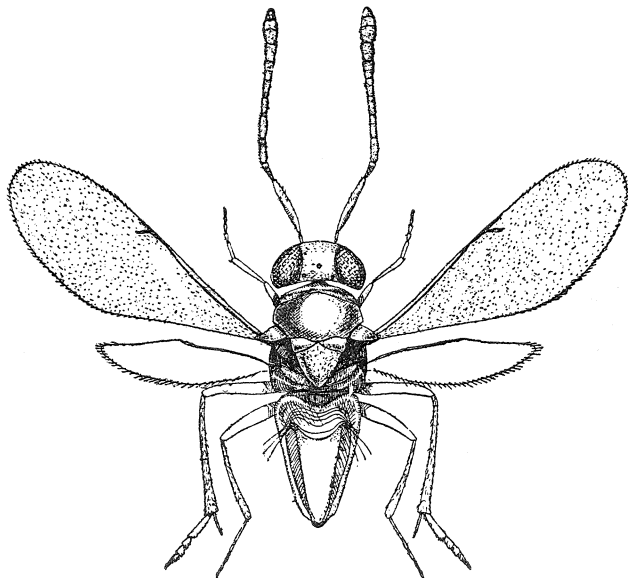


Fig. 10. *Leptomastix histrion* Mayr.  
After Mercet.

*stix histrion* determiniertes Weibchen, welches Eigenthum des Leydener Museums ist." After the description of the species (♀) he says: "Dem Männchen (♂) von *Ericydnus ventralis* ähnlich".

The next author to deal with *Leptomastix* is Thomson (Hym. Scand. IV p. 128). He was not able to, or he did not wish to recognize the genus after Förster's description, but named it *Stenoterys* (sp. *orbitalis*). His genus *Stenoterys* is, no doubt, identical with *Leptoma-*

*stix*. He gives a brief description of the ♂ and lays stress upon the antennae being sparingly provided with long, dark hairs.

Finally Mercet (Encirtidos, Madrid 1921, p. 119) deals with the genus. He has an excellent picture of the ♀ but not, as he usually has, a picture of the ♂ antennae. This antenna, however, presents such characteristic criteria that it is strange that he does not mention them at all, but perhaps he has not noticed them. He places the genus just after *Pholidoceras*, *Doliphoceras*, and *Philoponectroma*, and my following remarks confirm this relationship.

Description of the ♀ antennae: 11-jointed: scape, pedicel, 6 funicle-joints, 3-jointed club. The apex of the clavus presents an appearance which I have never seen in any other antenna and which is, no doubt, quite unique among the chalcid flies. The outermost half of the 3rd club joint bears about 20 sense organs arranged in an oval figure. These sense organs look like the picture accompanying this paper: on a clear spot (microscope; transmitted light) stands a short cylinder bearing a hair, which seems to be moveable. Moreover, the sense-ridges, sense-spots, and hairs, common in the antennae of different chalcid flies, can be seen.

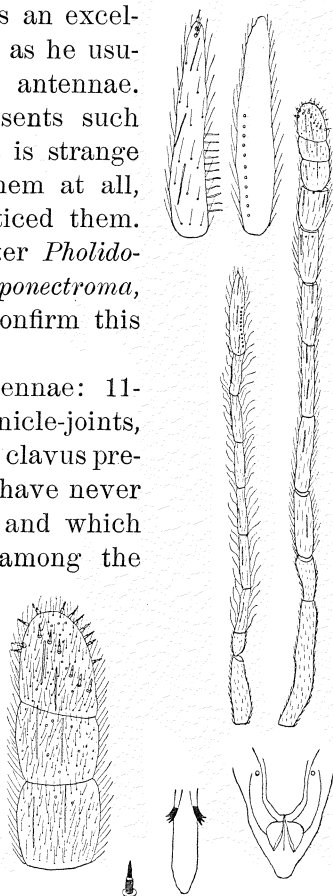


Fig. 11. *Leptomastix histrio* Mayr. To the left, female antennal club with sense-organ. To the right, male and female antenna (above the outermost joint of male antenna) and below penis (left) and ovipositor.

Description of the ♂ antennae: 9-jointed: scape, pedicel, 6-jointed funicle and 1-jointed clavus. The clavus bears at its tip 3 sense-organs like those mentioned in the female club. Moreover sense-ridges and sense-hairs. But in addition the clavus bears 11 sense-organs formed like bits of tape. These sense-organs are not easily seen in all the slides but you may always be able to see (transmitted light) 11 clear spots on which the sense-organs are fixed. The genera *Pholidoceras*, *Doliphoceras*, and *Philoponectroma* have organs somewhat similar to these, but in the said three genera the organs are short, stiff, and spatulate and fixed both on the club and the last funicle joint.

♀ ovipositor and sheaths insignificant. ♂ valves with 3 strong teeth.

Mercet writes (p. 123) that his specimens were swept among *Pinus* and *Nerium*, the first one infested with *Aspidiotus hederæ*, the second one with *Chionaspis*. He therefore concludes that *Leptomastix* is a parasite in Coccids. The faintly developed ovipositor in the female may suggest that the host is easily accessible, but the complicated antennal club in the same sex indicates that the matter is not an easy one and that the connection is perhaps quite different.

For examination I have had 3 ♂♂ + 1 ♀ (England ♂ + ♀, Denmark 2 ♂♂).

### **Ophioneurus spinosus n. sp.**

1852. *Ophioneurus* Ratz. Ichneum. d. Forstins. III. p. 197.

1918. *Ophioneurus* Kryger. Europ. Trichogram. Ent. Medd.

12. B. 1918 p. 292.

♀: Antenna 9-jointed, viz: scape, pedicel, one small annellus, 6-jointed clavus. Sixth club joint very long and slender and provided with very long sense-organs (spines and setae).

Thorax: Parapsidal furrows distinct, scutellum with a longitudinal furrow.

Abdomen: Phragma reaching halfway down into the abdomen, ovipositor rising from the point where phragma ends. Ovipositor hardly protruding.

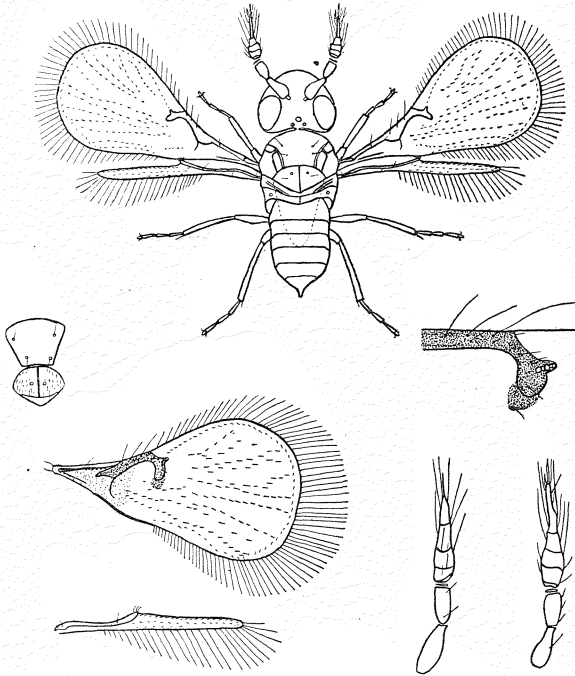


Fig. 12. *Ophioneurus spinosus* n. sp.

From left to right, above, scutum and scutellum, wing venation, fore- and hind-wing, male and female antenna.

Fore-wing with all discal cilia in straight lines, 13 altogether, 6 on the surface, 7 on the underside. Subcosta with 1 seta. Venation not so black as in *signatus*; outer edge more rounded than in *signatus*. Subcosta with 10 sense-organs just as in *signatus*.

Legs: Tibia of middle leg with an apical spur nearly as long as first tarsal joint (in *signatus* much shorter).

Head light brown, antennae yellowish-brown, eyes and ocelli red. Thorax and abdomen brown, shining, legs brown with tarsi and outer end of all tibiae lighter, all apical tarsal joints darker.

♂: As the female, but antennae not so powerful and spines and setae much weaker.

Length: ♀. Antenna 0.2 mm.  
 Length of fore-wing 0.5 mm.  
 Greatest width of same 0.2 mm.  
 Length of hind-wing 0.36 mm.  
 Length of whole animal 0.4 mm.

♂. Antenna 0.2 mm.  
 fore-wing 0.4 mm.  
 whole animal 0.35 mm.

Type: 1 ♀ + 1 ♂ on slides in the Zoological Museum, Copenhagen.

Swept in peat moor, on a small oak or a small birch tree, or on low herbage under these two trees. Sorte Mose, Lillerød, North Seeland.

<sup>19</sup>/<sub>7</sub> 1930: 2 ♂♂ + 1 ♀. <sup>23</sup>/<sub>7</sub> 1930: 1 ♀.

In 1934 and 1935 I have swept many specimens on small birches in the Børstingerød fen (peat fen), North-Seeland. July. Also Salpetermosen (peat fen) July.

### **Pareupelmus n. g.**

In 1921 Fr. Ruschka published a paper entitled "Chalcididenstudien" I Teil in Verh. Zool. bot. Gesells. Wien (pp. 224—315). It treats the subfamily *Eupelmidae* from Europe and the countries around the Mediterranean. The generic key (p. 242) opens with *Tetracnemus*. ♀ funicle 6-jointed, ♂ (p. 244) funicle 6-jointed, joints 2, 3, 4, 5 provided with rami. As Westwood states in definite terms that his genus *Tetracnemus* has 5-jointed funicle, joints 1, 2, 3, 4 with rami, it is obvious that Ruschka's genus cannot be a true *Tetracnemus*. The veins show that it must belong to the *Eupelmidae*, not

to the *Encyrtidae*, while Westwood's genus is a true *Encyrtus*.

The name *Tetracnemus* for Ruschka's genus should accordingly be dropped and the genus should be given another name. I would have preferred that Ruschka himself had altered the name, but as he retired from entomological work some years ago, I have no hope that he will revert to this matter again. I therefore propose to name the genus

*Pareupelmus* n. n.

and the species

*Pareupelmus diversicornis* Ruschka.

### **Perissopterus anglicus Blood.**

*Perissopterus anglicus* Blood. Trans. Ent. Soc. Hampshire and South England 1929 p. 38.

The genus was first described by Howard in 1895 on the basis of two American species. Since then the genus has been found in New South Wales, Puerto Rico, China, Singapore, and New Caledonia and thus seems to be a native of the tropics and the western hemisphere. That it was also to be found in Europe, was not to be expected. But in 1929 Dr. Blood, Bristol, swept a female specimen of a *Perissopterus* in the New Forest, England. Later in the same summer, when I was hunting

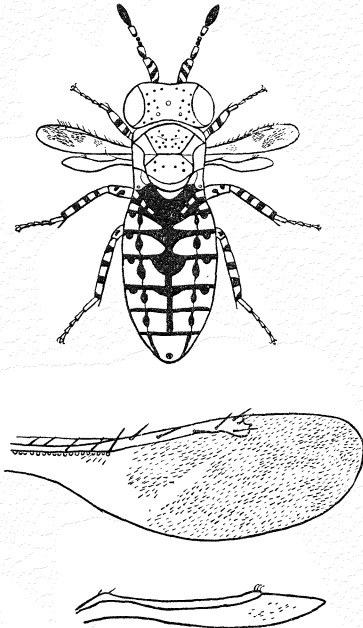


Fig. 13. *Perissopterus anglicus*  
Blood. ♂.



in the same place, I also got a female of the species. Dr. Blood described the new species as *P. anglicus*. In the summer of 1931 I succeeded in rearing the European species from stems of *Salix repens* taken at Sandkroen, Tisvilde, Denmark. As I got both ♂♂ and ♀♀, and as the male of the genus had not hitherto been found in Europe, I shall give a few details of it here.

**Perissopterus anglicus** Blood.

♂. Micropterous or apterous. While in the female the abdominal segments are only white near the edge and brown on the greater part of the upper side, in the male they are all white with brown marks (see fig.). In all other particulars similar to the female.

♂♂ + ♀♀ reared from stems of *Salix repens* with different scale insects. Sandkroen, Tisvilde, Denmark.

Type: 1 ♂ mounted in balsam. Zool. Mus., Copenhagen.

Dates: Bred  $^{20}/_7$ — $^{10}/_8$  from *Salix repens* collected in May.

**Pteroptrix** Walk.

The collections of the British Museum (South Kensington) still include a great part of Walker's collections of Hymenoptera, among which are several types.

In Mon. Chalcid. 1839 Walker describes several minute Chalcid flies under the generic name *Pteroptrix*. In that part of Walker's collections which are in the British Museum the late Dr. Waterston found the type specimens of the *Pteroptrix* species. I have myself had permission to look over the collections and I agree with Dr. Waterston that only three of these flies belong to the *Trichogramminae*, viz: *Pteroptrix Acestes*, *P. Doricha*, and *P. evanescens*, while all the other *Pteroptrix* species represented in the collection belong to the tetramerous or pentamerous chalcid flies.

With the permission of Dr. Waterston I shall give

here a few notes on our common investigations concerning the three above-mentioned species.

**Pteroptrix evanescens** Walk.

Monogr. Chalcid. I. 1839.

The specimen is really a true *Trichogramma evanescens* Westwood, but as Westwood's name is from 1833 (Phil. Mag. (3) II) and Walker's from 1839 or 1840, the former must have the priority and the species must also in the future bear the name: *Trichogramma evanescens* Westwood.

**Pteroptrix Acestes** Walk.

Monogr. Chalcid. I. 1839.

Only a small part of the type specimen was present. The ravages of time had nearly destroyed it, but Mr. Waterston mounted the remainder in Canada-balsam on a slide. Especially a fore-wing was in a perfect condition. From this fore-wing it may easily be seen that *P. Acestes* is the same species as was called by me *Chaetostricha weneri* (Ent. Medd. 12. B. 1918 p. 306). Hence we can only drop the name *weneri* and let the species bear the name *acesstes*, and as the name *Pteroptrix* is no more to be used for this species, the name *Oligosita acesstes* must be the correct name.

**Pteroptrix Doricha** Walk.

Monogr. Chalcid. I. 1839.

The species is a *Centrobia* and no doubt a specimen of *Centrobia Walkeri* Förster (Hym. Stud. II 1856 p. 87, 89). As, however, Förster's work is from 1856 and Walker's from 1839, the name *Pteroptrix Doricha* must have the priority. But as the name *Pteroptrix* cannot be used for this species, it must bear the name

*Centrobia doricha* Walker,

and *Centrobia Walkeri* Förster must be abandoned.

### **Tetracnemus Westw.**

Westwood's original description of this genus and its single species was published in the Mag. Nat. Hist. 1837, Vol. I, pp. 257—259, and is copied here:

"Genus quasi intermedium inter Encyrtum et Eulophum. Corpus oblongum, minutum. Caput thorace paullo angustius. Ocelli distantes. Antennæ capite cum thorace longiores; 8-articulatæ: articulo 1mo, elongato; 2do, parvo, obconico; 3tio, 4to, et 5to,

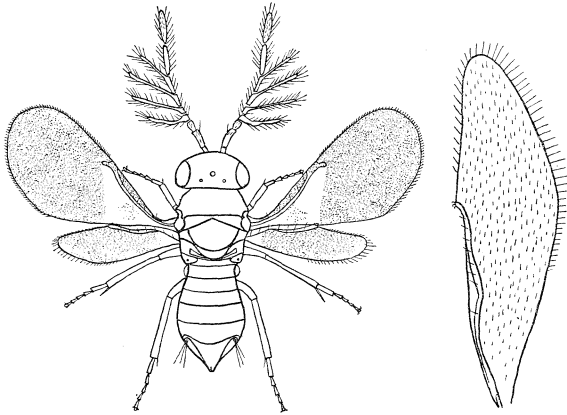


Fig. 14. *Tetracnemus* Westw.  
Hind-wing to the right.

minimis, singulo ramum elongatum supra emittenti; 6to, longo, tenui, apice supra ramum emittenti; 7mo, paullo breviori; ultimo, magno, oblongo-ovato. Thorax ut in Encyrtis formatus, scutello magne subrotundato. Alæ anticæ nervo subcostali, cum costa spatio parvo conjuncto, et ad apicem ramum parvum clavatum et curvatum emittente. Pedes sat longi atque graciles, intermedii ut in Encyrtis formati. Tarsi 5-articulati pulvillo magno. Abdomen parvum, ovatum, subdepressum; apice subacuminatum. Mas.

Species unica mihi adhuc cognita.

*Tetracnemus diversicornis* Westw.

Caput nigro-æneum, vertice tenuissime et transverse rugosum. Antennæ nigrae, pilosæ. Thorax æneus, scabriculus; tegulæ piceæ. Abdomen nigricans. Pedes nigricantes, geniculis rufescentibus, tarsis piceis, calcaribus et articulo basali pedum intermediorum luteis.

Long. corp.  $\frac{1}{2}$  lin.; expans. alar. 1 lin. Habitat in quercetis apud Sylvam Coombe, die 3tio Julii, 1835, captus."

This description seems to be very distinct, but nevertheless the genus has had a peculiar fate. Förster (Hym. Stud. II. 1856) does not mention it at all, nor has Thomson got it in Sweden (Scand. Hym. IV. 1875). The first to mention it is Howard. In his paper: Insects of the

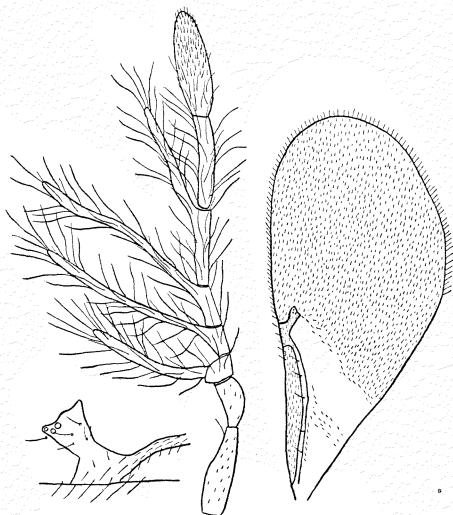


Fig. 15. *Tetracnemus* Westw.  
Stigma, antenna and fore-wing.

subfamily Encyrtinae with branched antennae 1892 (Proc. U. S. Nat. Mus. vol. XV pp. 361—369) he gives a key to and a description of the families known up to that year. But he immediately adds to the confusion of the question. Though Westwood says in his description: Thorax ut in *Encyrtis* formatus, Howard states at the beginning of his key: Scapulae widely separated at tips . . . *Tetracnemus*. But the widely separated Scapulae do not belong to the Encyrtidae. And moreover Howard says: Antennae 10-jointed, though Westwood distinctly says 8-jointed and mentions all the 8 joints individually.

Mayr (Die Europ. Encyrtiden. Verh. Zool.-bot. Ges. Wien, vol. XXV, 1875) has not seen the genus, and he therefore only mentions it briefly in his preliminary remarks, stating that the genus has the first 3 small funicular joints provided with very long branches. Besides he questions the connection of the genus with the Encyrtinae. Ashmead (Class. 1904 pp. 295 and 297) has . . . .Axillæ widely separated, face with a distinct carina . . . .Tetracnemus. Whence he has the distinct carina, is not evident; at any rate it is not derived from the original description.

Mercet in Fauna Iberica. Encirtidos, Madrid 1921 is of the opinion that a genus like Tetracnemus does not exist. On p. 541 he gives his reasons for his questioning its existence. His essential objection to Westwood's description seems to be that all the hitherto known genera with branched antennae have a 6-jointed funicle with joints 2—5 branched, while *Tetracnemus* has a 5-jointed funicle with joints 1—4 branched. He therefore supposes that Westwood has missed a very small first funicle joint. And his second objection is that though we know species with 5-jointed funicles among the *Encyrtidæ*, this seems to be so exceptional that we should be very cautious to erect genera with 5-jointed funicles.

Mercet has asked the late Dr. Waterston at the British Museum to look for the type specimen at Oxford, but he was unable to find it, so we must suppose that it has been lost.

Ruschka (Zool. bot. Gesells. Wien B. 70 1921 p. 242 and 245) describes *Tetracnemus diversicornis* Westwood, which species he has swept in dry meadow land in different localities in Austria, and of which he has seen Förster's ♀ type specimen in Vienna. His pictures show a species with a wing resembling an *Eupelmus* wing, and he really reckons his species to the *Eupelmoidæ*. Besides he figures an antenna with a 6-jointed

funicle, of which joints 2—5 are branched, and a clavus with 1 joint. Schmiedeknecht (Hym. Mitteleurop. Jena 1930 p. 417), finally, has in the key *Tetracnemus* just as Ashmead has it in his key (Classification), but he adds that he has often swept it in Thuringia.

If we are now going to judge from all this, there is only two facts to take into account, viz: Westwood's and Ruschka's descriptions. Both are trustworthy men, and we can only believe that they are both right, which is to say that we have to do with two different genera, so that Ruschka's genus is not at all *Tetracnemus* Westw.

In the summer of 1930 when I visited Finland I got an Encyrtid which I believe is the true *Tetracnemus* Westw.; and as it is different from Ruschka's genus, I shall give the description here:

***Tetracnemus diversicornis* Westw.**

♂. Antennae: 8-jointed, scape, pedicel, 5-jointed funicle, 1-jointed club. Scape long, pedicel not half the length of the scape. Funicular joints increasing in size towards apex; 1st and 2nd very small, 3rd as long as first two together, 4th and 5th each longer than the preceding; club joint the longest of all the antennal joints, twice as long as the 3rd funicular joint. Funicle joints 1, 2, 3, and 4 branched. The branches from 2nd and 3rd joint the longest, and all branches longer than the club. Funicle joints and their branches with very long setae. Club with shorter but much more numerous setae.

Head hemispherical; antennae inserted near the mouth. Mandibles acuminate. Eyes and ocelli red. Front with a sharp edge.

Thorax long and stout, as wide as head, scutellum large shield-shaped, axillae touching one another, metathorax very small.

Abdomen as long and as wide as thorax, cerci rather

long, rising from a place  $\frac{1}{3}$  up the abdomen; phragma reaching a little down into abdomen.

Fore-wing has marginal vein distinct and postmarginal vein very faint, radius a little longer. Marginal fringe very short. Linea calva present, running from stigma to hind margin; a hairless spot near the base of the wing. Nervation of hind-wing very long, nearly two-thirds of the whole length of the wing.

Brown with metallic tint. Legs and antennae yellowish-brown, hind femora brown.—The colour is from a specimen mounted in Canada balsam.

Length: Antenna 1 mm.

Fore-wing 1.4 mm.

Hind-wing 0.8 mm.

Whole animal 1.5 mm.

$\frac{7}{8}$  1930. Finland.

Swept 10 ♂♂ on the branches of 3—4 old and high fir trees standing in the garden to the right of the walk from the main road to the Restaurant "Alphyddan" near Helsinki. I was only able to sweep there for 10 minutes and had no time for further examinations concerning the host. The species seems to be associated with fir-trees, the soil beneath the trees being nearly bare.

I swept no females, it was no doubt too early for the sex, and I was unable to return to the place later on.

Neotype: 1 male on a slide mounted in Canada balsam. Zool. Mus. Helsinki.

The chief objection to Westwood's description is that the figure, especially of the thorax, does not fit an Encyrtid fly. But in the text he says distinctly:

"Thorax ut in Encyrtis formatus . . . . Pedes . . . . intermedii ut in Encyrto formati."

But we must suppose that Westwood has known several Encyrtids very well, and we shall therefore not lay too much stress on an incorrectness in a figure.

I have myself some few objections to the figure, viz: the 3rd funicle joint is too short, the 4th too long and the clavus too heavy. But the antenna has the right number of joints, there is no annellus, it is the 1st, 2nd, 3rd, and 4th funicular joints which are ramose. The wing has a distinct marginal vein, and the branches on the funicle joints are correctly placed on the top of each joint. So altogether I think Westwood's drawing from 1837 is a very good one and represents a true Encyrtid.

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