

The European and eastern Nearctic fungus-gnats in the genus *Ectrepesthoneura* (Mycetophilidae)

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ABSTRACT. The validity and composition of *Ectrepesthoneura* Enderlein are discussed and it is contrasted with the related genus *Tetragoneura* Winnertz. The occurrence of mid-tibial sense organs in these genera and elsewhere in the sub-family Sciophilinae is considered. The European *Ectrepesthoneura* are revised and the secondary sexual characters of the male legs newly described. Two species, *E. pubescens* (Zetterstedt) = *messaurensis* Plassmann, syn.n. and *E. colyeri* sp.n., are added to the British list. The Nearctic species are discussed and the two eastern species dealt with fully: the male of *E. bicolor* (Coquillett) is newly recognized and *E. laffooni* sp.n. described. Some western Nearctic *Tetragoneura* probably belong correctly to *Ectrepesthoneura* but examination of types showed that *T. quintana* Cole, *T. longicauda* van Duzee and the eastern Nearctic *T. pimpla* Coquillett belong to *Dziedzickia* Johannsen in its present broad usage. The Palaearctic *Ectrepesthoneura gracilis* Edwards also probably has closer affinities with *Dziedzickia* than with its present assignment. The Japanese *Ectrepesthoneura* described by Sasakawa (1961) are excluded as they are probably Sciaridae.

Introduction

Ectrepesthoneura Enderlein is a small Holarctic genus, closely related to the large worldwide genus *Tetragoneura* Winnertz. At present both genera are placed in the tribe Leiini of the sub-family Sciophilinae but Tuomikoski (1966) considered that they should be placed more correctly in the tribe Gnoristini near *Synapha* Meigen, the character they share with the Leiini (a short vein R1) being due to convergence. Both *Ectrepesthoneura* and *Tetragoneura* comprise short-bodied gnats with relatively short stout legs. Some species hitherto included in these genera (*E. gracilis* Edwards and several Nearctic *Tetragoneura*) have the abdomen and legs more slender and differences in wing venation and genital structure which suggest a closer relationship with *Dziedzickia* Johannsen (Gnoristini). The true position of these species

was obscured, again because of their rather short vein R1. Sasakawa (1961) described two Japanese species (*japonica* and *yasumatsui*) in *Ectrepesthoneura* but his figures of wing venation and genitalia indicate that they are not correctly placed, but are probably Sciaridae.

Ectrepesthoneura has been distinguished from *Tetragoneura* by a combination of two venational characters, the long vein Sc ending in R and a very short-stalked or sessile posterior fork; in *Tetragoneura* vein Sc is short and ending free, while the posterior fork has a relatively long stem. Variation in the latter character has led some authors, e.g. Garrett (1925), to question the validity of recognizing *Ectrepesthoneura* as a taxon distinct from *Tetragoneura* but as redefined here it is considered a natural group. This is confirmed by the peculiar characters of the male genitalia, e.g. the large ninth tergite with specific marginal structures, present in all species except *gracilis* and the simple stylomeres

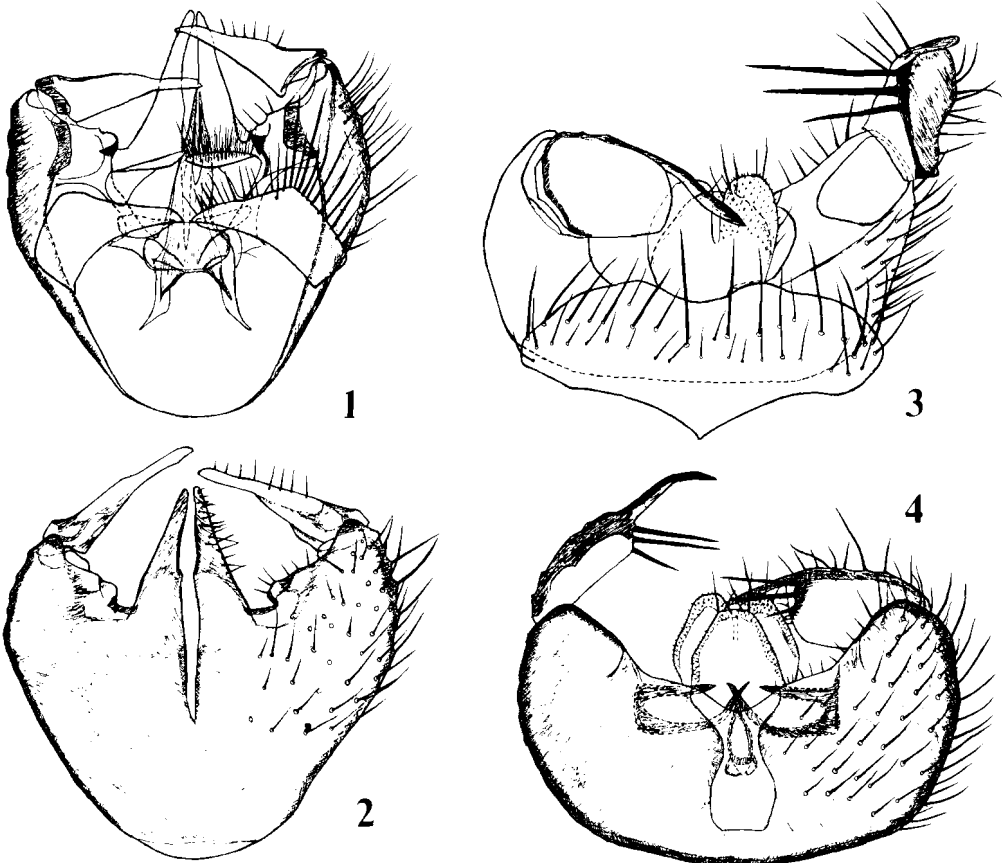
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bearing flattened terminal bristles, found in all species except *gracilis* and *laffooni* sp.n. Neither character is found in *Tetragoneura*, in which most species have a narrow transverse ninth tergite, usually with relatively simple structure, typified by the European *T.sylvatica* Curtis (Figs. 3 and 4). This tergite is larger in a few New Zealand species, but does not conceal the stylomeres dorsally. In the Nearctic *T.nitida* Adams it is divided medially into two separate plates (Figs. 1 and 2).

E.laffooni has highly modified genitalia but is otherwise a typical member of *Ectrepesthoneura*. The genus is a compact group, both in external and genital characters but *E.gracilis* is somewhat different and the generic diagnosis given below does not take it into account. Its genital structure differs most obviously in the small ninth tergite closely articulating with the large genital capsule, which is itself narrowly

divided ventrally. The more slender form and differences in venation, e.g. downcurved vein R5 and well-marked postradial veins, suggest relationship with *Dziedzickia*. The presence of only one pair of long scutellars, the laterals being reduced, is another difference from the generic diagnosis. An undescribed Nearctic species, which runs to *Tetragoneura* because of its short posterior fork and short Sc ending faintly in the wing membrane, resembles *gracilis* in other aspects of its venation, its slender form and a small ninth tergite (but capsule not ventrally cleft and other structures very different). Both should probably become the types of new genera but it is premature to establish them as such until the World fauna of the group has been more intensively studied.

A 'sensory' area situated dorsally on the basal half of the male mid tibia is present in



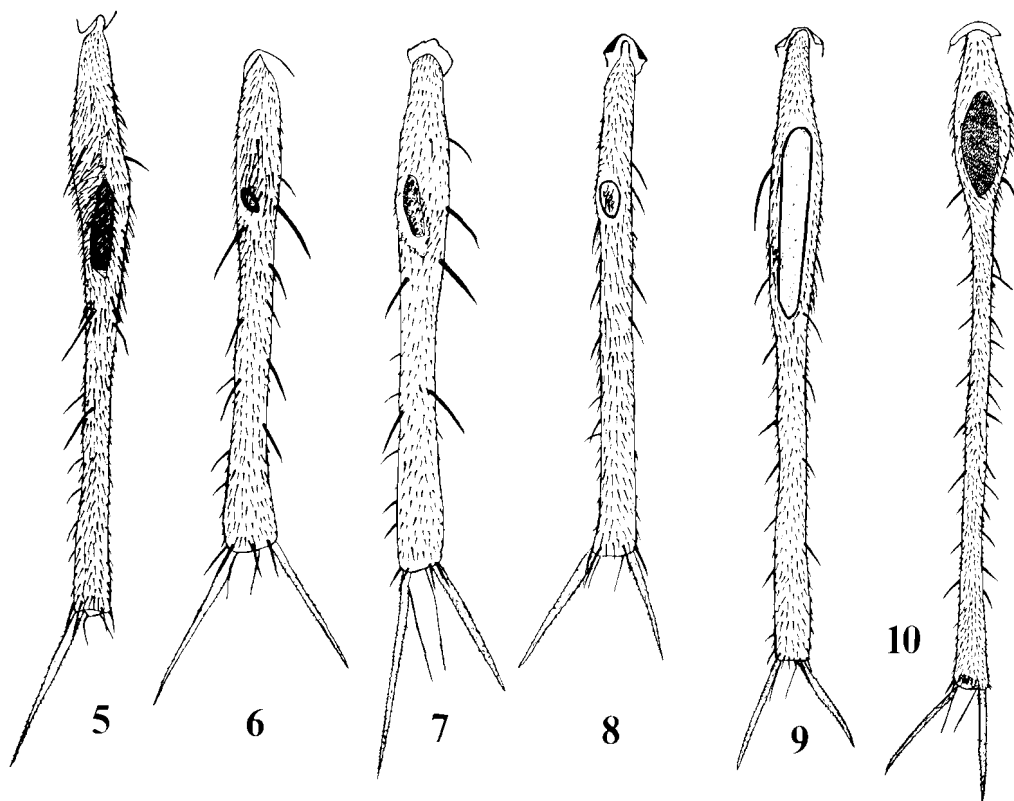
FIGS. 1-4. *Tetragoneura*, male genitalia: *T.nitida*: 1, dorsal view; 2, ventral view; *T.sylvatica*: 3, dorsal view; 4, ventral view.

all known *Ectrepesthoneura* including *gracilis*, but is not exclusive to this genus. A similar (sometimes strongly setulose) organ is present in some *Tetragoneura* but has been recorded in only about a quarter of the nearly fifty species where it has been taken into account in the description; it is absent in *sylvatica* and *nitida*. The example figured (Fig. 5) is an undescribed Oriental species very close to the Japanese *tibialis* Sasakawa (1961) but differing from it in minor genital details; one peculiarity in common with *tibialis* is the absence of the anterior mid tibial spur, a character noted in some New Zealand species by Tonnoir & Edwards (1927).

A well marked oval 'sensory' pit in the same position is found in several *Synapha* including *fasciata* Meigen (Fig. 8) although it is absent in the nearly related *vitripennis* (Meigen). It is present in a Nearctic *Synapha* I have examined; this would run to *Dziedzickia* in existing keys as the long vein Sc apparently

curves into R, the anterior branch (Sc1) being very faint or absent.

A comparable organ is present in some unrelated genera of Sciophilinae, e.g. *Coelophthinia* Edwards (Gnoristini) in which it is represented by an elongate membranous cavity (Fig. 9) and *Polylepta* Winnertz (Sciophilini) (Fig. 10) where an oval swelling bears close set coarse golden setulae. In *Coelophthinia*, this structure is common to both sexes and Freeman (1951) mentioned its presence in both sexes in Neotropical species referred to *Coclosia* Winnertz; the three British species of *Coelosia* bear no vestige of it. Both sexes of *Phthinia* Winnertz (Sciophilini), which have very long slender legs, have a similar organ to *Coelophthinia* but it is less obvious, narrower and slit-like; in *humilis* Winnertz it occupies the basal half of the tibia. *Speolepta* Edwards (Gnoristini), which closely resembles *Phthinia* except in the absence of macrotrichia on the wing membrane, has a similar structure on the



FIGS. 5-10. Dorsal view of right male mid tibia: 5, *Tetragoneura* sp. near *tibialis*; 6, *Ectrepesthoneura hirta*; 7, *Ectrepesthoneura bicolor*; 8, *Synapha fasciata*; 9, *Coelophthinia thoracica*; 10, *Polylepta guttiventris*.

basal third of the mid tibia emphasized by adjacent setulae being longer than elsewhere on the tibia.

The function of the mid-tibial organ is unknown but it is probably involved in courtship. Its presence is indicative of some relationship between the genera concerned but its taxonomic value is reduced by its apparent total absence in species closely related to others bearing it. A similar structure has been described in some fossil genera of Sciophilinae, i.e. *Proboletina* Meunier and *Loewiella* Meunier (Edwards, 1940) but the status of these genera is in doubt pending a revised generic classification of the Sciophilinae. A redefinition of the tribes, which are clearly not entirely monophyletic in their present usage, will evidently be necessary.

Abbreviations

Abbreviations of museums in which material is deposited are as follows: BMNH: British Museum (Natural History), London, U.K.; CAS: California Academy of Sciences, San Francisco, California, U.S.A.; HD: Hope Department of Entomology, Oxford, U.K.; ISUM: Iowa State University, Ames, Iowa, U.S.A.; MNHN: Muséum National d'Histoire Naturelle, Paris, France; RSM: Royal Scottish Museum, Edinburgh, U.K.; SMFM: Senckenberg Museum, Frankfurt-am-Main, Germany; USNM: United States National Museum, Washington, D.C., U.S.A.; UZI: Zoological Institute, University of Lund, Sweden.

Ectrepesthoneura Enderlein

Willistoniella Meunier, 1904: 74. Type-species *W. magnifica* Meunier, by monotypy (preoccupied).

Meunieria Johannsen, 1909: 87, nom.n. for *Willistoniella* Meunier (preoccupied) (synonymy, Edwards, 1940: 125).

Ectrepesthoneura Enderlein, 1911: 155.

Type-species *Tetragoneura hirta* Winnertz, by original designation and monotypy.

Mainly blackish, grey dusted, short-bodied gnats with whitish hairs and bristles, sometimes with abdomen more or less extensively yellow. Antennae slender, with elongate flagellar segments; 2 + 14. Palpi four segmented,

the basal segments more or less swollen, the attachment of the third to the second being preapical. Lateral ocelli remote from eye margins. Bristles of pronotum and proepisterna including long pale upswept bristles, some of which reach to beyond mid line of head. Mesoscutum with long pale reclinate bristles separated into biserial acrostichal (ac) and pluriserial dorsocentral (dc) rows by narrow bare median and lateral stripes. Two pairs of long scutellars. Pleurotergites bare. Wings clear. Vein Sc long, ending in R well before base of Rs. Vein R4 present, enclosing a narrow radial cell. Vein R1 short, portion beyond R4 usually subequal to r-m (at most twice as long). Vein R5 straight towards tip, the costa prolonged well beyond it to approach tip of M1. Veins of radial sector strong, pigmented; postradial veins weak and faint. Posterior fork narrow basally and very short stalked or sessile. Legs relatively short, mainly yellowish. Males with 'sensory' pit, sometimes surrounded by dense setulae, near the base of mid tibia; hind tibial comb absent. Male genitalia with ninth tergite large, not closely articulating with the genital capsule but enclosing it dorsally and laterally, usually with highly specific marginal structure. Stylomeres usually simple, bearing flattened terminal bristles.

Remarks. The long vein Sc ending in R distinguishes *Ectrepesthoneura* (including *E. gracilis*) from all other members of the Leini except *Docosia*, where the lateral ocelli are close to the eye margins, the posterior fork shorter, the genital structure is distinctive and the pleurotergites are usually hairy.

The European species of *Ectrepesthoneura*

With the exclusion of the Japanese species, the genus is at present known only from Europe and North America. No species are known to have a Holarctic distribution and the Nearctic species are considered separately below. Edwards (1940) established that the fossil genus *Meunieria* was congeneric and he also referred here five species described in *Tetragoneura* by Meunier (1904) from Baltic amber.

Tetragoneura hirta Winnertz was the only included species until Edwards (1928) described *gracilis* from Corsica. Three other

legs yellow except the tip of the hind femora and trochanters and apical orange bands on all tergites; leg structure is simple, the hind tibia $1.4\times$ its femur with 12 a-d in a continuous row. The single Scottish female examined (INVERNESS: Inverdruaie, 10.ix.1966, *D. M. Ackland*, HD) differs in some respects and may be *pubescens*; the abdomen is dark but for small apical patches on tergites 1-3 and the hind tibia is only $1.25\times$ its femur with 14 a-d in a continuous row; the bare thoracic stripes are more shining, the yellow parts of the antennae brown marked and flagellar segments a little longer but not quite $2\times$ long as broad.

E.colyeri is described fully; comparative descriptions are given of the other species, of which the leg structure has not previously been described. *E.hirta*, the most widespread European species, was the only one seen in British material by Edwards; the two species added to the British list here are superficially similar as is *referta* but the distinctive shape of the ninth tergite in each case facilitates the recognition of dried material of the males.

Ectrepesthoneura colyeri sp.n.

Male. Head grey; palpi and proboscis yellow. Antennae with scape dark, pedicel and first flagellar segment yellow, this colour extended onto segments 2 and 3, rest of flagellum greyish brown. Flagellar segments about $1.5\times$ long as broad, shorter apically where antenna is more slender, but last segment $1.5\times$ penultimate. Palpi with basal segment very short, broad; second and third segments broad, subequal in length; apical segment slender, cylindrical. Pale hair on frons and clypeus; long hairs on scape and pedicel, short grey hair on flagellum.

Thorax entirely grey, moderately shining on bare stripes between bristle rows; clothed with long pale bristles including biserial ac and pluriserial dc; long bristles on pronotum and proepisterna convergent behind head, rest of pleura bare. Two pairs of long yellow scutellars, laterals less than half length of apicals. Halteres yellow. Legs yellow except slight darkening beneath trochanters extended as shade onto basal third of femora 2-3. Femora 3 vaguely darkened on apical quarter.

Coxae and femora with yellow hair, longest beneath hind femora. Tibiae and tarsi thickly

clothed with short black setulae. Fore tibia with 3-4 short p on apical half. Mid tibia with a small lens-shaped brown sensory area dorsally at basal third; tibia only slightly swollen at this point, bearing denser slightly longer setulae; 4-5 short black a-d, 3-4 p-d (distal to sensory area), 4-6 short dark p on apical third, 5-6 short weak p-v. Hind tibia with 5-6 short a-d on basal half (most basal a little more dorsad), 4-5 weaker a-d on apical quarter with a gap between the two series; last bristle of upper row set slightly ventrad to rest of series and the setulae present at this point decumbent, set at 45° to long axis and predominant direction of other setulae; 15-16 p-d in complete row (stronger basally), 8 short pale p on apical third. Tibial spurs yellow. Hind tibia evenly enlarged apically and little longer ($1.1-1.2\times$) than its femur. Mid femur $1.25\times$ its tibia.

Wings faintly yellowish; veins yellowish except slightly browner costa and radial sector. Costa extended 0.7 distance from R5 to M1. R4 present, forming a small oblong radial cell, subequal in length to r-m. Sc ending in R at mid-point of section before base of Rs. R1 short, equal to produced part of costa, a little longer than r-m. Median fork begins level with R4; posterior fork almost sessile, beginning near base of wing. An slightly exceeding level of base of M1 + 2. All veins bear macrotrichia dorsally except h, Sc, M, M1 + 2, basal half of r-m (which bears 3-4 setulae apically) and bases of fork veins.

Abdomen thickly clothed with long pale hairs. Tergites black with orange yellow markings; 1-2 widely yellow at sides; 3-4 narrowly yellow at sides, extended dorsally as triangular areas on hind margins; 5 black with orange reflections, 6 entirely black. Venter yellow. Hypopygium dark yellowish brown (Figs. 11-12); ninth tergite with broad triangular cleft on apical margin forming two rounded lobes which are emarginate in lateral view.

Wing length 2.45-2.9 mm.

Holotype ♂, ENGLAND, Hampshire, New Forest, Ridley Wood, 30.vii.1953 (*C. N. Colyer*) (BMNH).

Paratypes: 1 ♂ ENGLAND, Sussex, Three Bridges, 15.vi.1892 (*G. H. Verrall*) (HD); 1 ♂ SCOTLAND, Strathclyde (Dunbarton), Bonhill, 25.v.1909 (*J. R. Malloch*) (RSM); 1 ♂ FRANCE, Haut-Rhin, near Kruth, Schlossberg,

names, *Sciophila dissimilis* Zetterstedt (1852), *Sciophila aliena* Walker (1856) and *Sciophila pubescens* Zetterstedt (1860) have been considered synonyms of *hirta*. With the discovery of additional European species, *E. messaurensis* Plassmann (1975), *E. referta* Plassmann (1976) and *E. colyeri* sp.n. it is necessary to reassess this synonymy. By contrast only two European *Tetragoneura* are known (Plassmann, 1972).

Edwards (1925a) reviewed Zetterstedt's collection (UZI) and stated that the types of *Sciophila pubescens* were missing and *dissimilis* was represented by a damaged wing. Recent enquiries, however, resulted in the types of *pubescens* being found; these and the remains of *dissimilis* were examined. *S. pubescens* is a distinct species of *Ectrepesthoneura*, which is considered to be a senior synonym of *E. messaurensis* Plassmann (see below), while Edwards' opinion has been confirmed that *dissimilis* is a *Tetragoneura*, the posterior fork being narrowed towards the base as in *nitida* and some other exotic species.

Zetterstedt (1852) described *dissimilis* from a single female. The type (labelled 'Ratan, Jemtland, 17.8.40') comprises the damaged wing and the right fore leg. It has not been possible to identify it with any known species. A brief description follows:

Part of one wing except central area, slightly brown tinged; base damaged so Sc not visible and must be very short. Last section of R1 about as long as r-m; R4 present but faint, enclosing a narrow cell; R5 ending well short of level of tip of posterior branch of median fork; stem and base of median fork without macrotrichia; base of posterior fork very slightly beyond base of stem of median fork, narrowly tapered at base.

Key to European species of *Ectrepesthoneura*

1 Wings clouded broadly but faintly at tip, across middle of wing (from tip of R1 across stem of median fork) and along posterior branch of posterior fork; postradial veins well developed, including base of median fork and its stem; anal vein here, ending opposite tip of Sc and well before proximal end of r-m; R5 slightly sinuous, curved down at tip and ending distinctly beyond level of tip of M2; R1 long, portion beyond R4 about twice length of r-m and ending in costa well beyond tip of anterior branch of posterior fork. Hind tibiae with only about 6 p-d bristles.

Palpi not especially swollen, second (first visible) segment distinctly shorter than third. Thoracic bristles shorter. Build slender. Legs uniform brownish yellow *gracilis* Edwards

- Wings clear; postradial veins weak, especially base of median fork and its stem; An with macrotrichia; R5 straight, ending opposite or before tip of M2; R1 short, portion beyond R4 subequal to r-m and ending at level halfway between tips of veins of posterior fork. Hind tibiae with 9-17 a-d and 15-26 p-d. Legs with coxae and femora yellow with some dark markings including dark tip to hind femora; tibiae and tarsi brownish yellow, tibial spurs usually contrastingly yellow. Thoracic bristles longer and pale whitish. Generally stouter 2
- 2 Ninth tergite, covering hypopygium dorsally, apparently produced to a blunt median point. Hind tibiae with proximal and distal series of a-d bristles, only narrowly separated but end of first series marked by a stronger yellow bristle situated a little before middle of tibia. Palpi with second (first visible) segment swollen and as long as third segment. Abdomen may be entirely dark or with lateral orange markings . . *hirta* Winnertz
- Ninth tergite with a distinct median emargination. Hind tibiae with a-d bristles all dark in colour. . . 3
- 3 Mid tibia only slightly swollen basally, distinctly shorter than its femur; hind tibia with a-d bristles widely separated into two groups on basal half and apical quarter without any distinctly stronger bristle. Ninth tergite with broadly bilobed apical margin reflexed laterally. Second and third palpal segments very broad and of equal length. Abdomen with orange lateral markings in material examined. *colyeri* sp.n.
- Mid tibia more distinctly swollen basally and about equal in length to its femur; hind tibia with a-d bristles separated into a basal and distal group, the last bristle of the basal group being distinctly larger. Palpi with basal segments less swollen, the second shorter than the third. Abdomen entirely dark in material examined. . . 4
- 4 Hind tibia with a-d bristles restricted to basal half and apical third. Bare stripes of mesoscutum shining, broader than the rows of bristles separating them. Pedicel and base of first flagellar segment pale (as in *hirta* and *colyeri*). Ninth tergite with narrow median apical cleft and simply rounded laterally. *pubescens* (Zetterstedt)
- Hind tibia with basal and distal series of a-d bristles narrowly separated but last of basal series stronger and lighter brown. Bare stripes of mesoscutum not broader than bristled areas and like them dusted. Antennae entirely dark. Ninth tergite with shallow median emargination between two small protuberances bearing flattened bristles *referta* Plassmann

It has not yet been possible to identify females (other than *gracilis*) although it is probable that most of the twenty-three English females examined belong to *hirta*. These have

legs yellow except the tip of the hind femora and trochanters and apical orange bands on all tergites; leg structure is simple, the hind tibia $1.4\times$ its femur with 12 a-d in a continuous row. The single Scottish female examined (INVERNESS: Inverdrue, 10.ix.1966, *D. M. Ackland*, HD) differs in some respects and may be *pubescens*; the abdomen is dark but for small apical patches on tergites 1-3 and the hind tibia is only $1.25\times$ its femur with 14 a-d in a continuous row; the bare thoracic stripes are more shining, the yellow parts of the antennae brown marked and flagellar segments a little longer but not quite $2\times$ long as broad.

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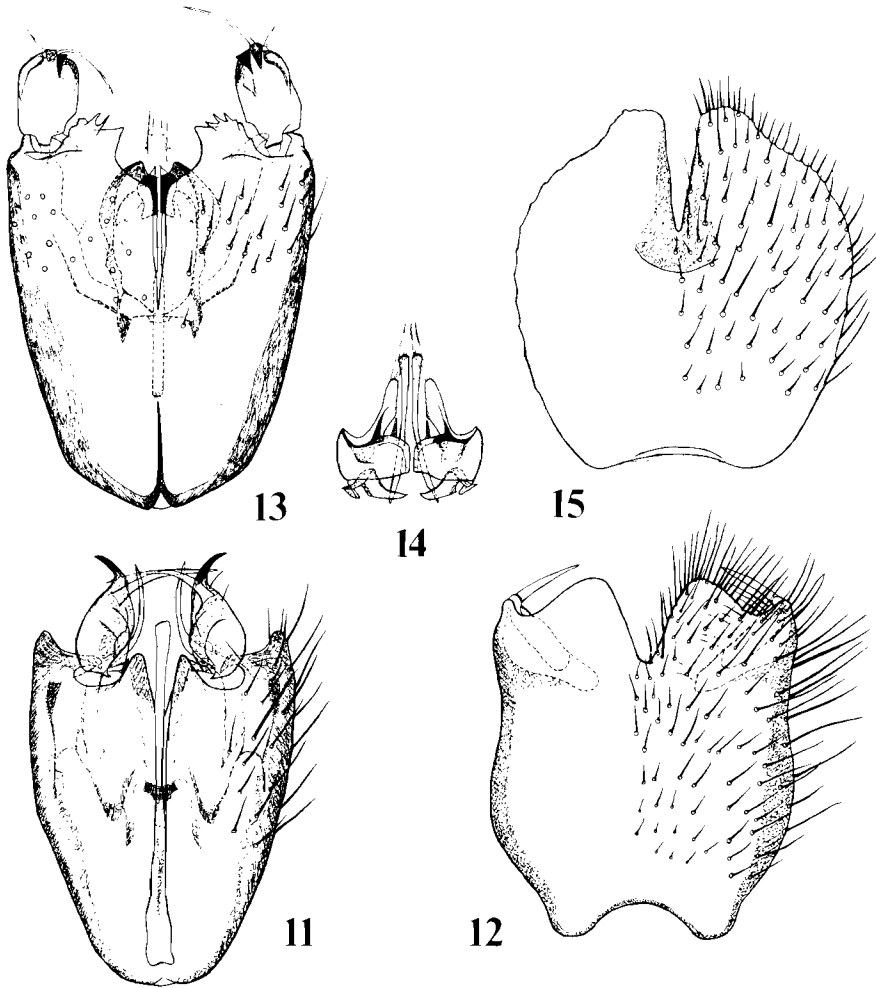
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Abdomen thickly clothed with long pale hairs. Tergites black with orange yellow markings; 1-2 widely yellow at sides; 3-4 narrowly yellow at sides, extended dorsally as triangular areas on hind margins; 5 black with orange reflections, 6 entirely black. Venter yellow. Hypopygium dark yellowish brown (Figs. 11-12); ninth tergite with broad triangular cleft on apical margin forming two rounded lobes which are emarginate in lateral view.

Wing length 2.45-2.9 mm.

Holotype ♂, ENGLAND, Hampshire, New Forest, Ridley Wood, 30.vii.1953 (*C. N. Colyer*) (BMNH).

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FIGS. 11–15. *Ectrepesthoneura*, male genitalia: *E. colyeri*: 11, ventral view; 12, dorsal view of ninth tergite; *E. pubescens*: 13, ventral view; 14, dorsal view of aedeagus; 15, ninth tergite.

800 m.; 1♂, FRANCE, Haut Rhin, Vieil Armand, Markstein, 28.viii.1972 (*G. Couturier*) (MNHN).

***Ectrepesthoneura pubescens* (Zetterstedt)**

Sciophila pubescens Zetterstedt, 1860: 6559.
Ectrepesthoneura messaurensis Plassmann, 1975: 10, syn.n.

The male (labelled: Tärna 56) is here designated lectotype and the female (labelled: Tärna) becomes a paralectotype but it is not in good condition and its conspecificity with the male is uncertain. Zetterstedt stated that

both specimens were collected by Holmgren in July 1856. Through a loan obtained by Mr A. M. Hutson, I have examined the holotype of *messaurensis* and can confirm that it is synonymous. Plassmann's figures of the male genitalia agree except in the form of the ninth tergite, in which the median cleft is shown as broadly triangular; this is due to distortion of the tergite in the holotype.

Male. Mainly black with all hairs and bristles whitish yellow. Head grey dusted. Antennal scape dark; pedicel and base of first flagellar segment yellow, rest dark grey. Antennae long, flagellar segments at least twice as long

as broad. Palpi pale yellow; basal segments slightly swollen, the second shorter than the third.

Thorax slightly shining, grey dusted except on four narrow bare stripes between bristled areas. Legs yellow; trochanters and extreme base of femora dark brown, also dark shades beneath base of fore femora and above tip of hind femora. Mid tibia approximately equal in length to its femur, with 4 a-d, 2 p-d, 3 short p near tip, 4–5 short weak p-v; swollen on basal third, at the distal end of this swollen part a discrete lens-shaped brown edged area bearing slightly longer close set setulae. Hind tibia 1.3× length of its femur, evenly enlarged to the tip, with 6 a-d on basal half (1 d near base) and 4–5 somewhat shorter a-d on apical third; a small irregular bare area just ventrad to the last of the first series; 16 p-d of variable length in a continuous row.

Wings very similar to *colyeri*; R1 slightly shorter than r-m and about equal to radial cell; costa extending 0.55 distance from R5 to M1; Sc reaches 0.6 distance to Rs; distribution of macrotrichia similar but 7 on apical three quarters of r-m.

Abdomen entirely black, slightly shining; hypopygium moderately large, ninth tergite with a deep narrow triangular cleft on its rounded apical margin (Figs. 13–15).

Wing length 2.8 mm.

Type material examined. Lectotype ♂, SWEDEN: Tärna, vii.1856 (ex. *J. W. Zetterstedt collection*) (UZI). Paralectotype ♀, SWEDEN: Tärna (UZI). Holotype ♂ of *messauraensis*, SWEDEN: Messaure, 25.vi.1969 (SMFM).

Other material. 1 ♂, SCOTLAND, Highland Region, Inverness, Loch an Eilein, 29.v.1973, pine forest (*P. J. Chandler*).

Ectrepesthoneura hirta (Winnertz)

Tetragoneura hirta Winnertz, 1846: 19. Fig. 8. *Ectrepesthoneura hirta* (Winnertz); Enderlein, 1911: 155; Edwards, 1925b: 581, Fig. 212 (wing); Plassmann, 1974: 354, Figs. 2a–b, lectotype designation.

Winnertz (1846) did not indicate the type locality but Plassmann (1974) designated as lectotype a male from Krefeld (ex *J. Winnertz*' collection) in the Senckenberg Museum,

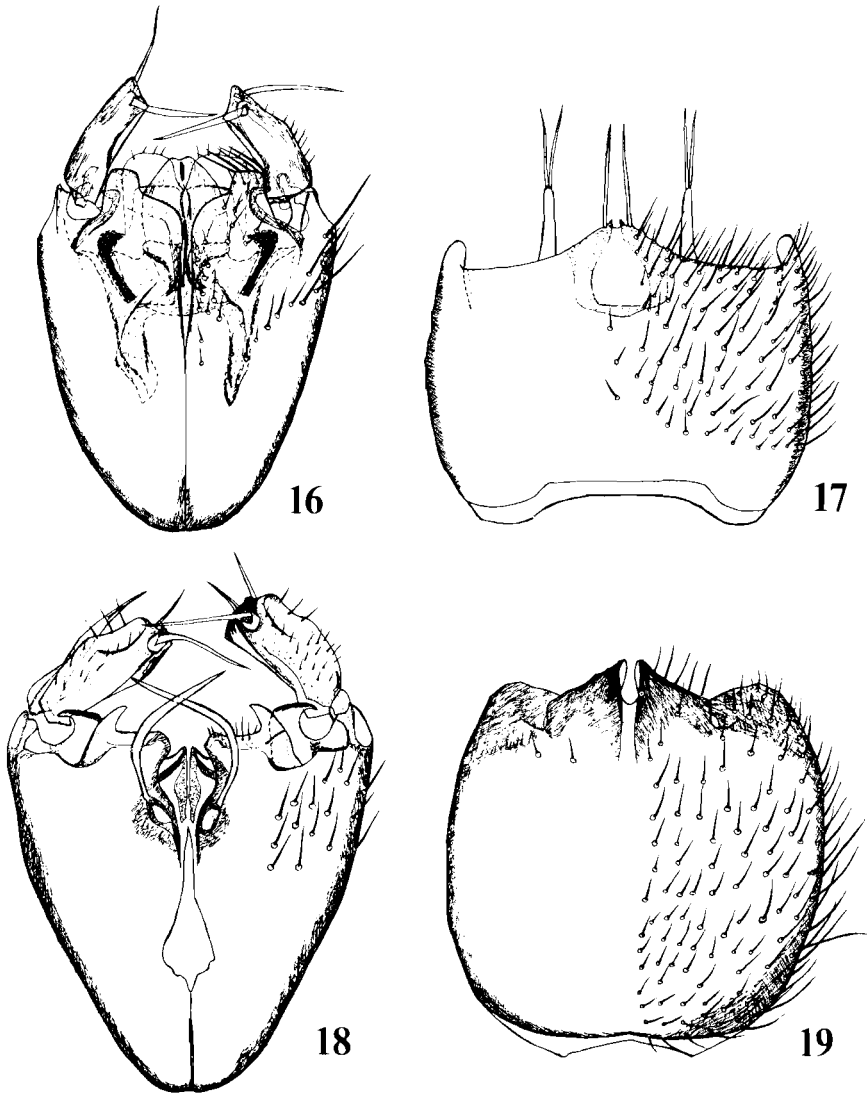
Frankfurt-am-Main, and figured the genitalia so that the identity of the species is firmly established. A second male probably from the type series, which comprised several of both sexes, has been examined; it is labelled 'Rhénanie: Crefeld, J. Winnertz, ex coll. Laboulbène' (MNHN) and is also the species accepted as *hirta*.

The type of *Sciophila aliena* Walker (1856: 43) (BMNH) lacks one wing, the abdomen, most of the antennae and the front legs. Walker stated that it was a male but it is evidently a female according to the structure of the mid and hind legs. It is probably *hirta*.

Male. Body usually entirely dark, grey dusted on head and thorax; bare stripes between bristle rows not shining. Abdomen usually entirely slightly shining black, but a few examples have ± extensive orange markings (sides of tergite 1, ± broad triangles on posterior half of 2–3, 4–5 sometimes with small apical triangles). Antenna with pedicel and most of first flagellar segment yellow, rest dark; flagellar segments almost quadrate to 1.5× long as broad in some specimens. Palpi pale yellow with segments 2–3 distinctly broader than in *pubescens* but a little narrower than in *colyeri*.

Legs pale yellow; trochanters, shades beneath bases of all femora, extreme tip of mid femur, apical quarter of hind femur and narrowly at base of hind coxa dark brown. Mid tibia equal to its femur, with 3–6 a-d, 2–3 p-d, 4–6 short p near tip, 4 weak p-v; slightly swollen on basal third, with a small oval shining brown sensory area at the distal end of the swollen part, setulae slightly longer and coarser just basad to this area (Fig. 6). Hind tibia long, slender, 1.25–1.35× its femur, thickened on apical half; with 6 a-d (the last stronger, yellow) on basal half, 9–11 a-d on apical half with only a narrow gap between these series; a small oval shining bare area just below the yellow bristle; 1 d near base, 15–18 p-d (which may become biserial in middle), 8–12 short p on apical half.

Wings with R1 subequal to 1.3× radial cell. Sc reaches 0.6 distance to base of Rs. Costa extends 0.6–0.7 distance from R5 to M1. Cross-vein r-m has 6–7 macrotrichia on apical three-quarters. Stem of posterior fork may equal length of R4 or be almost sessile as in other species.



FIGS. 16–19. *Ectrepesthoneura*, male genitalia: *E. hirta*: 16, ventral view; 17, ninth tergite; *E. bicolor*: 18, ventral view; 19, ninth tergite.

Hypopygium dark brown, with the tergite produced to a narrowly cleft triangular tip (Figs. 16 and 17).

Wing length 2.7–3.1 mm.

Type material examined. 1 ♂, Paralectotype, GERMANY: Krefeld (*J. Winnertz*) (MNHN).

Other material examined. 21 ♂, BRITISH ISLES: Kent, Surrey, Sussex, Hants., London, Herts., Oxon., Hereford, Cambs., Norfolk, Tayside (Perthshire) (Craighall, 4.vii.1977, *I. F. G. McLean*) and Down (*A. H. Haliday*,

National Museum, Dublin, Ireland); 5 ♂, FRANCE: Var, Île de Port Cros; Drôme, Forêt de Lente; Haute Savoie, Mont Salève; Seine et Marne, Fontainebleau (MNHN); 2 ♂, CZECHOSLOVAKIA: Aš (Asch) (*Kowarz*) (HD).

The larger material has permitted a better idea of variation than in other European species. I reared 1 ♂, 13.iv.1973 from fungus-encrusted bark collected 18.iii.1973 at Leckford, Hampshire. Winnertz recorded rearing

his type material from both rotten beech wood and from *Coriolus versicolor*. The specimens reared by Matile (1964) from rotten pine wood at Port Cros included *hirta* and *gracilis*.

***Ectrepesthoneura referta* Plassmann**

Ectrepesthoneura referta Plassmann, 1976: 73, Figs. 1 a–b.

Plassmann briefly described *referta*, based on 3 ♂ from Sweden; the two males studied agree well with his figures of the genitalia.

Male. Body entirely dark, grey dusted; all hairs and bristles pale whitish yellow. Antennae uniformly dark; flagellar segments a little more than 1.5× long as broad. Palpi pale yellow but terminal segment brown apically; segments 2 and 3 broadly flattened, the third elongate, 1.5× long as second.

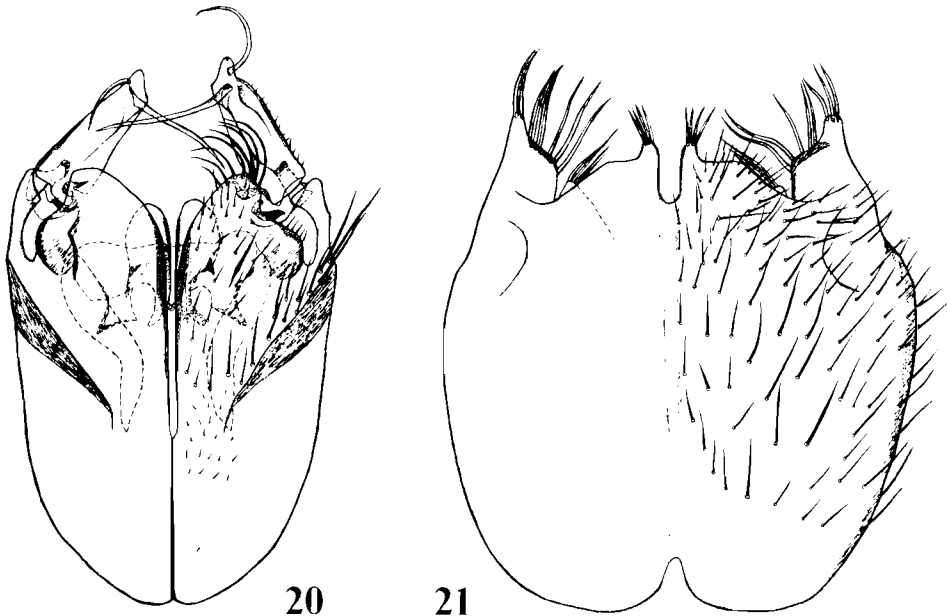
Thorax slightly shining but bare areas between bristle rows dusted. Legs mainly yellow; darkened on extreme base of coxae, trochanters, a shade beneath bases of all femora and apical quarter of hind femora. Mid tibia swollen on basal two-fifths with at basal third a long oval brown sensory area shielded anteriorly by longer coarser setulae; 6 a-d of variable strength (second adjacent to sensory

area more a), 1 short d or p-d proximal to sensory area, 3 strong p-d distal to it, 4 p on apical two-fifths, 7 weak p-v. Hind tibia with 6–7 a-d on most of basal half (the last of this series stronger and lighter brown, with a vague bare area distal to it and some setulae ventral to this area deflected); 7–9 a-d on more than apical two-fifths, leaving a narrow gap between the two series; 1–2 d near base; 16 p-d in main series but becoming biserial with about 10 weaker bristles ventral to them on apical half; 10 weak p on apical half; 4 short v. Mid tibia nearly equal to its femur in length; hind tibia 1.35× its femur.

Radial cell long, a little shorter than r-m and R1 beyond R4 which are subequal; r-m with 9 macrotrichia (nearly to base); costa reaching 0.6 distance from R5 to M1; Sc ends in R at 0.6 of section before base of Rs. Posterior fork sessile. Hypopygium (Figs. 20 and 21) with large ninth tergite bearing small setose protuberance either side of shallow median cleft and large setose lateral flanges.

Wing length 3 mm.

Material examined. 1 ♂, CZECHOSLOVAKIA: Krkonos Mts., Harrachov, R. Sejsky, 14.vi.1973 (*S. J. Chambers and A. M. Hutson*) (BMNH); 1 ♂, ITALY: Aosta, Valle de Cogne, 25.vi.1973 (*L. Matile*) (MNHN).



FIGS. 20–21. *Ectrepesthoneura referta*, male genitalia: 20, ventral view; 21, ninth tergite.

