REVIEW OF THE BRITISH AND NOTES ON OTHER SPECIES OF THE *MYCETOPHILA RUFICOLLIS*-GROUP, WITH THE DESCRIPTION OF A NEW SPECIES (DIPT., MYCETOPHILIDAE)

BY PETR LAŠTOVKA

and

LEONARD N. KIDD

The authors give an account of the British species of the *Mycetophila ruficollis*-group. A relatively large amount of material from museums and private collections was studied. Four species of this recently revised (Laštovka, 1972) group were found, one of which, *Mycetophila britannica* sp. n. is described as new. *Mycetophila sepulta* (Laffoon) was ascertained for the first time in the Palaearctic region.

Species of the *Mycetophila ruficollis*-group will be found in British collections and cited in the literature under the name *Mycetophila lineola* Meigen. However, it is now considered certain that the species described by Meigen as *lineola* is not a member of the present group of species but is identical with *M. alea* Laffoon (= *guttata* Dziedzicki).

There are 12 species of the *ruficollis*-group known from the Holarctic region; 10 of these, which until recently were considered as a single species, have been found in the Palaearctic. All but one of the known Holarctic species of the group possess only a central spot on the wings; all have M (before r-m) setulose below and are without ventral bristles on the mid tibiae.

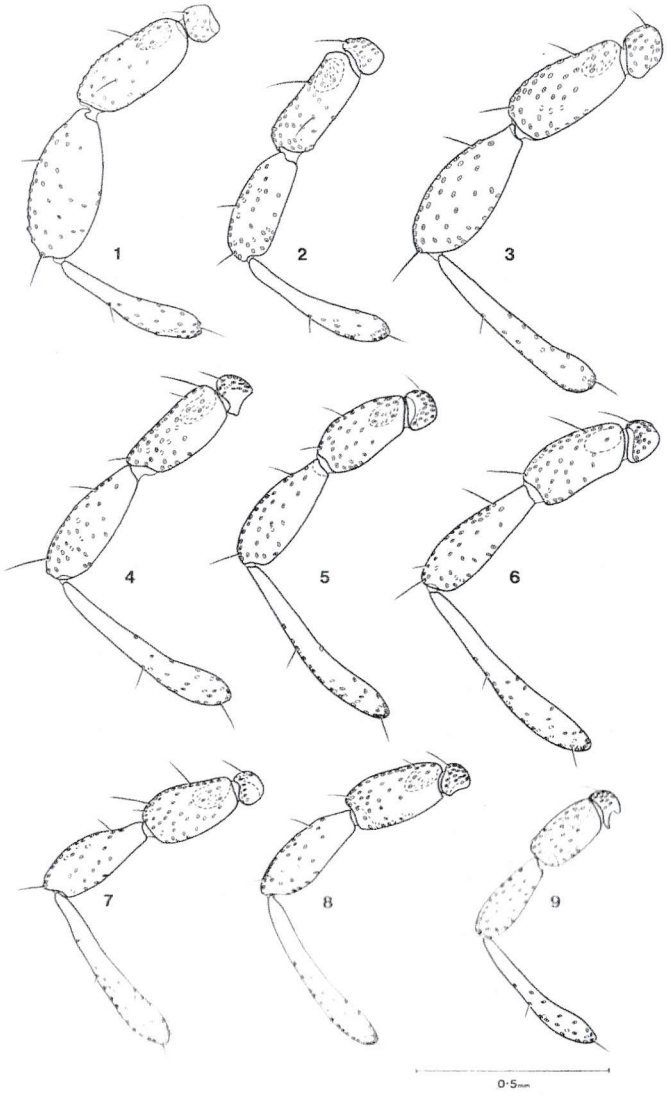
Mycetophila britannica sp. n.

♂ ♀. Indices of 2nd – 4th palpal segments (figs. 5, 6): maximum width, 2nd: 3rd, ♂ = 1.06 – 1.18, ♀ = 1.03 – 1.16; 3rd: 4th, ♂ = 1.68 – 1.82, ♀ = 1.28 – 1.47; length, 2nd: 3rd, ♂ = 0.78 – 0.83, ♀ = 0.73 – 0.80; 3rd: 4th, ♂ = 0.60 – 0.68, ♀ = 0.52 – 0.68. Indices of 3rd – 5th antennal segments (♂ and ♀, fig. 18): length, 3rd: 4th = 1.57 – 1.75, 4th: 5th = 0.80 – 0.94; ratio of width to length, 3rd = 0.48 – 0.60, 4th = 0.78 – 0.88, 5th = 0.61 – 0.76.

Proepisternum with 3 – 5 long bristles, mesepimeron with 3 – 6 bristles; ratio of height to width of anepisternum: 0.93 – 1.08. Wing, length, ♂ = 3.0 – 3.6, ♀ = 3.4 – 4.1 mm. Number of setulae on veins below: R: 6 – 12, R1: 30 – 37, M (before r-m): 10 – 16; ratio of r-m/M petiole = 1.1 – 1.8. Ratio of length of fore tarsal segments, 3rd: 4th, ♂ = 1.24 – 1.35, ♀ = 1.34 – 1.43; 4th: 5th, ♂ = 0.97 – 1.08, ♀ = 1.01 – 1.13; female with very slightly swollen tarsal segments 2 – 4, male segments simple. Mid tibia with 3 – 5 a, 5 – 6 d and 3 – 7 p; hind tibia with 6 – 7 a, 5 – 6 d and 6 – 10 p; hind coxa with posterior setulae 4 – 6 times shorter than longest posterior preapical ones.

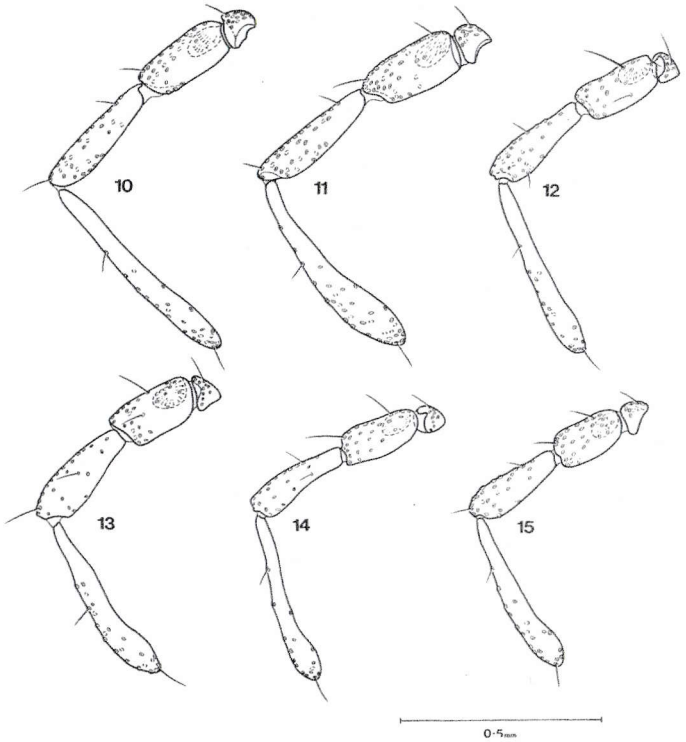
Male hypopygium. Gonocoxopodites (fig. 24): posterior margin with wide, blunt process in middle; anterior impression with rather wide, regularly divergent arms; about posterior 2/3 of ventral surface with setae. Basistyle (fig. 26): posterior process regularly rounded, more or less semicircular, greater part of, to whole surface with distinct warts; adjacent spines divergent, 3rd and 4th close to each other, 1st longest, 2nd widest of them. Dististyle (fig. 28): distal posterior process nearly rectangular, wide, with 1 – 2 small setulae; lateral margin with shallow notch, posterior margin with numerous strong bristles, proximally nearly parallel with anterior one, sinuated distally, base with numerous setulae; dististyle rather evenly narrowed toward apex. Intromittent organ (fig. 31): penis tube without distinct rim, distal part of penis sheath laterally angularly

widened, with few folds or keels on inner margin; lateral impression deep and wide, anterior angle of penis sheath round. Female cercus (fig. 36): 1st segment much longer than wide, both dorsal and ventral margins nearly parallel, apical notch rather deep and wide; 2nd segment widened proximally, regularly narrowed towards end.



Figs. 1-9. Palps laterally. 1, *M. ruficollis*, ♂ (Blean Woods, Kent); 2, *M. ruficollis*, ♀ (Blean Woods, Kent); 3, *M. laffooni*, ♂ (holotype); 4, *M. laffooni*, ♀ (Saratoga, USA); 5, *M. britannica*, ♂ (holotype); 6, *M. britannica*, ♀ (Gerrard's Cross, Bucks.); 7, *M. cranida*, ♂ (holotype); 8, *M. sepulta*, ♂ (Ames, USA); 9, *M. sepulta*, ♀ (Ames, USA). Scale represents 0.5 mm.

Holotype: male, Gerrard's Cross, Bucks., May 1952, P.A. Buxton, from *Melanopus squamosus* (Huds.) Pat. (= *Polyporus squamosus* (Huds.) Fr. (in British Museum, Natural History).

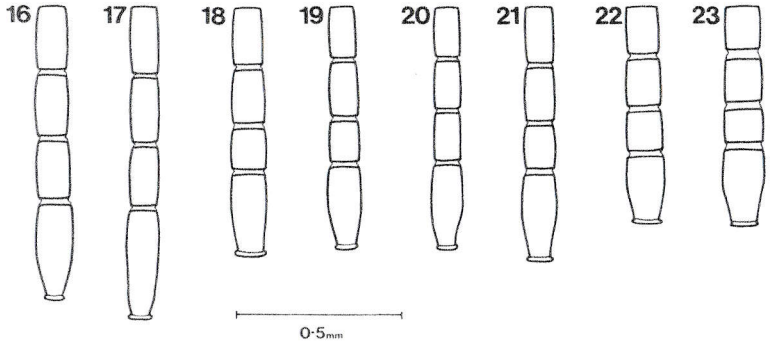


Figs. 10-15. – Palps laterally: 10, *M. strobli*, ♂ (Prague, ČSSR); 11, *M. Strobli*, ♀ (Prague, ČSSR); 12, *M. uninotata*, ♂ (Potštejn, ČSSR); *M. uninotata*, ♀ (Potštejn, ČSSR); 14, *M. ichneumonea*, ♂ (Freshfield, Lancs.); 15, *M. ichneumonea*, ♀ (Freshfield, Lancs.). Scale represents 0.5 mm.

Paratypes: BEDFORDSHIRE: Shefford, 17.xi.1917 (1 ♂), F.W. Edwards; BERKSHIRE: Wytham Wood, 7/8.viii.1967 (3 ♂ 1 ♀), L.N. Kidd; BUCKINGHAMSHIRE: Gerrard's Cross, May 1952 (5 ♂ 2 ♀), June 1953 (1♂ 3♀), P.A. Buxton, from *Melanopus squamosus*; Gerrard's Cross, November 1954 (1 ♂ 1 ♀). P.A. Buxton, from *Armillaria mellea* (Vahl ex Fr.) Kummer; CAMBRIDGESHIRE: Cambridge, 23.x.1902 (1 ♀), 21/23.xi.1903 (2 ♂), 19.x.1907 (1 ♀), 10.xi.1909 (1 ♀), F. Jenkinson; CORNWALL: Downderry, 20.x.1911 (1 ♂), Lt. Col. Yerbury; Sheviock, 20.x.1911 (1 ♂), Lt. Col. Yerbury; DEVON: Tuckenhay, 31.v.1920 (1 ♂), F.W. Edwards; Heathfield, 2.ix.1960 (14 ♂ 6 ♀), 7.ix.1960 (7 ♂ 1 ♀), J.R. Vockeroth; ESSEX: Epping Forest, xi.1915 (1 ♂ 1 ♀) bred from *Russula nigricans* (Bull. ex Merat) Fr., J. Ramsbottom; HAMPSHIRE: New Forest, 11.vii.1909 (1 ♂), F.C. Adams; Denny Wood, 28.vii.1953 (1 ♂), C.N. Colyer; HERTFORDSHIRE: Felden, 1.xi.1892 (1 ♂), 19/20.xi.

1894 (2 ♂), 27/29.x.1896 (1 ♂ 1 ♀), 3.i.1899 (1 ♀), A.Piffard; KENT: Blean Woods, in sticky traps, 29.viii.1968 (2 ♂), 12.ix.1968 (8 ♂ 1 ♀), 27.ix.1968 (2 ♂ 1 ♀), 9.x.1968 (1 ♂ 3 ♀), 29.x.1968 (4 ♂), 13.xi.1968 (2 ♂ 4 ♀), 26.xi. 1968 (1 ♂), A. Russell-Smith; LANCASHIRE: Grange-over-Sands, 15/17.xi. 1936 (1 ♂), A.E. Wright; MIDDLESEX: Pinner, 14.ix.1912 (1 ♂), F.W. Edwards; SURREY: Happy Valley, Old Coulsdon, 27.x.1937 (1 ♂), H. Britten; Bookham, 22.x.1950 (1 ♂), 17.ix.1951 (1 ♂), L. Parmenter; Chobham, xii.1953 (1 ♂), bred from *Hebeloma crustuliniforme* (Bull. ex St. Amans) Quel., P.A. Buxton; SUSSEX: Crowborough, 24.iv.1903 (1 ♂), 8.iv.1905 (1 ♂), 10.i.1916 (1 ♂), F. Jenkinson; WESTMORLAND: Stock Ghyll, 3.vi.1968 (1 ♂), 5.x.1971 (1 ♀), A.M. Hutson; YORKSHIRE: Greenfield, 26.viii.1961 (1 ♂), L.N. Kidd; ABERDEENSHIRE: Braemar, 24.vi.-13.vii.1951 (1 ♂), R.L. Coe; ELGIN: Logie, viii.1903 (1 ♂), ix.1904 (2 ♂), 13/15.xi.1904 (3 ♂) bred, F. Jenkinson; INVERNESS-SHIRE: Nethy Bridge, 15.vi.1905 (1 ♀), F. Jenkinson; Aviemore, 24/29.vi.1933 (1 ♂), R.L. Coe; Loch an Eilean, 14.vi.1967 (1 ♂), D.M. Ackland; MERIONETHSHIRE: Brithdir Isaf, near Dolgelly, 25.xi.1971 (2 ♂), A.M. Hutson.

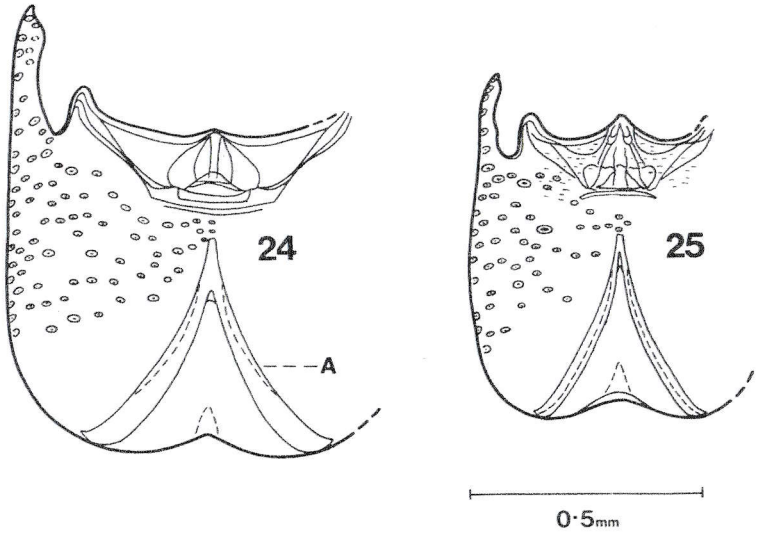
Paratypes have been deposited in the British Museum (Natural History), National Museum (Prague), Manchester Museum, Cambridge University Museum, Oxford University Museum and Werneth Park Study Centre and Natural History Museum, Oldham.



Figs. 16-23. Antennae, 1st - 4th flagellar segments laterally. All females except fig. 19: 16, *M. ruficollis* (Blean Woods, Kent); 17, *M. laffooni* (Saratoga, USA); 18, *M. britannica* (Gerrard's Cross, Bucks.); 19, *M. cranida* (holotype, male); 20, *M. sepulta* (Stoke Common, Bucks.); 21, *M. strobli* (Prague, ČSSR); 22, *M. uninotata* (Potštejn, ČSSR); 23, *M. ichneumonea* (Freshfield, Lancs.). Scale represents 0.5 mm.

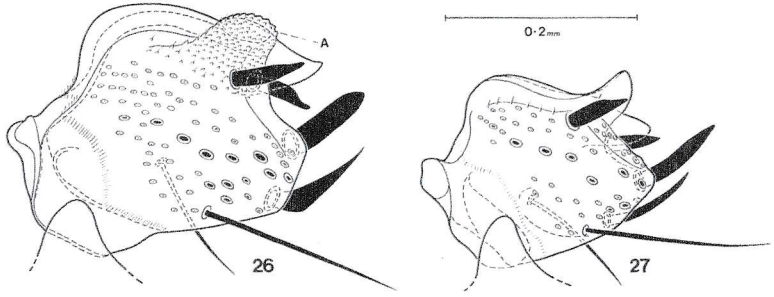
Remarks. Some other characters which are common to the whole species-group are given in Laštovka (*op. cit.*). The length of the dististyle seems to be somewhat variable; it is very short, with strongly sinuate posterior margin in a specimen from the New Forest, Hampshire, 24.x.1967, L. Parmenter (fig. 29). This specimen is considered as being conspecific as other correlative differences have not been found.

M. britannica is undoubtedly very closely related to *M. evanida* Lašt. which it resembles closely in a number of characters, viz. antennae, palps and some hypopygial features. Males of *M. britannica* differ from *M. evanida* by



Figs. 24-25. – Gonocoxopodites, ventral view: 24, *M. britannica* (holotype); 25, *M. sepulta* (Stoke Common, Bucks.). A, anterior impression. Scale represents 0.5 mm.

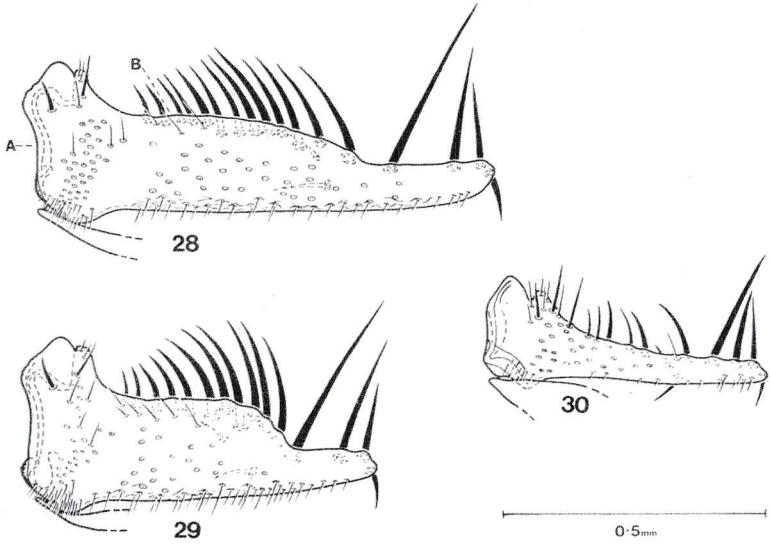
the somewhat shorter antennae (cf. figs. 18 and 19), wider, regularly ovate 3rd segment of the palps (in *M. evanida* more club-shaped cf. figs. 5 and 7), sinuate and more bristled posterior margin of dististyle, shorter and more rounded lateral angle of basistyle, lower and blunter medial posterior process of gonocoxopodites and by a number of characters in the intromittent organ (cf. figs. 31 and 32). Considering the close relationship and possible allopatric



Figs. 26-27. – Basistyles, ventral view: 26, *M. britannica* (holotype); 27, *M. sepulta* (Stoke Common, Bucks.). A, posterior process. Scale represents 0.2 mm.

distribution of these two species, it is not excluded that further study will show merely their subspecific status. However, it seems equally probable that the known distribution only reflects inadequate collecting. In certain characters this species also bears a similarity to *M. ruficollis* Meigen and *laffooni* Lašt.

M. britannica is very common in England as the above records indicate and the recorded host fungi – *Armillaria mellea, Hebeloma crustuliniforme, Russula nigricans* and *Melanopus squamosus* – testify to its polyphagous habits. It has been taken in every month of the year except February and March, and trapped specimens were most numerous during September. Specimens were still fairly plentiful during October and November, with a sharp drop in numbers during December.



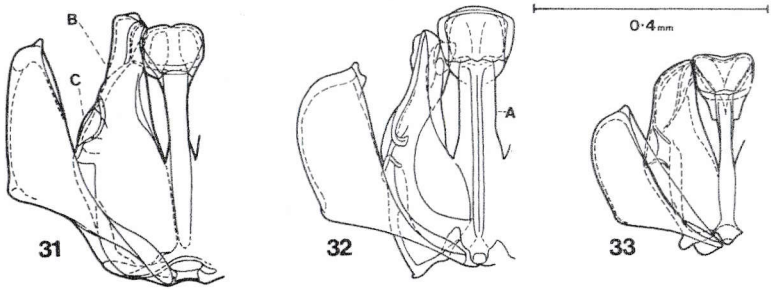
Figs. 28-30. – Dististyles, lateral view: 28, *M. britannica* (holotype); 29, *M. britannica* (New Forest, Hants.); 30, *M. sepulta* (Washburn, USA). A, lateral margin; B, posterior margin. Scale represents 0.5 mm.

Mycetophila sepulta (Laffoon)

Material examined (30 ♂ 13 ♀): BUCKINGHAMSHIRE: Gerrard's Cross, x.1954 (5 ♂ 3 ♀), bred from *Hypholoma elongatum* (Pers. ex Fr.) Ricken (= *Psilocybe elongata* (Pers. ex Fr.) J. Lange), P.A. Buxton; Stoke Common, x.1954 (3 ♂ 4 ♀), bred from *Hypholoma elongatum,* P.A. Buxton; CAMBRIDGESHIRE: Cambridge, 25.v.1904 (1 ♂), F. Jenkinson; CHESHIRE: Arden Hall, 8.i.1922 (7 ♂), H. Britten; Longdendale, 16.x.1932 (1 ♀), H. Britten; Cotterill Clough, 6.xi.1938 (1 ♂), H. Britten; Dunham Park, 27.ix. 1943 (6 ♂ 3 ♀), H. Britten; Tintwistle, i.x.1946 (1 ♂), H. Britten; HERTFORDSHIRE: Hitchin, ix.1917 (2 ♂ 1 ♀), F.W. Edwards; LANCASHIRE: Platt

Fields, Manchester, 25.xi.1922 (1 ♂), H. Britten; SUSSEX: Crowborough, ix/x.1903 (1 ♀), F. Jenkinson; YORKSHIRE: Sawley, Ripon, 2.ix.1904 (1 ♂), F. Jenkinson; Leeds District, 29.v.1944 (1 ♂), W.D. Hincks; Ravens Gill, 10.iv.1959 (1 ♂), W.D. Hincks.

Distribution: England, Canada, USA (including Alaska). New species for the Palaearctic subregion.



Figs. 31-33. – Intromittent organs, dorsal view: 31, *M. britannica* (holotype); 32, *M. evanida* (after Laštovka, 1972); 33, *M. sepulta* (after Laštovka, 1972). A, rim of penis tube; B, penis sheath; C, lateral impression. Scale represents 0.4 mm.

The discovery of this species in England is interesting, as it has hitherto only been recorded in the Nearctic where it is widely distributed. Edwards (1925) had obviously noted this species when he mentioned some British specimens of *"M. lineola"* without a distinct central wing spot. Probably the nearest related species, perhaps an allopatric sibling, is *M. strobli* Lašt. although here again further collecting is necessary before a more definite conclusion as to distribution can be reached.

M. sepulta has been taken during the months Jan., Apr., May, Sept., Oct., and Nov., and has been reared twice from *Hypholoma elongatum.*

Mycetophila ruficollis Meigen

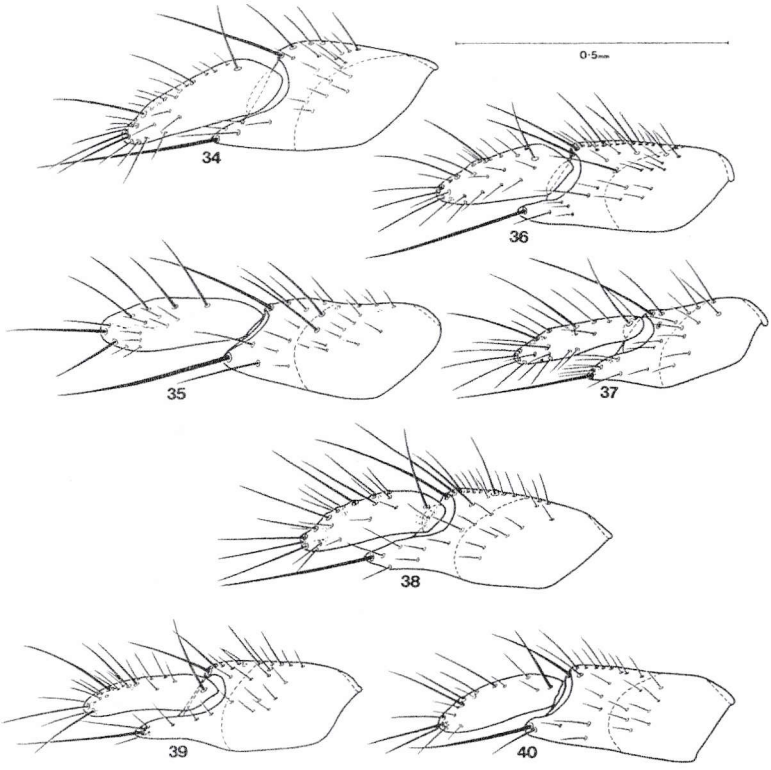
Material examined (229 ♂ 159 ♀): CHESHIRE: Cotterill Clough, 18.iv. 1944 (2 ♂), H. Britten; DORSET: Ferndown, 24.x.1965 (1 ♂), L. Parmenter; HEREFORDSHIRE: Stoke Wood, 19.x.1910 (1 ♂ 2 ♀), J.H. Wood; KENT: Blean Woods, in sticky traps, 8.ii.1968 (1 ♂ 1 ♀), iv.1968 (1 ♂ 2 ♀), 2.iv.1968 (3 ♂ 4 ♀), 18.iv.1968 (3 ♂ 5 ♀), 16.v.1968 (1 ♀), 18.vii.1968 (3 ♀), 1.viii.1968 (1 ♂ 2 ♀), 15.viii.1968 (1 ♀), 29.viii.1968 (71 ♂ 27 ♀), 12.ix.1968 (125 ♂ 84 ♀), 27.ix.1968 (16 ♂ 14 ♀), 9.x.1968 (1 ♂ 3 ♀), 29.x.1968 (2 ♂ 5 ♀), 13.xi.1968 (4 ♀), 7.i.1969 (1 ♂), 21.i.1969 (1 ♀), A. Russell-Smith; SUSSEX: Crowborough, 10.i.1907 (1 ♀), F. Jenkinson.

Distribution: England, Austria, Czechoslovakia, Japan.

This very distinctive species does not appear to be common in any of the countries from which is has been recorded. By far the most numerous records are those from Britain, the specimens from Blean Woods, Kent being taken by .

Mr. A. Russell-Smith in sticky traps which were examined at fortnightly intervals. The species was recorded in these traps during every month except March, June and December. It reached its peak of emergence in the first two weeks of September and was also numerous during the latter half of August. Reference to the above records shows the rapid decline in the numbers taken after mid-September.

As *M. ruficollis* does not occur regularly in normal associations of other *Mycetophila* species it may have a different biology. Particular collecting methods may explain the large numbers taken at the above locality.



Figs. 34-40. – Female cerci: 34, *M. ruficollis* (Blean Woods, Kent); 35, *M. laffooni* (Saratoga, USA); 36, *M. britannica* (Gerrard's Cross, Bucks.); 37, *M. sepulta* (Ames, USA); 38, *M. strobli* (Prague, ČSSR); 39, *M. uninotata* (Potštejn, ČSSR); 40, *M. ichneumonea* (Freshfield, Lancs.). Scale represents 0.5 mm.

Mycetophila ichneumonea Say

Material examined (46 ♂ 12 ♀) CHESHIRE: Chadkirk Wood, Romiley, bred from *Russula cyanoxantha* (Schaeff. ex Secr.) Fr., coll. 28.vii.1951

(2 ♂ 2 ♀), L.N. Kidd; DERBYSHIRE: Lathkill Dale, 19.vi.1961 (1 ♂), L.N. Kidd; DEVON: Heathfield, 2.ix.1960 (1 ♂), J.R. Vockeroth; ESSEX: Epping Forest, 29.ix.1971 (1 ♂), bred from *Russula ochroleuca* (Pers. ex. Secr.) Fr., S. Trifourkis; HERTFORDSHIRE: Harpenden, viii.1915 (1 ♀), bred, E.J. Salisbury; Knebworth, viii.1918 (1 ♂), larva in *Russula* sp., F.W. Edwards; KENT: Blean Woods, 14.ix.1965 (2 ♂), L. Parmenter; Blean Woods, in sticky traps, 29.viii.1968 (2 ♂), 12.ix.1968 (1 ♂), A. Russell-Smith; LANCASHIRE: Grange-over-Sands, 19.xi.1936 (1 ♂), A.E. Wright; Freshfield, emerged 6.x. 1962 (3 ♂ 1 ♀), from *Lactarius torminosus* (Schaeff. ex Fr.) S.F. Gray, L.N. Kidd; Freshfield, 19.ix.1970 (2 ♂ 1 ♀), A.M. Hutson; OXFORDSHIRE: Oxford Museum, 6.xii.1918 (1 ♂), A.H. Hamm; STAFFORDSHIRE: Colwich Park, 8/12.vi.1889 (2 ♂), G.H. Verrall; SUSSEX: Crowborough, 30.ix.1903 (1 ♂), 2.viii.1912 (1 ♀), 12/13.iv.1921 (5 ♂), F. Jenkinson; WESTMORLAND: Rydal, 19.vi.1889 (1 ♀), G.H. Verrall; YORKSHIRE: Whitewell, 9.v.1953 (1 ♂), A. Brindle; Greenfield, 10.ix.1960 (2 ♂), L.N. Kidd; Haw Park, near Wakefield, 7.ix.1968 (1 ♂), L.N. Kidd; ABERDEENSHIRE: Balmoral Forest, 1/4.vii.1937 (1 ♀), R.L. Coe; Dinnet Oak Wood, 22.viii.1971 (1 ♂ 2 ♀), P. Skidmore; BUTESHIRE: Catacol, Isle of Arran, 29/30.v.1919 (1 ♂), F.W. Edwards; Sannox, Isle of Arran, 26/28.v.1919 (1 ♂), F.W. Edwards; ELGIN: Logie, 18/29.viii.1903 (1 ♂), ix.1905 (1 ♂), 9.ix.1909 (1 ♂), F. Jenkinson; INVERNESS-SHIRE: Grantown-on-Spey, 7.viii.1911 (1 ♂), Lt. Col. Yerbury; Feshy Bridge, 1.vii.1933 (1 ♀), R.L. Coe; Loch an Eilean, 14.vi.1967 (1 ♂), D.M. Ackland; Kinrara, 23.vi.1967 (1 ♂), D.M. Ackland; BRECKNOCKSHIRE: Llangammarch Wells, 21.vii.1913 (1 ♀), 10.viii.1913 (1 ♂), Lt. Col. Yerbury; CAERNARVONSHIRE: Bettws-y-Coed, 15.iv.1887 (1 ♂), G.H. Verrall; MERIONETHSHIRE: Coed-y-Rhygen, 28.v.1965 (1 ♂), A. Brindle; Coed Camlyn, 1.vi.1965 (1 ♂), A. Brindle; Brithir Isaf, near Dolgelly, 25.ix.1971 (3 ♂), A.M. Hutson.

Distribution: England, Austria, Czechoslovakia, USSR (Estonia, Elberg coll.), Spain, Sweden, Algeria, Japan, Mongolia, USA, Canada.

M. ichneumonea is very probably the most common and widely distributed representative of the group in the Holarctic region. Some of its morphological characters are rather variable and it may well be that the species is polytypic, consisting of 2 – 3 subspecies. The antennal characters and distinctive male hypopygium should however render its identification a fairly simple matter. Records in Britain cover all months except the period January to March inclusive. It is bred most frequently from Russulaceae.

All the British species were found in both sexes. Numerous females of some other species also accumulated during this work and in view of the fact that it has hitherto been impossible to separate these satisfactorily, a key to, and figures of the diagnostic characters of known Holarctic females are given below. As in the case of the male hypopygium, the features studied were moistened in a 10% solution of KOH for about 3 hours and mounted on slides in a uniform position. Ovipositors, antennae and palps are figured laterally.

KEY TO BRITISH SPECIES

1. – 3rd palpal segment as wide as (♀) or distinctly wider than (♂) 2nd and as long as (♂) or slightly shorter than (♀) 4th (figs. 1, 2); posterior margin of gonocoxopodites straight or slightly notched medially; anterior impression of gonocoxopodites with very wide, posteriorly slightly and anteriorly greatly divergent arms; nearly whole ventral surface of gonocoxopodites with setae; surface of dististyle finely wrinkled in middle, its posterior margin greatly sinuate; penis tube with distinct rim; 1st segment of female cercus not distinctly longer than the basally widened 2nd one (fig. 34) *Mycetophila ruficollis* Meigen
– 3rd palpal segment narrower than 2nd and distinctly shorter than 4th (in both sexes); posterior margin of gonocoxopodites with prominence medially; anterior impression with narrower, regularly divergent arms; ventral surface of gonocoxopodites anteriorly bare; surface of dististyle without wrinkles in middle, its posterior margin mostly straight or slightly sinuate; penis tube without complete rim; 1st segment of female cercus distinctly longer than 2nd, or 2nd segment not widened basally. 2
2. – Central spot of wings absent or indistinct; antennae slender, 2nd flagellar segment at most only slightly shorter than 3rd (fig. 20); posterior process of basistyle narrow, smooth (fig. 27); 2nd segment of female cercus not distinctly shorter than 1st, nor wider basally (fig. 37) *Mycetophila sepulta* (Laffoon)
– Central spot of wings distinct; antennae stouter, 2nd flagellar segment distinctly shorter than 3rd; posterior process of basistyle wide, with warts or setulae; 2nd segment of female cercus distinctly shorter than 1st, more or less narrowed distally 3
3. – Antennae very short, 2nd flagellar segment quadrate or nearly so (fig. 23); 3rd palpal segment only slightly wider than 4th, club-shaped (figs. 14, 15); dististyle with lateral margin deeply notched, posterior margin nearly straight; distal part of penis sheath divided; lateral impression of penis sheath small or absent; 2nd segment of female cercus not distinctly widened proximally (fig. 40) *Mycetophila ichneumonea* Say
– Antennae more slender, 2nd flagellar segment longer than wide (fig. 18); 3rd palpal segment distinctly wider than 4th, more or less regularly ovate (figs. 5, 6); dististyle with lateral margin slightly notched, posterior margin sinuate (fig. 28); distal part of penis sheath undivided, with keels or folds at inner margin; lateral impression large (fig. 31); 2nd segment of female cercus distinctly widened proximally (fig. 36). *Mycetophila britannica* sp. n.

KEY TO THE KNOWN HOLARCTIC FEMALES

1. – Wing with preapical spot; hind coxa with brown ring, hind femur and tibia each with brown spot apically; 2nd segment of cercus appreciably widened distally (according to Laffoon, 1957) *Mycetophila parvimaculata* Van Duzee
– Wing without preapical spot; legs entirely yellowish brown; 2nd segment of cercus at most slightly widened distally 2
2. – Central wing-spot indistinct or absent; 2nd flagellar segment of antennae not distinctly shorter than 3rd (fig. 20); 2nd segment of cercus about as long as 1st at its dorsal margin and not widened basally (fig. 37) *Mycetophila sepulta* (Laffoon)
– Central wing-spot distinct; 2nd segment of cercus distinctly longer than 1st or widened in basal half 3
3. – 3rd palpal segment as wide as 2nd or wider; antennae slender, 2nd flagellar segment not distinctly shorter than 3rd (figs. 2, 4) 4
– 3rd palpal segment distinctly narrower than 2nd; antennae stouter, 2nd flagellar segment usually distinctly shorter than 3rd 5
4. – Antennal segments very narrow, 1st flagellar one nearly 3 times as long as wide (fig. 17); 2nd segment of cercus not wider basally than in distal half (fig. 35) *Mycetophila laffooni* Laštovka
– 1st flagellar segment of antennae at most 2.5 times as long as wide (fig. 16); 2nd segment of cercus distinctly widened basally (fig. 34) *Mycetophila ruficollis* Meigen
5. – 3rd palpal segment distinctly wider than 4th (fig. 6); 2nd segment of cercus

strikingly widened in proximal third (fig. 36) *Mycetophila britannica* sp. n.
– 3rd palpal segment at most only slightly wider than 4th; 2nd segment of cercus at most slightly and regularly widened towards base 6
6. – Antennae relatively slender, 1st flagellar segment about twice as long as wide, 2nd distinctly longer than wide (fig. 21); 3rd palpal segment very long, not distinctly wider than 4th (fig. 11) *Mycetophila strobli* Laštovka
– Antennae short, 1st flagellar segment less than twice as long as wide, 2nd quadrate or nearly so (figs. 22, 23); 3rd palpal segment wider than 4th (figs. 13, 15) 7
7. – 1st segment of cercus greatly notched apically, its ventral lobe reaching middle of 2nd segment at least (fig. 39) *Mycetophila uninotata* Zetterstedt
– 1st segment of cercus slightly notched apically, its ventral lobe not reaching middle of 2nd segment (fig. 40) *Mycetophila ichneumonea* Say

DISCUSSION

The diagnostic characters used in this group are not equally useful for the determination of the various species. While differences of the male hypopygium are generally distinct and reliable, those of the antennae, palps and female ovipositor are of much more limited value. Nevertheless, the separation of the known females, especially of sympatric species is fairly safe. The length and shape of the antennal segments is much the same in both sexes and it is therefore possible to relate the nature of the male antennae to both sexes even in species where the female is hitherto unknown. On the other hand, there would appear to be some sexual dimorphism in the palps, namely in the shape and size of the 3rd and 4th segments (figs. 1 – 15). The most conspicuous sexual differences of the palps are found in *M. ruficollis* and *M. laffooni.*

Phyletic relationships inside the group may be evaluated only on the basis of morphological criteria as yet. Differences in a number of characters appear to have distinct correlations which could have some phyletic significance; thus slender antennae correspond to wider palps, wider and less divergent anterior impression of gonocoxopodites, wider dististyle etc. Similar correlations can be found in larval characters (unpublished).

Speciation within the group probably took place relatively recently and it is possible that the process is not yet finished. For example, in *M. ichneumonea,* which may be considered a polytypic species, there appear to be perceptible differences in its allopatric populations. In any case, if better known, this group could well be a suitable subject for evolutionary studies.

ACKNOWLEDGEMENTS

We are particularly grateful to Mr. A. Russell-Smith – Centre for Overseas Pest Research for the opportunity of working on the material obtained by him in sticky traps at Blean Woods, to Dr. J.R. Vockeroth (Research branch, Canada Department of Agriculture) for specimens collected by him during a visit to England, to Mr. D.M. Ackland for providing specimens taken by him in Scotland, to Mr. Stephen Trifourkis (Department of Biological Science, North East London Polytechnic) for some bred material, and to Mr. A.M. Hutson, Dr. John Smart and Mr. Allan Brindle for supplying specimens from the collections of the British Museum (Natural History), Cambridge University Museum and Manchester Museum respectively.

REFERENCES

Edwards, F.W., 1925, British fungus-gnats (Diptera, Mycetophilidae) with a revised generic classification of the family, *Trans. ent. Soc. Lond.*, **1924**: 505-670. **Laffoon, J.L.**, 1957, A revision of the Nearctic species of *Fungivora* (Diptera, Mycetophilidae), *Iowa St. Coll. J. Sci.*, **31**: 141-340. **Lastovka, P.**, 1972, Holarctic species of *Mycetophila ruficollis*-group (Diptera, Mycetophilidae), *Acta ent. bohemoslov.*, **69**: 275-94.

P. Laštovka, Department of Entomology, Research Institute of Food Industry, Czech Academy of Agriculture, Prague.
L.N. Kidd, Werneth Park Study Centre and Natural History Museum, Oldham.
March 28th, 1974.

Coenoscelis subdeplanata Bris. (Col., Cryptophagidae) in Birmingham. – In early November, 1973, a number of beetles were sent to me for identification which, though obviously belonging to the genus *Coenoscelis*, were clearly not *ferruginea* Sahlb., the species to which they ran in Joy (1932, *A Practical Handbook of British Beetles*, **1**): By using the key given by Portevin (1931, *Coléoptères de France*, **2**) they were identified as *C.subdeplanata* Bris. and this diagnosis was confirmed by comparing a dissected aedeagus with the figure of that organ given by Mr. Colin Johnson (1966, *Entomologist*, **99**: 129-31) and later by examination of a specimen named by him in the British Museum (Nat. Hist.).

C.subdeplanata was first recorded in Britain by Johnson in 1966 (*loc. cit.*) on the occurrence of a single specimen in Yorkshire. Subsequently Mr. A.A. Allen reported it from Kent (1968, *Entomologist's mon. Mag.*, **104**:122), Blackheath and Berkshire (1970, *Entomologist's mon. Mag.*, **107**:161). In contrast to all these occurrences in more or less rural surroundings the subjects of the present note were found in a factory in the Selly Oak district of Birmingham, an area of old terraced houses and industrial premises. The locality from which the beetles came was the spectroscopic laboratory of the Birmingham Battery and Metal Company, to whose chief metallurgist, Mr. Taylor, I am indebted for the original specimens and also for the opportunity to collect more in his laboratory. The insects had been noticed over a period of some weeks, sometimes in such numbers as to become a nuisance. In all I have examined 18 examples, including the ones sent by Mr. Taylor and those which I collected myself. All were *C.subdeplanata* and I see no reason to suppose that any other species had been present.

It was not clear just where the beetles were coming from. The spectrographic laboratory is a new room, only opened in 1972, and has a tiled floor, painted concrete walls and a tiled ceiling. Above this is a shallow space and then a tiled roof supported on reinforced concrete beams. The room which is air conditioned and maintained at a temperature of 68± 2°F. is kept very clean and the floor had been scrubbed and polished on the morning of my visit, although despite this about half a dozen *Coenoscelis* were found squashed there. This habitat seems a far cry from the fungus infested wood or refuse heaps cited as the usual ones by Freude, Harde & Lohse (1967, *Die Käfer Mitteleuropas*, 7). According to Mr. Taylor the beetles have not been noticed anywhere else in the factory apart from one or two in the room adjoining the laboratory which were almost certainly stragglers from the main colony. I looked around the laboratory in the hope of finding some suitable pabulum for *Coenoscelis*, but without success and I had to conclude that the beetles must be emerging either from the air conditioning system or from the ducts taking waste and water pipes through the floor. Obviously the air conditioner would not allow the passage of particles the size of *Coenoscelis* into the room so the possibility that the fans were drawing in beetles from some waste tip or other source outside the factory is remote. My guess is, therefore, that the beetles were coming up the pipe ducts, perhaps from some older part of the building where they were living in rotting timber or other decaying organic material. – P.J. OSBORNE, Geology Department, University of Birmingham: *December 10th*, 1973.