

On the habitat and distribution of *Conostethus brevis* Reuter and *C. griseus* D. and S. (Hemiptera - Heteroptera, Miridae). — My attention was drawn to these species in June 1977 when I found two *brevis* unexpectedly on a boulder beach in Aberdeenshire, 90 km east of the type locality. The host plant given by Southwood & Leston (1959, *Land and Water Bugs of the British Isles*, London) is *Limonium*, but this has a southern distribution and only reaches as far north as the Solway Firth and Firth of Forth.

To investigate the matter further I examined, between 23rd June and 1st July 1977, a variety of coastal localities and habitats around the Moray Basin, on the west coast of Scotland and in north-east England. The following records of *brevis* were obtained: Rosehearty (Aberdeens.) 1m, 1f; Beaully Firth (Inverns.) 7m, 8f; Udale Bay (Cromarty) 9m, 7f, 1 imm.; Applecross (Wester Ross) 6m, 2f; Aberlady Bay (East Lothian) 4m, 2f; Belhaven (East Lothian) 1f; Budle Bay (Northumberland) 1f; Alnmouth (Northumberland) 10m, 6f. The Northumberland records are the first from England.

The next year, between 25th June and 15th July 1978, a further extension of the known range of *brevis* was established, as well as an overlap of the range with that of *C. griseus*, which occurs in very similar habitat. The two species have not yet been found at the same locality. *C. brevis* was found at Morston (Norfolk) 7m, 4f, and *griseus* at Walton-on-Naze (Essex) 22m, 8f; North Coates (Lincs.) 4m, 7f; Ravenglass (Cumbria) 5m, 1f. The latter species is already known from the Solway Firth and north of England, down the east coast to the Thames Estuary and from Dorset and the Isle of Wight (Southwood & Leston, op. cit., and Le Quesne, 1975, *Entomologist's mon. Mag.* 110: 122).

Nowhere in 1977 were the *brevis* associated with *Limonium*. Collecting was by sweeping and some visual searching. The adults in 1977 were often still soft and immatures were also encountered. The habitat at the northern *brevis* sites was as follows: the beach zone close to the spring tide litter line where sparse vegetation had become established with about 50 per cent. bare sand or mud; also the corresponding zone of salttings. Associated plants were: *Armeria*, *Plantago maritima* L., *Cochlearia officinalis* L., *Glaux maritima* L., *Festuca rubra* agg., and especially *Puccinellia maritima* (Huds.) Parl. None of these was at all sites. It is notable that *Armeria* is in the same family as *Limonium*: however, a dense *Armeria* sward at Amble (Northumberland) yielded no bugs.

At the 1978 sites *Limonium* was in fact present where, or near to where, *Conostethus* spp. were collected. However, at Walton *griseus* could not be found on *Limonium* but was found commonly when a stand of *Puccinellia* was swept: ten or more could be had in two or three strokes of the net across the flower heads. The bugs were also observed on the flower spikes and stems of the grass. At the other 1978 sites the habitat was species-rich and it was not possible to be sure of the host plant. Both *griseus* (at Walton) and *brevis* (in Scotland) were observed running actively on the bare ground — at Rosehearty this was in fact lichen-covered rock (*Xanthoria et al.*) — and since this behaviour was observed on several occasions it seems possible that the character of the substrate may be important to these two bugs; certainly bare sand, mud or rock was present at all sites where the bugs were successfully sought.

It is concluded from these observations that *Limonium* is not the usual host of these *Conostethus* in Scotland and certainly not always in England. *Puccinellia* is certainly one important alternative host and probably also *Festuca rubra* agg.

The identification of this species-pair is difficult with the key in Southwood & Leston (op. cit.), but the following combination of characters enables most male specimens to be named. The length of the males is mostly over 3.75 mm in *griseus* (= *friscus* Wagner) and mostly under in *brevis*; male antennal length is c. 3.0 mm in *griseus* and c. 2.6 mm in *brevis*; male *griseus* has nearly parallel sides but *brevis* males are clearly tapered; in both sexes *griseus* has darker wings and the head spots and antennae are darker. In both species my males have been macropterous with wings much longer than the abdomen, and most of the females have been brachypterous with wings just shorter than the abdomen. No *brevis* was shorter than 3.2 mm, although the type specimens from Morayshire were 2.5 mm (male) and 2.3 mm (female) (Reuter, O.M., 1877, *Entomologist's mon. Mag.* 14: 76-8). — Dr. B. S. NAU, 15 Park Hill, Toddington, Dunstable, Beds.: March 20th, 1979.

NOTES ON SCIOPHILINAE (DIPT., MYCETOPHILIDAE) WITH A REVISION OF PALAEARCTIC *SYNTEMNA* WINNERTZ

BY A.M. HUTSON

In preparing the first half of a handbook to the identification of British fungus-gnats (Mycetophilidae), a number of additional species and synonymies were found in the subfamily Sciophilinae. Examination of some Nearctic material also showed much stronger affinities between the Nearctic and Palaearctic faunas of this group than is suggested in the literature. Such data are outside the scope of the identification handbook and so a miscellany of information is presented here. A revision of the Palaearctic *Syntemna* with two new species is included.

I am grateful to the following entomologists and their institutes for the loan of type specimens and other material: C.A. Andrewes (Devizes, U.K.), P.J. Chandler (private, U.K.), J. Ismay (Hope Department of Zoology (Entomology), Oxford), B. Lindeberg (Zoological Museum of the University, Helsinki), M. Matile (Muséum National d'Histoire Naturelle, Paris), F. Mihalyi (Musée Hongrois d'Histoire naturelle, Budapest), M. Suwa (Hokkaido University, Sapporo), W. Tobias (Natur-Museum und Forschungs-Institut "Senckenberg", Frankfurt), J.R. Vockeroth (Canadian National Collection, Ottawa), I also thank Mr. D.M. Ackland for figs. 1 and 2.

TRIBE MYCOMYINI

One new species and one poorly described species of *Mycomya* are discussed here. *Neoempheria bimaculata* Roser is recorded from Britain for the first time.

Mycomya rosalba sp.n. (fig. 2)

Male. Head dark with pale mouthparts. Antennae with scape, pedicel and base of first flagellar segment pale, rest very dark. Antennae c. 0.75 length of front femur + tibia; length of first flagellar segment c. 2.5 its breadth. Pronotum very pale; mesonotum heavily dusted, pale with three narrowly separated dark stripes; scutellum slightly darkened, postnotum pale; anepisternum, pleurotergites and base of sternopleuron dark, rest of pleurae pale. 4 scutellar bristles; postnotum bare. Halteres yellow.

Wing length 5 mm. Sc1 present and reaching Costa; Sc2 shortly after base of Rs; apical half of Sc with macrotrichia. Small cell of wing at base of Rs clear, not clouded. Stem of median fork slightly more than half of the length of the upper branch of the fork; fork veins with macrotrichia. Posterior fork level with base of stem of median fork; stem and fork veins of posterior fork with macrotrichia.

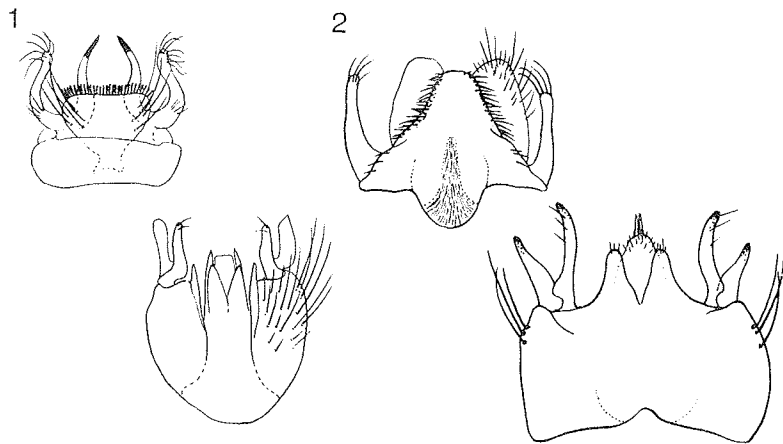
Legs with no dense brush of setae on front coxa, but a long mid-coxal spur present. Fore-tibia slightly shorter than basitarsus; tarsal claws with a single small basal tooth. Coxae yellow, slightly darkened towards apex of outer surface of hind femur, femora yellow, tibiae and tarsi darkened.

Abdomen with tergites dark with a narrow apical pale band; sternites mainly pale; Genitalia (fig. 2) with lateral lobes of tergite 8 with about 4 long bristles each; median process of tergite 9 strongly setose laterally, evenly tapering to a blunt apex; lateral lobes narrow with a few hairs towards tip. Sternum with a pair of rounded median lobes but not lateral processes; paired inner styles present, narrow with darkened tips.

Female unknown.

I have not been able to find any described species that conforms with this specimen and so describe it as new; however, this is a large genus very much in need of revision and with many species so poorly described that they are difficult to recognise. The presence of the mid-coxal spur, the structure of the 9th tergite and absence of lateral sternal processes of the genitalia place this species near such species as *cinerascens* Macq., *trivittata* Zett., *kingi* Edws and *alpina* Matile, from which this species differs in having four scutellar bristles.

Material studied. — Holotype ♂, ENGLAND: N. Yorks, Scargill, 16.vi.1977 (P.J. Chandler), alder wood by stream.



Figs. 1-2. — *Mycomya* spp. ♂ genitalia (top: dorsal; lower right: ventral): 1, *M. pectinifera* Edws; 2, *M. rosalba* sp.n.

Mycomya pectinifera Edwards (fig. 1)

Dziedzicki (1885) presented figures of ♂ genitalia labelled *Sciophila nigricornis* Zett. There was no description. Edwards (1925) examined Zetterstedt's collection of Mycetophilidae and considered Zetterstedt's *nigricornis* a synonym of *Mycomya ornata* Meigen. He considered Dziedzicki's figures to represent a quite different, undescribed species, which he named *Mycomya pectinifera*. There is no further description of this species or any published records of it until the specimen considered as this species by Hutson & Kidd (1975). The genitalia agree well with Dziedzicki's figures and since no other details of this species have been given, a diagnostic description of the British specimen is given here.

Male. Head dark reddish brown. Antennae slightly longer than length of front femur + tibia; first flagellar segment c. 6 times as long as broad; antennae ochre coloured, base of first flagellar segment paler. Palps pale dusky brown.

Mesonotum pale with three distinct reddish-brown stripes. Scutellum, postnotum, lower part of sternopleuron (katepisternum) and pleurotergite reddish-brown, rest of thorax paler. Scutellum with 4 bristles, postnotum bare.

Wing length 4.5 mm. Sc1 present as a short stump ending free; 4 macrotrichia towards apex of Sc; Sc2 reaching R1 at slightly less than half the length of the small cell at base of Rs. Length of stem of median fork about equal to length of upper branch of fork. Posterior fork approximately opposite base of stem of Median fork. Post-radial veins without macrotrichia. Legs with no dense brush of setae on front coxae and no mid-coxal spur. Front tibia c. 1.2 length of basitarsus. Tarsal claws without teeth.

Abdomen uniformly dark red-brown. ♂ tergite 9 (fig. 1) with median process very broad with a dense comb of spines along its whole length, lateral processes narrow with a tuft of fine hairs at tip. A pair of long narrow heavily sclerotised rods arising from beneath tergite 9. Dististyle deeply bilobed, the dorsal lobe very pale, ventral lobe darker and with two small spines on upper surface near tip.

Material examined. — 1 ♂, ENGLAND: Cornwall, Antony, in wood by estuary, 24.ix.1972 (A.M. Hutson) BMNH, London (in spirit).

Mycomya nava Plassmann (1977) is very probably a synonym.

Neoempheria bimaculata Roser

Hutson & Kidd (1975) added *winnertzi* Edws to the two species of *Neoempheria* Osten-Sacken already included in the British list (*lineola* Meig., *pictipennis* Haliday). *N. bimaculata*, a species similar to *pictipennis* and *winnertzi* but with an entirely dark wing tip, has also been found in British material.

Material examined. — 1 ♀, ENGLAND: Hants, New Forest, ix.1904 (D. Sharp) BMNH, London; 1 ♂, Oxon, Wicks Wood, swept in wood, 6.ix.1969 (P.J. Chandler), in coll. P.J. Chandler; 1 ♂, Wilts, Wernditch, 9.ix.1974 (C.H. Andrewes) BMNH, London; 1 ♂, Wilts, Wilton, 24.viii.1974 (C.H. Andrewes) BMNH, London.

TRIBE SCIOPHILINI

Genus *EUDICRANA* Loew

Edwards (1941) suggested that *Eudicrana nigriceps* (Lundström, 1909) was at most a subspecies of the earlier described *E. obumbrata* Loew, 1869, of North America. I have only seen the same two specimens that Edwards examined, but feel sure that these two are synonymous. The genitalia are nearly identical and slight differences, such as the colour of thorax and length of Sc, may not be significant. Edwards (op. cit.) mentioned that there was a difference between tergite 9 of the British specimen and Lundström's figure of *nigriceps*. A re-examination of the British specimen shows that tergite 9 has been removed for Lundström's figure and that what is visible lies under tergite 9 (tergite 10?). This tergite does not demonstrate this characteristic shape in the North American specimen examined and is the main reason for not synonymising these two species now, but this may be due to the way the genitalia of the latter have been prepared. Examination of other Nearctic material would probably readily confirm this synonymy.

Genus *ALLOCOTOCERA* Mik

British specimens of *A. pulchella* Curtis 1837 were compared with 1 ♂ *A. parvula* (Coquillett, 1901) from CANADA: Quebec, Gatineau Co., Masham Twp., 2.viii.1974, D.M. Wood (BMNH, London). These two species are considered identical and are hereby synonymised.

Allocotocera pulchella Curtis 1837 = *Leptomorphus parvula* Coquillett 1901 syn. nov.

Genus *SYNTEMNA* Winnertz

Six species are known from the Palaearctic: *daisetsuzana* Okada, 1938; *hungarica* Lundström, 1912; *morosa* Winnertz, 1863; *nitidula* Edwards, 1925; *relicta* Lundström, 1912; *setigera* Lundström, 1914. Okada (1938) figured the male genitalia of *daisetsuzana* and the male genitalia of all the others are figured in Landrock (1927-29) based on earlier figures. Plassmann (1974) re-illustrated the type of *morosa* Winnertz.

A seventh Palaearctic species was isolated on the basis of a single male from Britain and is described here. Material of all Palaearctic species was examined and a second undescribed species was found in Finnish material. A specimen of *daisetsuzana*, previously known only from the two original Japanese specimens was also found in material collected in Finland. In all, 82 Palaearctic specimens of the genus were examined and a revised key to Palaearctic species is given below together with details of the material examined, diagnostic descriptions of the two new species and figures of the male genitalia of all species. Figures of sternum 8 of the females of some species are also presented. Through the kindness of J.R. Vockeroth (Ottawa), single males of nine Nearctic species were also made available. Of these, four are species described from the Palaearctic, one is also possibly described from the Palaearctic and four are undescribed. These will be discussed in greater detail by Dr. Vockeroth at a later date, but the Holarctic element is discussed here. 6 of the 8 Palaearctic species occur in Finland, and all but one (which may only be a subspecies) of the Nearctic species occur in Canada or Alaska, so this would appear to be a strongly boreal group.

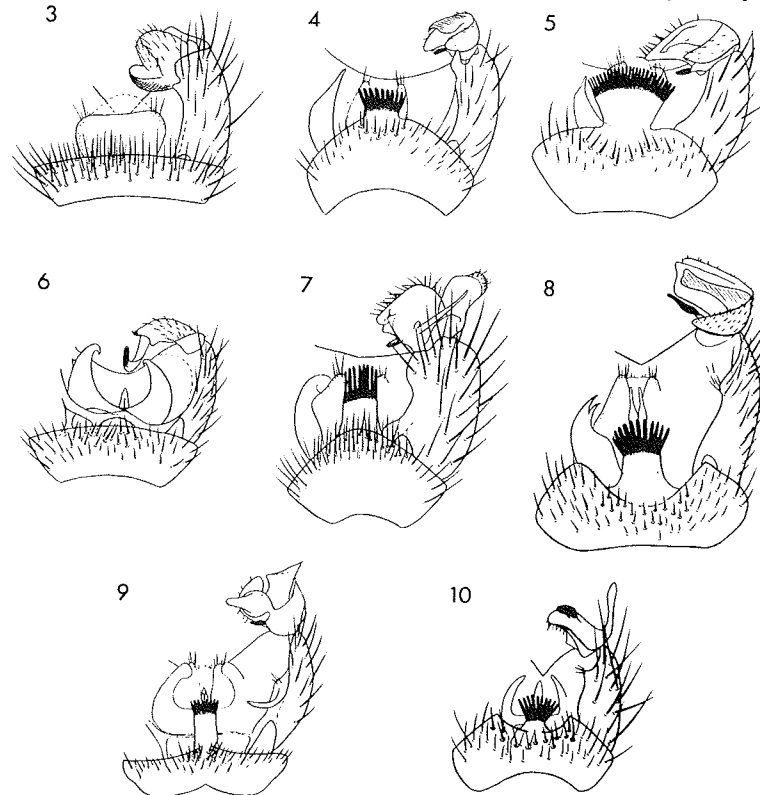
The characters used in previous keys were found to be mostly unreliable. The following key to Palaearctic species is based largely on new characters, but few of these were found to be really consistent. Colour characters and details of macrotrichia on veins and in basal cell may be particularly unreliable. Ultimately, the male genitalia are the only reliable identification features so far established, but it is hoped that the characters given in this key may be helpful in providing some supporting characters, including some that may be helpful in associating females. Females of 5 Palaearctic species were examined, 4 of which can be fairly safely associated with males, the other is not so positively associated.

Adults of this genus seem to be uncommon in collections and are usually taken singly. Larger samples are probably the result of the use of a trap, e.g. Malaise trap. Winnertz (1863: 769) reared his original material from the fallen trunk of a Hornbeam (*Carpinus betulus* L.) and in Britain J.H. Wood

collected specimens from a rotting Beech (*Fagus sylvatica* L.). No other details of the life-history of species of this genus have been published.

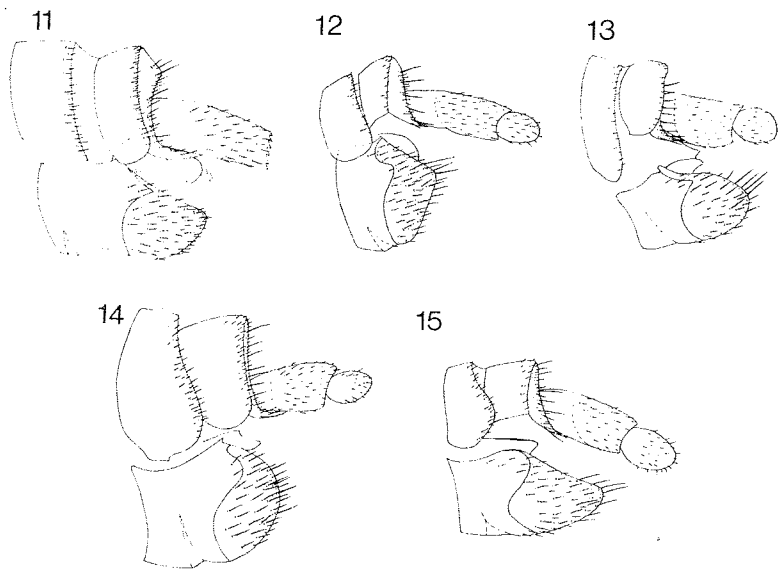
KEY TO PALAEARCTIC SPECIES OF *SYNTEMNA* WINNERTZ, 1863

1. R4 absent, 8-10 scutellar bristles evenly distributed across scutellum; posterior fork well beyond base of median fork; slight cloud at wing tip; macrotrichia dense over whole wing except extreme base, basal cell with dense macrotrichia, bristles of propleuron, mesonotum and scutellum rather short dark and fine; palps yellow; mesonotum uniformly dark; macrotrichia extending well back towards wing base on stem of posterior fork; pedicel and flagellar segments 1-3 yellow; distinct black spot above distal end of squama; Anal vein with few macrotrichia; ♂ front tarsus simple; postero-lateral margins of ♂ tergites 1-3 pale; ♂ genitalia (fig. 3) with tergite 9 without spinous bristles and without spine bearing process, dististyle simple; ♀ front tarsal segments slightly swollen; ♀ with lateral lobes of sternum 8 rounded apically, flat or slightly emarginate dorsally (fig. 11) . . . *morosa* Winnertz
- R4 present, enclosing a small cell; 4-6 major scutellar bristles placed at sides of scutellum leaving a clear median area, other small bristles present; posterior fork usually at or before base of stem or median fork; wing clear; ♂ dististyle complex . 2



Figs. 3-10. — *Syntemna* spp. ♂ genitalia (dorsal): 3, *S. morosa* Winn.; 4, *S. setigera* Lundstr.; 5, *S. penicilla* sp.n.; 6, *S. daisetsuzana* Okada; 7, *S. relicta* Lundstr.; 8, *S. hungarica* Lundstr.; 9, *S. nitidula* Edws; 10, *S. stylata* sp.n.

2. — Macrotrichia covering at most only apical half of wing beyond base of Median fork, sometimes more extensive in posterior part of wing, but none in or close to Basal cell; ♂ front basitarsus with a brush of pale hairs curved distally on the ventral surface at apex (absent in one specimen in 20); ♂ tergite 9 with a median process bearing a comb of spines 3
- Macrotrichia much more extensive extending well proximad of base of Median fork and including some in area of basal cell; ♂ front tarsus simple 4
3. — ♂ second tarsal segment of fore leg simple, without apical ventral brush; ♂ genitalia fig. 4; ♀ front tarsal segment 2 and 3 distinctly swollen; ♀ sternum 8 broadly rounded apico-laterally (fig. 13), last segment of cerci as broad as long; mesonotal hairs long fine and pale; abdomen unicolorous; palpi dark, sometimes paler towards base; mesonotum with more or less pale humeri; stem of posterior fork usually without macrotrichia; antennae either uniformly dark or with pedicel and 1st (and occasionally 2nd) flagellar segments pale; distinct black spot above distal end of squama; Anal vein usually bare *setigera* Lundström
- ♂ second tarsal segment of fore leg with small apical ventral brush; ♂ genitalia fig. 5; ♀ front tarsus hardly swollen, ♀ sternum 8 truncate apico-laterally (fig. 12), last segment of cerci longer than broad; mesonotal hairs long, pale and fine; abdomen unicolorous; stem of posterior fork without macrotrichia; pedicel and 1st (and sometimes 2nd) flagellar segments more or less yellow; dark spot above distal end of squama; Anal vein bare or with a few setae at its apex *penicilla* sp.n.



Figs. 11-15. — *Syntemna* spp. ♀ ovipositor (lateral): 11, *S. morosa* Winn. (apex of cerci missing); 12, *S. penicilla* sp.n.; 13, *S. setigera* Lundstr.; 14, *S. hungarica* Lundstr.; 15, *S. ?nitidula* Edws.

4. — Setae of propleurae, mesonotum and scutellum black; thorax uniformly dark; posterior fork at or beyond base of Median fork; palpi yellow (two specimens) or darkened (1 specimen); macrotrichia of stem of posterior fork extending well towards base; antennae with pedicel and basal flagellar segments yellow; c.15 macrotrichia in basal cell; spot above distal end of squama pale; macrotrichia present on Anal vein; ♂ genitalia fig. 6, tergite 9 without median process bearing comb of spines; ♀ unknown *daisetsuzana* Okada

- Setae of propleurae, mesonotum and scutellum pale yellowish; posterior fork usually at or before base of stem of Median fork; tergite 9 with a median process bearing a comb of spines 5
5. — Palps yellow; humeri somewhat pale; stem of posterior fork usually with only a few macrotrichia near the fork; pedicel and basal two or more flagellar segments yellow; Anal vein with macrotrichia 6
- Palps darkened; mesonotum uniformly dark; stem of posterior fork usually with many macrotrichia extending back almost to the origin of the vein; c.15-30 macrotrichia in upper surface of basal cell 7
6. — A distinct black spot above distal end of squama; more than 30 macrotrichia in upper surface of basal cell; ? mesonotal bristles pale, long and coarse; apico-lateral corners of ♂ tergites 1-3 pale; ♂ genitalia fig. 7; ♀ unknown. *relicta* Lundstr.
- Spot above distal end of squama pale; usually five or less, occasionally up to c.20 macrotrichia in upper surface of basal cell; mesonotal bristles very pale, long and coarse; apico-lateral corners of ♂ tergite 2 (and sometimes 3) usually pale; ♂ genitalia fig. 8; ♀ with lateral lobes of sternum 8 evenly rounded, broader than long (fig. 14) *hungarica* Lundstr.
7. — Anal vein with 8-12 macrotrichia; spot above distal end of squama pale; pedicel and at least three basal flagellar segments of antennae usually yellow; mesonotal bristles usually short, fine, less pale; ♂ abdominal tergite 2 distinctly pale; ♂ genitalia fig. 9; ? ♀ with lateral lobes of sternum 8 somewhat pointed, longer than broad (fig. 15) *nitidula* Edwards
- Anal vein with 2 or 3 apical macrotrichia; distinct black spot above distal end of squama; antennae more or less uniformly dark, first flagellar segment slightly paler; mesonotal bristles long, coarse and pale; apico-lateral corners of ♂ tergites 2 and 3 slightly pale; ♂ genitalia fig. 10; ♀ unknown *stylata* sp.n.

Syntemna daisetsuzana Okada, 1938

The record from Finland gives this species a very wide Palaearctic distribution. The types were preserved in alcohol which had evaporated leaving the specimens stuck to the tube. The holotype was released perfectly satisfactorily, but the paratype was severely damaged. Both were remounted on micropins and the genitalia of the paratype were cleared and are figured here (fig. 6). The type material has faded through being dried in alcohol, but in other respects the specimen from Finland fits this species very well. The only other Palaearctic species showing the absence of a comb bearing median process to the ♂ tergite is *morosa* Winn.

Material examined. — Holotype ♂, JAPAN: Hokkaido, Sôun-kyô, 4.vii.1935 (no collector) EIHU, Sapporo. Paratype ♂: JAPAN: Hokkaido, Sôun-kyô, 7.vii.1953 (no collector) EIHU, Sapporo. 1 ♂, FINLAND: NL 66,3°, Oulanka Biol. Stat., 23.vii.1967 (F. Mihalyi) MHHN, Budapest.

Syntemna hungarica Lundström, 1912

This is the most frequently recorded species. *S. columbiana* (Sherman, 1921), of North America, is certainly a synonym, but I have not seen the type of either of these species and so leave the confirmation of this synonymy to later workers. Certainly, both Vockeroth (in litt.) and the author have compared specimens from both sides of the Atlantic and consider them conspecific. The genitalia figures presented here are from British specimens. It should be noted that the female figured was not collected with males, but

three females with similar ovipositors seem to fit *hungarica* sufficiently to assume their identity.

Three males in the British Museum (Natural History) are labelled from rotting Beech, but it is not clear whether they were actually reared from this habitat or whether they were merely collected as adults.

Material examined. — 1 ♂, ENGLAND: Berks, Windsor Forest, 29.v.1974 (A.E. Stubbs), in coll. P.J. Chandler; 1 ♀ Gloucs, Soudley, Sutton Bottom, SX 663116, 25.viii.1973 (A.M. Hutson), BMNH, London; 1 ♂, Heref., Seger Hill, 20.x.1913 (J.H. Wood), BMNH; 3 ♂, Heref., Seger Hill, rotting beech, 22.x.1913 (J.H. Wood), BMNH; 1 ♂, Hunts, Monks Wood NNR, suction trap, 15.ix.1972 (M.W. Service & J.H. Cole), in coll. P.J. Chandler; 1 ♀, Oxon, Cothill, marshy wood, 1.vii.1976 (P.J. Chandler), in coll. P.J. Chandler; ?1 ♀, Yorks, ?Bolton Woods, ?1931 (C.A. Cheetham), BMNH, London; 1 ♂, WALES: Brecon, Crickhowell, v.1937 (F.W. Edwards), BMNH, London; 1 ♂, Brecknock, Llangammarch Wells, 23.vii.1913 (J. Yerbury), BMNH, London; 1 ♂ SCOTLAND: Inverness, Grantown on Spey, 17.viii.1911 (J. Yerbury), BMNH, London; 1 ♂ Inverness, Kinrara, Loch shore, 19.vi.1976 (P.J. Chandler), in coll. P.J. Chandler; 1 ♂, Inverness, Nethy Bridge, 23.vi.1923 (J.J.F.X. King), BMNH, London; 1 ♂, AUSTRIA: Tyrol, Obergurgl, Pirschhuttberg, 1850m, Malaise trap, 2-3.viii.1972 (A.C. & B. Pont), BMNH, London; 1 ♂, FINLAND: NL 68°. Pallastunturi, 28.vii.1967. (F. Mihalyi), MZUH, Helsinki; 1 ♂, SWEDEN: Lapland, Abisko, 3.viii.1951 (J.R. Vockeroth), CNC, Ottawa; 1 ♂, ALASKA: Isabel Pass, Mi 206 Richardson Hwy, 2900', 13.vii.1962 (P.J. Skitsko), BMNH, London.

Syntemna morosa Winnertz, 1863

Apart from the specimens listed below, a single male of a very closely related species from CANADA (British Columbia, Squamish, Diamond Head Trail, 3200', 6.viii.1953 (W.R.M. Mason), CNC, Ottawa) was examined. There are differences in that the posterior fork is below the base of the Median fork; thoracic bristles pale and long; palps dark; 3rd and apical part of 2nd flagellar segments rather dark; apical two thirds of Anal vein with macrotrichia; abdomen uniformly dark and the genitalia slightly different. The figure of genitalia presented here (fig. 3) is from the lectotype designated by Plassmann (1974). This original material was reared by Winnertz from a fallen log of Hornbeam (*Carpinus betulus*).

Material examined. — Lectotype ♂, GERMANY, Crefeld, (Wnz.), NMFIS, Frankfurt; paralectotypes 1 ♂ 1 ♀, Rhenanie, Crefeld, (J. Winnertz), MNHN, Paris.

Syntemna nitidula Edwards, 1925

The specimen listed here from Finland is the first record from outside the British Isles. It differs from the available British material in lacking macrotrichia on the stem of the posterior fork, 3rd and apical half of 2nd antennal flagellar segments dark, mesonotal bristles longer and finer. As with *hungarica*, the female that is illustrated here is not associated with any male and so the association is partly speculative.

Material examined. — Holotype ♂, ENGLAND: Lancs, Humphrey Head, 28.viii.1921 (C.A. Cheetham), BMNH, London; 1 ♂, Heref., Trumpet Wood, 27.v.1913 (J.H. Wood), BMNH, London; 1 ♂, Gloucs, R. Wye, The Slaughter, 32/5514, 22.viii.1973 (A.M. Hutson), BMNH, London; ?1 ♀, Kent, Ellenden Wood, 27.v.1975 (A.E. Stubbs), BMNH, London; 1 ♂, FINLAND: Oulu, Oulanka Biol. Stn, 21.vii.1969 (G.C. & D.M. Wood), CNC, Ottawa.

Syntemna penicilla sp.n.

Palps pale, sometimes rather dusky, particularly in females; antennae with pedicel and 1st (and sometimes 2nd) flagellar segments more or less yellow; thorax with mesonotal hairs long pale and fine; 4 (-6) major scutellar bristles placed to either side of the scutellum; mesonotum uniformly dark; wings clear; posterior fork before base of stem of Median fork; distinct dark spot above distal end of squama; macrotrichia covering about apical third of wing, none in area of basal cell and rarely any in costal cell; Anal vein bare or with a few macrotrichia at its tip; stem of posterior fork bare; abdomen unicolorous; ♂ front basitarsus with a brush of pale hairs curved distally on the ventral surface of the apical third; 2nd front tarsal segment with a similar brush in the apical third; ♂ tergite 9 with a row of robust spine-like bristles and with an apico-median process which is about as broad as long and bearing a comb of c.20-25 spines at its apex; coxite simple, without any internal flaps; dististyle with a very stout bristles on a short pedicel on inner surface, a long weak process on the dorsal surface and c.7 very strong and some finer bristles on the ventral surface (fig. 5); ♀ front tarsus barely swollen; lateral lobes of sternum 8 truncate, last segment of cerci longer than broad (fig. 12).

Material examined. — Holotype ♂, "allotype ♀", 12 ♂ 26 ♀ paratypes, FINLAND: Kuusamo, Kiutaköngäs, 24.vi.1964 (R. Tuomikoski), MZUH, Helsinki [2 ♂, 2 ♀ to BMNH, London]; 1 ♂, Vihti, Vihtijärvi, 24.v.1964 (R. Tuomikoski) MZUH, Helsinki; 1 ♂, Esbo, Kolmperä, 25.v.1964 (W. Hackman) MZUH, Helsinki; 1 ♂, Sotkama, Aarreniemi, 19.vi.1964 (R. Tuomikoski) MZUH, Helsinki; 2 ♀, Pielisjärvi, Koli, 17.vi.1964 (R. Tuomikoski) MZUH, Helsinki; 1 ♀, Pielisjärvi, Koli, 15.vi.1964 (R. Tuomikoski) MZUH, Helsinki; 1 ♀ Rovaniemi, Pisavaara, 30.vi.1964 (R. Tuomikoski) MZUH, Helsinki.

These 47 specimens are all from Finland collected between late May and June. One male of a closely related species was seen from U.S.A.: Alaska, Isabel Pass, Mi 206 Richardson Hwy, 2900', 19.vii.1962, R.E. Leech (CNC, Ottawa).

Syntemna relicta Lundström, 1912

The type has the genitalia and one wing mounted separately in Canada Balsam on small strips of perspex with the rest of the specimen. The balsam has contracted and details of the genitalia are difficult to see. The second specimen, from Norway, seems to agree with this species and I have no hesitation in including it here. The figure (fig. 7) is from this latter specimen.

The Alaskan specimen differs only in slightly darker antennae; abdomen uniformly dark; the bristles on tergite 9 are stronger and restricted to the base of the apico-median process and anterior margin of this tergite; the inner spur of the dististyle is not so well developed. However, I have little doubt in identifying this specimen with this species.

Material examined. — Holotype ♂, FINLAND: Alandia, Kunstö, in a shady hollow at the foot of a hill in a pine wood [data from original description, not on specimen], (K. Lundström) MZUH, Helsinki; 1 ♂, N. NORWAY: Borselv, Silfarfossen, 5.vii.1964 (R. Tuomikoski) MZUH, Helsinki; 1 ♂, U.S.A.: Alaska, Isabel Pass, Mi 206 Richardson Hwy, 2900', 13.vii.1962 (P.J. Skitsko) CNC, Ottawa.

Syntemna setigera Lundström, 1914

The genitalia of the type are mounted in Canada Balsam on a piece of perspex with the rest of the specimen, but the balsam has contracted and the details of the genitalia are not clear.

There is no significant difference between Palaearctic and Nearctic material. A very closely related Nearctic species (1 ♂, CANADA: B.C., Vancouver, Point Grey, 1.v.1973 (J.R. Vockeroth) CNC, Ottawa) differs principally in details of ♂ tergite 9, in the presence of a very poorly developed tarsal brush on segment 1, but a well developed brush on segment 2, and in distribution of wing macrotrichia. One male from Finland lacks the tarsal brush, but is a typical specimen in all other respects.

Material examined. — Holotype ♂, FINLAND: Kantalaks, 2346, (R. Frey), MZUH, Helsinki; 2 ♂, NL 66.3°, Oulanka Biol. Stat., 24.vii.1967 (F. Mihalyi) MHHN, Budapest; 2 ♀, same data, but 23.viii.1967; 1 ♂, U.S.A.: Alaska, Isabel Pass, Mi 206 Richardson Hwy, 2900', 18.vii.1962 (P.J. Skitsko) CNC, Ottawa.

Syntemna stylata sp.n.

Palps darkened; antennae uniformly dark except for first flagellar segment which is slightly pale; bristles of propleuron, scutellum and mesonotum long, coarse and pale; mesonotum uniformly dark; 4 major scutellar bristles placed at sides of scutellum leaving a broad median gap; wings clear; distinct black spot above distal end of squama; R4 present; Anal vein with only 2 or 3 apical macrotrichia; stem of posterior fork with many macrotrichia; posterior fork before base of stem of Median fork; macrotrichia extensive covering all but extreme base of wing, subcostal cell and the small cell at base of Rs; c.18-25 macrotrichia in basal cell; ♂ front tarsus simple; ♂ abdomen with slightly pale apico-lateral corners to tergites 2 and 3; ♂ tergite 9 with apico-median process short and narrow and bearing a comb of c.10 spines; some strong bristles along apical margin of main part of tergite 9; dististyle with a long outer process (fig. 10). ♀ unknown.

Material examined. — Holotype ♂, SCOTLAND: Moray, Logie, 19.ix.1913 (F. Jenkinson) BMNH, London. This is the only Palaearctic species of which only a single specimen has been seen. However, it is sufficiently distinct to justify its description as new.

GENUS *SCIOPHILA* MEIGEN

This is a genus of over 30 Palaearctic species, c. 25 Nearctic species and a few species in the southern hemisphere. A revision of the genus from a Holarctic viewpoint is very much needed and the re-examination of the types including many for names that have fallen into disuse is also required. A

student at the University of Helsinki, Finland, (Pakaarinen, pers. comm.) carried out such a study in the 1960's and found a very strong holarctic element, but his results await publication.

Few characters apart from the male genitalia have been used for reliable identification of species and few species have been adequately illustrated, particularly in the Nearctic fauna. Reliance has been placed on combinations of colour characters and minor venational characters. Attempts by the present author to find further reliable characters have not been very successful; the only additional character that was found to be consistent was the presence or absence of a small group of very small pale hairs on the anterior lateral part of the hypopleuron. This group of hairs is very difficult to see except from certain light angles and is present in *ochracea* Walk., *interrupta* Winn., *fridolini* Stackelberg, *varia* Winn., *plurisetosa* Edws, *lutea* Macq., *buxtoni* Freeman, *fenestella* Curtis, *nonnisilva* sp.n., *hirta* Heig. It is absent in *limbatella* Zett., *rufa* Meig., *cliftoni* Edws, *adamsi* Edws, *nigronitida* Landr., *geniculata* Zett. The absence of a similar group of hairs at the anterior angle of the katepisternum separates *geniculata* and *nigronitida* from all other species, but requires confirmation in some species. Presumably such small groups of hairs are worthy of further investigation — they are difficult to see in dried specimens, but are more obvious in specimens preserved in spirit.

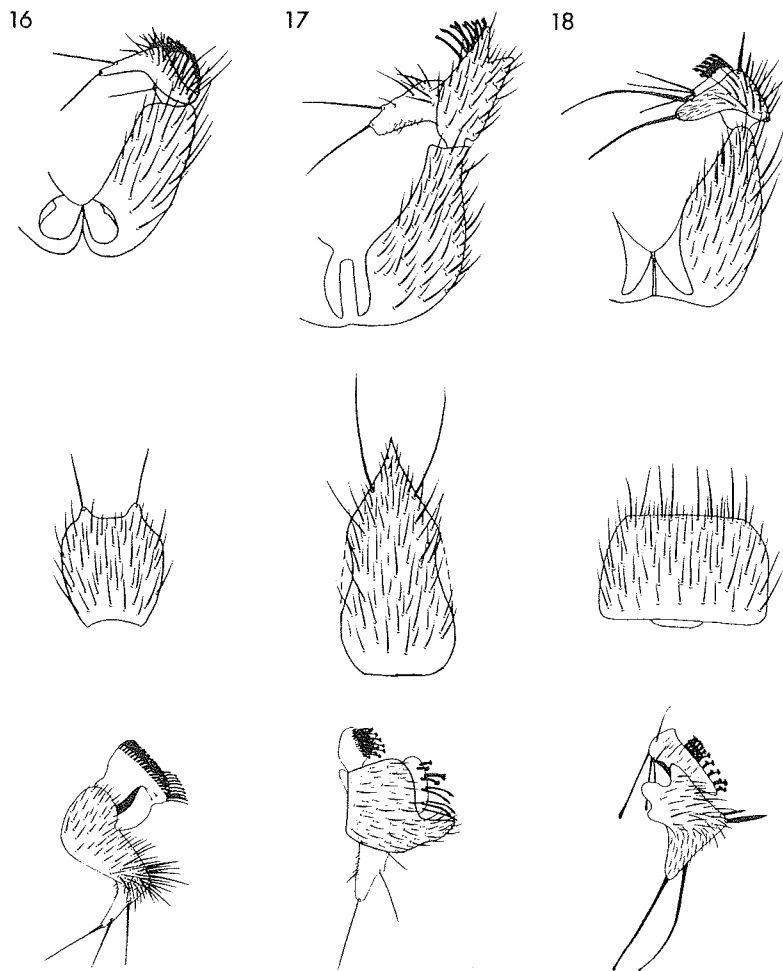
Included in the material in the British Museum (Natural History) are three previously unrecorded species. Since Landrock (1927-29) and Edwards (1941), Stackelberg (1943) has described two species, Freeman (1956) one species and Plotnikova (1962) two species. No other Palaearctic species has been described. One of the British species seems identifiable with *S. fridolini* Stackelberg described from the Kola Peninsula in north west Russia and the others do not seem to be identifiable with any other of the adequately recognisable Palaearctic species. Pending a revision of the genus it is considered expedient to describe these as new species. These three species are discussed below.

Sciophila fridolini Stackelberg, 1943

A single specimen identified as *interrupta* Winnertz in the British Museum (Natural History) had been misidentified. It agrees with the description and figures of *fridolini* Stackelberg, but it was not possible to examine the type. The species is previously known only from the type ♂, U.S.S.R., Kola Peninsula, Chibina.

Small dark red species; head with first antennal flagellar segment slightly pale at base, rest of antennae dark; segment 1 of antennal flagellum nearly twice as long as broad, segments 2 and 3 about equally long and broad, segment four and following segments broader than long, becoming longer near apex; palps dark, head black; thorax uniformly dark red, bristling including a small group of fine short hairs on the anterior angle of the katepisternum and on the anterior edge of the hypopleuron; wings with mark at junction of median and posterior stem veins pale, not distinctly black; microtrichia present among the macrotrichia; Sc2 above base of Rs; posterior fork complete and short, the fork being beyond level of apex of Anal vein, just beyond level of apex of Sc1; coxae, femora and tibiae all entirely yellow, no antero-dorsal row of bristles on front tibia; abdomen

uniform dark reddish black; δ tergite 9 with emarginate apical margin and a pair of long bristles on distinct tubercles; dististyle very short with a long narrow tapering ventral process bearing one strong apical bristle and two or three strong posterior bristles, internal brush of spines with weakly branched tips (fig. 16). η unknown.



Figs. 16-18. — *Sciophila* spp. δ genitalia (top: ventral; centre: tergite 9; bottom: lateral view of dististyle): 16, *S. fridolini* Stackelberg; 17, *S. nonnisilva* sp.n.; 18, *S. quadriterga* sp.n.

Material examined. — 1 δ , ENGLAND: Sussex, Crowborough, ix.1916 (F. Jenkinson) BMNH, London; 1 δ , Yorks, Ingleton, 30.vi.1924 (F.W. Edwards) BMNH, London.

The Sussex specimen had been identified as *interrupta*. The two specimens of *interrupta* recorded by Edwards (1913) were not seen during the present study, but a single δ from the Hope Department of Zoology (Entomology),

Oxford, was examined. The data are CAMBS: Chippenham Fen. 7.ix.1946, J.E. Collin.

Sciophila nonnisilva sp.n.

This is a small species, similar to such species as *cliftoni*, *fenestella* and possibly the larger *lutea*, but with a narrowly blackened tip to the femur. It may be more closely related to *adamsi*. The δ tergite 9 is characteristic in being very sharply pointed with a thickened tip.

Antennae with scape and most of 1st flagellar segment pale, rest dark; 1st flagellar segment about twice as long as broad, subsequent segments c. 1.5 times as long as broad; palps pale, rest of head black; thorax uniformly dark reddish black; small group of short fine hairs present on anterior edge of hypopleuron and anterior angle of katepisternum. Wings with microtrichia present among the macrotrichia; Sc2 above or slightly beyond base of Rs; posterior fork complete, the fork being beyond the level of the end of the Anal vein and opposite or shortly before apex of Sc1; coxae entirely yellow; apex of mid- and hind femur narrowly dark and base slightly darkened ventrally; base of fore femur also usually slightly darkened ventrally; no antero-dorsal row of bristles on fore tibia; abdomen uniformly dark reddish black; δ tergite 9 abruptly narrowing to a very sharply pointed apex with two long lateral bristles; dististyle almost square with a posteriorly directed extension from the apico-ventral corner; ventral process long and tapering with a single apical bristle and 2 or 3 posterior bristles; two groups of bristles with strongly branched tips on inside of dististyle, the dorsal group much shorter, stouter and more densely arranged than the ventral group (fig. 17). η unknown.

Material examined. — Holotype δ , ENGLAND: Hunts, Monks Wood, 26.ix.1972 (J. Cole) in suction trap, BMNH, London; Paratype δ , same data but 28.vii.1972; 1 δ , Wilts, Vernditch, 30.iv.1971 (C. Andrewes) BMNH, London; 1 δ , Cambs, Chippenham Fen, 18.vii.1965 (L. Parmenter) BMNH, London.

Sciophila quadriterga sp.n.

A small, largely pale species similar to *fenestella*, *varia*, etc. with a wing length of slightly less than 3.5mm. Tergite 9 is simple and almost quadrate.

Antennae with scape, pedicel and first three flagellar segments yellow, rest dark; basal flagellar segments c.4 times as long as broad, following segments c.3 times as long as broad; palps and frons yellow, rest of head black; mesonotum and scutellum yellow, dorsum with vague median and lateral stripes; prothorax pale, rest of pleurae darker, particularly pleurotergites, postnotum and ventral part of katepisternum; halteres yellow; 4 major scutellar bristles, postnotum with median and lateral rows of bristles; katepisternum and hypopleuron bare; wings with microtrichia present; Sc2 ending about half way along length of small cell at base of Rs; posterior fork ending slightly beyond apex of Sc1; dark spot where postradial veins fork above distal end of squama; coxae, femora and tibiae entirely yellow, tarsi slightly darkened; δ tergite 9 very broadly truncate, hardly narrower at apex than at base, without markedly stronger bristles; dististyle very reduced, triangular with two very stout bristles distally (one about twice as long as the other), 3 long bristles on the dorsal apex and one apical and one subapical very long bristles on inner ventral apex; ventral process somewhat reduced with three long apical bristles; inner surface of dististyle with a single group of stout bristles with branched apices (fig. 18); η unknown.

Material examined. — Holotype δ , ENGLAND: Herefordshire, Cherry Hill, by rotting log, 23.v.1977 (P.J. Chandler) BMNH, London.

TRIBE GNORISTINI

Genus *COELOPHTHINIA* Edwards, 1941

Specimens from Britain were compared with a specimen from Canada. The only differences were found in the genitalia and these were so insignificant that it seems very likely that *thoracica* Winnertz 1863 from Europe and *curta* Johannsen 1912 from North America are synonymous. However, British males from Hampshire, Cornwall (Isles of Scilly) and Merionethshire show constantly longer dististyle, ventral process of basistyle and differences in the internal processes of the dististyle. These differences are very small but in view of their constancy it seems advisable to maintain the only two species of this genus as distinct subject to the comparison with further material including any types.

Material examined. — 1?, ENGLAND: Herts, Offley Holes, iv.1936 (F.W. Edwards); 1 ♂, Hants, New Forest, 18.x.1937 (F.W. Edwards); 1?, Yorks, Austwick, 20.x.1923 (C.A. Cheetham); 4 ♂ 1 ♀, Cornwall, Isles of Scilly, Tresco, 6.x.1970 (A.M. Hutson); 2 ♂, WALES: Merioneth, nr. Dolgelly, Brithdir Isaf, 25.ix.1971 (A.M. Hutson); 1 ♂, CANADA: Quebec, Old Chelsea, 1.x.1963 (J.R. Vockeroth). All in BMNH, London.

Genera *DZIEDZICKIA* Johannsen, *PALAEODOCOSIA* Meunier, etc.

These two genera and related genera, including *Hadroneura* Lundstr. and *Synapha* Meigen, are in need of comprehensive revision. Certainly the concepts of workers in the Nearctic differ greatly from those in the Palaearctic. In the Palaearctic there are few species in a number of small genera, while in the Nearctic, with rather more species, workers have had difficulty in recognising these genera and species, resulting in species being moved from genus to genus and genera being elevated or reduced in status in a rather unsystematic fashion. Laffoon (1965) listed 13 species in *Dziedzickia* and did not recognise such genera as *Palaeodocosia* and *Syntemna*. It has been possible to examine a few of these in the present study and there is no doubt that these species are not all congeneric. "*D.*" *columbiana* Sherman is discussed under *Syntemna* and it is clear that several other species belong to this genus. "*D.*" *vittata* Coquillett is congeneric, if not conspecific, with European *Palaeodocosia alpicola* Strobl and *janickii* Dziedzicki. The genitalia of a ♂ *vittata* from Canada (B.C., Vancouver, Point Grey, 13.viii.1973 (J.R. Vockeroth) BMNH, London) are identical with British material of *janickii*. But in other characters, such as body colour and bristle colour of thorax, it is more like the related *alpicola*. Edwards (1941) discusses a similar British specimen. It is likely that if more material were available it would be found that all three names represent a single species.

Edwards (1941) suggested that *flava* Edwards should be included in *Palaeodocosia* — it does not seem to be particularly closely related to *janickii* and *alpicola*, but if it is included in this genus, then the Nearctic "*D.*" *polygona* Loew should also be included. "*D.*" *fuscipennis* Coquillett does not belong to *Dziedzickia* on the basis of two females in the British Museum (Natural History), but its affinities are uncertain.

The distinctions between *Hadroneura* and *Dziedzickia* are uncertain, but this may be through confusion in association of genera in North America and Europe. *Synapha tibialis* Coquillett is so different from European species of *Synapha* that it cannot be regarded as congeneric.

A careful revision of this group involving a review of the type-species of the various available generic names would be very welcome. It is unfortunate that one of the generic names is based on female specimens apparently poorly preserved in Baltic Amber (Meunier, 1904; Edwards, 1940, 1941).

TRIBE LEIINI

Genus *RONDANIELLA* Johannsen

This small genus has been considered to include 1 Palaearctic, 1 Nearctic and 1 Oriental species. A second Palaearctic species has been recognised at various times, but is generally regarded as a synonym. The oriental species is distinct, but comparison of two Nearctic samples (2 ♂ 2 ♀, Canada, Quebec and 2 ♂ 2 ♀, U.S.A., Iowa) with Palaearctic specimens shows these to be synonymous.

Rondaniella dimidiata (Meigen, 1804) = *R. soroscula* (Loew, 1869) syn. nov.

REFERENCES

- Dziedzicki, H., 1885, II. Przyczynek do fauny owadów dwuskrzydłych. Rodzaje nowe: *Hertwigia*, nov. Gen.; *Eurycera*, nov. Gen. i gatunki rodzajów: *Boletina*, *Sciophilina*. *Pam. fizyogr.* 5: 164-94. Edwards, F.W., 1913, XII. Notes on British Mycetophilidae, *Trans. ent. Soc. Lond.* 46 (1913): 334-82; 1925, British Fungus-gnats (Diptera, Mycetophilidae). With a revised generic classification of the family, *Trans. ent. Soc. Lond.* 57 (1924): 505-670; 1940, Redefinitions and synonymy of some genera of amber fungus-gnats (Diptera, Mycetophilidae), *Proc. R. ent. Soc. Lond.* (B) 9: 120-26; 1941, Notes on British fungus-gnats (Dipt., Mycetophilidae), *Entomologist's mon. Mag.* 77: 21-32, 67-82. Freeman, P., 1956, Two new species of Mycetophilidae (Diptera: Nematocera) from Britain, *Proc. R. ent. Soc. Lond.* (B) 25: 26-8. Hutson, A.M. & Kidd, L.N., 1975, Two Mycetophilidae (Dipt.) new to Britain, *Entomologist's mon. Mag.* 110: 236. Laffoon, J.L., 1965, Family Mycetophilidae (Fungivoridae). In Stone, A., Sabrosky, C.W., Wirth, W.W., Foote, R.H. & Coulson, J.R. A Catalog of the Diptera of America north of Mexico. *Agric. Handb. Forest Serv. U.S.* no. 276: iv + 1696pp. Landrock, K., 1926-27, 8. Fungivoridae (Mycetophilidae). *Fliegen palaarkt. Reg.* 2(1): 1-195. Meunier, F., 1904, Monographie des Cecidomyiidae, Sciaridae, Mycetophilidae et Chironomidae de l'Ambre de la Baltique, *Annls Soc. scient. Brux.* 28: 12-264. Okada, I., 1938, Einige Fungivoriden vom Daisetsu-Gebirge in Hokkaido (Dipt., Nematocera), *Insecta matsum.* 12: 91-8. Plassmann, E., 1974, Untersuchungen an Mycetophilidentypen aus der Winnertz'schen Sammlung, *Senckenberg, biol.* 55: 353-5; 1977, Drei Weitere neue Mycetophilidenarten aus dem Allgäu (Diptera: Mycetophilidae), *NachrBl. bayer. Ent.* 26: 30-1. Plotnikova, G.P., 1962, New Fungus-gnats (Diptera, Fungivoridae s.l.) from West Siberia. 1. *Ent. Obozr.* 41: 889-900 (in Russian; translated in *Ent. Rev., Wash.* 41: 552-8). Stackelberg, A.A., 1943, New palaearctic fungus-gnats (Diptera, Fungivoridae), *Proc. R. ent. Soc. Lond.* (B) 12: 167-71. Winnertz, J., 1863, Beitrag zu einer Monographie der Pilzmücken, *Verh. zool.-bot. Ges. Wien.* 13: 637-964.

Department of Entomology, British Museum (Natural History), London, SW7 5BD.
January 30th, 1979.