Chapter 1

Nerioidea

48: Pseudopomyzidae

McAlpine (in Oosterbreuk) describes the Family as follows:

Moderately slender, minute to small flies, 2-5mm in length; **head** - face with pair of sclerotised lateral plates, its median section usually desclerotised, at least on the lower part; postvertical bristles convergent; vibrissa, ocellar, and 2-4 pairs of reclinate fronto-orbital bristles present; antenna porrect; segment 3 rounded with dorsal (not sub-basal) arista; **wing** - costa with subcostal break; subcosta distally desclerotised to variable extent, approximated to R1; cell dm present or confluent with cell bm; cell cup sometimes indistinctly enclosed; vein A1 sclerotised, often long; alula distinct; **thorax** - prosternum narrow; dorsocentral bristles usually 4 or 5 pairs; scutellars 2 or 3 very unequal pairs; anepisternal bristle absent; **legs** of moderate length.

Adult pseudopomyzids usually live in shaded forests and are rarely collected and apparently also rare in nature. To find them sweep around fallen tree trunks or near rotting logs or set up malaise traps in these areas. Early stages are largely undescribed but larvae of Palaearctic species have been found under the bark, including the roots, of deciduous trees (more references in Oosterbreuk, Greve & Godfrey)

Head is of *Tenuia nigripes*, habitus is of *Pseudopomyza collessi* (from Oosterbreuk)

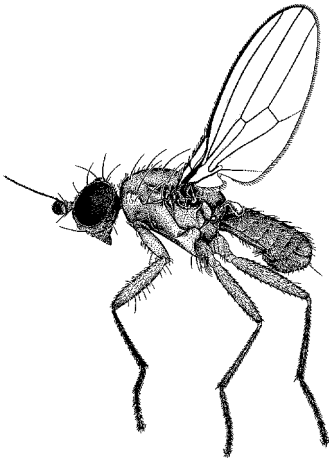
Pseudopomyza Strobl, 1893

38 ------ Head with 3 pairs of front-orbitals, thorax with 4 pairs of dorsocentrals & 2 pairs of long scutellars. Face bare between antennae, mesopleuron bare & costa without spines.

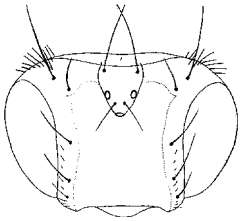
Pseudopomyza atrimana

In the UK this is known from Denny Wood, New Forest (Ivan Perry 1994) and Cuckoo Wood, Kent (Peter Chandler 23/7/72 with more recent records from Godfrey, 1994 and in Wales (Cartmel, SN602164) by Peter Chandler in 2009

Pseudopomyza atrimana



Greve (1995) states that the striking male postabdomen makes this species easily identifiable amongst Malaise trap material



Colour illustrations: Roháček, J. A new record of mass occurrence of Pseudopomyza atrimana (Meigen), with notes on probable breeding habitat of the species (Diptera : Pseudopomyzidae). Casopis slezského zemského muzea (A) 61, 3–10 (2012).

49: Micropezidae

Key to subfamilies

39 ------ No crossvein separating second basal cell (bm) and discal cells (dm) of wing; fronto-orbital setae absent

Costa practically bare from base to end of subcostal vein, this subcostal vein (R1) with small bristles on the upper surface. One distinct, strong, sternopleural bristle. Occiput very prominent and postvertical bristles present. No ventral pregenital lobes in males of British species and no thoracic dorso-central bristles. At least the four posterior tibiae with small bristles.

Micropezinae (Micropeza)---------- 41

---------- Crossvein present between second basal and discal cells; fronto-orbital setae present

Costa setulose to base. One, two (or even three) pairs of dorso-central bristles. Usually no single strong sternopleural bristle though often a fan of finer bristly hairs. Males with ventral abdominal lobes.

---------- 40

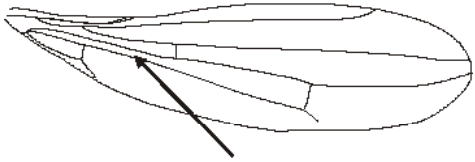
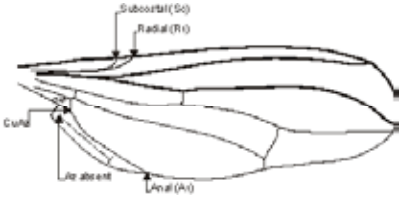
40 ------ Postvertical bristles present. Clypeus strongly developed and projecting, shining black. Anterior fronto-orbital setae far from eye margin. Male epandrium without surstyli

Taeniapterinae (Raineria) ---------- 45

---------- Postvertical bristles absent. Clypeus small, projecting only slightly beyond the mouth opening. Fronto-orbitals in two nearly parallel rows close to eye margins. Male epandrium with surstyli

Calobatinae ---------- 46

Key to subfamilies

Micropezinae	
	
Taeniapterinae / Calobatinae	
	
Taeniapterinae	
Calobatinae	
	
Terminology **Fronto-orbital setae**: if you can distinguish distinct orbital (posterior) and frontal (anterior) plates (actually paired sclerites which run along the inner edges of the compound eyes) on the frons then you can use the terms **orbital** and **frontal** for the setae, otherwise it is not clear to which plate the setae belong and the term **fronto-orbital** is used	

Micropezinae

Micropeza Meigen, 1803

Rohácek, 1990 provides a key to the Central European Micropezids, there seems to be a reasonable chance of discovering others, especially *brevipennis* (check collections of *corrigiolata*)

41 ------ Thorax black, any yellowish colouration confined to the humeral callus and sides of scutellum
---------- 42

---------- Thorax with large areas of yellow or orange ( )
---------- 44

42 ------ Propleuron with a row of long setae on the ventral margin; two basal segments of the antenna yellow.
non-British---------- Micropeza cingulata

---------- Propleuron without these ventral seta; two basal segments of the antennae black
---------- 43

43 ------ Haltere and fore coxa yellow; usually 2-4 pairs of longer setae on the metasternum; male cercus usually yellowish; female ovipositor sheath completely black ventrally; wing longer.

cf *M. lateralis*: Smaller, mainly black species. Vertex and occiput black. Thorax practically entirely black. Male hypopygium mainly black. 5 - 6.5mm

---------- Micropeza corrigiolata

---------- Haltere brown, fore coxa darkened at least antero-dorsally; metasternum with at most 1 pair of longer setae; male cercus brown; female ovipositor sheath yellowish brown ventrally; wing shorter
non-British----------Micropeza brevipennis

44 ------ Arista brown; propleuron without ventral setae; scutellum at most medially with a brownish spot, otherwise yellow; abdominal tergites largely dirty yellow
non - British ---------- Micropeza angustipennis

---------- Arista white; propleuron with well developed ventral setae; scutellum almost completely brown; tergites dark brown with raw sienna ( ) hind margins

cf *M. corrigiolata*: Larger, brown and sienna species. Vertex and occiput streaked and spotted with sienna. Side margins of thoracic disc, and lower part of pleurae sienna. Male hypopygium mainly sienna. 6 - 8.5mm

----------Micropeza lateralis

Micropeza

Micropeza corrigiolata

Micropeza lateralis

Taeniapterinae

Rainieria Rondani, 1843

The genus is characterised by the presence of well developed postocellar setae and the massive shining clypeus projecting beyond the mouth cavity.

45 ------ All femora black at base

Rainieria calceata

British Isles: Windsor Forest, June & July on felled beech. Donisthorpe, 1930. Chandler, 1975 reviews its status but has no sites beyond Windsor Forest and no dates earlier than August. Denton (2001) reports it from West End Common, Esher, Surrey (TQ16) under the drying remains of the fungus *Nothopanus lignatilis* in August. Skidmore also reports it at Juniper Hall (TQ15)
Hungary: Nagy-irtás, Vesprémfajsz (E 17°54'16" N 47°01'37") running around sap runs & rot holes, 31 May 1998 (Sumner)
Slovenia: Otosce, high meadow (E 14°02'54" N 45°46'11") running along beech log, 2 June 2003 (Sumner). Hudicevec (E 14°05'30" N 45°45'15"), 2 June 2003 (Pavett).
Warmer springs in central europe would account to some extent for the much earlier dates but I would suspect that U.K. flight periods could actually extend much earlier.

---------- All femora or at least fore femora light at base

European ----------latifrons, hennigi
Japanese ---------- boninensis

Refer to Krivosheina, 1996

Taeniapterinae

Rainieria calceata

Calobatinae

46 ------ Palpi short, not reaching the anterior part of the mouth opening. Ends of mediastinal (Sc1/Sc2) and subcostal (R1) veins ending very close together in costa, (by a distance slightly >1x middle (discal) crossvein length or <1x posterior crossvein (tp) length).

♂: claspers on 5th sternite not filiform (but they are curved, posteriorly directed.)

Neria (Compsobata) ---------- 50

---------- Palpi long and always easily visible, in the mouth opening. Ends of mediastinal (Sc1/Sc2) and subcostal (R1) veins ending well apart in the costa (by a distance >2x middle (discal) crossvein length or >1x posterior crossvein (tp) length).

♂: claspers on 5th sternite filiform (inwardly and anteriorly bent in apical halves.)

Two other features distinguish the Calobata/Cnodacophora group from all other genera: sternite 6 is flat and Y-shaped and sternite 4 is dilated at the middle of the posterior margin (Andersson, 1989)

Calobata & Cnodacophora---------- 47

47 ------ Usually two pairs of postsutural dorsocentral bristles on thorax. Humeri and female ovipositor yellowish. Arista with very short pubescence. Thorax without shining black stripes. Prothoracic episterna bare except on ridge above the front coxae. Anal vein (A_1) reaches wing margin.

♂ without a ventral projection between hind coxae.

Calobata ---------- 48

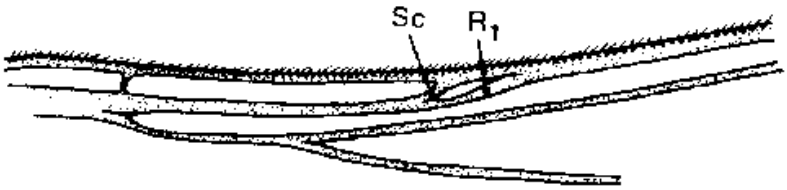
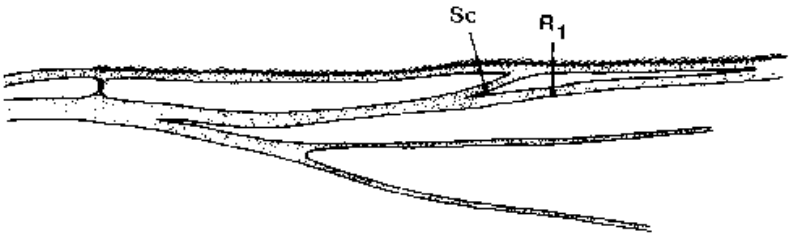
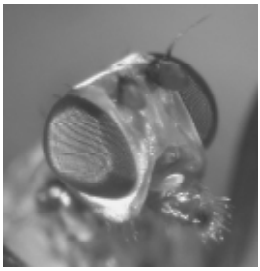
---------- Only one pair of dorsocentral bristles [? prescutellar acrostichials]. If humeri and female ovipositor yellowish, arista bearing long pubescence, and whole of prothoracic episterna bearing hairs as well as microscopic pile. Anal vein (A_1) abbreviated.

♂ with a projection of metasternum towards the rear, between hind coxae.

Examine scutellum, if its bristles are not on the margin then the rare Central European *Calobatella longiceps* may key here

Cnodacophora ---------- 49

Calobatinae

Neria	
	
Calobata & Cnodacophora	
	
	
Calobata	
Cnodacophora	

Calobata Meigen, 1803

One species only:

48 ------ Male: 5th abdominal sternite - each lobe is bidentate, with a short inner tubercular and long tubular outer projection, directed anteriorly, both with long hairs at the tips; 4th sternite - a pair of curved, hairless, tubular projections from each side margin directed posteriorly, 3rd sternite - a pair of small tubular projections one from each side margin directed posteriorly. 5 - 7.5mm

Note that in side view each of the last two pairs of projections may appear to arise from the previous segment, the sternites are not positioned directly underneath the corresponding tergites.

----------Calobata petronella

Cnodacophora Czerny, 1930

49 ------ Thorax entirely covered in greyish dust. Larger species. Second antennal joint blackish. Prothoracic episterna hairy. 6 - 8mm

Costal area from the end of the radial vein to the tip of the wing is infuscated (except in tenerals). **Male**: ventral abdominal lobes curving forwards towards the base of the abdomen somewhat as those on the fifth sternite in *petronella*, but simple not bidentate; they appear to arise from beneath the sides of the 4th tergite but are really part of the 5th sternite.

---------- Cnodacophora sellata

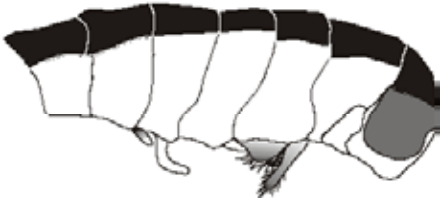
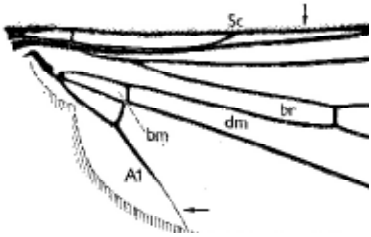
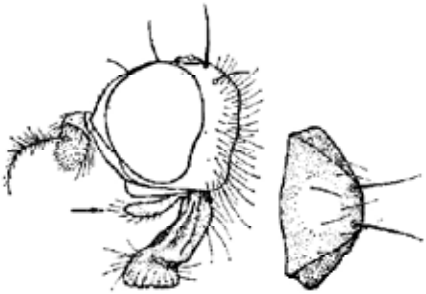
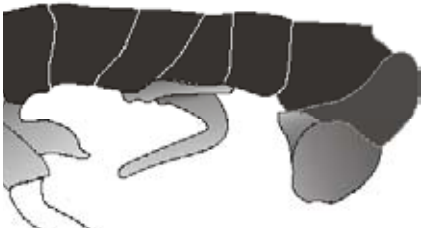
---------- Thorax with polished black stripes or patches. Smaller species. Second antennal joint yellow. Prothoracic episterna without hairs except on ridge above base of front coxae. 4.5 - 6mm

Frons with the upper half black. Shining black areas on thorax include a patch at middle in front and two side stripes abbreviated both in front and behind. A broad grey-dusted middle stripe divides into two diverging narrow stripes in front which extend to each humerus and widens out behind to cover the postalar calli and the scutellum. **Male**: abdominal lobes arise from the fifth sternite and are similar to those of *sellata,* situated at about half way down the abdomen. **Female**: ovipositor also resembling that of *sellata* in being more tapering in outline than in *cibaria* or *cothurnata*.
Scotland, Spey Valley, Spey/Nethy confluence, Strathglass - late May, June & July.

----------Cnodacophora stylifera

Note:
In life the membranous pluera of the abdomen may be substantially distended (the illustration of the abdomen of *Calobata petronella* is from life.) After death this membrane contracts and frequently obscures visibility of the male appendages.

Calobata & Cnodacophora

Calobata petronella	
	
Cnodacophora sellata	
	
Cnodacophora stylifera	
 	

Neria Robineau-Desvoidy, 1830

50 ------ Wing with large areas free of microtrichia basally; mainly reddish-yellow thorax (black on front margin and scutellum) and often two dark annulations on hind femora.

Small species with short and narrow wings, whole of prothoracic episterna with hairs as well as pile. (Palpi not quite extending to front of mouth opening). 4 - 5mm

Microtrichia character is used in some keys to separate this *Neria* from *Compsobata* (now all are *Neria* - Andersson, 1989)

----------Neria ephippium

---------- Wing basally uniformly covered in microtrichia; thorax dark but dusted greyish, the maximum extent of any yellow confined to humeri, postalar calli and sides of scutellum.

Much larger species with longer and rather broader wings; prothoracic episterna with a few hairs only on the lower margin above the front coxae. Only one pair of dorsocentral bristles on the thorax. (Palpi variable in length but not extending beyond the mouth opening).

---------- 51

51 ------ Upper (posterior) half of frons velvety black; male with an unpaired (median flat) process of the 6th sternum projecting anteriorly between the large but slender processes (curved towards each other and semitubular but dilated knob-like at the tip) of the 5th sternum, anal "cerci" with not very long hairs; female ovipositor sheath entirely black, without a transverse row of long hairs at tip beneath. Arista entirely pale yellow. 5 - 7mm

----------Neria commutata

---------- Frons orange up to the ocellar triangle; male without the unpaired process on the 6th sternum, claspers much more robust; female ovipositor sheath reddish-brown at least subapically

---------- 52

52 ------ First tergite with a small lateral polished area; male sternal claspers not bulbous, with a forked internal tip; female ovipositor sheath dorsolaterally constricted.

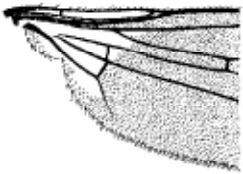
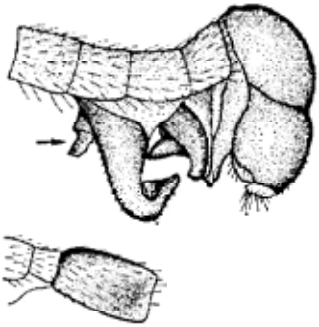
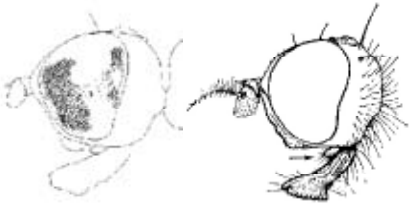
----------Neria cibaria (cothurnata)

---------- First tergite completely microtomentose; male claspers bulbously hemispherical; female ovipositor sheath without dorsolateral constriction

---------- Neria femoralis

Arista darkened about the base. Upper half of frons yellow/red even on each side of the ocellar triangle. 5 - 7.5mm. Yellow on upper half of frons extending to the sides of the ocellar triangle, this colour may also be red. Male ventral lobes similarly curved towards each other as in *commutata* but each one much wider, especially about the base, though abruptly narrowed near the tip where they are flattened out into an anterior rounded dilation and a smaller more pointed posterior tooth; they are not preceded by a median ventral projection. Anal cerci with much longer hairs, longer than cerci. Female ovipositor with a transverse row of long pale hairs at the tip beneath.

Neria

Neria ephippium	
	
Neria commutata	
	
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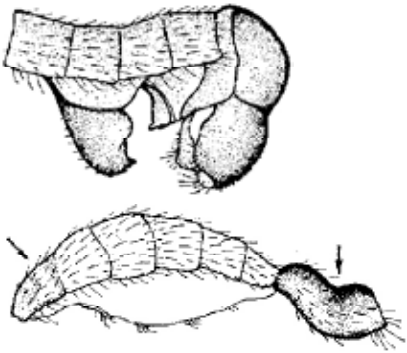
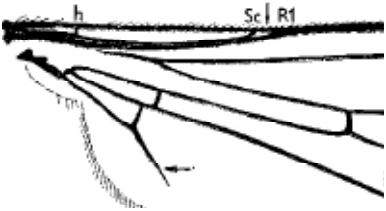
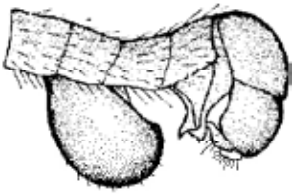
	
Neria femoralis	
	

References - Nerioidea

? von Roser. Spillebeenvliegen. . p.10-19 . .

Andersson, H.. 1989 Taxonomic notes on Fennoscandian Micropezidae (Diptera). Notulae Entomologicae. 69 p.153-162 . .

Anon.. 2001 Probably a museum's collection on a website. . . . http://www.erc.pref.fukui.jp/gbank/insect/order26.html. [Japanese].

Anon.. 2001 Nearctica: Nomina - Diptera. Nomina Insecta Nearctica. . . .

Barraclough, D.A.. 1996 Review of the South African species of Micropezidae (Diptera: Schizophora), with first record of the Micropezinae from the Afrotropical Region. Ann. Natal Mus.. 37 p.141-171

Barraclough, D.A.. 1993 The southern African species of Neriidae (Diptera). Ann. Natal Mus.. 34(1) October p.1-17 . .

Brindle, A.. 1965 Taxonomic notes on the larvae of British Diptera. 19. The Micropezidae (Tylidae). Entomologist. 98 p.83-86 . .

Buck, M.. 1996 Notes on German species of the families Scatopsidae, Stenomicridae, Drosophilidae and Pseudopomyzidae (Diptera), including a new record. Studia dipterologica. 3 (2) p.370-372 . .

Chandler, P.J.. 1975 Notes on the British status of three unusual Acalypterate flies (Diptera). Proc. Brit. Ent. Nat. Hist. Soc.. p.66-72 . .

Chandler, P.J.. 2003 Corrections and Changes to Diptera Checklist (9). Dipterists Digest. 10(1) p.58-60

Chandler, P.J.. 1983 *Pseudopomyza atrimana* (Meigen) (Diptera: Pseudopomyzidae), A fly of an Acalypterate Family new to the British list.. Proc. Trans. Br. Ent. Nat. Hist. Soc.. 16 p.87-89 . .

Collin, J.E.. 1945 British Micropezidae. Entomologist's Record. 15/10/1945 p.115-119 . .

Cresson, E.T.. 1938 The Neriidae and Micropezidae of America north of Mexico (Diptera). Trans. Am. Ent. Soc.. 64 p.293-366 . . [German].

Czerny, L.. 1941 Tylidae. Die Fliegen der palaearktischen Region. . . .

Czerny, L. in Lindner, E. (Ed) . 1930 Tylidae (42a). Die Fliegen der palaearktischen Region. V. . . [German].

Danielsson, R.. 1998 Cypselomatidae present in the Entomological Museum of Lund University. Entomological Museum of Lund University. . . http://darwin.biol.lu.se/systzool/zoomus/ZooDoc/VetSam/ZooEnt/OrdDip/ListDip/069.Cypselosomatidae.

Donisthorpe, H.. 1930 *Calobata calceata*, Fall. (Micropezidae, Diptera), a species new to the British List. Entomologist's Record. 42(1) 15/9/30 p.117 . .

Evenhuis, N.L.. 1998 Family: Micropezidae. Australasian/Oceanian Diptera Catalog — Web Version.

Fabricius. 1794 *Paracalobata ephippium*. Entom. Syst.. IV p.338 . . [German].

Fabricius, J.C.. 1794 Hafniae. Entomologia systematica emendata et aucta. 4 p.1-472 . **.**

Fallén, C.F.. 1820 Opomyzides. Dipt. Suec. Opomyz.. p.1-12 . **.**

Frey, R.. 1947 Neue Diptera Brachycera aus Finnland und angrenzenden Landern. IV.. Notulae Entomologicae. 26 p.65-69 . . [German].

Frey, R.. 1918 Beitrag zur Kenntnis der Dipterenfauna des nordl. europalischen Russlands. II. Dipteren aus Archangelsk. Acta. Soc. Pro Fauna et Flora Fenn.. VI 46(2) p.1-32 . .

Frouz, J., Maca, J.. 1985 Faunistic records from Czechoslovakia. Diptera: Pseudopomyzidae. Acta Ent. Bohemoslov.. 82 p.154 . .

Godfrey, A.. 1994 Some rare Acalypterate Diptera taken in recent years. British Journal of Entomol-

ogy & Natural History. 7(2) p.85-88 . .

Godfrey, A.. 2001 2000 Annual Exhibition: Diptera. British Journal of Entomology & Natural History. 14(3) p.154-155 . .

Greve, L., Jonassen, T.. 1995 *Pseudopomyza atrimana* (Meigen, 1830) (Diptera, Pseudopomyzidae); new family and species to the Norwegian fauna. Fauna Norvegica Series B. 42 p.131-133 Oslo.

Greve, L., Nielsen, T.R.. 1991 A survey of the Family Micropezidae in Norway. Fauna Norvegica Series B. 38 p.77-87 . .

Hennig, W.. 1936 Revision der Tyliden (Dipt., Acalypt.). II. Konowia. 15 p.129-144 . .

Hennig, W.. 1938 Tyliden aus Japan. Insecta Mats. 13 p.1-14 . .

Hennig, W.. 1971 Die Familien Pseudopomyzidae und Milichiidae im Baltischen Bernstein (Diptera: Cyclorrhapha). Stuttgarter Beitrage zur Naturkunde. 223 p.1-16 . . [German].

Krivosheina, M.G., Krivosheina, N.P.. 1996 The species from the genus *Raineria* Rondani of Russia including the description of a new species. Studia dipterologica. #3 Heft 1 (97-100). . .

Krivosheina, N.P.. 1984 Family Pseudopomyzidae. Catalogue of Palaearctic Diptera. 10 p.49 . .

Krivosheina, N.P.. 1979 A new member of the Family Pseudopomyzidae (Diptera) in the palaearctic and the position of the family in the system of the Diptera. Ent. Rev.. 58 p.106-113 . .

Linnaeus, C.. 1758 Holmiae. Syst. Nat.. 10. . **.**

Linnaeus, C.. 1767 Stockholmiae. Fauna Suec.. . . **.**

Lobanov, A.M.. 1960 Contribution to the biology and ecology of *Trepidaria petronella* L. (Diptera, Tylidae). Zool. Zh.. 39 p.888-891 . .

Malloch, J.R.. 1935 Insects of Samoa. Diptera: Phoridae, Agromyzidae, Micropezidae, Tachinidae & Sarcophagidae (supplement). Insects of Samoa. VI(9) p.329-366 BMNH. .

Mathis, W.N.. 1996 Family CYPSELOSOMATIDAE (53). Australasian/Oceanian Diptera Catalog — Web Version

Mathis, W.N.. 1996 Family: Pseudopomyzidae. Australasian/Oceanian Diptera Catalog — Web Version.

McAlpine, D.K.. 1981 *Key to Families* - adults. Manual of Nearctic Diptera. 1 p.89-124 . .

McAlpine, D.K.. 1994 A new Australian species of pseudopomyzid fly (Diptera: Nerioidea) and the subgenera of *Pseudopomyza*. Proc. Linn. Soc. N.S.W.. 114 p.181-187 . .

McAlpine, D.K.. 1975 The subfamily classification of the Micropezidae and the genera of Eurybatinae (Diptera: Schizophora). J. Ent., Ser. B.. 43(2) p.231-245 . .

McAlpine, D.K.. 1996 Relationships and classification of the Pseudopomyzidae (Diptera: Nerioidea). Proc. Linn. Soc. N.S.W.. 116 p.223-232 . .

McAlpine, J., Shatalkin, A.I.. 1998? Family: Pseudopomyzidae. Manual of Palaearctic Diptera. 3.8. p.155-163 . .

McAlpine, J.F.. 1987 55. Cypselosomatidae. Manual of Nearctic Diptera. 2 p.757-760 . .

Meier, R., Buch, W., Klass, K.D., Petersen, J.F.T.. 2001 Collection inventory of the Diptera collection of the Zoological Museum, University of Copenhagen (ZMUC). Collection inventory of the Diptera collection of the ZMUC. . . http://www.zmuc.dk/EntoWeb/collections-databaser/Diptera/dipterasites.htm.

Meigen, J.W.. 1826 *Compsobata femoralis*. Systematische Beschreibung der defannten Europáischen zweiflúgeligen. V p.379 . . [German].**Meigen, J.W.**. 1826 *Tylus lateralis*. Systematische Beschreibung der defannten Europáischen zweiflúgeligen V. p.383 . . [German].

Merz, B.. 1997 Die Micropezidae (Diptera) der Schweiz. Bulletin de la Societe entomologique Suisse. 70 p.93-100 . . [German].

Müller, H.. 1957 Leguminosen Knollchen als Nahrungsquelle heimischer Micropezidae (Tyliden) Larven. Beitr. Ent.. 7 p.247-262 . . [German].

Ozerov, A.L.. 1991 On the taxonomy of flies of the subfamily Calobatinae (Diptera, Micropezidae). Zool. Journ.. 70 p.63-72 . . [Russian].

Ozerov, A.L.. 1987 Dipterans of the subfamily Calobatinae (Diptera, Micropezidae) in the fauna of the USSR. Zool. Journ.. 66 p.549-556 . . [Russian].

Pitkin, B.R.. 1996 Family: Neriidae. Australasian/Oceanian Diptera Catalog — Web Version. . . .

Robineau-Desvoidy, J.B.. 1830 Essai sur les Myodaires. Mem. presentes par divers Savants. Inst. de France. (2)2 p.1-813 . . [French].

Rohácek, J.. 1981 First record of the family Pseudopomyzidae (Diptera) from Czechoslovakia. Casopis Slezského zemského muzea, Série A, Vedy prírodní (Opava). 30 p.189-190 . .

Rohácek, J., Barták, M.. 1990 Micropezidae (Diptera) of Czechoslovakia. Casopis Slezského zemského muzea, Série A, Vedy prírodní (Opava). A p.97-111 . .

Séguy, E.. 1934 28. Dipteres (Brachyceres) (Muscidae Acalypterae et Scatophagidae). Faune de France. 28 #IV p.1-832 . . [French].

Shatalkin, A.I.. 1995(1994) Palaearctic species of Pseudopomyzidae (Diptera). Russian Entomol. J.. 3 p.129-145 . .

Smith, K.G.V.. 1989 An Introduction to the Immature Stages of British Flies. Handbooks for the Identification of British Insects. 10 part 14. . .

Soós, Á.. 1975 Taxonomische und faunistiche Untersuchungen uber die mongolischen Micropeziden (Diptera). Acta Zool. Acad. Sci. Hung.. 21 p.181-194 . . [German].

Soós, Á.. 1984 Family: Micropezidae (Tylidae). Catalogue of Palaearctic Diptera. 9 p.19-24 . .

Steyskal, G.C.. 1987 Micropezidae. Manual of Nearctic Diptera.

Steyskal, G.C.. ? Micropezidae et seq.. Catalog of Diptera of North America. p.633-641 . .

Steyskal, G.C.. 1987 Neriidae. Manual of Nearctic Diptera. . . .

Strobl, G.. 1893 Neue osterreichische Muscidae Acalypterae. Wien. Ent. Zeit.. 12 p.280-288 . . [German].

Wheeler, M.R.. 1956 *Lathetico-myia*, a new genus of acalyptrate flies of uncertain family relationship. Proc. U.S. nat. Mus. Wash.. 106 p.305-314 . .