

World Catalog of the Family Carnidae (Diptera, Schizophora)*

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Introduction

The Carnidae are quite small (1-2 mm) black flies, and probably due to their small size, they have not attracted a great degree of attention. One notable exception is *Carnus hemapterus* Nitzsch, which is parasitic on birds, and was therefore the centre of several studies. Most species of Carnidae are saprophagous and are associated with carrion, feces, or bird's nests. World-wide there are six genera with 90 extant and two fossil species.



Fig. 1: *Hemeromyia obscura* Coquillett.

* This chapter was submitted in 2002 and has last been updated in 2007

Information on morphology, biology, classification, and distribution of the Carnidae can be found in Hennig (1937), Sabrosky (1987), and Papp (1998a), with some information also present in Brake (2000b). The Nearctic species of the genus *Meoneura* were revised by Sabrosky (1959), and the genus *Carnus* was revised by Grimaldi (1997). A key to genera was published by Sabrosky (1987), Papp (1998a), and Buck & Marshall (2007).

The phylogeny of the Carnidae was discussed by Hennig (1972), Grimaldi (1997), Buck (2006), and Buck & Marshall (2007). *Meoneura* and *Carnus* are sistergroups with the latter probably arising from within *Meoneura*. The sistergroup to *Meoneura*+*Carnus* is *Enigmocarnus*, and sistergroup to these three genera is *Hemeromyia*. The sistergroup to the latter group is a clade consisting of *Neomeoneurites* and the fossil genus *Meoneurites*.

The position of the family within the Schizophora was discussed by Griffiths (1972), J. F. McAlpine (1989) and Buck (2006). According to Buck's phylogenetic analysis Carnidae belong to the superfamily Carnoidea. The only genus of the Australimyziidae, *Australimyza* Harrison, has previously been included in the Carnidae by Colless & D. K. McAlpine (1970, 1974) and Grimaldi (1997). However, according to Buck (2006) Australimyziidae are the sister group to Inbiomyiidae and are therefore not included in Carnidae. A revision of the genera *Meoneura* Rondani and *Hemeromyia* Coquillett is badly needed as well as a phylogenetic study of the family.

The starting point for this catalog was a compilation of the following catalogs and checklists:

Catalogs: Sabrosky 1965 (Nearctic), 1973 (Neotropical), 1977 (Oriental); Papp 1984 (Palearctic). Checklists: Hackman 1980 (Finland); Nowakowski 1991 (Poland); Canzoneri *et al.* 1995 (Italy); Roháček 1997 (Czech and Slovak Republics); Chandler 1998a (United Kingdom); Papp 1998b (Switzerland); Brake 1999 (Germany); Chandler *et al.* 2001 (Denmark), Beuk 2002 (Netherlands); Carles-Tolrá & Báez 2002 (Spain); Freidberg (Israel, pers. comm.).

All data from these summaries were checked against the original literature, and these papers and numerous others were comprehensively screened for nomenclatural and other data. Additional names, published subsequent to the regional catalogs, were entered from the original literature. All literature published before the end of 2006, as well as the 2006 Zoological Record, were checked. A few misspellings are included but this is by far not comprehensive. Only the first page on which information about Carnidae occurs has been given for all citations. All catalog data and citations, including those published after 2006, are available on the Carnidae pages at <http://diptera.myspecies.info>.

Acronyms

- AMNH American Museum of Natural History, New York, New York, United States.
- BBM Bishop Museum, Honolulu, Hawaii, United States.
- BMNH The Natural History Museum, London, United Kingdom.
- CNC Canadian National Collection of Insects, Ottawa, Canada.
- CUMZ University Museum of Zoology Cambridge, Cambridge, United Kingdom.
- DEBU Department of Zoology, University of Guelph, Guelph, Canada.
- DEI Deutsches Entomologisches Institut, Müncheberg, Germany.
- HNHM Hungarian Natural History Museum, Budapest, Hungary.
- INHS Illinois Natural History Survey, Champaign, Illinois, United States.
- IZUI Institut für Zoologie und Limnologie, Universität Innsbruck, Innsbruck, Austria.
- MLUH Institut für Zoologie und Zoologische Sammlung, Martin-Luther-Universität Halle-Wittenberg, Halle (Saale), Germany.
- MMUE Manchester Museum, Manchester, United Kingdom.
- MMB Moravske Zemske Muzeum, Brno, Czech Republic.
- NMBA Naturhistorisches Museum, Admont, Austria.
- NMP Natal Museum, Pietermaritzburg, South Africa.
- NMW Naturhistorisches Museum Wien, Vienna, Austria.
- NRS Naturhistoriska Riksmuseet, Stockholm, Sweden.
- PMHU Museum für Naturkunde, Institut für Paläontologie, Berlin, Germany.
- SMNS Staatliches Museum für Naturkunde Stuttgart, Stuttgart, Germany.
- UMO Oxford University Museum of Natural History, Oxford, United Kingdom.
- USNM National Museum of Natural History, Washington, D. C., United States.
- UZMH Zoological Museum, University of Helsinki, Finland.
- ZIL Museum of Zoology, Lund, Sweden.
- ZISP Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia.
- ZMHU Museum für Naturkunde, Institut für Systematische Zoologie, Berlin, Germany.
- ZMM Zoological Museum, Moscow, Russia.

Table of extant genera

The following table lists the extant genera of Carnidae in the order they are found in the catalog, with a summary of the number of extant species known from each zoogeographic region. The number in the total column can be less than the sum of those in individual regions if a species is known from more than one region.

TAXON	DISTRIBUTION						Total
	NE	NT	PA	AF	OR	AU	
Carnus Nitzsch	4		1		1		5
Enigmocarnus Buck	1						1
Hemeromyia Coquillett	2		5	1			8
Meoneura Rondani	13	1	61	5	3		74
Neomeoneurites Hennig		2					2
TOTALS	20	3	67	6	4		90

Key to world genera

1. Wing usually broken off, leaving a short stub; if wing complete, crossvein dm-cu absent. Female with abdominal sternites 1-5 absent; membrane with numerous setiferous sclerotized spots *Carnus* Nitzsch
- Wing complete; posterior crossvein dm-cu present. Female with all abdominal sternites present; membrane usually sparsely bristled..... 2
2. Frons with 1 medioclinate anterior and 3 reclinate posterior orbital setae; antennae separated across midline by broad, flat, median facial carina. Scutellum with 2-3 pairs of setae, anepisternum bare 5
- Frons with 2 medioclinate anterior and 2 lateroclinate posterior orbital setae, antennae separated only by narrow carina. Scutellum with 2 pairs of setae, anepisternum with setulae and one or more setae 3
3. Wing with cell dm long; crossveins r-m and dm-cu widely separated. C extending to M_1 ; M_1 distinct; cell cup closed; A_1 strong
.....*Hemeromyia* Coquillett
- Wing with cell dm short; crossveins r-m and dm-cu narrowly separated. C ending at R_{4+5} ; cell cup open; A_1 weak, streak-like 4
4. Head setae dark. Thorax not strongly grey microtomentose
.....*Meoneura* Rondani
- Head setae pale. Thorax strongly grey microtomentose
.....*Enigmocarnus* Buck

5. Face with lower margin and vibrissal angle projected well in front of eye; eye oval, long axis inclined anteroventrally. R_{4+5} and M_1 converging near apex, costal sector between R_{2+3} and R_{4+5} longer than sector between R_{4+5} and M_1 *Neomeoneurites* Hennig
- Face with lower margin and vibrissal angle not projected in front of eye; eye roundish. R_{4+5} and M_1 not converging, costal sector between R_{2+3} and R_{4+5} shorter than sector between R_{4+5} and M_1
..... *Meoneurites* Hennig (fossil)

Family Carnidae Newman

CARNITES Newman, 1834: 379, 396. Type genus, *Carnus* Nitzsch, 1818. Frey 1921a: 149 [family status, morphology of proboscis]; Hennig 1937: 1 [revision of family (diagnosis, morphology, phylogenetic relationships, distribution, biology, keys), Palaearctic], 1939: 83 [phylogenetic relationships, male terminalia], 1958: 655 [ground-plan and phylogenetic relationships], 1971a: 9 [phylogenetic relationships, apomorphic characters], 1971b: 16 [morphology of frons], 1972: 9 [phylogenetic relationships, apomorphic characters, description of spermathecae, key to genera]; Cole 1969: 388 [key to genera]; Speight 1969: 390 [morphology of prothorax, phylogenetic relationships]; Stackelberg 1970: 594 [key to species, European part of Russia]; Griffiths 1972: 235 [description of male terminalia, phylogenetic relationships], 1984: 2 [phylogenetic relationships]; Colless & McAlpine 1970: 727 [*Australimyza* included in Carnidae], 1974: 95 [*Australimyza* included in Carnidae]; Andersson 1977: 22 [phylogenetic relationships]; Papp 1978c: 32 [keys to genera and species, generic diagnoses, biological and faunistic data, Hungaria], 1984: 118 [diagnosis, catalog, Palaearctic], 1998a: 211 [diagnosis, biology, classification, distribution, key to Palaearctic genera]; McAlpine, D. K. 1982: 114 [phylogenetic relationships]; Roháček 1982: 7 [fauna of peat-bogs, Czech Republic]; Arnett 1985: 690 [North America]; Sabrosky 1987: 909 [diagnosis, biology, classification, distribution, key to Nearctic genera]; McAlpine, J. F. 1989: 1471 [phylogenetic relationships]; Barraclough 1994: 15 [review, key to genera, Southern African fauna, Afrotropical catalog]; Wheeler 1994: 439 [phylogenetic relationships, male terminalia]; Grimaldi 1997: 18 [generic relationships, evolution of host use]; Brake 2000b: 1 [phy-

logenetic relationships]; Buck & Marshall 2007: 9 [key to genera, phylogenetic relationships, evolution of male protandrium].

Genus CARNUS Nitzsch

Carnus Nitzsch, 1818: 305. Type-species, *hemapterus* Nitzsch, by monotypy. Egger 1854: 3 [etymology, generic diagnosis]; Brauer 1880a: 117 [as *Carnus* Egger, descriptive notes on larva]; Collin 1911a: 233 [synonymization of *Cenchrudobia*]; Stobbe 1913: 192 [discussion, history]; Hennig 1937: 72 [diagnosis]; Grimaldi 1997: 1 [diagnosis, revision, phylogenetic relationships].

Cenchrudobia Schiner, 1862: 435. Type-species, *eggeri* Schiner, by monotypy [= *hemapterus* Nitzsch]. Brauer 1880b: 40 [larval description, phylogenetic relationships]. Syn. Collin 1911a.

floridensis Grimaldi. **NE:** Florida.

Carnus floridensis Grimaldi, 1997: 12. USA. Florida: Wakulla Co. (84.3 W, 30.2 N). HT ♂ AMNH. Grimaldi 1997: 12 [on woodpecker nestling, figures of head, male abdomen and terminalia, female abdomen].

hemapterus Nitzsch. **PA:** widesp. in Europe; Israel, Japan; **NE:** widesp.

Carnus hemapterus Nitzsch, 1818: 306. Germany. Sachsen. ST 1♂6♀ [no types found in MLUH and NMW]. Nitzsch 1818: 306 [on *Sturnus vulgaris*]; Germar 1822: tab. 24 [citation, figure of habitus]; Egger 1854: 5 [diagnosis, on *Falco tinnunculus*]; Collin 1911b: 138 [history, systematic position, synonymization of *eggeri* Schiner], 1939: 153 [comparison to *Meoneura*, United Kingdom]; de Meijere 1913: 1 [diagnosis, description of egg and puparium, phylogenetic relationships, history, figures of head, proboscis, rudiment of wing, wing, halter, male terminalia, male and female habitus, egg, and puparium, on *Sturnus vulgaris*, *Sylvia atricapilla*], 1928: 46 [Netherlands], 1946: 18 [Netherlands]; Grandi 1951: 473 [list of hosts]; Stobbe 1913: 192 [discussion, history, on *Aquila imperialis*, *Falco sacer*]; Engel 1919: 249 [on *Jynx torquilla*, Germany]; Nöller 1920: 149-167 [biology, on *Sturnus vulgaris*, *Strix flammea*]; Frey 1921a: 151 [morphology of proboscis, figure of proboscis], 1921b: 102 [citation], 1941: 30 [checklist, Finland]; Mercier 1928: 529 [wing musculature, sections]; Séguy 1929: 67 [list of hosts, figures of male and female habitus], 1930: 180 [citation], 1934: 631 [list of hosts, figures of male and female habi-

tus]; Wegelin 1933: 105 [on *Passer domesticus*, *Sturnus vulgaris*, *Jynx torquilla*, *Sylvia atricapilla*, *Falco sacer*, “Ostpreußen“, Romania, Switzerland]; Eichler 1936: 107 [list of hosts, Germany]; Nordberg 1936: 44 [in nest of *Falco peregrinus*, *Corvus cornix*, *Pica pica*, *Fringilla coelebs*, *Regulus regulus*, *Turdus philomelus*, *T. musicus*, *Haliaetus albicilla*, *Certhia familiaris*, *Parus ater*, *P. atricapillus*, *Phoenicurus phoenicurus*, *Delichon urbica*, *Colaeus monedula*, *Sturnus vulgaris*, *Dryobates major*, *Dryocopus martius*, *Aegolius funereus*, *Columba domestica*, *C. oenas*, ecology, preferences, Finland]; Hennig 1937: 6 [diagnosis, synonymization of *setosus* Stobbe, figures of head, wing, male and female terminalia, and puparium, Germany], 1952: 282 [citation], 1972: 14 [figure of ovipositor]; Bequaert 1942: 140 [first North American record, on *Colaptes auratus*, ?*Otus asio*, taxonomy, distribution, list of hosts, bionomics, biology, New York, ?Florida (probably *C. floridensis* acc. to Grimaldi 1997)]; Kloet & Hincks 1945: 403 [checklist, Britain], 1976: 82 [checklist, Britain]; Büttiker 1946: 234 [figure of male habitus, list of hosts, Switzerland]; Balat & Bauer 1955: 103 [on *Falco vespertinus*, *F. tinnunculus*]; Stackelberg 1958: 189 [Russia (North European Territory)]; Hicks 1962: 254 [citation], 1971: 159 [citation]; Sabrosky 1965: 729 [Nearctic catalog, California, Arizona, New York, New Brunswick, Florida, Mexico], 1977: 275 [Oriental catalog, India], 1987: 909 [figure of head, wing, and female habitus]; Lloyd & Philip 1966: 414 [on *Buteo jamaicensis calurus*, *Falco mexicanus*, *F. sparverius*, Utah]; Steyskal 1966: 116 [on *Corvus corax tingitanus*, Egypt]; Maa 1968: 33 [on *Ardea cinerea*, figures of head, proboscis, abdomen and male terminalia, Netherlands]; Wilson 1968: 251 [on *Sturnus vulgaris*, Indiana]; Cole 1969: 388 [Arizona, California]; Capelle & Whitworth 1973: 525 [distribution, list of host, figures of female habitus and puparium, North America]; Büttiker & Aeschlimann 1974: 298 [list of host, figure of male habitus, Europe]; Büttiker 1975: 311 [list of hosts, figure of female habitus, Switzerland]; Wilson & Bull 1977: 172 [on *Dryocopus pileatus*, Oregon]; Papp 1978c: 36 [Hungary], 1984: 119 [Palearctic catalog, Italia, Russia (Central & South European Territory), Sweden, former Yugoslavia], 1998a: 214 [figures of third instar larva and puparium], 1998b: 296 [checklist, Switzerland]; Hackman 1980: 152 [checklist, Finland]; Guigan *et al.* 1983: 54 [biology, distribution, France]; Andersson 1985: 117 [Sweden]; Roháček 1985: 198

[on *Pica pica*, Czech Republic, Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia], 1999: 328 [Czech Republic]; Cannings 1986a: 38 [on *Aegolius acadicus*, British Columbia], 1986b: 83 [biology]; Gregor 1986: 184 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Ferrar 1987: 101 [citation]; Walter & Hudde 1987: 251 [list of hosts, biology, Germany]; Freidberg 1988: 290 [Israel]; Kirkpatrick & Colvin 1989: 109 [biology, on *Tyto alba*, New Jersey]; Nowakowski 1991: 219 [checklist, Poland]; Canzoneri *et al.* 1995: 25 [checklist, Italy]; Carles-Tolrá 1995b: 50 [in Moerike trap, males in trap with liver of pig, Spain]; Schmidt 1995: 127 [biology, on *Milvus milvus*, *Gypaetus barbatus*, *Aquila pomarina*, list of hosts, Germany]; Křištofík *et al.* 1996: 559 [biology, on *Merops apiaster*, Slovakia]; Poole 1996: 81 [checklist, Nearctic]; Dawson & Bortolotti 1997: 2021 [biology]; Grimaldi 1997: 6 [diagnosis, list of hosts, biology, description of larva, figures of male terminalia, female abdomen, distribution, British Columbia, New Brunswick, Ontario, Colorado, Indiana, Maryland, Massachusetts, New Jersey, New York, Rhode Island, Utah, Hungary, Sweden, Switzerland, Egypt]; Müller 1997: 93 [on *Ciconia ciconia*, Germany]; Chandler 1998a: 144 [checklist, United Kingdom]; Roulin 1998: 265 [biology, on *Tyto alba*, Switzerland], 1999: 205 [biology, on *Tyto alba*, Switzerland]; Lacinia 1999: 29 [biology, on *Falco tinnunculus*]; Iwasa *et al.* 2000: 265 [in external auditory meatus of human, Japan]; Petrescu & Adam 2000: 221 [on *Merops apiaster*, Romania], 2001: 315 [on *Merops apiaster*, photo of female, Romania]; Carles-Tolrá & Blasco-Zumeta 2001: 52 [in *Juniperus thurifera* forest, Spain]; Fargallo *et al.* 2001: 236 [biology, on *Falco tinnunculus*, Spain]; Liker *et al.* 2001: 574 [biology, on *Sturnus vulgaris*, Hungary]; Roulin *et al.* 2001: 103 [biology, on *Tyto alba*, Switzerland]; Beuk 2002: 278 [checklist, Netherlands]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; Roulin *et al.* 2003: 75 [biology, on *Tyto alba*, *Falco tinnunculus*, Switzerland]; Heddergott 2003: 201 [biology, on *Falco t. tinnunculus*]; Valera *et al.* 2003: 245 [biology, on *Merops apiaster*, *Petronia petronia*, Spain]; Jánoškova *et al.* 2005: 84 [Slovakia]; Martín-Vivaldi *et al.* 2006: 468 [ecology, Spain]; Valera *et al.* 2006: 247 [ecology, in nest of *Coracias garrulus*, *Athene noctua*, *Upupa epops*, *Merops apiaster*, Spain]; Valera *et al.* 2006: 179 [biology, Spain].

- Carnus haemapterus*. Misspelling. Newman 1834: 397 [‘ae’ in species name spelled with ligature]; Egger 1854: pl. I [‘ae’ without ligature]; Balat & Bauer 1955: 103; Barraclough 1994: 17; Roulin *et al.* 2003: 75.
- Cenchridobia eggeri* Schiner, 1862: 436. Austria. ST 1♂ NMW. Schiner 1862: 436 [on *Falco tinnunculus*]. Syn. Collin 1911b.
- Carnus setosus* Stobbe, 1913: 193. Austria. ST 2♂ NMW [originally ST 2♂2♀]. Stobbe 1913: 193 [on *Picus major*]. Syn. Hennig 1937.
- Carnus hemapterus*. Misspelling. Roulin *et al.* 2003: 77.
- Carnus hematerus*. Misspelling. Westneat *et al.* 2004: 18 [on *Passer domesticus*].
- mexicana** Grimaldi. **NE:** Durango.
Carnus mexicana Grimaldi, 1997: 13. Mexico. Durango: 10 mi W Pueblo Nuevo [= El Salto] (105.4 W, 23.7 N). HT ♂ CNC. Grimaldi 1997: 13 [on flicker (?*Colaptes* sp.), figures of head, male terminalia, female abdomen].
- occidentalis** Grimaldi. **NE:** Utah, California, Idaho.
Carnus occidentalis Grimaldi, 1997: 11. USA. Utah: Box Elder Co., Mantua, Devil’s Gate (111.9 W, 41.4 N). HT ♂ AMNH. Grimaldi 1997: 11 [on flicker (?*Colaptes* sp.), *Falco peregrinus anatum*, *F. sparverius*, *Tyto alba*, hawk nest; figures of head, male abdomen and terminalia, wing, SEM of female habitus, head, larva, California, Idaho].
- orientalis** Maa. **OR:** Malaysia.
Carnus orientalis Maa, 1968: 33. Malaysia. Selangor: “Rantau Panjang”. HT ♀ BBM. Maa 1968: 33 [on *Bubo ketupu* Horsfield, figures of head, proboscis, abdomen and male terminalia]; Sabrosky 1977: 275 [catalog, Orient]; Grimaldi 1997: 11 [diagnosis].

Unnamed species

- sp. n. in Coninck 1986: 49 [on *Halcyon albiventris*]; Barraclough 1994: 16 [citation, Zaire]; Grimaldi 1997: 13 [citation].
- spp. in Grimaldi 1997: 13 [Mexico].
- sp. in Séguy 1955: 135 [in nest of falcons, *Dryobates*, eagle, starlings, “mésanges”]; Hicks 1962: 254 [citation].

Genus ENIGMOCARNUS Buck

Enigmocarnus Buck, 2007: 10. Type-species, *chloropiformis* Buck, by original designation.

chloropiformis Papp. NE: Texas.

Enigmocarnus chloropiformis Buck, 2007: 11. USA. Texas: Bastrop Co., Colorado River E Utley at Rd. 969. HT ♂ DEBU. Buck 2007: 10 [figures of habitus, wing, male terminalia].

Genus HEMEROMYIA Coquillett

Hemeromyia Coquillett, 1902: 190. Type-species, *obscura* Coquillett, by original designation. Melander 1913b: 169 [synonymization of *Paramadiza*]; Hendel 1920: 71 [review]; Hennig 1937: 58 [diagnosis]; Papp 1979: 108 [key to Palaearctic species]; Deeming & Báez 1984: 241 [key]; Wheeler 1994: 439 [discussion of male terminalia].

Paramadiza Melander, 1913a: 245. Type-species, *washingtona* Melander, by original designation. Syn. Melander 1913b.

afghanica Papp. PA: Afghanistan.

Hemeromyia afghanica Papp, 1979: 108. Afghanistan. Kabul: “Bini Hesar” (69.3 E, 34.5 N). HT ♂ HNHM. Papp 1979: 108 [reared from manure, figure of male surstylus], 1984: 120 [catalog, Palaearctic].

anthracina Collin. PA: Czech Republic to Ukraine, s. to Spain and Egypt; Canary Is.

Hemeromyia anthracina Collin, 1949: 222. Egypt. Matruh: Siwah, Wahat [= Siwa Oasis], “Mariout” (25.7 E, 29.2 N). HT ♀ UMO. Papp 1977a: 176 [reared from pigeon dung, Hungary], 1978c: 36 [Hungary], 1984: 120 [catalog, Palaearctic]; Deeming & Báez 1984: 241 [description of male, figures of head and male terminalia, Spain (Canary Islands)]; Roháček & Gregor 1984: 19 [Czech Republic]; Gregor 1987: 261 [checklist, Czech Republic]; Carles-Tolrá 1992c: 346 [on house windows, decaying vegetation, dog feces, Spain], 1994: 19 [Spain], 1997: 7 [Spain], 2004: 189 [on Apiaceae, Spain]; Pont 1995: 34 [information on type-material]; Roháček 1997: 79 [checklist, Czech Republic]; Korneyev 1999: 34 [Ukraine]; Carles-Tolrá & Báez 2002: 150 [catalog, Andorra, Canary Islands, Spain]; Valera *et al.* 2006: 247 [ecology, in nest of *Upupa epops*, Spain]; pers. note [Greece].

australis Barraclough. **AF:** Namibia.

Hemeromyia australis Barraclough, 1994: 19. Namibia. "Aar Farm".
HT ♂ BMNH. Barraclough 1994: 19 [figures of head and wing].

longirostris Carles-Tolrá. **PA:** Andorra, Hungary, Spain.

Hemeromyia longirostris Carles-Tolrá, 1992a: 63. Spain. Madrid: Madrid (3.7 W, 40.4 N). HT ♂ coll. Carles-Tolrá. Carles-Tolrá 1992a: 63 [on *Achillea filipendulina*, figures of head and male terminalia], 2004: 189 [on Apiaceae, Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Andorra, Spain]; Valera *et al.* 2006: 247 [ecology, in nest of *Upupa epops*, Spain].

Hemeromyia longicornis. Misspelling. Papp 2003: 334 [Hungary].

obscura Coquillett. **NE:** California to Texas.

Hemeromyia obscura Coquillett, 1902: 190. USA. New Mexico: Las Vegas Hot Springs (105.3 W, 35.7 N). HT ♀ USNM. Aldrich 1905: 649 [catalog, North America]; Malloch 1913: 145 [description of type specimens, New Mexico, Texas]; Sabrosky 1965: 728 [Nearctic catalog, Arizona, California]; Cole 1969: 388 [citation]; Poole 1996: 81 [checklist, Nearctic].

remotinervis (Strobl). **PA:** France to Hungary, s. to Macedonia; ?Egypt.

Agromyza remotinervis Strobl, 1902: 504. Croatia. Zadarsko-Krninska: Dalmatia: Zadar [= Zara] (15.2 E, 14.1 N). T ♀ NMBA.

Agromyza remotinervis Strobl, 1904: 566. Croatia. Zadarsko-Krninska: Dalmatia, Zadar [= Zara] (15.2 E, 14.1 N). T ♀ NMBA. Strobl 1904: 566 [German translation of Strobl 1902].

Hemeromyia remotinervis. Hendel 1920: 71 [generic combination, description of type, figures of head and wing]; Hennig 1937: 58 [diagnosis]; Coe 1968a: 125 [Macedonia, former Yugoslavia], 1968b: 140 [Macedonia, former Yugoslavia]; Dainat *et al.* 1971: 103 [attracted to *Clathrus ruber* (mushroom), with *Euxesta nitidiventris*, France]; Papp 1977a: 175 [Hungary], 1978c: 36 [Hungary], 1984: 120 [Palaeartic catalog, ?Egypt]; Chvála & Götze 2004: 44 [Strobl species-group name].

vibrissina Papp. **PA:** Hungary.

Hemeromyia vibrissina Papp, 2003: 334. Hungary. Budapest, Pest-szentlőrinc, Péterhalmi-erdő, tölgyes, tisztás. HT ♀ HNHM.

washingtona (Melander). **NE:** Washington, s. to California and New Mexico.

Paramadiza washingtona Melander, 1913a: 246. USA. Washington: Whitman Co., Wawawai (117.4 W, 46.6 N). HT ♀ USNM.

Hemeromyia nitens. Nomen nudum. Melander 1913b: 169 [attributed to Malloch]. Sabrosky 1953: 39 [discussion of name]; Sabrosky 1965: 728 [catalog, Nearctic]. Syn. Melander 1913b.

Hemeromyia nitida Malloch, 1913: 146. USA. Colorado: Teller Co., Florissant (105.3 W, 38.9 N). HT ♀ USNM. Malloch 1913: 146 [figure of head]. Syn. Sabrosky 1953.

Hemeromyia washingtona. Melander 1913b: 169 [synonymization of *nitens* Melander]; Sabrosky 1953: 39 [synonymization of *nitida* Malloch, reared from pupae collected in nest of *Peromyscus truei*], 1965: 728 [Nearctic catalog, California, Idaho, New Mexico]; Arnaud 1966: 149 [list of Melander names]; Coffey 1966: 215 [on cow feces, Washington]; Cole 1969: 388 [short diagnosis]; Ferrar 1987: 101 [citation]; Poole 1996: 81 [checklist, Nearctic].

Unnamed species

sp. in Griffiths 1972: fig. 134 [figure of male terminalia].

sp. in Sabrosky 1987: 911 [figure of wing].

sp. in Wheeler 1994: 440 [figure of male terminalia].

sp. in Papp 1998a: 212 [figure of head].

sp. in Brake 2000b: 71 [figure of spermathecae].

Genus MEONEURA Rondani

Meoneura Rondani, 1856: 128. Type-species, *Agromyza obscurella* Fallén, by monotypy. Lioy 1864: 1314 [generic diagnosis]; Hensdel 1903: 251 [systematic position, synonymization of *Psali-dotus*], 1911: 34 [list]; Malloch 1913: 144 [synonymization of *Anisonevra*]; Collin 1930: 82 [revision, key]; Seguy 1934: 629 [key to French species]; Hennig 1937: 59 [diagnosis, revision of Palearctic species, key, synonymization of *Agrobia*]; Sabrosky 1959: 17 [revision of Nearctic species, key]; Gregor 1973: 173 [variation, sister species]; Deeming 1976: 31 [checklist, distribution]; Papp 1976: 385 [key to Mongolian species]; Gregor & Papp 1981: 199 [distribution, seasonal incidence and food preference of Czechoslovak species].

Anisonevra Lioy, 1864: 1314. Type-species: *Agromyza lacteipennis* Fallén, by monotypy. Syn. Malloch 1913.

Agrobia Lioy, 1864: 1313. Type-species, *Agromyza pectinata* Meigen [= *obscurella* Fallén], by monotypy. Syn. Hennig 1937.

Psalidotus Becker, 1903: 191. Type-species, *primus* Becker, by monotypy. Syn. Hendel 1903.

Anisoneura. Misspelling for *Anisonevra* Lioy. Malloch 1913: 144; Neave, 1939: 204 [Neave gives the u spelling as the original, has a cross-reference under the v spelling].

Meonura. Misspelling. Cole 1969: 387; Kloet & Hincks 1976: 82.

acuticerca Gregor. **PA:** Andorra, Czech Republic, Spain.

Meoneura acuticerca Gregor, 1973: 138. Czech Republic. Moravia: “Devín in Pavlovské vrchy-hills, Moravia merid“. HT ♂ MMB. Gregor 1973: 138 [on human feces, figures of male terminalia], 1987: 261 [checklist, Czech Republic]; Gregor & Papp 1981: 200 [on human feces, Czech Republic]; Papp 1984: 120 [catalog, Palaearctic]; Carles-Tolrá 1992c: 346 [on human feces, Spain], 1994: 19 [Spain]; Roháček 1997: 79 [checklist, Czech Republic], 1999: 328 [Czech Republic]; Carles-Tolrá & Blasco-Zumeta 2001: 52 [in *Juniperus thurifera* forest, Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Andorra, Spain].

algerica Hennig. **PA:** Algeria.

Meoneura algerica Hennig, 1937: 61. Algeria. “Algeria centr., Hassi Babah”. HT ♂ NMW. Hennig 1937: 61 [figure of wing tip and male terminalia]; Papp 1984: 120 [catalog, Palaearctic].

alphabetica Carles-Tolrá & Ventura. **PA:** Spain.

Meoneura alphabetica Carles-Tolrá & Ventura, 2002: 289. Spain. Girona: “Queralbs, Núria”. HT ♂ coll. Carles-Tolrá. Carles-Tolrá & Ventura 2002: 289 [in white and blue pan traps]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

alpina Hennig. **PA:** Switzerland to Czech Republic, s. to Slovakia; **NE:** California.

Meoneura alpina Hennig, 1948: 138. Austria. Niedere Tauern, 1700-1900 m, Neualm near Predigtstuhl or Putzenalm near Sölkeltal. LT ♂ DEI [designated by Rohlfien & Ewald 1970: 444]. Hennig 1948: 138 [on *Veratrum album*]; Papp 1984: 120 [catalog, Palaearctic], 1998b: 296 [checklist, Switzerland]; Roháček 1987: 101 [Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia]; pers. note [Austria, California].

amurensis Ozerov. **PA:** Russia.

Meoneura amurensis Ozerov, 1986: 84. Russia. Amur Region: Zeya (127.2 E, 53.8 N). HT ♂ ZMM. Ozerov 1986: 84 [figure of male terminalia], 1999: 578 [key, Russia (Far East)].

anceps Frey. **PA:** Finland, Russia (North European Territory).

Meoneura anceps Frey, 1935: 100. Finland. "Lojo bei Torhola". HT ♂ [?lost]. Frey 1935: 100 [figure of male terminalia], 1941: 30 [checklist, Finland]; Hennig 1937: 62 [diagnosis, Russia]; Stackelberg 1958: 188 [Russia (North European Territory)]; Hackman 1980: 152 [checklist, Finland]; Papp 1984: 120 [catalog, Palaeartic]; Vilkkamaa, pers. comm. [holotype not in UZMH, probably lost].

arctica Ozerov. **PA:** Russia, Sweden.

Meoneura arctica Ozerov, 1991: 9. Russia. Yamal peninsula, r. Shchuch'ya, ust'ye p. Khej-ukha. HT ♂ ZMM. Ozerov 1991: 9 [figures of male terminalia]; pers. note [Sweden].

asiatica Papp. **PA:** Mongolia, Tunisia.

Meoneura asiatica Papp, 1976: 374. Mongolia. Töv [=Central] aimak: "Zargalant". HT ♂ HNHM. Papp 1976: 374 [on yak and horse feces, figures of male terminalia], 1978a: 202 [Tunisia], 1984: 120 [catalog, Palaeartic].

atoma Papp. **PA:** Andorra, Austria, Czech Republic, Netherlands, Spain, Switzerland.

Meoneura atoma Papp, 1981: 184. Austria. Tirol: Obergurgl (11.0 E, 46.9 N). HT ♂ HNHM. Papp 1981: 184 [figure of male surstylus], 1984: 120 [catalog, Palaeartic], 1998b: 296 [checklist, Switzerland]; Roháček & Gregor 1984: 20 [Czech Republic]; Gregor 1987: 261 [checklist, Czech Republic]; Roháček 1997: 79 [checklist, Czech Republic]; Carles-Tolrá & Báez 2002: 150 [catalog, Andorra, Spain]; pers. note [Netherlands].

australis Deeming. **AF:** South Africa.

Meoneura australis Deeming, 1997: 134. South Africa. Western Cape: 5 km W of Clanwilliam (18.9 E, 32.2 S). HT ♂ NMP. Deeming 1997: 134 [on hyrax feces, figures of male terminalia].

baluchistani Duda. **OR:** Pakistan, Yemen.

Meoneura baluchistani Duda, 1936: 337. Pakistan. Baluchistan: Quetta (67.0 E, 30.2 N). ST 1♂2♀ BMNH. Hennig 1937: 62 [diagnosis]; Deeming 1976: 29 [figure of male terminalia], 1998: 156 [Yemen]; Sabrosky 1977: 275 [catalog, Orient].

bicuspidata Collin. **PA:** United Kingdom to Poland.

Meoneura bicuspudata Collin, 1930: 88. United Kingdom. Scotland: Sutherland, Skelbo sandhills near Dornoch (4.0 W, 57.9 N); England: Cornwall, St. Merryn (5.0 W, 50.5 N); Essex, Frinton-on-Sea (1.2 E, 51.8 N). ST 3♂2♀ UMO; ST 4♂3♀ CUMZ. Collin 1930: 88 [figure of male terminalia]; Hennig 1937: 63 [diagnosis]; Kloet

& Hincks 1945: 403 [checklist, Britain]; Papp 1984: 120 [catalog, Palaearctic]; Nowakowski 1991: 219 [checklist, Poland]; Deeming 1995: 61 [on thistles, United Kingdom]; Pont 1995: 38 [information on type-material]; Brake 1997: 202 [Germany], 1999: 138 [checklist, Germany]; Chandler 1998a: 144 [checklist, United Kingdom].

Meonura bicuspidata. Kloet & Hincks 1976: 82 [checklist, Britain].

biseta Deeming. **AF:** Nigeria, Yemen (Socotra).

Meoneura biseta Deeming, 1976: 30. Nigeria. Zaria, Samaru. HT ♂ BMNH. Deeming 1976: 30 [figure of male terminalia]; pers. note [on carrion, Socotra].

californica Sabrosky. **NE:** California.

Meoneura californica Sabrosky, 1961: 229. USA. California: San Diego Co., Borrego Valley (116.3 W, 33.3 N). HT ♂ USNM. Sabrosky 1961: 229 [in Tinkham trap with rotten egg bait, figure of male terminalia], 1965: 729 [catalog, Nearctic]; Poole 1996: 81 [checklist, Nearctic].

carpathica Papp. **PA:** Czech Republic, s. to Spain and Romania.

Meoneura carpathica Papp, 1977a: 176. Romania. "Homoród-fürdő". HT ♂ HNHM. Papp 1977a: 176 [figures of male terminalia], 1978c: 46 [Hungary], 1984: 120 [Palaearctic catalog, Austria], 1993a: 89 [on human feces, Hungary], 1997: 152 [figure of male surstylus]; Gregor & Papp 1981: 200 [on human feces, Czech Republic, Slovakia]; Roháček 1985: 198 [biotopes, Czech Republic, Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia]; Gregor 1986: 183 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Carles-Tolrá 1992c: 347 [on rubbish bag, Spain], 1994: 19 [Spain]; Carles-Tolrá, Isern-Vallverdu & Pedrocchi-Renault 1993: 36 [Spain]; Roháček & Barták 2001: 386 [Czech Republic]; Carles-Tolrá & Báez 2002: 150 [catalog, Andorra, Spain]; pers. note [Austria].

caucasica Ozerov. **PA:** Russia.

Meoneura caucasica Ozerov, 1991: 10. Russia. North Ossetia: Caucasus. HT ♂ ZMM. Ozerov 1991: 10 [figures of male terminalia].

compacta Gregor. **OR:** ?Afghanistan, Pakistan.

Meoneura compacta Gregor, 1971: 55. Pakistan. Hindu Kush, Shekhninyak, Tirich-valley. HT ♂ MMB. Gregor 1971: 55 [on feces, figures of male terminalia]; Gregor & Daniel 1971: 352 [Pakistan]; Sabrosky 1977: 276 [catalog, Orient]; Papp 1984: 121 [Palaearctic catalog, ?Afghanistan].

digitata Sabrosky. **NE:** Nebraska.

Meoneura digitata Sabrosky, 1959: 19. USA. Nebraska: Thomas Co., Halsey (100.3 W, 41.9 N). HT ♂ USNM. Sabrosky 1959: 19 [figure of male terminalia], 1965: 729 [catalog, Nearctic]; Poole 1996: 81 [checklist, Nearctic]; Grimaldi 1997: 20 [figure of female abdomen].

elongella (Zetterstedt). **PA:** Norway to Finland, s. to Switzerland.

Agromyza elongella Zetterstedt, 1838: 790. Sweden. Vasterbottens Lan: Lycksele (18.7 E, 64.6 N). HT ♀ ?ZIL.

Meoneura elongella. Collin 1911a: 233 [generic combination]; Hennig 1937: 63 [diagnosis]; Deeming 1976: 29 [Norway]; Hackman 1980: 152 [checklist, Finland]; Papp 1984: 121 [catalog, Palaearctic], 1998b: 296 [checklist, Switzerland].

Agromyza elongula. Misspelling. Becker 1905: 243.

exigua Collin. **PA:** Denmark to Slovakia, s. to Spain and Hungary.

Meoneura exigua Collin, 1930: 84. France. Midi-Pyrénées: Toulouse (1.4 E, 43.6 N). ST 2♂2♀ and a third male terminalia mount BMNH [originally ST 3♂4♀]. Collin 1930: 84 [bred from damaged puparium of *Sarcophaga*, figure of male terminalia]; Hennig 1937: 63 [diagnosis], 1950: 53 [attracted to carrion, Germany]; Papp 1984: 121 [Palaearctic catalog, ?former Czechoslovakia], 2001: 286 [Hungary]; Ferrar 1987: 101 [citation]; Roháček 1987: 101 [Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia]; Carles-Tolrá 1992c: 347 [on carrion and dog feces, Spain], 1994: 19 [Spain]; Pont 1995: 67 [information on type-material]; Chandler *et al.* 2001: 189 [checklist, Denmark]; Carles-Tolrá & Blasco-Zumeta 2001: 52 [in *Juniperus thurifera* forest, Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

falcata Papp. **PA:** Austria, Switzerland.

Meoneura falcata Papp, 1997: 152. Austria. Pillersee. HT ♂ HNHM. Papp 1997: 152 [figure of male terminalia, in larch forest], 1998b: 296 [checklist, Switzerland].

flabella Carles-Tolrá. **PA:** Spain.

Meoneura flabella Carles-Tolrá, 1992b: 193. Spain. Zaragoza: Pina de Ebro. HT ♂ coll. Carles-Tolrá. Carles-Tolrá 1992b: 193 [figure of male terminalia]; Carles-Tolrá & Blasco-Zumeta 2001: 52 [in *Juniperus thurifera* forest, Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

flavifacies Collin. **PA:** widesp. in Europe; Mongolia, Russia (Far East);
NE: Alaska and Northwest Territories to Labrador, s. to Oregon,
 Utah & Michigan.

Meoneura flavifacies Collin, 1930: 85. United Kingdom. England: Cornwall, Devon, Hampshire, Essex, Suffolk, Cambridgeshire. ST 10♂8♀1? UMO; ST 2♂ CUMZ; ST 3♂2♀ BMNH. Collin 1930: 85 [on flowers of white thorn, figure of male terminalia]; Karl 1936: 324 [Poland]; Hennig 1937: 63 [diagnosis, Germany, Poland]; Kloet & Hincks 1945: 403 [checklist, Britain]; de Meijere 1946: 18 [Netherlands]; Stackelberg 1958: 188 [Russia (North European Territory)]; Sabrosky 1959: 24 [diagnosis, Alberta, British Columbia, Manitoba, Ontario, Quebec, Labrador, Alaska, Colorado, Idaho, Michigan, North Dakota, Oregon, Utah, Washington], 1965: 729 [Nearctic catalog, Alaska and Northwest Territories to Labrador, s. to Oregon, Utah, and Michigan]; Buhl 1961: [pan trap study, biology, Germany]; Cole 1969: 389 [citation]; Andersson 1971: 235 [Norway, Sweden]; Papp 1976: 375 [Mongolia], 1978b: 202 [in cave, France], 1978c: 45 [Hungary], 1984: 121 [Palaeartic catalog, Austria, Finland, Romania], 1985a: 378 [on sheep feces, Hungary], 1992: 84 [developing in pasture dung, Hungary], 1993a: 89 [on human feces, Hungary], 1993b: 110 [in cattle farm, on sheep feces, Hungary], 1995: 159 [on sheep feces, Hungary], 1998a: 211 [figure of male habitus], 1998b: 296 [checklist, Switzerland]; Hackman 1980: 152 [checklist, Finland]; Gregor & Papp 1981: 200 [on human and cow feces, Czech Republic, Slovakia]; Nibaruta 1982: 204 [reared from cow feces, Belgium]; Roháček & Gregor 1984: 19 [on feces, Czech Republic, Slovakia], Deeming 1985: 143 [United Kingdom]; Gregor 1986: 183 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Ozerov 1986: 85 [Russia, Amur Region], 1999: 579 [key, Russia (Far East)]; Roháček 1986: 4 [Czech Republic], 1987: 101 [Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia]; de Bruyn 1991: 156 [checklist, Belgium]; Nowakowski 1991: 219 [checklist, Poland]; Carles-Tolrá 1992c: 347 [Spain], 1994: 19 [Spain]; Carles-Tolrá, Isern-Vallverdu & Pedrocchi-Renault 1993: 36 [Spain]; Pont 1995: 72 [information on type-material]; Brake 1996: 42 [Netherlands], 1997: 201 [ecology, faunistics, Germany], 1999: 138 [checklist, Germany]; Poole 1996: 81 [checklist, Nearctic]; Chandler 1998a: 144 [checklist, United Kingdom]; Chandler *et al.* 2001: 189 [checklist, Denmark]; Roháček & Barták 2001: 386

[Czech Republic]; Beuk 2002: 278 [checklist, Netherlands]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; Withers 2002: 118 [Ireland]; pers. note [Austria, Germany, Italy, Norway, Poland, Spain, Sweden, California].

Meonura flavifacies. Kloet & Hincks 1976: 82 [checklist, Britain].

Agromyza lacteipennis. Misidentification. Coquillett 1900: 464 [Alaska]; Sabrosky 1959: 24 [correction of identification].

Meoneura lacteipennis. Misidentification. Malloch 1913: 144 [descriptive notes, figures of wing and fore femur, Alaska, British Columbia]; Sabrosky 1959: 24 [correction of identification].

flavifrons Papp. **PA:** Spain to Austria.

Meoneura flavifrons Papp, 1981: 185. Austria. Tirol: Obergurgl. HT ♂ IZUI. Papp 1981: 185 [figure of male terminalia], 1984: 121 [catalog, Palearctic], 1998b: 296 [checklist, Switzerland]; Carles-Tolrá 1992c: 347 [Spain], 1994: 19 [Spain]; Carles-Tolrá, Isern-Vallverdu & Pedrocchi-Renault 1993: 36 [Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

forcipata Sabrosky. **PA:** Mongolia; **NE:** Canada (British Columbia).

Meoneura forcipata Sabrosky, 1959: 24. Canada. British Columbia: Mt. Revelstoke. HT ♂ CNC. Sabrosky 1959: 24 [figure of male terminalia], 1965: 729 [catalog, Nearctic]; Papp 1976: 375 [discussion of male terminalia, Mongolia], 1984: 121 [catalog, Palearctic]; Poole 1996: 81 [checklist, Nearctic]; Cooper & Cumming 2000: 48 [information on type-material].

freta Collin. **PA:** United Kingdom to Poland, s. to Spain and Hungary; Russia (Far East).

Meoneura freta Collin, 1937: 251. United Kingdom. Norfolk: Blakeney Point. ST 4♂2♀ UMO. Kloet & Hincks 1945: 403 [checklist, Britain]; Lyneborg 1969: 42 [figures of male terminalia, Spain]; Papp 1978c: 41 [Hungary], 1984: 121 [catalog, Palearctic], 1992: 84 [developing in pasture dung, Hungary], 1995: 159 [on sheep feces, Hungary], 1998b: 296 [checklist, Switzerland]; Gregor & Papp 1981: 200 [on human feces and decaying fish, Czech Republic, Slovakia]; Gregor 1986: 183 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Roháček 1987: 102 [Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia], 1999: 328 [Czech Republic]; Carles-Tolrá 1992c: 347 [on carrion, on dog and cow feces, Spain], 1994: 19 [Spain]; Pont 1995: 74 [information on type-material]; Brake 1997: 201 [ecology, faunistics, on carrion, Germany], 1999: 138 [checklist, Germany]; Chandler 1998a:

144 [checklist, United Kingdom]; Ozerov 1999: 578 [key, Russia (Far East)]; Chandler *et al.* 2001: 189 [checklist, Denmark]; Carles-Tolrá & Blasco-Zumeta 2001: 52 [in *Juniperus thurifera* forest, Spain]; Roháček & Barták 2001: 386 [Czech Republic]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; pers. note [Poland].

Meonura [sic] *freta*. Kloet & Hincks 1976: 82 [checklist, Britain].

furcata Hennig. **PA:** Algeria, Spain.

Meoneura furcata Hennig, 1937: 64. Algeria. “Algeria centr., Hassi Babah”. HT ♂ NMW. Hennig 1937: 64 [figure of male terminalia]; Papp 1984: 121 [catalog, Palaearctic]; Carles-Tolrá 1995b: 50 [in pan traps and pitfall with beer, Spain]; Carles-Tolrá & Blasco-Zumeta 2001: 52 [in *Juniperus thurifera* forest, Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

glaberrima Becker. **PA:** widesp. in Europe; Afghanistan, Tunisia.

Meoneura glaberrima Becker, 1907c: 548. France. Corsica. LT ♂ ZMHU [designated by Papp 1977b: 185]. Kröber 1935: 77 [Germany]; Hennig 1937: 64 [description of types, figure of male terminalia, probably corsican subspecies of *lacteipennis* Fallén]; Beshovski 1972: 12 [Bulgaria]; Papp 1977b: 185 [lectotype designation and description, not subspecies of *lacteipennis* Fallén], 1978a: 202 [Tunisia], 1979: 106 [Afghanistan], 1984: 121 [catalog, Palaearctic]; Ozerov 1994: 140 [notes, synonymization of *neglecta* Collin]; Roháček & Barták 2001: 386 [Czech Republic]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; Carles-Tolrá 2004: 189 [on Apiaceae, on *Thapsia villosa*, Spain].

Meoneura glaberrima Becker, 1910: 664. France: Corsica. LT ♂ ZMHU.

Meoneura neglecta Collin, 1930: 88. United Kingdom. England: Suffolk, Moulton. LT ♂ UMO [designated by Ozerov 1994: 140]. Hennig 1937: 67 [diagnosis, figure of male terminalia, Germany]; Kloet & Hincks 1945: 403 [checklist, Britain]; Stackelberg 1958: 189 [Russia (North European Territory)]; Papp 1978c: 47 [Hungary], 1984: 121 [catalog, Palaearctic], 1985a: 378 [on sheep feces, Hungary], 1992: 84 [developing in pasture dung, Hungary], 1993b: 113 [on sheep feces, Hungary], 1995: 159 [on sheep feces, Hungary], 1998b: 296 [checklist, Switzerland]; Hackman 1980: 152 [checklist, Finland]; Gregor & Papp 1981: 201 [in Skufin trap, Czech Republic]; Roháček & Gregor 1984: 19 [Slovakia]; Gregor 1986: 183 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Pont 1995: 114 [information on type-material];

Roháček 1997: 79 [checklist, Czech Republic, Slovakia]; Chandler 1998a: 144 [checklist, United Kingdom]; Brake 1999: 138 [checklist, Germany]; Chandler *et al.* 2001: 189 [checklist, Denmark]. Syn. Ozerov 1994.

Meonura [sic] *neglecta*. Kloet & Hincks 1976: 82 [checklist, Britain].
graeca Hennig. **PA:** Greece.

Meoneura graeca Hennig, 1972: 8. Greece. Grevená (21.4 E, 40.1 N). HT ♂ SMNS. Hennig 1972: 8 [figures of spermathecae and male and female terminalia]; Papp 1984: 121 [catalog, Palaearctic].

granadensis Lyneborg. **PA:** Spain.

Meoneura granadensis Lyneborg, 1969: 42. Spain. Granada. HT ♂ CNC. Lyneborg 1969: 42 [figures of male terminalia]; Papp 1984: 121 [catalog, Palaearctic]; Cooper & Cumming 2000: 48 [information on type-material]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

helvetica Papp. **PA:** Spain, Switzerland.

Meoneura helvetica Papp, 1997: 154. Switzerland. "Ftan/Clünas". HT ♂ Coll. Bächli. Papp 1997: 154 [figures of male terminalia]; Papp 1998b: 296 [checklist, Switzerland]; Carles-Tolrá & Ventura 2001: 123 [Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

hennigi Gregor. **PA:** Afghanistan, Tajikistan; **OR:** Pakistan.

Meoneura hennigi Gregor, 1971: 54. Pakistan. Hindu Kush, Shekhniyak, Tirich-valley. HT ♂ MMB. Gregor 1971: 54 [on feces and decaying meat, figures of male terminalia]; Gregor & Daniel 1971: 352 [Afghanistan, Pakistan]; Sabrosky 1977: 275 [catalog, Orient]; Papp 1979: 106 [on donkey feces, montane species, Afghanistan], 1984: 121 [Palaearctic catalog, Tajikistan].

hungarica Papp. **PA:** Spain to Czech Republic, s. to Tunisia and Slovakia.

Meoneura hungarica Papp, 1977a: 177. Hungary. Hortobágy N.P., Tiszacsege, Kiskecskés. HT ♂ HNHM. Papp 1977a: 177 [on feces, figure of male terminalia], 1978a: 202 [Tunisia], 1978c: 44 [Hungary], 1984: 121 [catalog, Palaearctic], 1992: 84 [developing in pasture dung, Hungary], 1995: 159 [on sheep feces, Hungary]; Gregor & Papp 1981: 201 [on human feces, decaying fish, and carrion, Czech Republic, Slovakia]; Gregor 1986: 183 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Carles-Tolrá 1992c: 347 [on dog and cow feces, Spain], 1994: 19 [Spain]; Roháček 1997: 79 [checklist, Czech Republic, Slovakia], 1999: 328 [Czech Republic]; Carles-Tolrá & Blasco-Zumeta 2001: 52 [in *Juniperus thurifera* forest, Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Andorra, Spain].

inversa Papp. **PA:** Mongolia.

Meoneura inversa Papp, 1976: 375. Mongolia. Bayan-Ölgiy: “im Tal des Flusses Chavcalyn gol“. HT ♂ HNHM. Papp 1976: 375 [figures of male terminalia], 1984: 121 [catalog, Palaearctic].

kaszabi Papp. **PA:** Mongolia.

Meoneura kaszabi Papp, 1976: 376. Mongolia. Dundgovi [= Mitteligobi]: “Choot bulag, zwischen Chuld und Somon Delgerchangaj“. HT ♂ HNHM. Papp 1976: 376 [in soil traps, figure of male terminalia], 1984: 121 [catalog, Palaearctic].

krivosheinae Ozerov. **PA:** Tajikistan.

Meoneura krivosheinae Ozerov, 1991: 11. Tajikistan, okr. Dzilikulya, zapovednik “Tigrovaya Balka“. HT ♂ ZMM. Ozerov 1991: 11 [figures of male terminalia], 1994: 140 [comparison with *stepposa* Ozerov].

lacteipennis (Fallén). **PA:** widesp. in Europe; Tunisia.

Agromyza lacteipennis Fallén, 1823: 4. Sweden. ST 1? ZIL, ST 5? NRS. Meigen 1830: 183 [diagnosis]; Curtis 1831: 240 [United Kingdom]; Macquart 1835: 612 [Sweden]; Zetterstedt 1838: 789 [diagnosis, Sweden, Finland], 1848: 2768 [diagnosis, on Apiaceae, Asteraceae, and *Carduus*, Sweden, Finland]; Rossi 1848: 81 [Austria]; Schiner 1864: 300 [diagnosis]; Kowarz 1894: 29 [Czech Republic]; Wulp & de Meijere 1898: 136 [Netherlands]; Strobl 1900a: 640 [Bosnia-Herzegovina], 1900b: 61 [Spain], 1902: 504 [Bosnia-Herzegovina], 1904: 566 [German translation of Strobl 1902], 1906: 376 [Spain], 1910: 215 [up to 1800 m, Austria]; Verrall 1901: 35 [list, Britain]; Becker 1902: 342 [Meigen specimens]; Aldrich 1905: 648 [catalog, North America]; Czerny & Strobl 1909: 262 [Spain]; Kröber 1910: 103 [Germany]; Kuntze 1913: 551 [Corsica]; Kramer 1917: 349 [Germany], 1921: 96 [Germany]; Frey 1918: 27 [Northern European Russia]; Danielson, pers. comm. [information on type-material]; Pape, pers. comm. [information on type-material].

Meoneura lacteipennis. Collin 1911a: 233 [generic combination, United Kingdom], 1930: 86 [diagnosis]; Wahlgren 1927: 384 [Sweden]; Frey 1935: 101 [Finland], 1941: 30 [checklist, Finland]; Seguy 1934: 631 [France, Tunisia]; Kröber 1935: 77 [Germany]; Karl 1936: 324 [Poland]; Hennig 1937: 65 [diagnosis, figure of male terminalia, Austria, France, Germany, Russia]; Ardö 1957: 140 [in marine dune shore ecosystem, Norway]; Stackelberg 1958: 188 [Russia (North European Territory), on *Anthriscus*, *Aegopodium*, *Heracleum*, *Filipendula*, *Sorbaria*]; Buhl 1961: 4 [citation]; Nuorteva & Järvinen 1961: 202 [in nest of *Riparia riparia*, Fin-

land]; Hicks 1971: 159 [citation]; Papp 1977a: 179 [figure of male terminalia], 1978a: 202 [Tunisia], 1978c: 45 [Hungary], 1984: 122 [catalog, Palaearctic], 1998b: 296 [checklist, Switzerland]; Hackman 1980: 152 [checklist, Finland]; Ferrar 1987: 101 [citation]; Gregor 1987: 261 [checklist, Czech Republic]; Roháček 1987: 102 [Czech Republic]; de Bruyn 1991: 156 [checklist, Belgium]; Nowakowski 1991: 219 [checklist, Poland]; Bröring *et al.* 1993: 133 [Germany]; Roháček 1997: 79 [checklist, Czech Republic, Slovakia]; Chandler 1998a: 144 [checklist, United Kingdom]; Brake 1999: 138 [checklist, Germany], 2000a: 161 [Germany], 2000b: 26 [SEM-photo of head, figures of proboscis and female reproductive system]; Chandler *et al.* 2001: 189 [checklist, Denmark]; Roháček & Barták 2001: 386 [Czech Republic]; Beuk 2002: 278 [checklist, Netherlands]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; Carles-Tolrá 2004: 189 [on Apiaceae, Spain]; pers. note [on *Anthriscus silvestris*, Germany]

Meoneura lactipennis. Misspelling. Kröber 1938: 91 [Germany].

Meoneura laeteipennis. Misspelling. Kloet & Hincks 1945: 403 [checklist, Britain].

Meonura [sic] *lacteipennis*. Kloet & Hincks 1976: 82 [checklist, Britain].

lamellata Collin. **PA:** Iceland to Russia (North European Territory), s. to France and Hungary; Algeria, Russia (Far East); **NE:** Alaska.

Meoneura lamellata Collin, 1930: 86. United Kingdom. England: Dorset, Suffolk, Norfolk. ST 18♂5♀ UMO; ST 7♂4♀ BMNH. Collin 1930: 86 [near openings of Sand Martin burrows]; Seguy 1934: 631 [Algeria]; Frey 1935: 101 [Finland], 1941: 30 [checklist, Finland]; Nordberg 1936: 44 [in nest of *Corvus cornix*, *Pica pica*, *Fringilla coelebs*, *Turdus merula*, *Parus major*, *Delichon urbica*, *Sturnus vulgaris*, Finland]; Karl 1936: 324 [Poland]; Hennig 1937: 66 [diagnosis, figure of male terminalia, Germany, Russia]; Kloet & Hincks 1945: 403 [checklist, Britain]; Brauns 1949: 159 [in *Honckenya*-Zone, Germany]; Ardö 1957: 140 [in marine dune shore ecosystem, Norway, Sweden]; Stackelberg 1958: 188 [Russia (North European Territory)]; Sabrosky 1959: 23 [diagnosis, in nest of *Riparia riparia*, Alaska], 1965: 729 [catalog, Nearctic]; Buhl 1961: 4 [citation]; Nuorteva & Järvinen 1961: 201 [in nest of *Riparia riparia*, Finland]; Hicks 1962: 254 [citation], 1971: 159 [citation]; Andersson 1967: 115 [Iceland]; Büttiker 1969: 216 [in nest of *Riparia riparia*, Switzerland]; Cole 1969:

389 [citation]; Papp 1978c: 50 [Hungary], 1984: 122 [Palearctic catalog, Austria, former Czechoslovakia], 1998b: 296 [checklist, Switzerland]; Hackman 1980: 152 [checklist, Finland]; Andersson 1985: 117 [Sweden]; Deeming 1985: 143 [on beach, United Kingdom], 1995: 61 [on thistles, United Kingdom]; Ferrar 1987: 101 [citation]; Nowakowski 1991: 219 [checklist, Poland]; Ólafsson 1991: 52 [checklist, Iceland]; Carles-Tolrá, Isern-Vallverdu & Pedrocchi-Renault 1993: 36 [Spain]; Pont 1995: 95 [information on type-material]; Poole 1996: 81 [checklist, Nearctic]; Brake 1997: 201 [ecology, faunistics, figure of male habitus, on carrion, reared from feces and pellets of *Larus argentatus*, Germany], 1999: 138 [checklist, Germany]; Chandler 1998a: 144 [checklist, United Kingdom]; Ozerov 1999: 579 [key, Russia (Far East)]; Chandler *et al.* 2001: 189 [checklist, Denmark]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; Carles-Tolrá 2004: 189 [on Apiaceae, on *Thapsia villosa*, Spain]; pers. note [France, Poland].

Meonura [sic] *lamellata*. Kloet & Hincks 1976: 82 [checklist, Britain].

longifurca Papp. **PA:** Switzerland.

Meoneura longifurca Papp, 1997: 154. Switzerland. Graubünden: Zuoz-Nüd. HT ♂ Coll. Bächli. Papp 1997: 154 [figure of male terminalia], 1998b: 296 [checklist, Switzerland].

maritima Ozerov. **PA:** Russia (Far East).

Meoneura maritima Ozerov, 1991: 11. Russia. Far East: Yuzhnoe Primor'ye, Lazovskij r-i, okr. Lazo. HT ♂ ZMM. Ozerov 1991: 11 [figures of male terminalia], 1999: 579 [key, Russia (Far East)].

milleri Gregor. **PA:** Czech Republic, Slovakia, Spain.

Meoneura milleri Gregor, 1973: 137. Czech Republic. Moravia: "Devín in Pavlovské vrchy-hills, Moravia merid". HT ♂ MMB. Gregor 1973: 137 [on human feces, rocky steppe, figures of male terminalia], 1986: 183 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Gregor & Papp 1981: 201 [on human and *Capra aegagrus* feces, Czech Republic, Slovakia]; Papp 1984: 122 [catalog, Palearctic]; Roháček 1997: 79 [checklist, Czech Republic, Slovakia], 1999: 328 [Czech Republic]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

minuscula Papp. **PA:** Hungary.

Meoneura minuscula Papp, 1977a: 178. Hungary. Bakony-hg.: Fenyőfő. HT ♂ HNHM. Papp 1977a: 178 [on human feces, figures of male terminalia], 1978c: 43 [Hungary], 1984: 122 [catalog, Palearctic].

minutissima (Zetterstedt). **PA:** United Kingdom to Finland and Russia (North European Territory), s. to Hungary.

Agromyza minutissima Zetterstedt, 1860: 6459. Sweden. Skåne: “Kungsmarken“ near Lund. HT ♀ ZIL. Strobl 1893: 134 [dwarf form of *vagans* var. *obscorella* Fallén], 1894: 137 [Austria], 1910: 215 [probably var. of *lacteipennis* Fallén]; Danielson, pers. comm. [information on type-material].

Agromyza vagans var. *minutissima*. Strobl 1898a: 270 [Austria], 1901: 244 [Austria].

Meoneura minutissima. Collin 1911a: 233 [generic combination], 1930: 85 [type information, diagnosis, figure of male terminalia, United Kingdom]; Hennig 1937: 66 [diagnosis]; Frey 1941: 30 [checklist, Finland]; Kloet & Hincks 1945: 403 [checklist, Britain]; Ardö 1957: 140 [in marine dune shore ecosystem, Sweden]; Stackelberg 1958: 188 [Russia (North European Territory)]; Papp 1978c: 42 [Hungary], 1984: 122 [catalog, Palaearctic], 1992: 84 [developing in pasture dung, Hungary], 1998b: 296 [checklist, Switzerland]; Gregor & Papp 1981: 201 [on human feces, Czech Republic]; Roháček & Gregor 1984: 19 [on feces, Slovakia]; Gregor 1986: 183 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Roháček 1987: 102 [Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia], 1999: 328 [Czech Republic]; Ozerov 1991: 9 [comparison with *M. arctica*]; Chandler 1998a: 144 [checklist, United Kingdom]; Chandler *et al.* 2001: 189 [checklist, Denmark].

Meonura [sic] *minutissima*. Kloet & Hincks 1976: 82 [checklist, Britain].

Meoneura minutissima. Misspelling. Hennig 1948: 138.

mongolica Papp. **PA:** Mongolia.

Meoneura mongolica Papp, 1976: 378. Mongolia. Töv [=Central] aimak: “12 km S von Somon Bajanbaraat“. HT ♂ HNHM. Papp, 1976: 378 [figures of male terminalia], 1984: 122 [catalog, Palaearctic].

moravica Gregor & Papp. **PA:** Czech Republic, Portugal, Spain.

Meoneura moravica Gregor & Papp, 1981: 205. Czech Republic. Moravia: Podhradí, Vranov nad Dyji. HT ♂ MMB. Papp 1984: 122 [catalog, Palaearctic]; Gregor 1987: 261 [checklist, Czech Republic]; Carles-Tolrá 1992c: 348 [on dog feces, Spain], 1994: 19 [Spain], 2004: 189 [on Apiaceae, Spain]; Roháček 1997: 79 [checklist, Czech Republic]; Carles-Tolrá & Báez 2002: 150 [catalog, Portugal, Spain].

neottiophila Collin. **PA:** widesp. in Europe.

Meoneura neottiophila Collin, 1930: 87. United Kingdom. England: Suffolk, Newmarket (0.4 E, 52.3 N); Oxfordshire, Oxford (1.3 W, 51.8 N); Reading (1.0 W, 51.5 N); Hertfordshire, Weston (0.2 W, 52.0 N); Cambridgeshire, Chippenham (0.4 E, 52.3 N). ST 9♂8♀1 (sex ?) UMO, ST 20♂6♀ CUMZ, ST 2♀ BMNH, ST 4 (sex ?) MMUE. Collin 1930: 87 [bred from old nests of birds, on carrion]; Frey 1935: 101 [Finland], 1941: 30 [checklist, Finland]; Nordberg 1936: 44 [in nest of *Haliaeetus albicilla*, *Accipiter gentilis*, *A. nisus*, *Parus atricapillus*, *Phoenicurus phoenicurus*, *Colaeus monedula*, *Dryobates major*, *Aegolius funereus*, *Falco tinnunculus*, *Columba oenas*, Finland]; Hennig 1937: 67 [diagnosis, figure of male terminalia, Germany]; Kloet & Hincks 1945: 403 [checklist, Britain]; Stackelberg 1958: 189 [Russia (North European Territory)]; Buhl 1961: 4 [citation, reared from humus layer below colony of *Corvus frugilegus*, Germany]; Hicks 1962: 254 [citation]; Papp 1978c: 49 [Hungary], 1984: 122 [Palaeartic catalog, Sweden], 1998a: 214 [figure of puparium], 1998b: 296 [checklist, Switzerland]; Hackman & Meinander 1979: 75 [reared from macrofungus *Leccinum scabrum*, Finland]; Hackman 1980: 152 [checklist, Finland]; Gregor & Papp 1981: 201 [on dead blind-worm and decaying fish or meat, Czech Republic]; Andersson 1985: 117 [Sweden]; Ferrar 1987: 101 [citation]; Gregor 1987: 261 [checklist, Czech Republic]; Roháček 1987: 102 [Czech Republic, Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia], 1999: 328 [Czech Republic]; Nowakowski 1991: 219 [checklist, Poland]; Carles-Tolrá 1992c: 348 [on carrion, fungi, decaying fat, and pigeon feces, Spain], 1994: 19 [Spain], 1997: 7 [Spain]; Pont 1995: 114 [information on type-material]; Chandler 1998a: 144 [checklist, United Kingdom], 1998b: 29 [on fungus *Pleurotus*], 2002: 158 [on fungus *Polyporus squamosus*]; Brake 1999: 138 [checklist, Germany]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; pers. note [on carrion, Germany].

Meonura [sic] *neottiophila*. Kloet & Hincks 1976: 82 [checklist, Britain].

nevadensis Lyneborg. **PA:** Spain.

Meoneura nevadensis Lyneborg, 1969: 41. Spain. Granada: Sierra Nevada, N. slope Veleta. HT ♂ CNC. Lyneborg 1969: 41 [figures of male terminalia]; Papp 1984: 122 [catalog, Palaeartic]; Cooper & Cumming 2000: 48 [information on type-material]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

nigeriensis Deeming. **AF:** Nigeria.

Meoneura nigeriensis Deeming, 1976: 30. Nigeria. Zaria, Samaru. HT ♂ BMNH. Deeming 1976: 30 [figure of male terminalia].

nigrifrons Malloch. **NE:** Illinois, Nebraska, Ontario.

Meoneura nigrifrons Malloch, 1915: 47. USA. Illinois: Champaign Co., Urbana (88.2 W, 40.1 N). HT ♂ INHS. Frison 1927: 196 [type information]; Sabrosky 1959: 25 [diagnosis, Illinois, Ontario], 1965: 729 [Nearctic catalog, Nebraska]; Poole 1996: 81 [checklist, Nearctic].

nitidiuscula Collin. **PA:** Cape Verde Is, Egypt, Oman, Saudi Arabia, Yemen.

Meoneura nitidiuscula Collin, 1949: 224. Egypt. Matruh: Siwah, Wahat [=Siwa Oasis] (25.7 E, 29.2 N). ST 10♂♀ BMNH. Steyskal 1966: 118 [citation]; Deeming 1976: 29 [condition of type-material, figure of male terminalia], 1998: 156 [pollinating *Caralluma* sp. (Asclepiadaceae), on *Saccharum griffithii* in wadi bed, dunes, cow byre, Oman, Saudi Arabia, Yemen]; Barraclough 1994: [Cape Verde Islands]; Pont 1995: 117 [information on type-material].

obscurella (Fallén). **PA:** widesp. (Iceland to China); **NE:** Massachusetts, Minnesota, New York, Ontario.

Agromyza obscurella Fallén, 1823: 6. Sweden. Skåne [=Scania]. ST 1♂ ZIL, ST 6(sex ?) NRS. Meigen 1830: 184 [diagnosis]; Curtis 1831: 240 [United Kingdom]; Macquart 1835: 612 [France, ?Germany]; Rossi 1848: 81 [Austria]; Zetterstedt 1848: 2770 [diagnosis, Denmark, Sweden], 1855: 4815 [Sweden], 1860: 6459 [Sweden]; Schiner 1864: 300 [diagnosis]; Wulp 1871: 205 [Netherlands]; Kowarz 1873: 463 [?Slovakia, not Hungary], 1894: 29 [Czech Republic]; Siebke 1877: 180 [Norway]; Strobl 1880: 36 [Austria]; Mik 1881: 599 [France]; Gobert 1887: 50 [catalog, France]; Pokorny 1887: 412 [Italy]; Bezzi 1894: 346 [Italy]; Wulp & de Meijere 1898: 137 [Netherlands]; Thalhhammer 1899: 68 [Hungary]; Verrall 1901: 35 [list, Britain]; Becker 1902: 342 [Meigen specimens], 1905: 239 [catalog, Palaearctic], 1907b: 59 [China]; Grimshaw 1905: 35 [United Kingdom]; Malloch 1913: 143 [as a questionable synonym of *vagans* Fallén]; Danielson, pers. comm. [information on type-material]; Pape, pers. comm. [information on type-material].

Agromyza vagans var. *obscurella*. Strobl 1893: 134 [?Austria], 1894: 137 [Austria], 1900a: 640 [Bosnia-Herzegovina, Italy, Croatia], 1900b: 61 [Spain], 1902: 504 [Croatia], 1904: 566 [German trans-

lation of Strobl 1902], 1906: 376 [Spain], 1910: 215 [Austria]; Funk 1901: 40 [Germany].

- Meoneura obscurella*. Becker 1907a: 407 [Tunisia]; Collin 1911a: 233 [United Kingdom], 1930: 87 [diagnosis, in caves, in cellar of museum]; Malloch 1913: 143 [as a synonym of *vagans* Fallén]; Dalla Torre 1918: 162 [Austria]; Bezzi 1921: 437 [Libya]; Frey 1921a: 149 [morphology of proboscis, figures of proboscis], 1935: 101 [Finland], 1941: 30 [checklist, Finland], 1945: 97 [Portugal (Azores)]; Wahlgren 1927: 384 [Sweden]; Engel 1930: [description of larva and puparium, reared from snuff]; Lindroth 1931: 317 [on salt-fish, Iceland]; Edwards & Collin 1932: 266 [United Kingdom (St. Kilda)]; Seguy 1934: 631 [France]; Kröber 1935: 77 [Germany], 1938: 91 [Germany]; Karl 1936: 324 [Poland]; Hennig 1937: 68 [diagnosis, discussion of synonyms, figures of head, wing, and male terminalia, Austria, Germany, Greece], 1950: 53 [attracted to carrion, Germany], 1952: 281 [citation], 1971b: 57 [figure of head], 1972: 13 [figure of proboscis and ovipositor]; Kloet & Hincks 1945: 403 [checklist, Britain]; Ringdahl 1954: 106 [citation]; Stackelberg 1958: 189 [Russia (North European Territory)]; Sabrosky 1959: 22 [diagnosis, in feed and seed company, Canada, Minnesota], 1965: 729 [Nearctic catalog, Ontario, Massachusetts, New York], 1987: 911 [figures of ovipositor and male terminalia]; Buhl 1961: 4 [citation]; Coe 1962: 142 [former Yugoslavia (Dalmatia)]; Schumann 1963: 320 [Germany]; Lyneborg 1968: 35 [on *Angelica* flowers, Denmark (Faroes Is.)], 1969: 43 [Spain]; Papp 1978c: 48 [Hungary], 1984: 122 [catalog, Palearctic]; Hackman 1980: 152 [checklist, Finland]; Andersson 1985: 117 [Sweden]; Ferrar 1987: 101 [citation]; Gregor 1987: 261 [checklist, Czech Republic]; de Bruyn 1991: 156 [checklist, Belgium]; Nowakowski 1991: 219 [checklist, Poland]; Ólafsson 1991: 52 [checklist, Iceland]; Bröring *et al.* 1993: 133 [Germany]; Canzoneri *et al.* 1995: 25 [checklist, Italy]; Poole 1996: 81 [checklist, Nearctic]; Roháček 1997: 79 [checklist, Czech Republic]; Chandler 1998a: 144 [checklist, United Kingdom]; Brake 1999: 138 [checklist, Germany], 2000a: 161 [Germany]; Ozerov 1999: 579 [key, Russia (Far East)]; Chandler *et al.* 2001: 189 [checklist, Denmark]; Beuk 2002: 278 [checklist, Netherlands]; Carles-Tolrá & Báez 2002: 150 [catalog, Portugal (Azores, Madeira), Spain].
- Meonura* [sic] *obscurella*. Kloet & Hincks 1976: 82 [checklist, Britain].

Agromyza pectinata Meigen, 1830: 179. Not given (?Austria). ST 3♀ NMW. Gimmerthal 1847: 205 [Latvia]; Rossi 1848: 81 [Austria]; Beuthin 1887: 29 [Germany]; Verrall 1888: 12 [?United Kingdom]; Kröber 1910: 103 [Germany]; Malloch 1913: 143 [as a questionable synonym of *vagans* Fallén]; Kramer 1917: 349 [description of male terminalia, Germany].

Meoneura pectinata. Collin 1911a: 233 [generic combination]; Hennig 1937: 68 [information on type-material]. Syn. Hennig 1937.

Agromyza infuscata Meigen, 1830: 184. Not given (?Austria). ST 1 (sex ?) NMW. Zetterstedt 1848: 2771 [diagnosis, Sweden], 1860: 6459 [Sweden]; van der Wulp 1871: 206 [discussion as possible var. of *obscurella* Fallén]; Malloch 1913: 143 [as a questionable synonym of *vagans* Fallén]; Contreras-Lichtenberg, pers. comm. [information on type-material].

Meoneura infuscata. Collin 1911a: 233 [generic combination], 1930: 85 [synonymization of *vagans* var. *geniculata* Strobl]; Hennig 1937: 68 [information on type-material]. Syn. Hennig 1937.

Agromyza tritici Fitch, 1856: 535. USA. New York. ST 3♂1♀ USNM. Fitch 1856: 535 [reared from wheat, "Wheat Mow Fly", description and figure of puparium, description of parasitic hymenoptera]; Osten Sacken 1858: 85 [catalog, North America], 1878: 211 [catalog, North America]; Smith 1890: 404 [New Jersey]; Aldrich 1905: 649 [catalog, North America]; Malloch 1913: 143 [as a synonym of *vagans* Fallén]; Hennig 1937: 68 [possible synonym of *obscurella* Fallén]; Sabrosky 1959: 22 [information on type-material]; Cole 1969: 389 [citation]. Syn. Sabrosky 1959.

Agromyza vagans var. *geniculata* Strobl, 1898b: 585. Bosnia and Herzegovina. Dalmatia, Mostar & Trebinje. ST 2♂7♀ NMBA. Strobl 1902: 504 [Croatia], 1904: 566 [German translation of Strobl 1902]; Chvála & Götze 2004: 44 [Strobl name].

Agromyza vagans var. *geniculata* Strobl, 1900a: 640. Dalmatia. Mostar & Trebinje. ST 2♂7♀ NMBA. Strobl 1900a: 640 [German translation of Strobl 1898b].

Meoneura [*vagans* var.] *geniculata*. Hendel 1911: 35 [generic combination]. Syn. Hennig 1937.

palaestinensis Hennig. PA: Israel, Jordania, Tunisia.

Meoneura palaestinensis Hennig, 1937: 70. Israel. Tel Aviv: "Rehobot bei Jaffa". HT ♂ SMNS. Hennig 1937: 70 [figure of male terminalia]; Papp 1978a: 202 [Tunisia], 1984: 122 [catalog, Palaearctic]; Tschorsnig, pers. comm. [information on type-material, 8 speci-

mens but none of these labeled as type, 2 specimens dissected]; pers. note [Jordania].

paralacteipennis Papp. **PA:** Hungary.

Meoneura paralacteipennis Papp, 1977a: 179. Hungary. Borsod-Abaúj-Zemplén: Tiszatarján. HT ♂ HNHM. Papp 1977a: 179 [figure of male terminalia], 1978c: 47 [Hungary], 1984: 122 [catalog, Palaearctic].

paraseducta Papp. **PA:** Mongolia.

Meoneura paraseducta Papp, 1976: 379. Mongolia. Arhangaj [= Archangaj] aimak: “Koschoo zaidam am Chogschin-Orchon“. HT ♂ HNHM. Papp 1976: 379 [in nest of *Milvus*, in soil trap, figures of male terminalia], 1984: 123 [catalog, Palaearctic].

parva Papp. **PA:** Mongolia.

Meoneura parva Papp, 1976: 380. Mongolia. Hentiy [= Chentey] aimak: “7 km NO von Somon Mörön“. HT ♂ HNHM. Papp 1976: 380 [figures of male terminalia], 1984: 123 [catalog, Palaearctic].

perlamellata Hennig. **PA:** Andorra, Israel, Spain.

Meoneura perlamellata Hennig, 1937: 71. Israel. Jerusalem (35.2 E, 31.8 N). HT ♂ SMNS. Hennig 1937: 71 [figure of male terminalia]; Papp 1984: 123 [catalog, Palaearctic]; Carles-Tolrá 1992c: 348 [on decaying fat, Spain], 1994: 19 [Spain]; Carles-Tolrá, Garranto & Checa 1993: 85 [Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Andorra, Spain]; Tschorsnig, pers. comm. [information on type-material].

polita Sabrosky. **NE:** Washington and Idaho, s. to California, Mexico, and Texas.

Meoneura polita Sabrosky, 1959: 20. USA. Texas: Pecos Co., Fort Stockton (102.9 W, 30.9 N). HT ♂ USNM. Sabrosky 1959: 20 [on *Erigonum*, figure of male terminalia, Arizona, California, Mexico, New Mexico, Washington], 1961: 230 [comparison with *californica* Sabrosky], 1965: 729 [Nearctic catalog, Washington and Idaho, s. to California, Mexico, and Texas], 1973: 1 [catalog, Neotropics]; Poorbaugh *et al.* 1968: 21 [reared from cattle feces, California]; Legner 1969: 125 [attracted to rotten egg baits, California]; Ferrar 1987: 101 [citation]; Poole 1996: 81 [checklist, Nearctic].

prima (Becker). **PA:** widesp. in PA, e. to Afghanistan; **AF:** Namibia, South Africa, Sudan; **NE:** Washington and Idaho, s. to California, Mexico, and Texas.

Psolidotus primus Becker, 1903: 192. Egypt. Cairo (31.3 E, 30.1 N). LT ♂ ZMHU [designated by Papp 1977b: 186].

Meoneura prima. Becker 1905: 239 [catalog, Palaearctic, as a synonym of *obs curella* Fallén]; Bezzi 1908: 194 [as a synonym of *obs curella* Fallén, Egypt]; Hennig 1937: 68 [possible synonym of *obs curella* Fallén]; Steyskal 1966: 118 [citation]; Papp 1977b: 186 [lecto-type designation and diagnosis, valid species, synonymization of *seducta* Collin], 1978a: 202 [Tunisia], 1979: 107 [Afghanistan], 1984: 123 [Palaearctic catalog, Finland, Greece, Jordania, United Kingdom], 1992: 84 [developing in pasture dung, Hungary], 1998b: 296 [checklist, Switzerland], 2001: 286 [Hungary]; Gregor & Papp 1981: 201 [on human feces, pig manure, decaying fish and meat, in slaughter house, Czech Republic]; Roháček & Gregor 1984: 20 [Czech Republic]; Roháček 1985: 199 [Czech Republic], 1987: 103 [Czech Republic]; Gregor 1987: 261 [checklist, Czech Republic, Slovakia]; Ozerov 1991: 11 [comparison with *maritima* Ozerov]; Barraclough 1994: 21 [probably associated with feces of rock hyrax (*Procapra capensis*), figures of head and wing, South Africa]; Carles-Tolrá 1992c: 348 [on carrion, fungi and bird feces, Spain], 1994: 19 [Spain], 1995a: 72 [Spain]; Deeming 1997: 133 [Sudan]; Roháček 1997: 79 [checklist, Czech Republic, Slovakia], 1999: 328 [Czech Republic]; Chandler 1998a: 144 [checklist, United Kingdom]; Chandler *et al.* 2001: 189 [checklist, Denmark]; Carles-Tolrá & Blasco-Zumeta 2001: 52 [in *Juniperus thurifera* forest, Spain]; Kirk-Spriggs 2001: 251 [behaviour, on feces of namaqua rock mouse (*Aethomys namaquensis*), Namibia]; Roháček & Barták 2001: 386 [Czech Republic]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; pers. note [Canary Is, Germany, Greece, Jordania, Morocco].

Meoneura seducta Collin, 1937: 250. United Kingdom. England: Pembrokeshire, Grassholme Is. (5.4 W, 51.7 N). ST 2♂2♀ UMO, ST 2♂2♀ BMNH. Collin 1937: 250 [possible association with nests of gannets]; Kloet & Hincks 1945: 403 [checklist, Britain]; Sabrosky 1959: 22 [diagnosis, reared from or collected on feces of pig, mink, cow, and chicken, California, Greece, Idaho, Jordan, Maryland, Michigan, Ontario, Texas, Washington], 1965: 729 [catalog, Nearctic]; Timon-David 1961: 233 [in nest of *Larus argentatus michahellis*, France]; Coffey 1966: 215 [collected and reared from chicken and swine feces, on mink, cow, horse, human, and dog feces, Washington]; Cole 1969: 389 [citation]; Lyneborg 1969: 44 [figures of male terminalia, Spain]; Hicks 1971: 159 [citation]; Hackman 1980: 152 [checklist, Finland]; Ferrar 1987: 101

- [citation]; Pont 1995: 146 [information on type-material]; Poole 1996: 81 [checklist, Nearctic]. Syn. Papp 1977.
- Meonura* [sic] *seducta*. Kloet & Hincks 1976: 82 [checklist, Britain].
- pseudoflavifacies*** Papp. **PA:** Austria, Czech Republic, Switzerland.
- Meoneura carpathica pseudoflavifacies* Papp, 1997: 152. Austria. Pillersee. HT ♂ HNHM. Papp 1997: 152 [figure of male terminalia], 1998b: 296 [checklist, Switzerland].
- Meoneura pseudoflavifacies*. Roháček 1999: 326 [species status, Czech Republic].
- pseudoseducta*** Papp. **PA:** Mongolia.
- Meoneura pseudoseducta* Papp, 1976: 381. Mongolia. Bayan-Ölgiy: “im Tal des Flusses Chavcalyn gol, 25 km O von Somon Cagaan-nuur“. HT ♂ HNHM. Papp 1976: 381 [figures of male terminalia], 1984: 123 [catalog, Palaearctic].
- pseudotriangularis*** Papp. **PA:** Mongolia.
- Meoneura pseudotriangularis* Papp, 1976: 382. Mongolia. Töv [= Central] aimak: Ulaanbaatar, “Nucht im Bogdo ul“. HT ♂ HNHM. Papp 1976: 382 [in soil trap, figures of male terminalia], 1984: 123 [catalog, Palaearctic].
- pteropleuralis*** Sabrosky. **NE:** Nebraska.
- Meoneura pteropleuralis* Sabrosky, 1959: 19. USA. Nebraska: Thomas Co., Halsey (100.3 W, 41.9 N). HT ♂ USNM. Sabrosky 1959: 19 [on sand hills, figure of male terminalia], 1965: 729 [catalog, Nearctic]; Poole 1996: 81 [checklist, Nearctic].
- quadrisetosa*** Papp. **PA:** Mongolia, Russia (Far East).
- Meoneura quadrisetosa* Papp, 1976: 382. Mongolia. Töv [= Central] aimak: “12 km S von Somon Bajanbaraat“. HT ♂ HNHM. Papp 1984: 123 [catalog, Palaearctic]; Ozerov 1999: 578 [key, Russia (Far East)].
- sabroskyi*** Papp. **PA:** Hungary.
- Meoneura sabroskyi* Papp, 2006: 224. Hungary. “Kiskunsági N.P., Kerekegyháza, Kondor-tó“. HT ♂ HNHM. Papp 2006: 224 [on flowers, figures of male terminalia].
- scutellata*** Deeming. **AF:** Nigeria.
- Meoneura scutellata* Deeming, 1976: 30. Nigeria. Zaria, Samaru. HT ♂ BMNH. Deeming 1976: 30 [figure of male terminalia].
- setipyga*** Papp. **PA:** Mongolia.
- Meoneura setipyga* Papp, 1976: 384. Mongolia. Töv [= Central] aimak: “Zargalant“. HT ♂ HNHM. Papp 1976: 384 [on yak and horse feces, figures of male terminalia], 1984: 123 [catalog, Palaearctic], 1992: 87 [on horse/donkey feces, Mongolia].

sinclairi Wheeler. **NT:** Ecuador (Galapagos Is.).

Meoneura sinclairi Wheeler, 2000: 116. Ecuador. Galapagos Is.: San Cristóbal, Puerto Baquerizo (89.6 W, 0.9 S). HT ♂ CNC. Wheeler 2000: 116 [on marine iguana nesting sites, in yellow pan traps, carrion and feces traps, seal feces trap, in littoral zone and adjacent arid zone, on flowers of PaloSanto, phylogenetic relationships, zoogeography, figures of male and female terminalia].

stepposa Ozerov. **PA:** Kazakhstan.

Meoneura stepposa Ozerov, 1994: 140. Kazakhstan. Akmola: “Mt. Kokshetau nr. river Torsakkan Akmol”. HT ♂ ZISP. Ozerov 1994: 140 [figures of male terminalia].

subfreta Papp. **PA:** Afghanistan, Spain.

Meoneura subfreta Papp, 1979: 107. Afghanistan. Kandahar (65.7 E, 31.6 N). HT ♂ HNHM. Papp 1979: 107 [figures of male terminalia], 1984: 123 [catalog, Palaearctic]; Carles-Tolrá 1992c: 348 [Spain], 1994: 19 [Spain]; Carles-Tolrá & Blasco-Zumeta 2001: 53 [in *Juniperus thurifera* forest, Spain]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain].

subnivalis Gregor. **PA:** Afghanistan.

Meoneura subnivalis Gregor, 1971: 56. Afghanistan. Hindu Kush: Ishmurkh-valley. HT ♂ MMB. Gregor 1971: 56 [figures of male terminalia]; Gregor & Daniel 1971: 352 [Afghanistan]; Papp 1984: 123 [catalog, Palaearctic].

triangularis Collin. **PA:** widesp. in Europe; Mongolia, Russia (Far East); **NE:** Alaska to Manitoba, s. to Oregon and Colorado.

Meoneura triangularis Collin, 1930: 88. United Kingdom. England: Sussex, Newmarket (0.4 E, 52.3 N). ST 1♂1♀ UMO. Collin 1930: 88 [figure of male terminalia]; Hennig 1937: 71 [diagnosis, Germany, Russia]; Kröber 1938: 91 [Germany]; Kloet & Hincks 1945: 403 [checklist, Britain]; Stackelberg 1958: 189 [Russia (North European Territory)]; Sabrosky 1959: 24 [diagnosis, Alaska, Manitoba, Oregon, Washington], 1965: 729 [Nearctic catalog, Alaska to Manitoba, s. to Oregon and Colorado]; Cole 1969: 389 [British Columbia, Oregon, Washington]; Andersson 1971: 236 [Russia (North European Territory), Sweden]; Papp 1976: 385 [in soil traps, Mongolia], 1978c: 44 [Hungary], 1984: 123 [Palaearctic catalog, Austria, Finland], 1992: 90 [on human feces, Hungary], 1995: 159 [on sheep feces, Hungary], 1998b: 296 [checklist, Switzerland]; Hackman 1980: 152 [checklist, Finland]; Gregor & Papp 1981: 202 [on human feces and decaying meat, Czech Re-

public]; Ozerov 1986: 85 [Russia, Amur Region], 1999: 579 [key, Russia (Far East)]; Nowakowski 1991: 219 [checklist, Poland]; Carles-Tolrá 1992c: 348 [on dog feces, Spain], 1994: 19 [Spain], 2004: 189 [on Apiaceae, Spain]; Pont 1995: 165 [information on type-material]; Gregor 1987: 261 [checklist, Czech Republic]; Poole 1996: 81 [checklist, Nearctic]; Roháček 1997: 79 [checklist, Czech Republic], 1999: 328 [Czech Republic]; Chandler 1998a: 144 [checklist, United Kingdom]; Brake 1999: 138 [checklist, Germany]; Carles-Tolrá & Blasco-Zumeta 2001: 53 [in *Juniperus thurifera* forest, Spain]; Roháček & Barták 2001: 386 [Czech Republic]; Carles-Tolrá & Báez 2002: 150 [catalog, Andorra, Spain]; pers. note [on fox feces, Germany, Morocco, Netherlands].

Meonura [sic] *triangularis*. Kloet & Hincks 1976: 82 [checklist, Britain].

tunisica Papp. **PA:** Tunisia.

Meoneura tunisica Papp, 1978a: 202. Tunisia. “La Hencha”. HT ♂ HNHM. Papp 1978a: 202 [on *Ferula* flowers, on mimosa shrubs near feces, figure of male terminalia], 1984: 123 [catalog, Palearctic].

ungulata Carles-Tolrá & Ventura. **PA:** Spain.

Meoneura ungulata Carles-Tolrá & Ventura, 2002: 290. Spain. Girona: “Queralbs, Núria”. HT ♂ coll. Carles-Tolrá. Carles-Tolrá & Ventura 2002: 290 [in white pan trap]; Carles-Tolrá & Báez 2002: 150 [catalog, Spain]; pers. note [doubtful species, probably synonym of *alpina* Hennig].

vagans (Fallén). **PA:** widesp. in Europe; Russia (Far East); **NE:** Idaho to Pennsylvania, n. to Quebec.

Agromyza vagans Fallén, 1823: 5. Sweden. ST 1♂1 (sex ?) ZIL, ST 3 (sex ?) NRS. Meigen 1830: 183 [diagnosis]; Curtis 1831: 240 [United Kingdom]; Zetterstedt 1848: 2767 [diagnosis, Sweden], 1855: 4815 [Sweden], 1860: 6458 [Sweden]; Schiner 1864: 300 [diagnosis]; Siebke 1877: 180 [Norway]; Strobl 1880: 36 [on *Primula*, Austria], 1900a: 640 [Croatia], 1902: 504 [Greece; acc. to Hennig 1937 probably *obscorella* Fallén], 1904: 566 [German translation of Strobl 1902], 1906: 376 [Spain], 1910: 215 [Austria]; Gobert 1887: 50 [catalog, France]; Pokorny 1887: 412 [Italy]; Bezzi 1894: 345 [Italy]; van der Wulp & de Meijere 1898: 137 [Netherlands]; Funk 1901: 40 [on meadows, Germany]; Verrall 1901: 35 [list, Britain]; Becker 1902: 342 [Meigen specimen]; Czerny & Strobl 1909: 262 [Spain]; Kröber 1910: 103 [Germany]; Kramer 1917: 349 [Germany], 1921: 96 [Germany]; Dalla Torre 1918: 162 [Austria]; Lyneborg 1968: 35 [citation, Denmark (Faroe

Is.); Danielsson, pers. comm. [information on type-material]; Pape, pers. comm. [information on type-material].

Meoneura vagans. Collin 1911a: 233 [generic combination, United Kingdom]; Hendel 1911: 34 [Idaho]; Malloch 1913: 143 [diagnosis, figures of head and fore femur; acc. to Hennig 1937 maybe *obscurella* Fallén]; Melander 1913a: 246 [Alaska, Idaho, Washington]; Johnson 1925: 288 [Maine, Massachusetts]; Hendel 1928: 104 [figures of head and wing]; Leonard 1928: 865 [New York]; Collin 1930: 84 [diagnosis, figure of male terminalia, on carrion]; Seguy 1934: 630 [figures of head and wing]; Frey 1935: 101 [Finland], 1941: 30 [checklist, Finland]; Karl 1936: 324 [Poland]; Hennig 1937: 72 [diagnosis, Austria, Russia]; Procter 1927: 225 [Maine], 1938: 347 [citation], 1946: 402 [citation]; Kloet & Hincks 1945: 403 [checklist, Britain]; Ardö 1957: 140 [in marine dune shore ecosystem, Denmark, Norway, Sweden]; Stackelberg 1958: 189 [Russia (North European Territory)]; Sabrosky 1959: 23 [diagnosis, Michigan], 1965: 729 [Nearctic catalog, *vagans* Fallén of Amerian authors equals several spp.]; Buhl 1961: 4 [citation]; Nuorteva & Järvinen 1961: 202 [in nest of *Riparia riparia*, Finland]; Gregor & Povolný 1961: 26 [on meat, Slovakia]; Schumann 1963: 320 [Germany]; Coe 1968b: 140 [flying over manure heap, Macedonia, Slovenia]; Cole 1969: 388 [discussion of presence in Northwestern America]; Hicks 1971: 159 [citation]; Beshovski 1972: 13 [Bulgaria]; Valley 1977: 125 [on dead snapping turtle, Pennsylvania, New York]; Hackman 1980: 152 [checklist, Finland]; Gregor & Papp 1981: 202 [on human feces and decaying meat, in slaughter house, Czech Republic]; Papp 1984: 123 [Palaeartic catalog, Hungary, Romania, ?Greece], 1985b: 507 [Switzerland], 1998b: 296 [checklist, Switzerland]; Roháček & Gregor 1984: 20 [Czech Republic]; Gregor 1986: 184 [catalog, Slovakia], 1987: 261 [checklist, Czech Republic, Slovakia]; Ozerov 1986: 85 [Russia (Amur Region)], 1999: 578 [key, Russia (Far East)]; Roháček 1987: 103 [Czech Republic, Slovakia], 1997: 79 [checklist, Czech Republic, Slovakia], 1999: 328 [Czech Republic]; Nowakowski 1991: 219 [checklist, Poland]; Brake 1996: 42 [Netherlands], 1997: 204 [Germany], 1999: 138 [checklist, Germany]; Poole 1996: 81 [Nearctic checklist]; Chandler 1998a: 144 [checklist, United Kingdom]; Roháček & Barták 2001: 386 [Czech Republic]; Beuk 2002: 278 [checklist, Netherlands]; Car-

les-Tolrá & Báez 2002: 150 [catalog, Spain]; pers. note [on dog and fox feces, on *Heracleum*, Germany, Norway, Quebec].

Meonura [sic] *vagans*. Kloet & Hincks 1976: 82 [checklist, Britain].

vieja Grimaldi. **NT:** Dominican Republic amber.

Meoneura vieja Grimaldi, 1997: 16. Dominican Republic amber. HT ♂ AMNH. Grimaldi 1997: 16 [phylogenetic relationships, figures of head, male terminalia, female abdomen and habitus, wing, photo of male and female habitus].

wirthi Sabrosky. **NE:** California, Washington.

Meoneura wirthi Sabrosky, 1959: 25. USA. California: Modoc Co., Willow Creek, Fandango Pass. HT ♂ USNM. Sabrosky 1959: 25 [figure of male terminalia]; Sabrosky 1965: 729 [Nearctic catalog, Washington]; Poole 1996: 81 [checklist, Nearctic].

Unnamed species

sp. in Frey 1921b: 103.

sp. n. in Oldroyd 1958: 79 [Penguin rookery in small cave, Gough Island]; Hicks 1962: 254 [citation]; Barraclough 1994: 22 [maybe *M. prima*]; Deeming 1997: 133 [discussion].

sp. in Gregor & Povolný 1959: 382 [Bulgaria].

sp. in Gregor & Povolný 1960: [on meat and feces, Hungary].

sp. in Gregor & Povolný 1961: 31 [figure of male terminalia, Slovakia].

spp. in Poorbaugh *et al.* 1968: 21 [attracted to cattle feces, California].

sp. in Legner 1969: 124 [attracted to rotten egg baits, Uruguay].

sp. n. in Deeming 1976: 31 [from stomach of ruff (*Philomachus pugnax* (Scolopacidae), Nigeria].

sp. in Sabrosky 1980: 690 [Afrotropical catalog, Nigeria].

sp. in Sabrosky 1989: 559 [Australasian/Oceanian catalog, New Zealand].

sp. in Fain & Grootaert 1994: 167+170 [with parasitic Acari, Papua New Guinea].

spp. n. in Deeming 1997: 134 [on elephant feces, Nigeria].

Genus MEONEURITES Hennig

Meoneurites Hennig, 1965: 185. Type-species, *enigmatica* Hennig, by monotypy.

Meonurites. Misspelling. Evenhuis 1994: 428.

enigmatica Hennig. **PA:** Baltic amber.

Meoneurites enigmatica Hennig, 1965: 185. Baltic amber (?Germany). HT ♀ PMHU. Hennig 1965: 185 [figures of head, thorax, ovipositor, habitus, wing, legs]; Keilbach 1982: 388 [citation, information about type].

Meonurites enigmatica. Evenhuis 1994: 428 [fossil catalog].

Genus NEOMEONEURITES Hennig

Neomeoneurites Hennig, 1972: 1. Type-species, *chilensis* Hennig, by original designation. Wheeler 1994: 436 [diagnosis, description of male terminalia, discussion].

chilensis Hennig. **NT:** Chile.

Neomeoneurites chilensis Hennig, 1972: 1. Chile. "Farellones". HT ♂ SMNS. Hennig 1972: 1 [on *Azorella*, figures of head, proboscis mesonotum, wing, female sternites, ovipositor, spermathecae, male terminalia]; Sabrosky 1973: 2 [catalog, Neotropics]; Wheeler 1994: 438 [discussion].

dissitus Wheeler. **NT:** Argentina.

Neomeoneurites dissitus Wheeler, 1994: 436. Argentina. Neuquén: "Lolog". HT ♂ CNC. Wheeler 1994: 436 [figures of male terminalia]; Cooper & Cumming 2000: 48 [information on type-material].

Taxa formerly included in Carnidae

Rhodesiella = Chloropidae

Agromyza lonicerae Kaltenbach, 1872 = Agromyzidae

Agromyza geniculata (Fallén, 1823) = Agromyzidae

Agromyza geniculata Meig. excl. Fallén = Agromyzidae?

Acknowledgments

I thank M. v. Tschirnhaus for giving me access to his collection of Carnidae and to his literature collection. His introduction to the study of Diptera and his help in the location of literature provided the base for this catalog. I thank W. N. Mathis, O. Lonsdale and F. C. Thompson for reviewing a draft of this paper.

I am grateful to R. Contreras-Lichtenberg (NMW), R. Danielson (ZIL), T. Pape (NRS), H.-P. Tschorsnig (SMNS), and P. Viikmaa (UZMH) for information on type material in their collections.

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