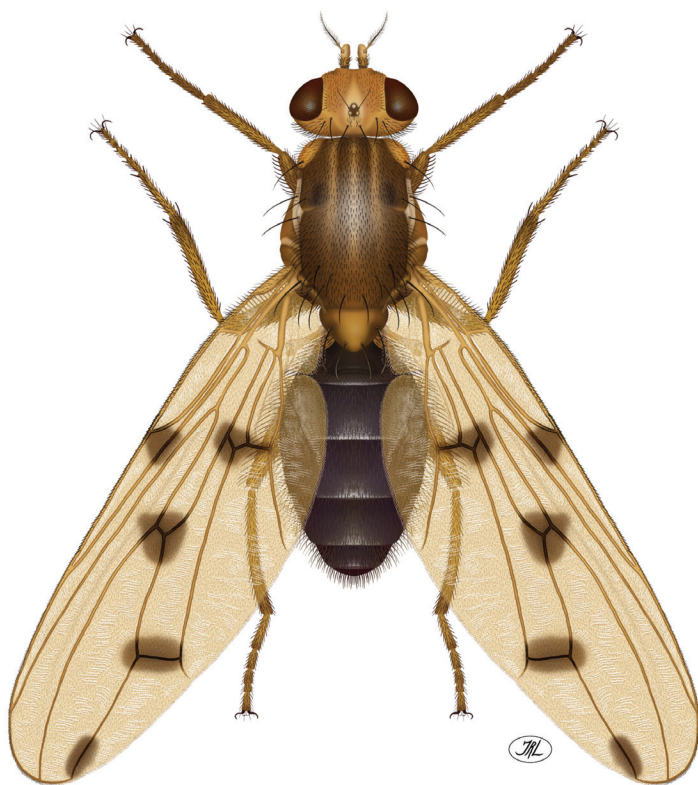


## World Catalog and Conspectus on the Family Dryomyzidae (Diptera: Schizophora)

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### Introduction

The family Dryomyzidae currently includes 25 species that are classified into eight genera. Two of these genera, *Palaeotimia* Meunier and *Prodryomyza* Hennig, are monotypic and are represented by fossils only, and a third genus, *Dryomyza* Fallén, contains two additional fossil species. Several



**Fig. 1:** *Dryomyza formosa* (Wiedemann).

genera that were once placed in the Dryomyzidae have been transferred to other families, mostly within the superfamily Sciomyzoidea (Coelopiidae, Helcomyzidae, Helosciomyzidae, Heterocheilidae, Platystomatidae), and at one time, the family was treated as a taxon within the Sciomyzidae. Adults are relatively large for acalyptrates, with body lengths of up to 18 mm, and most specimens are generally yellowish brown or dark gray. The distribution of the genera and species is restricted to the northern hemisphere, and the family is noticeably lacking from the tropics or subtropics. Only four species are known from the Oriental Region.

Zoological catalogs, checklists, and equivalent databases are indispensable tools for anyone needing a reference to a currently accepted name and frequently to other information relating to that taxon, such as bibliographic and distributional data. This is possible because most information is filed under a species' scientific name, which is the key to retrieval of information from the literature. The system is dynamic, however, and subject to interpretation. The taxonomic literature is constantly changing to reflect recent work, and some species are known by more than one name. Thus a complete listing of names, including synonyms, is an important starting point for locating information, whether as the basis for applied and basic research or simply to satisfy a curiosity.

The information included in a catalog is usually arranged in a logical and organized format that allows for its convenient and rapid conveyance—in short, a quick and easy storage and retrieval system. The format and amount of information presented varies greatly, however. Our use of the term catalog is intended to convey a more comprehensive treatment, including information on all valid names, synonyms, type species, and the status and deposition of primary types. The bibliographic section includes complete references (author, date, original citation), and distributional and other biotic information are also provided. Not all citations that occur in the literature of Dryomyzidae are included in this catalog or the bibliographic section, especially where we suspect that the species being treated was misidentified, and inclusion would further promulgate inaccurate distributional data.

Regional catalogs, checklists, and faunal treatments have contributed significantly to the compilation of this catalog. The most recent of these for a given region or country are as follows:

Catalogs: Steyskal 1965b (Nearctic), 1977a (Neotropical), 1977b (Oriental); Sóos 1984 (Palearctic); Pitkin & Evenhuis 1989 (Australasian/Oceanian; see D. K. McAlpine 1995).

Checklists: Hackman 1980 (Finland); Martinek 1987 (Czech Republic, Slovakia); Morimoto 1989 (Japan); Nowakowski 1991 (Poland); Gros-

series 1991 (Belgium); Munari & Rivosecchi 1995 (Italy); Poole & Gentili 1996 (Nearctic Region); Bächli 1998 (Switzerland); Chandler 1998 (British Isles); Teschner 1999 (Germany); Pakalniškis *et al.* 2000 (Lithuania); Papp 2001 (Poland); Petersen & Meier 2001 (Denmark); Zuijlen & Beuk 2002 (Netherlands); Carles-Tolrà & Báez 2002 (Spain).

Faunal Treatments: Czerny 1930 (Palearctic); Séguy 1934 (France); Kurahashi 1981 (Japan); Ozerov 1987 (Russia), 1998 (Palearctic), 1999 (Far East, Russia); Bächli 1997 (Switzerland) Falk 2005 (British Isles).

Fossil: Hennig 1965, 1969; Evenhuis 1994.

### Acronyms used in this catalog

To economize on space we have used acronyms for museums where primary type(s) are deposited. These acronyms are as follows:

|       |  |
|-------|--|
| ABRI  | Azuma Biological Research Institute, Takarazuka, Hyogo, Japan.   |
| BLKU  | Biosystematics Laboratory, Graduate School of Social and Cultural Studies, Kyushu University, Fukuoka, Japan.  |
| CUI   | Cornell University, Ithaca, New York, USA.   |
| HUS   | Hokkaido University, Sapporo, Hokkaido, Japan.   |
| KLEBS | Private collection of Prof. Dr. R. Klebs, Steinzeit. Konigsberg, Russia.   |
| LACM  | Los Angeles County Museum, Los Angeles, California, USA.   |
| MCZ   | Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA.  |
| MNHNP | Muséum National d'Histoire Naturelle, Paris, France.   |
| NMI   | National Museum of Ireland, Dublin, Ireland.   |
| NMW   | Naturhistorisches Museum, Wien, Austria.   |
| NSMT  | National Science Museum (Natural History), Tokyo, Japan.   |
| RNH   | Nationaal Natuurhistorische Museum, Leiden, Netherlands.   |
| SPMC  | Shandong Provincial Museum, Jinan, China.  |
| USNM  | former United States National Museum, collection incorporated in the National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA. |
| ZIL   | Zoological Institute, Lund University, Lund, Sweden.   |
| ZISP  | Zoological Institute, Academy of Sciences, St. Petersburg, Russia.   |
| ZMHU  | Zoologisches Museum, Humboldt Universität, Berlin, Germany.  |
| ZMM   | Zoological Museum, Moscow University, Moscow, Russia.  |

**Diagnosis.** Adult. Medium-sized to large flies (body length 4.0-18.0 mm); moderately robust, conspicuously setulose to moderately or strongly setose; yellow to brown or gray, moderately microtomentose. *Head:* Postocellar setae long, parallel or slightly divergent; 1-3 laterocline fronto-orbital setae. Antennae narrowly separated basally; antenna generally oriented ventrally; scape with setulae extended on to medial surface; pedicel short, lacking a complete dorsal seam. Face uniformly sclerotized, shallowly convex in profile; parafacial suture complete, extended with associated, shiny ridge to postgenal area; gena high (ca. 1/2-2/3 eye height), ventral half mostly setulose, dorsal half mostly bare; clypeus large, conspicuous, sometimes protruding. *Thorax:* Acrostichal setae either absent or with a prescutellar pair; dorsocentral setae 1-6; metepisternum bare; katepisternal suture more or less straight, not arched dorsally posteriorly; prosternum bare, straplike, extended laterally to join propleuron as a narrow, precoxal bridge; proepisternal seta long; proepimeral seta lacking. Wing hyaline to lightly infuscate; crossveins sometimes clouded; costa unbroken, bearing only setulae, not spinose; subcosta complete; apical section of vein M nearly straight, terminating posterior of wing apex; crossvein bm-cu distinctly apical of vein CuA<sub>2</sub>; vein CuA<sub>2</sub>+A<sub>1</sub> evident to wing margin; vein A<sub>2</sub> beyond alula as a long, curved crease. Midtibia with posterior (variable), preapical, and apical setae only; basitarsi lacking terminal ventral processes; male forebasitarsus unmodified; apical 2 tarsomeres flattened and somewhat expanded. *Abdomen:* Sternite 1 short but well sclerotized; sternites 1-2 incompletely separated; spiracles 2-5 in tergites. Female with 3 (1+2) small spermathecae.

Egg. Creamy white; elongate (length 1.2-1.4 mm, width 0.4-0.5 mm), bearing a pair of flanges, extended dorsolaterally from sides; chorion with fine, honeycomb-like reticulation.

Third-instar larva. Typically maggot-like, cylindrical, anterior end tapered, posterior end generally broadly rounded; anterior spiracle on short process, fan-shaped, digitate, with numerous terminal openings; posterior spiracles separate, on short or elongate respiratory tubes, each spiracle with 3 slits, surrounded by a circlet of plumose hydrofuge hairs (not in fascicles); anal opening on protuberance, this sometimes subdivided into lobes that bear spines or star-like sclerites around anus.

Puparium. Dark brown, ovoid with a moderately rugose surface.

Adult Dryomyzidae are similar to Coelopidae and Helcomyzidae and are sometimes confused with Heleomyzidae and Scathophagidae. They are distinguished from these and other families of Schizophora, especially those in the superfamily Sciomyzoidea, by the following combination of

characters: postocellar setae long, parallel or slightly divergent; antennal bases approximate basally, narrowly separated; pedicel short, lacking a complete dorsal seam; oral vibrissae absent; face uniformly sclerotized, usually shallowly convex medially; clypeus large and prominent; greater ampulla lacking; prosternum bare, strap-like, well separated from propleuron; wing lacking costal spines; crossvein bm-cu aligned distinctly apical to vein CuA<sub>2</sub>; some or all tibiae bearing a preapical dorsal seta.

**Biology.** Two distinctly different biologies are demonstrated in the natural history of this family. The larvae of *Oedoparena* Curran are predators of intertidal barnacles (Burger *et al.* 1980, Suwa 1981) and are thus only known from maritime coasts. The other genera, where information is available, prefer humid environments such as forests where there is an under story of shaded, low vegetation and where decaying organic matter is found. Larvae in these habitats have been discovered to feed in rotting plants and fungi, dead animals ranging from insects and mollusks to vertebrate carrion and even in human excrement. The larvae are saprophagous, and females usually lay eggs directly on the rotting food source.

**Distribution.** Species of Dryomyzidae are largely temperate in distribution and thus far are exclusively known from the northern hemisphere. With the exception of *Oedoparena*, which is strictly coastal in distribution, the other genera occur most frequently in humid, forested habitats. *Oedoparena* is only known from the cool, maritime coasts of the northern Pacific (Japan, Pacific Northwest of North America), and the other extant genera of the family are widespread across the Holarctic Region where their preferred habitats are found. Only four species occur in the Oriental Region, and these are found primarily in areas with temperate climates. As noted previously, the family is noticeably lacking in the Afrotropical, Australasian, and Neotropical Regions.

### Table of extant genera

The following table lists the extant genera of Dryomyzidae in the order found in the catalog, with a summary of the number of extant species known from each zoogeographic region. The number in the total column is less than the sum of those in each region as species are known from more than one region.

| TAXON                           | DISTRIBUTION |    |    |    |    |    | Total |
|---------------------------------|--------------|----|----|----|----|----|-------|
|                                 | NE           | NT | PA | AF | OR | AU |       |
| <i>Dryomyza</i> Fallén          | 2            |    | 8  |    | 2  |    | 10    |
| <i>Dryope</i> Robineau-Desvoidy | 2            |    | 2  |    |    |    | 3     |
| <i>Oedoparena</i> Curran        | 2            |    | 1  |    |    |    | 3     |
| <i>Paradryomyza</i> Ozerov      | 1            |    | 3  |    | 2  |    | 4     |
| <i>Pseudoneuroctena</i> Ozerov  | 1            |    | 1  |    |    |    | 1     |
| <i>Steyskalomyza</i> Kurahashi  |              |    | 1  |    |    |    | 1     |
| TOTALS                          | 8            |    | 16 |    | 4  |    | 22    |

**Classification and nomenclature.** The concept of the family Dryomyzidae adopted here includes six extant and two fossil genera. The names of three genera (*Dryomyza*, *Dryope*, and *Neuroctena*) need clarification, as they have been confused, and errors concerning their usage have been perpetuated and promulgated in the literature.

The type species of *Dromyza* has often been cited as *D. vetula* Fallén (= *Musca flaveola* Fabricius, 1794) through the subsequent designation of Westwood (1840: 165). *Dryomyza vetula*, however, was not an originally included species, and Westwood showed no synonymy that would link that species and name with any of the originally included species (Sabrosky 1999). Thus, Westwood's type designation is invalid. Zetterstedt (1846: 2082) published the next type designation for *Dryomyza* when he listed *Dryomyza anilis* Fallén as the type species. *Dryomyza anilis* is an originally included species, and Zetterstedt's subsequent designation is thus valid.

Robineau-Desvoidy (1830) proposed the genus *Dryope* for two of his species: *D. communis* and *D. liturata*. Coquillett (1910) subsequently designated *Dryomyza communis* (= *Musca flaveola* Fab., 1794) as the type species of *Dryope*, and as this species is an originally included species, this designation is valid and the generic name is available.

The third generic name, *Neuroctena* Rondani, 1868, is invalid. The type species of *Neuroctena* by monotypy is *Dryomyza anilis*, which had previously been designated as the type species of *Dryomyza* (Zetterstedt 1846). *Neuroctena* is thus an objective, junior synonym of *Dryomyza* and is an invalid name.

Czerny (1930) and several subsequent authors (Séguy 1934, Hendel 1937, Stackelberg 1970, Ozerov 1987, 1998, 1999, Chandler 1998, Zuijlen and Beuk 2002, Carles-Tolrá & Báez 2002) have recognized the genus "*Neuroctena*" as a separate genus. As noted above, however, *Neuroctena* is an invalid name, and the oldest available and valid name for Czerny

*et al.*'s generic concept of "*Neuroctena*" is *Dryomyza*. Czerny (1930) also recognized *Dryomyza* as a separate genus (separate from "*Neuroctena*") and included *D. flaveola* and *D. decrepita* Zetterstedt in it. If *D. flaveola* and related species are recognized as belonging to a separate genus from *Dryomyza*, then the oldest available and valid name for this genus would be *Dryope*. In summary, the genus for which "*Neuroctena*" has sometimes been used in the literature (Czerny 1930, Séguy 1934, Hendel 1937, Stackelberg 1970, Ozerov 1987, 1998, 1999, Chandler 1998, Zuijlen & Beuk 2002, Carles-Tolrá & Báez 2002) is actually *Dryomyza*, and in these same cases, what has been called *Dryomyza* is *Dryope*.

The phylogenetic relationships for the genera included in Dryomyzidae and for the families within the Sciomyzoidea have not been fully resolved (McAlpine 1991). Most phylogenetic considerations are either preliminary or they are concerned with the monophyly of a particular genus or small group of genera and not how these lineages are phylogenetically related to other such clades. J. F. McAlpine (1989), for example, suggested that the monophyly of the Dryomyzidae (Dryomyzinae in his sense) is supported by: (1) metasternum bare and (2) abdominal spiracles 2-5 in the ventral margins of their respective tergites (except for *Oedoparena minor* Suwa and the fossil species *Prodryomyza electrica* Hennig). Mathis & Steyskal (1980) provided evidence on the monophyly of *Oedoparena*: (1) anepisternum setulose, (2) antennae approximate at base, (3) clypeus relatively well developed, (4) loss of acrostichal setae, and (5) an association with barnacles. However, the clypeal, acrostichal, and antennal characters occur elsewhere in the Dryomyzidae, and their phylogenetic importance is questionable and needs further assessment. The setose anepisternum and a close association with barnacles may indicate the monophyly of the genus.

Although Ozerov (1998) divided the extant six genera into two tribes, Dryomyzini and Oedoparenini, that precedent is not followed here because the placement of the extinct genera within these tribes has not been clarified. Moreover, the tribes were not proposed within a phylogenetic context nor was evidence (synapomorphies) elaborated to support their recognition. *Oedoparena*, however, is certainly distinct in its morphology and natural history from other genera of the family and may merit recognition as a separate tribe.

The genus *Helcomyza* Curtis and related genera have sometimes been classified as the subfamily Helcomyzinae within the Dryomyzidae (Czerny 1930, Séguy 1934, Griffiths 1972, Steyskal 1987, McAlpine 1989). McAlpine (1991) enumerated several characters that distinguish the Helco-

myzidae as a family within the Sciomyzoidea and as separate from Dryomyzidae, Ropalomeridae, and Coelopidae. McAlpine further suggested the possibility that Helcomyzidae is the sister group to the Coelopidae. We follow McAlpine's precedent and for the present, treat the Dryomyzidae, Helcomyzidae, Coelopidae, and Heterocheilidae as separate families.

### **Key to extant genera of Dryomyzidae (modified from Ozerov 1998)**

1. Proepisternum and anepisternum densely setose, setae fine; clypeus tilted upward; prescutellar acrostichal setae absent; antennal bases closely approximate, distance between scapes narrower than width of anterior ocellus; dark bluish gray in ground color of body ..... *Oedoparena* Curran
- Proepisternum and anepisternum bare; clypeus not upturned; prescutellar acrostichal seta present (absent in *Paradryomyza*); antennal bases with distinct gap between, distance between scapes as long as or longer than width of anterior ocellus; yellow to brown in ground color of body ..... 2
2. Vein  $R_1$  setose along length ..... *Dryomyza* Fallén
- At least basal half or all of vein  $R_1$  without distinct row of setae 3
3. Postgena covered with hairs, and no setae ..... 4
- Postgena bearing many setae and occasionally bearing hairs ..... 5
4. Arista bare. Postpronotum with 2 setae; katepisternum with 6 well developed setae dorsally in 2 rows. Dorsum of legs and abdomen mostly bearing well-developed setae..... *Steyskalomyza* Kurahashi
- Arista with short hairs. Postpronotum with 1 seta; katepisternum usually with 3 setae in almost 1 row. Dorsum of legs and abdomen mostly densely setulose, lacking well-developed setae.....  
..... *Dryope* Robineau-Desvoidy
5. Prescutellar acrostichal seta absent. Hindfemur bearing 2 rows of spinules apically on ventral surface. Female abdominal tergite 7 spinulose ..... *Paradryomyza* Ozerov
- Prescutellar acrostichal seta present. Hindfemur and female abdominal tergite 7 lacking spinules ..... *Pseudoneuroctena* Ozerov



## Family Dryomyzidae Schiner

**Dryomyzinae** Schiner, 1862a: 148 [as the subfamily Dryomyzinae, family Muscidae]. Type genus: *Dryomyza* Fallén, 1820b.

Dryomyzidae. Brauer 1883: 39 [as a family]; Aldrich 1905: 578 [catalog, Nearctic]; Becker 1905: 37 [catalog, Palearctic]; Czerny 1930: 4 [review, Palearctic]; Séguy 1934: 88 [France]; Crampton 1944: 153 [classification]; Hennig 1958: 589 [discussion, phylogenetic relationships], 1965: 73 [fossil fauna], 1973: 56 [discussion]; Stackelberg 1970: 175 [key, Russia]; Hackman 1980: 144 [checklist, Finland]; Kurahashi 1981: 437 [revision, Japan]; Barnes 1984: 43 [biology, immature stages]; Sóos 1984: 153 [catalog, Palearctic]; Martinek 1987: 177 [checklist, Czech Republic, Slovakia]; Ozerov 1987: 40 [review, Palearctic], 1999: 555 [Russian Far East]; McAlpine 1989: 1450 [review, classification, phylogeny]; Morimoto 1989: 805 [checklist, Japan]; Grosseries 1991: 133 [checklist, Belgium]; Nowakowski 1991: 180 [checklist, Poland]; Munari & Rivosecchi 1995: 3 [checklist, Italy]; Poole & Gentili 1996: 153 [checklist, Nearctic]; Bächli 1997: 30 [Switzerland], 1998: 248 [checklist, Switzerland]; Chandler 1998: 131 [checklist, British Isles]; Teschner 1999: 148 [checklist, Germany]; Pakalniškis *et al.* 2000: 33 [checklist, Lithuania]; Papp, 2001: 295 [checklist, Hungary]; Petersen & Meier 2001: 194 [checklist, Denmark]; Zuijlen & Beuk, 2002: 247 [catalog, Netherlands]; Carles-Tolrá & Báez 2002: 163 [checklist, Spain].

Dryomyzini. Schiner 1862a: 148 [as a tribe]. Ozerov 1998: 353 [Palearctic manual].

Oedoparenini Ozerov, 1998: 353. Type genus: *Oedoparena* Curran, 1934.

### Genus DRYOMYZA Fallén

**Dryomyza** Fallén, 1820a: 15. Type species: *anilis* Fallén, by subsequent designation [Zetterstedt 1846: 2082]. Zetterstedt 1846: 2082 [revision, Scandinavia]; Schiner 1862b: 39 [Austria]; Becker 1905: 37 [synonymy of *Neuroctena*]; Steyskal 1957: 56 [synonymy of *Stenodryomyza*]; Stackelberg 1970: 175 [key, Russia]; Hackman 1980: 144 [checklist, Finland]; Barnes 1984: 43 [biology, immature stages]; Sóos 1984: 153 [catalog, Palearctic]; Martinek 1987: 177 [checklist, Czech Republic, Slovakia]; Morimoto 1989: 805 [checklist, Japan]; Grosseries 1991: 133 [checklist, Belgium];

Nowakowski 1991: 180 [checklist, Poland]; Munari & Rivosecchi 1995: 3 [checklist, Italy]; Poole & Gentili 1996: 153 [checklist, Nearctic]; Bächli 1997: 30 [Switzerland], 1998: 248 [checklist, Switzerland]; Sabrosky 1999: 119 [discussion; “The type species has often been cited as *Musca flaveola* Fabricius 1794 by designation of Westwood (1840: 145), but that nominal species was not originally included, and Westwood showed no synonymy that would link it with an originally included species.”]; Teschner 1999: 148 [checklist, Germany]; Pakalniškis *et al.* 2000: 33 [checklist, Lithuania]; Papp, 2001: 295 [checklist, Hungary]; Petersen & Meier 2001: 194 [checklist, Denmark].

*Neuroctena* Rondani, 1868: 56. Type species: *Dryomyza anilis* Fallén, by monotypy. Aldrich 1905: 578 [catalog, Nearctic]; Czerny 1930: 4 [review, Palearctic]; Séguy 1934: 88 [France]; Hendel 1937: 186 [generic key]; Stackelberg 1970: 175 [European Russia]; Kurahashi 1981: 437 [revision, Japan]; Ozerov 1987: 40 [review, Palearctic], 1998: 354 [Palearctic], 1999: 555 [Russian Far East]; Chandler 1998: 131 [checklist, British Isles]; Zuijlen & Beuk, 2002: 247 [catalog, Netherlands]; Carles-Tolrá & Báez 2002: 163 [checklist, Spain]. Syn. Becker 1905.

*Neuroctena (Stenodryomyza)* Hendel, 1924: 214. Type species: *Scatophaga formosa* Wiedemann, by original designation. Steyskal 1977b: 173 [catalog, Orient]; Ozerov 1987: 431 [review, Russia], 1999: 554 [Russia, Far East]. Syn. Steyskal 1957.

*Stenodryomyza*. Hendel 1937: 186 [new status, generic key].

**amblia** Kurahashi. **PA:** Japan (Honshu).

*Dryomyza amblia* Kurahashi, 1981: 443. Japan. Honshu: Ishikawa, Mt. Iozen. HT ♀ NSMT.

**anilis** Fallén. **NE:** Canada (British Columbia, Labrador, Nova Scotia, Ontario, Quebec), USA (Alaska, Connecticut, Iowa, Illinois, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, South Dakota, Vermont, Washington). **PA:** Austria, Belgium, Czech Republic, Denmark, Finland, France, Great Britain, Hungary, Italy, Japan (Honshu), Korea, Lithuania, Netherlands, Poland, Russia (European Part, Far East), Slovakia, Spain, Sweden, Switzerland.

*Dryomyza anilis* Fallén, 1820a: 16. Sweden. ST ♀♂ MNHNP [2♂, Becker 1902: 219], NMW, ZIL. Zetterstedt 1846: 2082 [revision, Scandinavia]; Schiner 1862b: 39 [Austria]; Becker 1905: 37 [catalog, Palearctic, synonymy of *liturata*], 1915: 128 [list]; Vimmer

- 1927: 40 [list]; Stackelberg 1970: 175 [key, Russia]; Mani 1974: 222 [list]; Hackman 1980: 144 [checklist, Finland]; Smith 1980: 167 [larva, key]; Barnes 1984: 43 [biology, immature stages]; Nowakowski 1991: 180 [checklist, Poland]; Munari & Rivosecchi 1995: 3 [checklist, Italy]; Poole & Gentili 1996: 153 [checklist, Nearctic]; Bächli 1997: 30 [Switzerland], 1998: 248 [checklist, Switzerland]; Papp, 2001: 295 [checklist, Hungary]; Petersen & Meier 2001: 194 [checklist, Denmark]; Fast & Wheeler 2004: 11 [list, Quebec].
- Dryope liturata* Robineau-Desvoidy, 1830: 619. Not given (? France). ST ? MNHNP. Syn. Becker 1905.
- Neuroctena anilis*. Rondani 1868: 56 [generic combination], 1869: 8 [list]; Aldrich 1905: 578 [catalog, Nearctic synonymy of *pallida*]; Czerny 1930: 4 [review]; Séguy 1934: 88 [France]; Stackelberg 1970: 175 [European Russia]; Ovchinnikova 1994: 3 [musculature of male terminalia]; Chandler 1998: 131 [checklist, British Isles]; Zuijlen & Beuk, 2002: 247 [catalog, Netherlands]; Carles-Tolrá & Báez 2002: 163 [checklist, Spain]; Speight 2004: 49 [list, Ireland]; Falk 2005: 8 [key, Great Britain]; Papp 2005: 200 [list, Korea].
- Dryomyza pallida* Day, 1881: 89. USA. Connecticut. HT ? [apparently lost]. Syn. Aldrich 1905.
- Dryomyza melanacme* Kurahashi, 1981: 441. Japan. Honshu: Ishikawa, Mt. Hakusan. HT ♀ NSMT. Syn. Ozerov 1999.
- Dryomyza analis*. Misspelling. Sóos 1984: 153 [catalog, Palaearctic]; Martinek 1987: 177 [checklist, Czech Republic, Slovakia]; Grosseries 1991: 133 [checklist, Belgium]; Teschner 1999: 148 [checklist, Germany]; Pakalniškis *et al.* 2000: 33 [checklist, Lithuania].
- Neuroctena analis*. Misspelling. Ozerov 1987: 40 [review, Russia, synonymy of *melanacme*], 1999: 555 [Russian Far East].
- badia*** Kurahashi. **PA:** Japan (Honshu), Korea, Russia (Far East).
- Dryomyza badia* Kurahashi, 1981: 440. Japan. Honshu: Nagano, Shimashima-dani. HT ♀ NSMT. Ozerov 1999: 555 [Russian Far East].
- Neuroctena badia*. Ozerov 1987: 40 [review, Russia, generic combination], 1999: 555 [Russian Far East]; Papp 2005: 200 [list, Korea].
- caucasica*** (Ozerov). **PA:** Russia (Caucasus).
- Neuroctena caucasica* Ozerov, 1987: 40. Russia. Dagestan: Gunib. HT ♀ ZISP.
- Dryomyza caucasica*. **NEW COMBINATION.**
- ecalcarata*** Kurahashi. **PA:** Japan (Hokkaido, Honshu), Russia (Far East).
- Dryomyza ecalcarata* Kurahashi, 1981: 442. Japan. Honshu: Toyama, Gokayama. HT ♀ NSMT.

- Neuroctena ecalcarata*. Ozerov 1987: 41 [review, Russia, generic combination], 1999: 554 [Russian Far East].
- formosa** (Wiedemann). **OR:** India, Taiwan, Vietnam. **PA:** China, Japan (Honshu, Kyushu, Shikoku), Korea, Russia (Far East).
- Scatophaga formosa* Wiedemann, 1830: 447. Japan. ST ♀ ZMHU.
- Dryomyza maculipennis* Macquart, 1851: 246. India. ST ♀ MNHNP. Osten Sacken 1882: 21 [synonymy]; Brunetti 1907: 169 [list, India]; Lichtwardt 1909: 127 [discussion, comparison with *formosa*]. Syn. Osten Sacken 1882.
- Dryomyza formosa*. Loew 1858: 112 [generic combination]; Osten Sacken 1882: 20 [synonymy of *maculipennis* and *gigas*]; Wulp 1896: 163 [south Asia]; Becker 1905: 37 [catalog, Palaearctic]; Matsumura 1905: 116 [review], 1931: 372 [review]; Shiraki 1932: 47 [review]; Yasumatsu 1939: 419 [review]; Steyskal 1957: 63 [revision]; Kurahashi 1981: 439 [revision]; Sóos 1984: 153 [catalog, Palaearctic]; Morimoto 1989: 805 [checklist, Japan]; McAlpine 1995: 42 [new records, Fijian (island of Komo) - probably erroneous].
- Dryomyza gigas* Snellen von Vollenhoven, 1862: 18. Japan. ST ? RNH. Syn. Osten Sacken 1882.
- Eggizoneura formosa*. Coquillett 1898: 339 [generic combination]; Matsumura 1905: 116 [review], 1931: 372 [review], 1932: 49 [review].
- Neuroctena (Stenodryomyza) formosa*. Hendel 1924: 214 [generic combination]; Wu 1940: 385 [China]; Steyskal 1977b: 173 [catalog, Orient]; Ozerov 1987: 431 [review, Russia], 1999: 554 [Russian Far East]; Papp 2005: 200 [list, Taiwan, Vietnam].
- Stenodryomyza formosa*. Czerny 1930: 5 [review, generic combination]; Hendel 1937: 186 [generic key]; Shiraki 1952: 1668 [review]; Takeuchi 1955: 151 [list]; Kanou 1959: 603 [larval morphology and biology].
- pakistan** Kurahashi. **OR:** Pakistan (Punjab).
- Dryomyza pakistana* Kurahashi, 1989: 44. Pakistan. Punjab: Murree, 2000 m. HT ♀ NSMT.
- pelidua** Statz. **PA:** Germany (compression fossil).
- Dryomyza pelidua* Statz, 1940: 146. Fossil; Germany. Rott: Siebengebirge (Oligocene). HT ? LACM. Evenhuis 1994: 429 [review].
- puellaris** Steyskal. **PA:** China.
- Dryomyza puellaris* Steyskal, 1957: 65. China. Szechwan: Suifu. HT ♀ USNM. Sóos 1984: 153 [catalog, Palaearctic].
- shanwangensis** Zhang. **PA:** China (compression fossil).

*Dryomyza shanwangensis* Zhang, 1989: 364. Fossil; China. Shandog: Shanwang, 22 km E Linqu (Miocene). HT ? SPMC. Evenhuis 1994: 429 [review].

**simplex** Loew. **NE:** Canada (Ontario, Quebec), USA (Connecticut, Georgia, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Tennessee, Vermont).

*Dryomyza simplex* Loew, 1862: 128. USA. "Middle States." ST ? MCZ [MCZ type number 13211]. Steyskal 1957: 67 [revision, synonymy of *ruthae*]; Poole & Gentili 1996: 153 [checklist, Nearctic]; Fast & Wheeler 2004: 11 [list, Quebec].

*Neuroctena simplex*. Hendel 1911: 370 [generic combination].

*Neuroctena ruthae* Brimley, 1925: 75. USA. North Carolina: Macon, Franklin. HT ♀ USNM [not found; Steyskal examined in 1957: 67]. Syn. Steyskal 1957.

**takae** Azuma. **PA:** Japan (Honshu).

*Dryomyza takae* Azuma, 2001: 472. Japan. Honshu: Shimane, Daisencho, Masumizu Highland. HT ♀ ABRI.

### Genus DRYOPE Robineau-Desvoidy

**Dryope** Robineau-Desvoidy, 1830: 618. Type species: *communis* Robineau-Desvoidy [= *Musca flaveola* Fabricius], by subsequent designation [Coquillett 1910: 536].

*Driope*. Misspelling. Rondani 1868: 55 [list, Italy].

*Dryomyza* of authors, not Fallén. Czerny 1930: 3 [review]; Séguy 1934: 87 [France]; Hendel 1937: 186 [generic key]; Stackelberg 1970: 175 [key, European Russia]; Sóos 1984: 153 [catalog, Palaearctic]; Martinek 1987: 177 [checklist, Czech Republic, Slovakia]; Ozerov 1987: 37 [Russia], 1999: 553 [Russian Far East], 2000: 357 [review, Nearctic]; Nowakowski 1991: 180 [Poland]; Grosseries 1991: 133 [checklist, Belgium]; Munari & Rivosecchi 1995: 3 [checklist, Italy]; Bächli 1997: 31 [Switzerland], 1998: 248 [checklist, Switzerland]; Chandler 1998: 131 [checklist, British Isles]; Teschner 1999: 148 [checklist, Germany]; Pakalniškis *et al.* 2000: 33 [checklist, Lithuania]; Papp 2001: 295 [checklist, Hungary]; Petersen & Meier 2001: 194 [checklist, Denmark]; Carles-Tolrá & Báez 2002: 163 [checklist, Spain]; Zuijlen & Beuk 2002: 247 [catalog, Netherlands].

**decrepita** (Zetterstedt). **NE:** Canada (British Columbia, Nova Scotia), USA (Alaska, Kansas, Massachusetts, Michigan, New Hampshire, New

York, Pennsylvania, Vermont). **PA:** Austria, Belgium, Czech Republic, Germany, Great Britain, Ireland, Netherlands, Poland, Slovakia, Sweden, Switzerland, Russia (European Part, Siberia, Far East).

*Dryomyza decrepita* Zetterstedt, 1838: 737. Scandinavia (various localities). ST ♀♂ ZIL. Zetterstedt 1846: 2085 [revision, Scandinavia]; Schiner 1862b: 40 [Europe]; Becker 1905: 37 [catalog, Palaearctic]; Czerny 1930: 3 [review]; Steyskal 1957: 61 [as possible synonym of *flaveola*], 1962: 71 [discussion, included as synonym of *flaveola*]; Stackelberg 1970: 175 [key, European Russia]; Sóos 1984: 153 [catalog, Palaearctic]; Martinek 1987: 177 [checklist, Czech Republic, Slovakia]; Nowakowski 1991: 180 [Poland]; Grosseries 1991: 133 [checklist, Belgium]; Bächli 1997: 31 [Switzerland], 1998: 248 [checklist, Switzerland]; Chandler 1998: 131 [checklist, British Isles]; Ozerov 1999: 553 [Russian Far East], 2000: 357 [review, synonymy of *ferruginea* and *dayi*]; Teschner 1999: 148 [checklist, Germany]; Zuijlen & Beuk 2002: 247 [catalog, Netherlands]; Falk 2005: 8 [key, discussion, Great Britain, Ireland].

*Dryope decrepita*. **NEW COMBINATION.**

*Dryomyza dayi* Cresson, 1920: 34. USA. New York: Tomkins, Ithaca. HT ♀ CUI. Steyskal 1957: 62 [as synonym of *D. flaveola*]. Syn. Ozerov 2000.

*Dryomyza ferruginea* Melander, 1920: 311. USA. Vermont: Caledonia, Lyndon. LT ♀ USNM [designated by Ozerov 2000: 357]. Poole & Gentili 1996: 153 [checklist, Nearctic]. Syn. Ozerov 2000.

*Dryomyza flaveola* of Steyskal [not Fabricius]. Misidentification. Steyskal 1957: 61 [synonymy, discussion], 1958: 138 [new records (Alaska, British Columbia, Manitoba, Ontario, Quebec, Nova Scotia)], 1962: 71 [as senior synonym of *decrepita*].

***flaveola*** (Fabricius). **PA:** Austria, Belarus, Belgium, Czech Republic, Denmark, France, Germany, Great Britain, Hungary, Ireland, Italy, Lithuania, Netherlands, Poland, Slovakia, Sweden, Switzerland, Russia (European Part, Caucasus), Ukraine.

*Musca flaveola* Fabricius, 1794: 343. Denmark. Copenhagen. LT ♂ MNHNP [designated by Becker 1902: 219].

*Dryomyza flaveola*. Meigen 1826: 256 [generic combination]; Zetterstedt 1846: 2084 [revision, Scandinavia]; Schiner 1862b: 40 [Austria]; Becker 1902: 219 [review of Meigen's types, synonymy of *fuscicornis*], 1905: 37 [catalog, Palaearctic, synonymy of *communis*, *mollis*, *zawadskii* and *vetula*]; Czerny 1930: 3 [review]; Séguy 1934: 88 [France]; Hendel 1937: 186 [generic key]; Stackelberg

1970: 175 [key, European Russia]; Hackman 1980: 144 [checklist, Finland]; Sóos 1984: 153 [catalog, Palaearctic]; Martinek 1987: 177 [checklist, Czech Republic, Slovakia]; Nowakowski 1991: 180 [Poland]; Grosseries 1991: 133 [checklist, Belgium]; Munari & Rivosecchi 1995: 3 [checklist, Italy]; Bächli 1997:31 [Switzerland], 1998: 248 [checklist, Switzerland]; Chandler 1998: 131 [checklist, British Isles]; Teschner 1999: 148 [checklist, Germany]; Pakalniškis *et al.* 2000: 33 [checklist, Lithuania]; Papp 2001: 295 [checklist, Hungary]; Petersen & Meier 2001: 194 [checklist, Denmark]; Zuijlen & Beuk 2002: 247 [catalog, Netherlands]; Carles-Tolrá & Báez 2002: 163 [checklist, Spain]; Falk 2005: 8 [key, Great Britain].

*Dryope flaveola*. **NEW COMBINATION.**

*Dryomyza vetula* Fallén, 1820a: 16. Sweden. “Beckaskog, Esperöd.” ST ♀♂ ZIL. Syn. Becker 1905.

*Dryope communis* Robineau-Desvoidy, 1830: 619. Not given (? France). ST ? MNHNP. Syn. Becker 1905.

*Dryomyza mollis* Haliday, 1833: 167. United Kingdom. Northern Ireland: Arde, Holywood. ST ? NMI. Syn. Becker 1905.

*Dryomyza zawadskii* Schummel, 1834: 740. Poland. “Silesia.” ST ? DEI. Schiner 1862b: 40 [Austria]; Hensel 1870: 133 [review]. Syn. Becker 1905.

*Dryomyza fuscicornis* Meigen, 1838: 343. Germany. Bavaria. LT ♀ MNHNP [designated by Becker 1902: 219]. Schiner 1862b: 40 [Germany]. Syn. Becker 1902.

*Dryomyza fusciformis*. Misspelling. Sóos 1984: 153.

*melanderi* (Steyskal). **NE:** Canada (British Columbia, Quebec), USA (Alaska, Idaho).

*Dryomyza maculipennis* Melander, 1920: 311. USA. Idaho: Latah, Moscow Mountain. LT ♀ USNM [designated by Ozerov 2000: 358]. Preoccupied Macquart 1851.

*Dryomyza melanderi* Steyskal, 1957: 63 [new name for *maculipennis* Melander]. Poole & Gentili 1996: 153 [checklist, Nearctic]; Ozerov 2000: 358 [review].

*Dryope melanderi*. **NEW COMBINATION.**

### Genus OEDOPARENA Curran

*Oedoparena* Curran, 1934: 382. Type species: *glauca* Coquillett, by original designation. Steyskal 1958: 141 [review], 1965b: 681 [catalog,

- Nearctic]; Mathis & Steyskal 1980: 349 [revision]; Burger *et al.* 1980: 360 [natural history]; Suwa 1981: 29 [revision]; Soós 1984: 154 [catalog, Palaearctic]; Morimoto 1989: 805 [checklist, Japan].
- glauca*** (Coquillett). **NE:** Canada (British Columbia), USA (Alaska, California, Washington).  
*Oedoparea glauca* Coquillett, 1900: 458. USA. Alaska: Metlakahtla. LT ♀ USNM [USNM type number 5254] [designated by Steyskal 1958: 142].  
*Heterocheila glauca*. Aldrich 1905: 578 [generic combination].  
*Heteromyza glauca*. Melander 1920: 309 [generic combination].  
*Oedoparena glauca*. Curran 1934: 382 [generic combination]; Cresson 1920: 31 [review]; Saunders 1928: 552 [list]; Steyskal 1958: 141 [review, figs. of male terminalia], 1965b: 681 [catalog, Nearctic]; Mathis & Steyskal 1980: 352 [revision]; Burger *et al.* 1980: 360 [natural history]; Suwa 1981: 30 [review, figs. of male terminalia].
- minor*** Suwa. **PA:** Japan (Hokkaido).  
*Oedoparena minor* Suwa, 1981: 30. Japan. Hokkaido: Otarushi, Asari beach. HT ♀ HUS. Soós 1984: 154 [catalog, Palaearctic]; Morimoto 1989: 805 [checklist, Japan].
- nigrifrons*** Mathis & Steyskal. **NE:** USA (Oregon, Washington).  
*Oedoparena nigrifrons* Mathis & Steyskal, 1980: 357. USA. Washington: Pacific, Ilwaco. HT ♀ USNM [USNM type number 76446].

### Genus PALAEOTIMIA Meunier

- Palaeotimia*** Meunier, 1908: 266. Type species: *ihoesti* Meunier, by monotypy.  
***ihoesti*** Meunier. **PA:** Baltic Region (amber).  
*Palaeotimia ihoesti* Meunier, 1908: 266. Fossil; Baltic Region. HT ♂ KLEBS [collection number 2395]. Evenhuis 1994: 429 [review].

### Genus PARADRYOMYZA Ozerov

- Paradryomyza*** Ozerov, 1987: 38. Type species: *Odontomera setosa* Bigot, by original designation.  
***orientalis*** Ozerov & Sueyoshi. **OR:** Taiwan.  
*Paradryomyza orientalis* Ozerov & Sueyoshi, 2002: 564. Taiwan. Taichun xian: Hoping xiang, Suchilanchi. HT ♀ BLKU. Papp 2005: 200 [list, Taiwan].



**setosa** (Bigot). **NE:** Canada (British Columbia, Quebec), USA (Alaska, Colorado, Idaho, Massachusetts, Montana, New Hampshire, Vermont, Washington). **PA:** Russia (Siberia, Far East).

*Odontomera ? setosa* Bigot, 1886: 386. USA. Washington. HT ♀ MNHNP. Hendel 1911: 370 [discussion].

*Neuroctena setosa*. Hendel 1911: 370 [generic combination, discussion, synonymy of *fumida*].

*Dryomyza setosa*. Steyskal 1957: 66 [generic combination]; Poole & Gentili 1996: 153 [checklist, Nearctic].

*Paradryomyza setosa*. Ozerov 1987: 38 [review, generic combination], 1999: 553 [Russian Far East].

*Neuroctena fumida* Coquillett, 1901: 616. USA. New Mexico: Rio Arriba, Beulah. HT ♀ USNM [USNM type number 5504]. Aldrich 1905: 579 [catalog, Nearctic]. Syn. Hendel 1911.

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

*Paradryomyza spinigera* Ozerov, 1987: 39. Russia. Far East: Amur Territory, Zeya. HT ♀ ZMM. Ozerov 1999: 554 [Russian Far East].

**steyskali** Ozerov & Sueyoshi. **OR:** India (Uttar Pradesh), Nepal.

*Paradryomyza steyskali* Ozerov & Sueyoshi, 2002: 567. Nepal. Dobang Kharka: 83°24'E, 28°36'N, 2400 m. HT ♀ BLKU.

### Genus PRODRYOMYZA Hennig

**Prodryomyza** Hennig, 1965: 73. Type species: *electrica* Hennig, by monotypy. **electrica** Hennig. **PA:** Baltic Region (amber).

*Prodryomyza electrica* Hennig, 1965: 73. Fossil; Baltic Region. HT ♀ Institut der Universität Tübingen [type number 1299/3]. Evenhuis 1994: 429 [review].

### Genus PSEUDONEUROCTENA Ozerov

**Pseudoneuroctena** Ozerov, 1987: 41. Type species: *Dryomyza senilis* Zetterstedt, by original designation.

**senilis** (Zetterstedt). **NE:** USA (Alaska). **PA:** Finland, Korea, Sweden, Russia (Siberia).

*Dryomyza flaveola* of Zetterstedt [not Fabricius]. Misidentification. Zetterstedt 1838: 736 [list, Sweden].

*Dryomyza senilis* Zetterstedt, 1846: 2087. "Scilicet in Jamtlandiae paroecia Undersåker passim, ex. gr. ad Ristansfors, Åreskutan & Mullfjellen; in Lapponia Umensi ad Wilhelmina." ST ? ZIL.

Becker 1905: 37 [catalog, Palaearctic]; Czerny 1930: 4 [review];  
Séguy 1934: 88 [key]; Hackman 1980: 144 [checklist, Finland];  
Sóos 1984: 154 [catalog, Palaearctic].

*Pseudoneuroctena senilis*. Ozerov 1987: 41 [review, Russia, generic  
combination, synonymy of *bergi*]; Papp 2005: 200 [list, Korea].

*Dryomyza bergi* Steyskal, 1957: 60. USA. Alaska: Lower Yukon Riv-  
er. HT ♀ USNM. Kurahashi 1981: 438 [review]; Poole & Gentili  
1996: 153 [checklist, Nearctic]. Syn. Ozerov 1987.

### Genus STEYSKALOMYZA Kurahashi

*Steyskalomyza* Kurahashi, 1982: 36. Type species: *hasegawai* Kurahashi,  
by original designation. Ozerov 1987.

*hasegawai* Kurahashi. PA: Japan (Honshu).

*Steyskalomyza hasegawai* Kurahashi, 1982: 37. Japan. Honshu: Iwate,  
Morioka, Kuriyagawa. HT ♀ NSMT. Iwasa 2002: 133 [biology].

### Nomina dubia

*dubia* Macquart. NT: “Patrie inconnue.”

*Dryomyza dubia* Macquart, 1844: 343. “Patrie inconnue.” HT ♀  
MNHNP.

*maculipes* Walker. NT: Mexico.

*Dryomyza maculipes* Walker, 1861: 319. Mexico. ST ? BMNH.

## Genus and species transferred to other families

### Genus SCIOGRIPHONEURA Malloch

*Sciogriphoneura* Malloch, 1933: 300. Type species: *nigriventris* Malloch,  
by original designation. Steyskal 1977: 1 [catalog, Neotropics].  
Barnes 1981: 64-66 [transferred *Sciogriphoneura* and its two in-  
cluded species from Dryomyzidae to Helosciomyzidae].

*brunnea* Steyskal. NT: Brazil.

*Sciogriphoneura brunnea* Steyskal, 1977: 1. Brazil. Rio de Janeiro:  
Itatiaia (Fazenda Serra). HT ♀ MZSP.

*nigriventris* Malloch. NT: Chile.

*Sciogriphoneura nigriventris* Malloch, 1933: 301. Chile. Chiloé: An-  
cud. HT ♀ BMNH. Steyskal 1977: 1 [catalog, Neotropics].

**advena** Wiedemann. **NT**: “South America.”

*Dryomyza advena* Wiedemann, 1830: 449 [Helosciomyzidae, genus *Sciosapromyza*]. ST ♂ NHMW. Hendel 1933: 70 [transferred *advena* Wiedemann to *Sciosapromyza* Hendel as the type species of that genus by monotypy].

**semicyanea** Walker. **AU**: Indonesia (Maluku), PNG.

*Dryomyza semicyanea* Walker, 1858: 109. Indonesia. Maluku. ST ? BMNH.

*Lamprogaster semicyanea*. McAlpine 1995: 42 [generic combination, Platystomatidae].

## Acknowledgments

We gratefully thank and acknowledge the following people and their supporting institutions for assistance: F. C. Thompson (Systematic Entomology Laboratory, USDA, c/o Smithsonian Institution, Washington, D.C. USA) for advice on nomenclatural matters and literature; I. Brake (The Natural History Museum, London, UK) for general reviews and literature, S. Gaimari (California Food and Agriculture, Sacramento) for clarifying the status of *Dryomyza advena* Wiedemann and David K. McAlpine (Australian Museum, Sydney, Australia) for his review.

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