

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

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Introduction

The family Odiniidae represents a small group of robust and strongly bristled opomyzoid flies that are closely related to Agromyzidae but have a vastly different biology. The adults are closely associated with trees, particularly those exuding sap or infested with other insects. Most species with known biologies feed within the galleries of wood-boring beetles as saprophages and predators. Some species for which details are available demonstrate life-history strategies that are remarkable in that they can feed and fully develop solely on the frass and fungi in the beetle galleries, but sometimes attack and kill the resident beetle pupa. This attack can be external, or the larval odiniid may bore in and feed internally. Besides their association with beetle galleries, some species are known from tunnels and galls of lepidopteran caterpillars, feeding again on the contents of this enclosed space or as predators of the inhabitants. Some species are predators of wood-infesting dipterans, and others have been reared from the egg masses of mealybugs associated with tree bark. Mature larvae or puparia have been described or illustrated for 12 species in five genera, and the general natural history is known for at least 14 species. Described species of Odiniidae are known from all continents except Australia, although specimens of the family are known from that fauna, indicating that many species worldwide still remain to be described. The 14 extant genera contain only 60 valid species (and three subspecies), but many new taxa are known, particularly from the Neotropical Region where many specimens have been collected. Even in the relatively well-collected Nearctic Region, numerous new species have been recognized. With some exceptions, the undescribed taxa are represented by few specimens, and in general specimens are relatively rare in collections. The following work provides a key to the known extant genera (excluding a fossil genus), description of one new genus, and a comprehensive catalog for all described species covering taxonomic, revisionary, faunistic and biological works and catalogs. This catalog includes all names and works published through 31 May 2011.

Catalogs 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, available 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 Odiniidae 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.

Catalogs: Sabrosky 1965 (Nearctic); Steyskal 1977 (Oriental); Cogan 1980 (Afrotropical), 1989 (Australasian/Oceanian); Prado 1975 (Neotropical); Krivosheina 1984 (Palearctic).

Checklists: Hackman 1980 (Finland); Máca 1987b (Czech Republic, Slovakia), 1999 (Germany); Morimoto 1989 (Japan); Bruyn 1991 (Belgium); Nowakowski 1991 (Poland); Krivosheina 1995 (Italy); Papp 1998a (Switzerland), 2001 (Hungary); Poole & Gentili 1996 (Nearctic Region); Chandler 1998 (British Isles); Pakalniškis *et al.* 2000 (Lithuania); Chandler *et al.* 2001 (Denmark); Carles-Tolrá 2002 (Spain); Zuijlen 2002 (Netherlands).

Faunal Treatments: Hennig 1938a (Palearctic); Séguy 1934 (France); Cole 1969 (western North America); Stackelberg 1970 (European Russia), 1989 (English translation of 1970); Prado 1973 (Neotropical); Papp 1978 (Hungary), 1998b (Palearctic); McAlpine 1987 (Nearctic); Máca 1978 (Czech Republic); Krivosheina 1999 (Far East, Russia).

Fossil: Hennig 1965, Carpenter 1992, Evenhuis 1994.

Natural History and Immatures: Beschovski & Georgiev 1993 (biology); Campadelli 1995 (biology); Chandler 1973 (biology), 1978 (biology); Ferrar 1987 (biology, larvae); Foote 1991 (larvae); Hennig 1952 (larvae); Kirk-

Spriggs & Barraclough 2009 (biology, puparia); Krivosheina 1980 (biology), 1981 (biology, larvae); Krivosheina & Krivosheina 1996 (biology, larvae); Lewis 1979 (larvae, puparia); Papp 1995 (larvae, puparia); Pulkkinen & Yang 1984 (biology); Smith 1989 (larvae); Teskey 1976 (biology); Vos-de Wilde 1935 (larvae); Yang 1984 (larvae, puparia); Zubkov & Kovalev 1975 (larvae).

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:

- AMNH American Museum of Natural History, New York, New York, USA.
 ANSP Academy of Natural Sciences, Philadelphia, Pennsylvania, USA.
 BMNH former British Museum (Natural History), collection incorporated in the Natural History Museum, London, United Kingdom.
 CNC Canadian National Collection, Ottawa, Ontario, Canada.
 CUMC University Museum, Cambridge University, Cambridge, United Kingdom.
 HNHM Hungarian Natural History Museum, Budapest, Hungary.
 INBIO Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica.
 INRA Institut National de la Recherche Agronomique, Montpellier, France.
 ITLJ Insect Systematics Laboratory, National Institute for Agro-Environmental Sciences, Tsukuba, Japan.
 MCT Collection of Miguel Carles-Tolrà, Barcelona, Spain.
 MNHNP Muséum National d'Histoire Naturelle, Paris, France.
 MNRJ Museu Nacional, Rio de Janeiro, Brazil.
 MPEG Museu Paraense Emilio Goeldi, Pára, Belém, Brazil.
 MZLS Museo Zoologico "La Specola," Florence, Italy.
 MZUSP Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil.
 NMW Naturhistorisches Museum, Wien, Austria.
 NRS Naturhistoriska Riksmuseet, Stockholm, Sweden.
 RSM National Museums of Scotland, Edinburgh, United Kingdom.
 SMT Staatliches Museum für Tierkunde, Dresden, Germany.
 UMO University Museum, Oxford University, Oxford, United Kingdom.
 USNM former United States National Museum, collection incorporated in the National Museum of Natural History, Smithsonian Institution, Washington, DC, USA.

- UZMC Zoologisk Museum, Copenhagen, Denmark.
 UZMH Zoological Museum, Finnish Museum of Natural History, Helsinki, Finland.
 ZIL Zoological Institute, Lund University, Lund, Sweden.
 ZISP Zoological Institute, Academy of Sciences, St. Petersburg, Russia.
 ZMAN Instituut voor Taxonomische Zoologie, Zoologisch Museum, Universiteit van Amsterdam, Amsterdam, Netherlands.
 ZMHU Zoologisches Museum, Humboldt Universität, Berlin, Germany.
 ZMM Zoological Museum, Moscow University, Moscow, Russia.

General information

Diagnosis. Small to moderately large, compact-bodied, strongly bristled flies (Figs. 1, 2); length 2.5-6 mm. Body pruinose silvery to dull grey and variously mottled or marked with brownish, or rarely solid brown pruinose. Head (Fig. 3) higher than long; postocellar setae divergent (absent in *Shewellia* Hennig), usually well developed; ocellar plate normal to unusually prominent (most Traginopinae); ocellar setae well developed, proclinate; with 3 or more pairs of fronto-orbital setae, posterior 2 reclinate (rarely 1, with 2nd missing), anterior 1-5 (usually 1) inclinate; frons and face in line or sloping (Traginopinae) to distinctly angulate (most Odiniinae); lunule bare, broadly exposed, sometimes with dorsomedial black pruinose spot; gena broad, often with upturned genal seta; vibrissa strong; first antennal flagellomere about as high as long, rounded at apex; arista bare to plumose. Mesonotum with 1 presutural and 3-4 postsutural dorsocentral setae; 1 prescutellar acrostichal seta, rarely absent or reduced; prescutellar seta usually present; scutellar disc setulose or bare; anepisternum bare or with posterior marginal setae. Legs stout; femora often enlarged (especially hind femur of males); often with tibial bands; preapical dorsal tibial setae present. Wing (Fig. 4) usually with patterns, from simple darkened crossveins to complexly pictured or mottled membrane; costa extending to vein R_{4+5} or to M, with subcostal break only; subcosta incomplete. Abdomen relatively short and broad, usually patterned with gray and/or brown pruinescence.

Mature larvae and/or puparia have been described or illustrated for 12 species in five genera. These include the Holarctic species *Odinia xanthocera* Collin (Yang 1984), the Palearctic species *Turanodinia tisciae* (Papp) (Papp 1995), *Turanodinia stackelbergi* Krivosheina & Krivosheina (Krivosheina & Krivosheina 1996), *Odinia czerny* Collin (Krivosheina 1981), *Odinia foliata* Krivosheina (Krivosheina 1981), *Odinia ornata* (Zetterstedt)

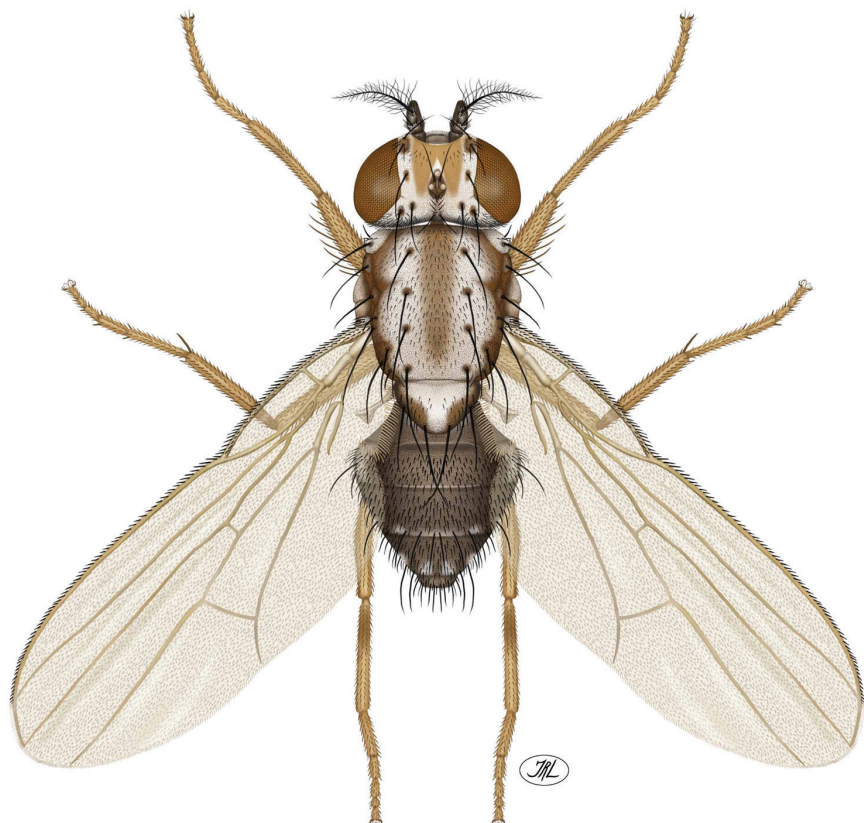


Fig. 1. Dorsal habitus of *Schildomyia vittithorax* Malloch, male.

(Zubkov & Kovalev 1975), *Odinia maculata* (Meigen) (Trojan 1962), *Odinia meijerei* Collin (Lewis 1979, Krivosheina 1981), *Odinia boletina* (Zetterstedt) (Kato 1952) and an unknown species of *Odinia* (as *O. maculata*) (Vos-de Wilde 1935), an Afrotropical species of *Afrodinia* (nr *medleri* Cogan) (Kirk-Spriggs & Barraclough 2009), and the Nearctic species *Neoalticomerus seamansi* Shewell and *Traginops irroratus* Coquillett (Shewell 1960). McAlpine (1987), Ferrar (1987), Smith (1989), Foote (1991) and Papp (1998b) also provide useful figures and discussion of the immature stages. An extensive summary of published immature morphology is given by Kirk-Spriggs & Barraclough (2009), which includes detailed comparisons of *Afrodinia* puparia with those of other genera, and adds interesting notes on the functional morphology of odiniid larvae. Eggs and the first two larval instars are unknown.

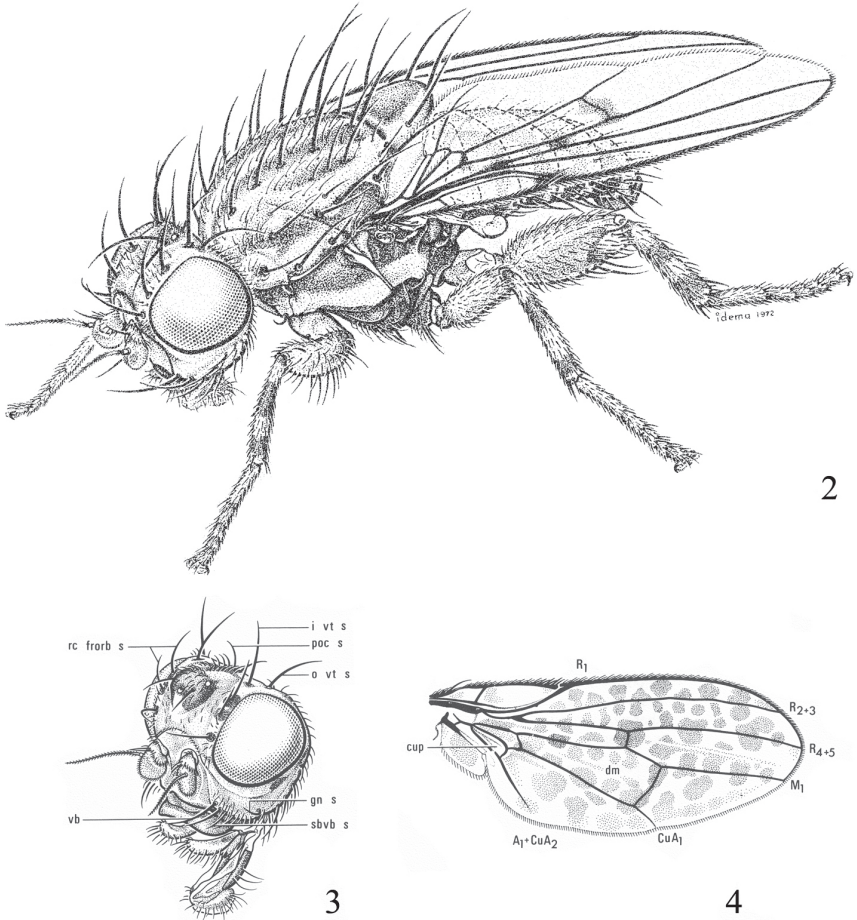


Fig. 2. Habitus of *Odinia betulae* Sabrosky, male. **Figs. 3 & 4.** *Traginops irroratus* Coquillett, male. **3,** head; abbreviations: gn s, genal seta; i vt s, inner vertical seta; o vt s, outer vertical seta; poc s, postocellar seta; rc frorb s, reclinate fronto-orbital seta; sbvb s, subvibrissal seta; vb, vibrissa. **4,** wing (from McAlpine 1987, figs. 72.1-72.3).

Biology. Few studies describe the biology of species of Odiniidae, with summaries for 12 species given by Ferrar (1987). Adults are closely associated with trees, especially those infested with other insects, rotting, with fungi, or exuding sap. Some species are known to feed on polypore fungi on trees, such as *Piptoporus betulinus* (Bull. ex Fr.) P. Karst. (Fomitopsidaceae) on birch (MacGowan & Rotheray 2002) and *Fomes fomentarius* (L.) Fr.

(Polyporaceae) on beech (Máca *et al.* 2005). Krivosheina (2006) commented that they are constant satellites of bark beetles and the dipteran families Pachyneuridae, Pleciidae (=Bibionidae) and Hesperinidae. Some species of *Odinia* Robineau-Desvoidy have been collected in McPhail traps baited with vinegar (Carles-Tolrá 1996) or various yeast mixtures (Sabrosky 1959, Steyskal 1963). Interestingly, Barkley (2009) found that odiniids were significantly more abundant in forest canopies (average trap height of >12 meters) than in the understory, with a mean abundance of 37:3 in canopy versus understory. Stork (1991) also found odiniids in the lowland rainforest canopy in Borneo. Von Tschirnhaus (2008a) collected specimens of *Odinia maculata* in window traps high in the forest canopy in Germany.

Although few species have known biologies, those with known larvae are associated with trees such as those that attract the adults. Usually, they are associated with galleries of wood-boring beetles, with several life history possibilities from saprophagy to predation. Relevant examples include: logs of *Betula* (Betulaceae) infested with platypodine weevils and a species of the buprestid genus *Agrilus* Curtis (Sabrosky 1959); under bark of a dead fir tree in tunnels of the scolytine weevil *Pitiogenes chalcographus* (L.) (Zubkov & Kovalev 1975); rotten elm trees infested with species of the oedemerid beetle genus *Ischnomera* Stephens (Collin 1952) or of the scolytine weevil genus *Scolytus* Geoffroy (Lewis 1979); *Populus* (Salicaceae) and *Salix* (Salicaceae) trees infested with species of the weevil genus *Cryptorhynchus* Illiger (Shewell 1960) or the tenebrionid genus *Scotobates* Rye (Sabrosky 1959). Kirk-Spriggs & Barraclough (2009) discussed a species of *Afrodinia* (nr. *medleri*) reared in South Africa from “gum” in tunnels of *Acacia karroo* Hayne (Fabaceae). It is interesting to note that the specimens studied were discussed by Bearder & Martin (1980), who posited that the liquid gum accumulated during and after occupation by beetle and moth larvae provide an excellent medium for the *Afrodinia*, and that the fly may contribute to stimulation of gum production, and that they may be eaten by the mohol bushbaby, *Galago moholi* Smith (Primates: Galagidae). Yang (1984) and Pulkkinen & Yang (1984) provided details on the natural history of the Holarctic species *Odinia xanthocera*, finding that oviposition of 15-20 eggs occurred at the entrance to a tunnel of the cerambycid species *Saperda populnea* Linnaeus. Larvae then ate the beetle frass, crawling towards the beetle’s pupal chamber, which they then attacked externally or bored internally, also displaying cannibalism. Also noted was the fact that the flies apparently did not need to devour the beetle pupa to fully develop, and occasionally did not even attack the pupa. This species has been reported from the same host other times, and has been under con-

sideration for biological control of Asian longhorned beetle, *Anoplophora glabripennis* Motschulsky (Coleoptera: Cerambycidae) (Hérard *et al.* 2003, Smith *et al.* 2003). A species reported as *Odinia* sp. nr. *xanthocera* has also been reported to attack the cerambycids *Saperda inornata* Say (Grimble & Knight 1970) and *Obera schaumii* LeConte (Grimble & Knight 1971), both on trembling aspen, *Populus tremuloides* Michaux. Regarding the former cerambycid, hundreds of specimens were reared from their galls (Grimble *et al.* 1971).

As interesting exceptions, several species are known as associates, and possibly predators, of lepidopteran caterpillars in enclosed spaces such as tunnels and galls. *Traginops purpurops* Steyskal was reared from a species of *Robinia* (Fabaceae) infested with a tortricid moth species in the genus *Ecdytophpa* Zeller (Steyskal 1963), *Odinia meijerei* was reared from larvae of the cossid moth species *Zeuzera pyrina* Linnaeus (Campadelli 1995) and from galls of the aegerid moth species *Paranthrene tabaniformis* Rottemburg (Beschovski & Georgiev 1993), *Odinia xanthocera* was reared from a tunnel of the sessid moth species *Synanthedon formicaeformis* Esper in the stem of a *Salix* sp. (Pakalniškis & Podénaš 1992), and *Odinia boletina* was reared from tunnels of gelechiid moth larvae in walnut twigs (Kato 1952) and adults are apparently attracted to bracket fungi (Chandler 1978), as are the adults of *Odinia rossi* MacGowan & Rotheray (MacGowan & Rotheray 2002). Krivosheina (1981) reported that several Palearctic species attack larvae of other wood-infesting Diptera. One Asian species, *Turanodinia coccidarum* Stackelberg, was reared from egg masses of the mealybug *Pseudococcus comstocki* Kuwana. Although appearing odd as a life history for an odiniid, this is perfectly reasonable for a variety of reasons. First, the females of this mealybug typically move under the tree bark to become sessile egg masses, thickly gathered together into waxy clusters. The microcosm associated with the egg masses of this mealybug is quite diverse, with many different organisms involved (from mites to predaceous fly larvae, to saprophagous moth larvae, many beetles, etc.), and the dense honeydew secreted by the mealybugs has intensive fungal growth. Ultimately, larvae of this species could be associated with this sub-bark microhabitat in a variety of ways, from consuming fungi, to insect frass, to predation. Interestingly, this species is also known from tunnels of the cerambycid beetle *Aeolesthes sarta* (Solsky) (Krivosheina & Krivosheina 1996). The other known species of *Turanodinia* Stackelberg are known from sap fluxes on deciduous trees, such as species of *Populus* and *Ulmus* (Ulmaceae) (Papp 1995, Krivosheina & Krivosheina 1996), and Krivosheina (2006) mentions their also aggregating in tunnels of *Cossus cossus* L. (Lepidoptera: Cossidae).

Table of genera

The following table lists the genera of Odiniidae in the order found in the catalog, with a summary of the number of described species and subspecies 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 or subspecies is known from more than one region. † indicates a fossil taxon.

TAXON	DISTRIBUTION						Total
	NE	NT	PA	AF	OR	AU	
Subfamily Odiniinae							
Afrodinia Cogan				2			2
Neoalticomerus Hendel	1		1				2
Odinia Robineau-Desvoidy	8	6	13	2	2		26
Protodinia Hennig†			1				1
Turanodinia Stackelberg			5				5
Subfamily Traginopinae							
Coganodinia				1			1
Gaimari & Mathis							
Helgreelia Gaimari		3					3
Lopesiodinia Prado		2					2
Neoschildomyia Gaimari		1					1
Neotraginops Prado		1		1			1
Paratraginops Prado		2		1			3
Pradomyia Gaimari		1					1
Schildomyia Malloch		9	1				10
Shewellia Hennig		1					1
Traginops Coquillett	2		1	2	1		5
TOTALS	11	26	22	8	3		64
Subfamilies							2
Genera							15

Classification. Recent evidence (McAlpine 1989) suggested that Odiniidae form a monophyletic group within the suprafamily Agromyzoinea along with Agromyzidae and Fergusoninidae, within the superfamily Opomyzoidea. This suprafamily is supported by several synapomorphies relative to the perceived acalyptrate groundplan (McAlpine 1989), including the more dorsally located anterior spiracles in the larvae. There appear to be two monophyletic lineages, the Agromyzidae + Fergusoninidae and the Odiniidae. Odiniids appear to be the most generalized member of the Agromyzoinea, with larval mouthparts simpler, the anterior spiracles more dorsolaterally

located, and the larval habitats within galleries of wood-boring insects rather than as primary tissue invaders of living plants. However, recent molecular analyses (Winkler *et al.* 2010, Wiegmann *et al.* 2011) have cast some doubts on the position of odiniids relative to other acalyptrates, particularly regarding the relationship with Fergusoninidae, but evidence still suggests a position near the Agromyzidae. Odiniids were originally considered as a subfamily of Agromyzidae, until Hendel (1922-1923, 1928) recognized them as a separate family. Hennig (1958) recognized odiniids and agromyzids as sister-taxa, but it was not until Spencer (1969) that specific character evidence was used to support this relationship, citing the strong aedeagal apodeme, modified hypandrium, the form of the surstyli, the whole general genitalic arrangement, and the presence of scutellar hairs in several odiniid genera and the more primitive agromyzid genera such as *Selachops* Wahlberg. Despite this, Griffiths (1972) considered odiniids to belong in his Tephritoinea, entirely separated from its current placement. The monophyly of the family is supported by the absence of an ejaculatory apodeme, the presence of several setae on the katapisternum, and the presence of a preapical dorsal seta on one or more tibiae (McAlpine 1989). The family Odiniidae is divided into two subfamilies, Odiniinae and Traginopinae. Several characters support this division, including the shape of the head, with the odiniines having a distinctly angulate frons to face, while the traginopines have the frons more or less in line with the face; the position of the ocellar triangle, with the odiniines having the posterior ocelli in line with the inner vertical setae, and the traginopines having the ocellar triangle more anteriorly placed.

Identification. Only a few key resources are necessary for identifying the described species of Odiniidae, although many taxa remain undescribed, and there is particular confusion surrounding some of the species of Palearctic *Odinia*. Hennig (1969) provided a key to the genera of the world, with descriptions or rediagnoses of several genera and their species, although without keys to species. Cogan (1975) provided keys and some descriptions for the known Afrotropical odiniid fauna. Sabrosky (1959) revised the genus *Odinia* for the New World, including descriptions of taxa and keys to species (although numerous species remain undescribed). For the Neotropical Region, Prado (1973) reassessed the described taxa, described several new taxa, and provided keys to species and adequate drawings of diagnostic characteristics. McAlpine (1987) and Papp (1998b) provided keys to the genera of the Nearctic and Palearctic Regions, respectively. Gaimari (2007, 2010) provided a key to the currently described New World genera. Filho *et al.* (2009) provided a key to the described Neotropical species, as

modified from Shewell (1960), Sabrosky (1969), Prado (1973) and Gaimari (2007). Several new genera are currently recognized from various parts of the world that fall outside the following key.

Key to extant genera of Oдиниidae

1. Posterior ocelli in front of line between inner vertical setae; ocelli usually arranged in isosceles triangle with distance between posterior pair conspicuously less than between either posterior ocellus and anterior ocellus; frons usually relatively arched (sometimes conspicuously tuberculate). Scutellar disc sometimes setulose. In profile, face and frons more or less in line or sloping (Subfamily Traginopinae)..... 5
 - Posterior ocelli in line with inner vertical setae; ocelli arranged in equilateral triangle or with distance between posterior pair greater than between either posterior ocellus and anterior ocellus; frons flat to slightly concave. Scutellar disc bare. In profile, face usually distinctly angulate with frons at antennal insertion (Subfamily Oдиниinae)..... 2
2. Postocellar setae reduced, short and thin. Dorsocentral setae 4 (1+3). Anepisternum with 1-2 strong setae plus several setulae. Dorsal preapical tibial setae well developed. Male hind femur not particularly short and thick [NE, PA] *Neoalticomerus* Hendel
 - Postocellar setae well developed, subequal to ocellar setae. Dorsocentral setae 4 (1+3) or 5 (1+4). Anepisternum bare. Dorsal preapical tibial setae thin, hair-like. Male hind femur often short and thick 3
3. Mesonotum strikingly marked with velvety-black patches. Dorsocentral setae 4 (1+3). Prescutellar acrostichal seta absent or reduced. Crossvein m-cu absent [AF] *Afroдинia* Cogan
 - Mesonotum lacking velvety black patches. Dorsocentral setae 5 (1+4). Prescutellar acrostichal seta present, well developed. Crossvein m-cu usually present..... 4
4. First flagellomere short, length less than its height. Vein R_{4+5} slightly curved and ending in costal vein almost at wing apex [AF, NE, NT, OR, PA] *Oдинia* Robineau-Desvoidy
 - First flagellomere as long as high. Vein R_{4+5} straight, ending in costal vein well before apex of wing [PA] *Turanodinia* Stackelberg

5. Ocelli and frons normal, lacking enlarged tubercle, but occasionally on raised bump little larger than diameter of anterior ocellus. 8
- Ocelli on moderately large to large tubercle, well in front of vertex 6
6. Arista long plumose. Vein M strongly curved at apex [AF, NT]....
..... *Paratraginops* Hendel
- Arista pubescent. Vein M straight..... 7
7. Propleuron bearing 2 setae [NT] *Neotraginops* Prado
- Propleuron lacking setae [AF, NE, OR, PA]
..... *Traginops* Coquillett
8. Costa extended to vein R_{4+5} . Genal seta absent 11
- Costa extended to vein M. Genal seta present..... 9
9. Scutellum at most bearing 2-5 setulae along margin [NT].....
..... *Lopesiodinia* Prado
- Scutellar disc and margins bearing numerous setulae 10
10. Only anterior fronto-orbital seta inclinate [NT, PA].....
..... *Schildomyia* Malloch
- Several anterior fronto-orbital setae inclinate [NT]
..... *Neoschildomyia* Gaimari
11. Postocellar setae absent 13
- Postocellar setae present..... 12
12. Dorsocentral setae 4 (1+3). Lunule large, extending half distance between antennal base and anterior ocellus. Scutellum with setula anterior to basal scutellar seta [AF].....
..... *Coganodinia* Gaimari & Mathis, **gen. nov.**
- Dorsocentral setae 5 (1+4). Lunule extending about one-quarter distance between antennal base and anterior ocellus. Scutellum lacking setulae [NT] *Pradomyia* Gaimari
13. Scutellar disc setulose. Several anterior fronto-orbital setae inclinate [NT] *Shewellia* Hennig
- Scutellar disc bare. Only one fronto-orbital seta inclinate [NT]
..... *Helgreelia* Gaimari

Family Odiniidae Hendel

Oдиниinae Hendel, 1920: 112 [as a subfamily of Agromyzidae]. Type genus, *Odinia* Robineau-Desvoidy. Hendel 1922-1923: 152 [key, diagnosis, as a family], 1928: 102 [key, diagnosis]; Séguy 1934: 626 [France]; Hennig 1938a: 1 [Palearctic], 1952: 265 [discussion, larvae], 1958: 611 [discussion, phylogenetic relationship with Agromyzidae], 1965: 119 [discussion, fossils], 1969: 616 [key to genera, discussion], 1971: 47 [discussion, relationship with Agromyzidae], 1973: 60 [discussion]; Rohdendorf 1964: 109 [classification, as subfamily of Agromyzidae]; Sabrosky 1965: 793 [catalog, Nearctic], 1999: 219 [family-group catalog]; Cole 1969: 419 [western North America]; Spencer 1969: 12 [discussion, relationship with Agromyzidae]; Stackelberg 1970: 232 [European Russia]; Prado 1973: 481 [key to world genera; Neotropics], 1975: 1 [catalog, Neotropics]; Cogan 1975: 471 [review, biology, Afrotropics], 1980: 637 [catalog, Afrotropics]; Teskey 1976: 24 [biology]; Steyskal 1977: 242 [catalog, Orient]; Papp 1978: 1 [key to genera, Hungary], 1998b: 233 [review, biology, immatures, key to genera (adults), key to some genera (larvae), Palearctic], 2001: 312 [checklist, Hungary]; Krivosheina 1981: 130 [key to genera, Palearctic, systematics, immatures, review, biology], 1984: 260 [catalog, Palearctic], 1995: 9 [checklist, Italy], 1999: 571 [Russian Far East]; Hackman 1980: 150 [checklist, Finland]; Morge 1984: 448 [key to genera, Germany]; Ferrar 1987: 256 (Part 1), 741 (Part 2) [immatures, biology]; Máca 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany]; McAlpine 1987: 863 [key to genera, review, Nearctic], 1989: 1458 [phylogenetic relationships]; Smith 1989: 103 [immatures]; Bruyn 1991: 150 [checklist, Belgium]; Nowakowski 1991: 191 [checklist, Poland]; Evenhuis 1994: 418 [fossil fauna]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Chandler 1998: 135 [checklist, British Isles]; Pakalniškis *et al.* 2000: 36 [checklist, Lithuania]; Chandler *et al.* 2001: 205 [checklist, Denmark]; Carles-Tolrá 2002: 176 [checklist, Spain]; Zuijlen 2002: 272 [checklist, Netherlands]; Gaimari 2007: 2 [key to New World genera], 2010: 1052 [key to New World genera, biology, classification, review, Central America]; von Tschirnhaus 2008a: 79 [discussion]; Filho *et al.* 2009: 65 [key to Neotropical species]; Schacht & Heuck 2010: 438 [German translation of key to genera in Papp 1978].

Subfamily ODINIINAE Hendel

Oдиниinae Hendel, 1920: 112. Type genus, *Odinia* Robineau-Desvoidy. Hennig 1969: 617 [classification], 1973: 60 [discussion]; Gaimari 2007: 2 [in key, New World], 2010: 1052 [in key, New World, discussion, Central America].

Genus AFRODINIA Cogan

Afrodinia Cogan, 1975: 476. Type species, *deemingi* Cogan, by original designation. Cogan 1980: 637 [catalog, Afrotropics]; Kirk-Spriggs & Barraclough 2009: 162 [puparia].

deemingi Cogan. **AF:** Nigeria.

Afrodinia deemingi Cogan, 1975: 477. Nigeria. Zaria: Samaru. HT ♂ BMNH. Cogan 1980: 637 [catalog, Afrotropics].

medleri Cogan. **AF:** Nigeria.

Afrodinia medleri Cogan, 1975: 478. Nigeria. West State: Idanre. HT ♀ BMNH. Cogan 1980: 637 [catalog, Afrotropics].

Genus NEOALTICOMERUS Hendel

Neoalticomerus Hendel, 1903: 252. Type species, *Milichia formosa* Loew, by original designation. Hennig 1938a: 10 [revision, Palearctic]; Shewell 1960: 628 [review]; Trojan 1962: 5 [Poland, in key]; Sabrosky 1965: 794 [catalog, Nearctic]; Stackelberg 1970: 232 [key, European Russia]; Teskey 1976: 24 [biology, larvae]; Máca 1978: 148 [Czech Republic], 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany]; Papp 1978: 8 [review, Hungary], 1981: 227 [Hungary], 1998a: 268 [checklist, Switzerland], 2001: 312 [checklist, Hungary]; Krivosheina 1981: 132 [biology, morphology], 1984: 260 [catalog, Palearctic], 1995: 9 [checklist, Italy], 1999: 574 [review, Russian Far East]; Hackman 1980: 150 [checklist, Finland]; Morge 1984: 448 [key, Germany]; Nowakowski 1991: 191 [checklist, Poland]; Gaimari 2007: 2 [in key, New World genera], 2010: 1053 [in key, New World genera].

formosus (Loew). **PA:** Austria, Czech Republic, Finland, France, Germany, Hungary, Italy, Latvia, Mongolia, Poland, Russia, Slovakia, Spain, Sweden, Switzerland.

Ochtiphila litorella var. b. Fallén, 1823: 10. 1♀ NRS [specimen not part of type series as pointed out by Pont (1984), which fol-

lows I.C.Z.N. §72.4.1 (§72.b of previous editions); *Ochthiphila litorella* in the true sense (LT ♂ NRS, designated by Pont (1984)) is the senior synonym of the type species of the muscid genus *Schoenomyza* Haliday]. Zetterstedt 1848: 2720 [synonymy]. Syn. Becker 1905.

Milichia formosa. *Nomen nudum*. Loew (attributed to M[eigen]) 1843: 312 [discussion].

Milichia formosa Loew, 1844: 328. Poland. Poznań [= Posen]. HT ♀ ZMHU. Zetterstedt 1848: 2720 [Sweden]; Schiner 1863: 298 [review, middle Europe], 1864: 71 [list, Europe].

Milichia pulchra Zetterstedt, 1848: 2724. Sweden. Östergötland: Gums. ST ♀ NRS [cited ST ♂ not known]. Schiner 1863: 298 [review, Europe], 1864: 71 [list, Europe]. Syn. Becker 1907.

Ochthiphila [sic] *litorella*. Schiner 1867: 325 [discussion].

Neoalticomerus formosus. Hendel 1903: 252 [generic combination]; Becker 1905: 240 [catalog, Palearctic, synonymy of *litorella* var. b], 1907: 510 [synonymy of *pulchra*]; Séguy 1934: 628 [France]; Hennig 1938a: 10 [revision]; Trojan 1962: 7 [Poland, in key]; Stackelberg 1970: 233 [European Russia]; Papp 1977b: 120 [list, Mongolia], 1978: 9 [key, Hungary], 1981: 227 [Hungary], 1998a: 268 [checklist, Switzerland], 2001: 312 [checklist, Hungary]; Máca 1978: 148 [Czech Republic], 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany]; Hackman 1980: 150 [checklist, Finland]; Krivosheina 1984: 260 [catalog, Palearctic], 1995: 9 [checklist, Italy], 1999: 574 [review, Russian Far East]; Süß 1984: 10 [Bezzi collection, Italy]; Nowakowski 1991: 191 [checklist, Poland]; Máca *et al.* 2005: 283 [habitat, Czech Republic]; Schacht & Heuck 2010: 440 [key], 441 [Germany]; Kahanpää 2011: 46 [checklist, Finland].

Odinia pulchra. Becker 1905: 240 [generic combination, catalog, Palearctic].

seamansi Shewell. **NE:** Canada (Alberta, New Brunswick), United States (Arizona, Nebraska).

Neoalticomerus seamansi Shewell, 1960: 629. Canada. Alberta: Lethbridge. HT ♂ CNC [CNC type number 7125]. Shewell 1960: 629 [immatures]; Sabrosky 1965: 794 [catalog, Nearctic]; Teskey 1976: 24 [biology, larvae]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Winkler *et al.* 2010: 752 [exemplar, phylogenetic study]; Wiegmann *et al.* 2011: st01 [exemplar, phylogenetic study].

Genus ODINIA Robineau-Desvoidy

Odinia Robineau-Desvoidy, 1830: 648. Type species, *trinotata* Robineau-Desvoidy, by subsequent designation [Rondani 1875: 167]. Schiner 1863: 297 [as synonym of *Milichia* Meigen]; Rondani 1875, 170 [synonymy of *Alticomeres* and *Milichia* sensu Schiner]; Coquillett 1902: 185 [discussion, type species, synonymy of *Alticomeres*]; Curran 1934: 332 [generic key]; Hennig 1938a: 6 [revision, Palearctic]; Sabrosky 1959: 224 [New World], 1965: 794 [catalog, Nearctic]; Shewell 1960: 630 [discussion]; Trojan 1962: 5 [Poland, in key]; Cole 1969: 419 [western North America]; Stackelberg 1970: 233 [European Russia]; Prado 1973: 482 [Neotropics]; Máca 1978: 149 [Czech Republic], 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany]; Papp 1978: 2 [review, key to species, Hungary], 1998a: 268 [checklist, Switzerland], 2001: 312 [checklist, Hungary]; Krivosheina 1981: 134 [discussion, key to species, Palearctic], 1984: 261 [catalog, Palearctic], 1995: 9 [checklist, Italy], 1999: 574 [review, Russian Far East]; Hackman 1980: 150 [checklist, Finland]; Morge 1984: 448 [key, Germany]; Morimoto 1989: 809 [checklist, Japan]; Bruyn 1991: 150 [checklist, Belgium]; Nowakowski 1991: 191 [checklist, Poland]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Chandler 1998: 135 [checklist, British Isles]; Chandler, Petersen & Papp 2001: 206 [checklist, Denmark]; Carles-Tolrá 2002: 176 [checklist, Spain]; Zuijlen 2002: 272 [checklist, Netherlands]; Gaimari 2007: 2 [in key, New World genera], 2010: 1053 [in key, New World genera, Central America, discussion].

Alticomeres Rondani, 1856: 121. Type species, *trinotatus* Rondani, by original designation. Rondani 1875: 170 [synonymy]; Becker 1905: 240 [catalog, Palearctic]. Syn. Coquillett 1902.

betulae Sabrosky. **NE:** Canada (British Columbia, Quebec), USA (Maine, New Hampshire).

Odinia betulae Sabrosky, 1959: 230. USA. Maine: Kennebec, China. HT ♂ USNM [USNM type number 64274]. Sabrosky 1959: 230 [biology], 1965: 794 [catalog, Nearctic]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Fast & Wheeler 2004: 11 [list, Quebec].

biguttata Sabrosky. **NE:** USA (Florida). **NT:** West Indies (Puerto Rico, Virgin Islands).

Odinia biguttata Sabrosky, 1959: 226. Virgin Islands. St. Croix: Peter Rest. HT ♀ USNM [USNM type number 64272]. Sabrosky 1965:

794 [catalog, Nearctic]; Prado 1975: 1 [catalog, Neotropics]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Filho *et al.* 2009: 66 [in key].

boletina (Zetterstedt). NE: Canada (Alberta, Ontario, Quebec). PA: Austria, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, Japan, Morocco, Netherlands, Poland, Russia, Slovakia, Spain, Sweden, Switzerland, Ukraine.

Milichia boletina Zetterstedt, 1848: 2721. Sweden. Östergötland: Lärketorp & Vadstena [= Wadstena]. ST ♂ 3♀ ZIL [♂ from Östergötland has been labeled as the lectotype, but this has not been published]. Schiner 1863: 298 [review, middle Europe], 1864: 71 [list, Europe]; Bezzi 1891: 50 [Pavia, Italy].

Odinia boletina. Becker 1905: 240 [generic combination, catalog, Palearctic]; Hendel 1911: 33 [discussion]; Séguy 1934: 628 [France]; Hennig 1938a: 7 [revision]; Kato 1952: 2 [biology, Japan]; Collin 1952: 116 [review, biology, England]; Sabrosky 1959: 229 [review, New World], 1965: 794 [catalog, Nearctic]; Trojan 1962: 7 [Poland, in key]; Cole 1969: 419 [western North America]; Stackelberg 1970: 233 [European Russia]; Máca 1978: 149 [Czech Republic], 1981: 302 [list, Czechoslovakia], 1987a: 317 [note, Bulgaria], 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany], 2009a: 110 [distribution, Czech Republic], 2009b: 220 [discussion, checklist, Slovakia]; Papp 1978: 8 [key, Hungary], 1998a: 268 [checklist, Switzerland], 2001: 312 [checklist, Hungary]; Parmasto 1978: 142 [feeding on fungal host]; Krivosheina 1981: 137 [redescription; discussion], 1984: 261 [catalog, Palearctic], 1995: 9 [checklist, Italy], 1999: 574 [review, Russian Far East]; Hackman 1980: 150 [checklist, Finland]; Süss 1984: 9 [Bezzi collection, Italy]; Williams 1986: 117 [note, Ireland]; Allen 1987: 42 [list, southeast London, England]; Chandler 1989: 26 [note, Ireland], 1998: 135 [checklist, British Isles]; Franz 1989 [Czech Republic]; Morimoto 1989: 809 [checklist, Japan]; Nowakowski 1991: 191 [checklist, Poland]; Speight 1996: 179 [note, list, Ireland]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Korneyev 1997: 88 [note, Ukraine]; Chandler *et al.* 2001: 206 [checklist, Denmark]; Carles-Tolrá 2000: 153 [Spain], 2002: 176 [checklist, Spain]; Zuijlen 2002: 272 [checklist, Netherlands]; Máca *et al.* 2005: 283 [Czech Republic, biology]; von Tschirnhaus 2007: 109 [checklist, Germany, Memert; remarks,

morphology], 2008a: 67 [checklist, Italy, South Tyrol], 80 [discussion, biology, morphology], 2008b: 387 [checklist, Germany, East Frisian islands]; Beschovski 2009: 207 [Bulgaria]; Stuke 2009: 91 [checklist, Germany]; Gaimari 2010: 1051 [discussion, biology]; Schacht & Heuck 2010: 440 [key], 441 [Germany]; Winkler *et al.* 2010: 752 [exemplar, phylogenetic study]; Kahanpää 2011: 46 [checklist, Finland].

brevitibia Shewell. **NT:** Brazil (Pará, Roraima, Santa Catarina).

Odinia brevitibia Shewell, 1960: 632. Brazil. Santa Catarina: Nova Teutônia. HT ♂ CNC [CNC type number 7126]. Prado 1973: 484 [revision], 1975: 1 [catalog, Neotropics]; Prado & Papavero 2002: 1 [list, Brazil]; Filho *et al.* 2009: 66 [in key].

connecta Cogan. **AF:** Gambia, Nigeria.

Odinia connecta Cogan, 1975: 475. Nigeria. Zaria: Samaru. HT ♀ BMNH. Cogan 1980: 637 [catalog, Afrotropics]; Schacht 2000: 2 [list, Gambia].

conspicua Sabrosky. **NE:** USA (Georgia, Maryland, Massachusetts).

Odinia conspicua Sabrosky, 1959: 228. USA. Maryland: Somerset, Jackson Island, 38°02.4'N, 75°49.8'E. HT ♂ USNM [USNM type number 64273]. Sabrosky 1959: 228 [biology], 1965: 794 [catalog, Nearctic]; Poole & Gentili 1996: 202 [checklist, Nearctic].

coronata Sabrosky. **NE:** Mexico (Morelos), USA (Arizona, Texas). **NT:** Belize, Colombia, Costa Rica, El Salvador, Guatemala, Mexico (Chiapas), Panama, Peru, West Indies (St. Vincent).

Odinia coronata Sabrosky, 1959: 234. El Salvador. La Union. HT ♂ USNM [USNM type number 64275]. Sabrosky 1965: 794 [catalog, Nearctic]; Prado 1975: 1 [catalog, Neotropics]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1053 [Central America].

czernyi Collin. **PA:** Austria, Czech Republic, Finland, France, Germany, Hungary, Italy, Lithuania, Russia, Slovakia, Switzerland, Ukraine.

Odinia czernyi Collin, 1952: 113. Austria. HT ♂ NMW. Stackelberg 1970: 233 [European Russia]; Papp 1978: 4 [key, Hungary], 1998a: 268 [checklist, Switzerland], 2001: 312 [checklist, Hungary]; Krivosheina 1981: 138 [redescription, discussion, immatures], 1984: 261 [catalog, Palearctic], 1999: 574 [review, Russian Far East]; Shatalkin 1981: 44 [former USSR]; Máca 1987b: 237 [checklist, Czech Republic, Slovakia], 1997: 228 [checklist, Czech Republic], 1999: 168 [checklist, Germany], 2009b: 220 [discussion, checklist, Slovakia]; Pont 1995: 56 [notes on type];

MacGowan & Horsfield 2002: 107 [description of adult, puparium; biology; list, Perthshire, England; reference to Finnish specimen]; Korneyev 2003: 68 [note, Ukraine]; Dumčius & Pakalniškis 2006: 56 [list, Lithuania]; von Tschirnhaus 2008a: 69 [list, France, Italy]; Schacht & Heuck 2010: 439 [key], 441 [Germany]; Kahanpää 2011: 46 [checklist, Finland].

Odinia mejerei of Hackmann [not Collin]. Misidentification. Hackmann 1980: 150 [checklist, Finland]; Kahanpää 2011: 46 [report misidentification].

foliata Krivosheina. **PA:** Russia (South Prymorye).

Odinia foliata Krivosheina, 1979: 201. Russia. South Prymorye: Kedrovaja Pad, Komarovo-Zapovednoe. HT ♂ ZISP. Krivosheina 1981: 140 [redescription, discussion, immatures, biology], 1984: 261 [catalog, Palearctic], 1999: 574 [review, Russian Far East]; Shatalkin 1981: 44 [former USSR].

formosipennis Frey. **OR:** Myanmar.

Odinia formosipennis Frey, 1961: 33. Myanmar. Kambaiti. ST 2♀ UZMH. Steyskal 1977: 242 [catalog, Orient].

hendeli Collin. **PA:** Austria, Germany, Great Britain, Russia (European Part).

Odinia maculata of Hendel [not Meigen]. Misidentification. Hendel 1911: 33 [discussion].

Odinia hendeli Collin, 1952: 113. Austria. ST ♀ NMW. Germany. Schönebeck. ST ♀ ZMHU. United Kingdom. England: Cambridge. ST ♂ BMNH, 2 ST ♂ UMO, 2 ST ♂ CUMZ. Collin 1952: 113 [biology]; Stackelberg 1970: 233 [European Russia]; Chandler 1973: 342 [biology], 1998: 135 [checklist, British Isles]; Krivosheina 1981: 142 [redescription, discussion], 1984: 261 [catalog, Palearctic]; Allen 1987: 42 [list, southeast London, England]; Pont 1995: 79 [notes on types]; Máca 1999: 168 [checklist, Germany]; Papp 2001: 312 [probable, checklist, Hungary]; Ismay & Webb 2002: 224 [list, Oxfordshire, England]; Schacht & Heuck 2010: 439 [key].

mejerei Collin. **NE:** Canada (Ontario), USA (Michigan, New York, Pennsylvania, Texas, Virginia). **PA:** Bulgaria, Czech Republic, Germany, Great Britain, Hungary, Netherlands, Poland, Slovakia, Spain, Sweden, Switzerland.

Odinia mejerei Collin, 1952: 115. Czech Republic. Asch [=Aš]. ST ♀ UMO. Netherlands. Hilversum. ST 3♀ ZMAN. The Hague. ST ♀ ZMAN. United Kingdom. England. Cambridge. ST ♂ CUMC, ST

♂ UMO, ST 2♂ BMNH. Essex. ST ♀ BMNH. Hertfordshire. ST ♀ BMNH. Oxford. ST ♀ UMO. No data. ST ♂ UMO, ST ♀ UMO (Bigot collection). Collin 1952: 115 [biology]; Sabrosky 1959: 231 [review, New World, biology], 1965: 794 [catalog, Nearctic]; Cole 1969: 419 [list, eastern USA]; Benson & Walker 1974: 50 [biology]; Máca 1978: 149 [Czech Republic], 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany], 2009a: 110 [distribution, Czech Republic]; Papp 1978: 8 [key, Hungary], 1998a: 268 [checklist, Switzerland], 2001: 312 [checklist, Hungary]; Lewis 1979: 233 [immatures]; Krivosheina 1981: 146 [redescription, discussion, immatures], 1984: 261 [catalog, Palearctic], 1999: 574 [review, Russian Far East]; Nowakowski 1991: 191 [checklist, Poland]; Beschovski & Georgiev 1993: 45 [biology]; Campadelli 1995: 129 [biology]; Pont 1995: 106 [notes on types]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Chandler 1998: 135 [checklist, British Isles]; Carles-Tolrá 2000: 153 [Spain], 2002: 176 [checklist, Spain]; Zuijlen 2002: 272 [checklist, Netherlands]; Máca *et al.* 2005: 283 [biology, Czech Republic]; Gaimari 2010: 1051 [discussion, biology]; Schacht & Heuck 2010: 440 [key], 441 [Germany].

Odinia mejjere. Misspelling. Cole 1969: 419 [distribution].

ornata (Zetterstedt). **PA:** Czech Republic, Finland, France, Germany, Great Britain, Italy, Norway, Russia, Slovakia, Spain, Sweden, Switzerland.

Milichia ornata Zetterstedt, 1838: 787. Norway. Bossekop; Sweden. Lycksele, Wilhelmina. ST ♂ 3♀ ZIL [♂ from Lycksele labeled as LT by Krivosheina in 1985, but not published]. Loew 1843: 311 [discussion]; Zetterstedt 1848: 2718 [review]; Schiner 1863: 298 [review, middle Europe], 1864: 71 [list, Europe]; Siebke 1877: 178 [review, Norway].

Odinia ornata. Becker 1905: 240 [generic combination, catalog, Palearctic, as synonym of *O. maculata* Meigen]; Tucker 1909: 303 [misidentification, Nearctic, Kansas]; Collin 1911: 233 [list]; Hennig 1938a: 8 [as synonym of *O. maculata* Meigen]; Stackelberg 1970: 233 [European Russia]; Shatalkin 1981: 44 [former USSR]; Krivosheina 1981: 147 [as ?*ornata*, identity questionable, redescription, discussion], 1984: 261 [catalog, Palearctic], 1999: 575 [review, Russian Far East]; Hackman 1980: 150 [checklist, Finland]; Chandler 1998: 135 [checklist, British Isles]; Máca 1999: 168 [checklist, Germany], 2004: 335 [faunistic record, Czech Re-

public], 2009b: 220 [discussion, faunistic record, Slovakia]; Carles-Tolrà 2001: 76 [Spain], 2002: 176 [checklist, Spain]; Máca *et al.* 2005: 283 [biology, Czech Republic]; von Tschirnhaus 2008a: 67 [checklist, Italy], 81 [discussion, biology, morphology; review, literature], 82 [records, France, Switzerland]; Kahanpää 2011: 46 [checklist, Finland].

parvipunctata Sabrosky. **NT:** West Indies (Puerto Rico, Virgin Islands).

Odinia parvipunctata Sabrosky, 1959: 235. Puerto Rico. Isabela: Guajataca Forest. HT ♂ USNM [USNM type number 64276]. Sabrosky 1965: 794 [catalog, Nearctic]; Gaud & Martorell 1973: 249 [distribution, Puerto Rico]; Prado 1975: 1 [catalog, Neotropics]; Filho *et al.* 2009: 66 [key].

penrithorum Cogan. **AF:** Namibia.

Odinia penrithorum Cogan, 1975: 475. Namibia. Otjitambi Farm: 43.5 km ESE Kamanjab. HT ♂ BMNH. Cogan 1980: 637 [catalog, Afrotropics].

photophila Papp. **PA:** Hungary.

Odinia photophila Papp, 1977a: 171. Hungary. Borsod-Abauj-Zemlen: Makkoshotyka. HT ♂ HNHM. Papp 1978: 7 [key, Hungary], 2001: 312 [checklist, Hungary]; Krivosheina 1984: 261 [catalog, Palearctic]; Schacht & Heuck 2010: 439 [key].

picta (Loew). **NE:** USA (Georgia, Pennsylvania).

Milichia picta Loew, 1861: 358. USA. Georgia. HT ♂ MCZ [MCZ type number 13452]. Osten Sacken 1878: 210 [catalog, Nearctic].

Odinia picta. Aldrich 1905: 651 [generic combination, catalog, Nearctic]; Sabrosky 1959: 232 [review]; 1965: 794 [catalog, Nearctic]; Cole 1969: 419 [list, eastern USA]; Poole & Gentili 1996: 202 [checklist, Nearctic].

pomona Cogan. **PA:** Great Britain, Netherlands, Switzerland.

Odinia pomona Cogan, 1969: 252. United Kingdom. England: Essex, Danbury. HT ♂ BMNH. Krivosheina 1984: 261 [catalog, Palearctic]; Papp 1998a: 268 [checklist, Switzerland], 2001: 312 [probable, checklist, Hungary]; Chandler 1998: 135 [checklist, British Isles]; Zuijlen 2002: 272 [checklist, Netherlands]; Schacht & Heuck 2010: 440 [key].

rossi MacGowan & Rotheray. **PA:** Great Britain.

Odinia sp. Rotheray *et al.* 2001: 81 [biology].

Odinia betulae MacGowan & Rotheray, 2002: 67. United Kingdom. Scotland: Wester Ross, Dundonnell. HT ♂ RSM. Preoccupied, Sabrosky, 1959. MacGowan & Rotheray 2002: 67 [biology].

Odinia rossi MacGowan & Rotheray, 2004: 24 [replacement name for *Odinia betulae* MacGowan & Rotheray (not Sabrosky)]. Gaimari 2010: 1051 [discussion, biology].

surumuana Prado. **NT:** Brazil (Roraima).

Odinia surumuana Prado, 1973: 484. Brazil. Roraima: Surumu. HT ♀ MNRJ. Prado 1975: 1 [catalog, Neotropics]; Prado and Papavero 2002: 1 [list, Brazil]; Filho *et al.* 2009: 66 [in key].

thaii Papp. **OR:** Thailand.

Odinia thaii Papp, in Papp, Merz & Földvari, 2006: 192. Thailand. Trang: Thung Khai Botanic Garden. HT ♀ HNHM.

trifida Carles-Tolrà. **PA:** Andorra, Spain.

Odinia trifida Carles-Tolrà, 1996: 2. Spain. Barcelona: Caldes Montbui. HT ♂ MCT. Carles-Tolrà 2002: 176 [checklist, Andorra, Spain]; Carles-Tolrà & Pujade-Villar 2003: 174 [checklist, Andorra].

trinotata Robineau-Desvoidy. **PA:** Austria, Belgium, Czech Republic, Denmark, France, Germany, Great Britain, Greece, Hungary, Italy, Netherlands, Poland, Romania, Slovakia, Spain, Switzerland.

Odinia trinotata Robineau-Desvoidy, 1830: 648. France. Saint-Sauveur. HT [sex not stated] MNHNP. Schiner 1863: 298 [synonymy], 1864: 71 [synonymy]; Rondani 1875: 170 [redescription, synonymy of *trinotatus* and *maculata*?]; Becker 1905: 240 [junior synonym of *maculata*]; Evenhuis *et al.* 2010: 121 [publication date]. **REVISED STATUS.**

Milichia maculata Meigen, 1830: 132. Europe. ST ♂ 2♀ MNHNP, NMW. Loew 1841: 26 [synonymy of *M. ornata* Zetterstedt], 1843: 310 [discussion], 1844: 324 [review]; Zetterstedt 1848: 2718 [discussion]; Schiner 1863: 298 [review, middle Europe], 1864: 71 [list, Europe]; Brauer 1883: 92 [note]; Becker 1902: 314 [deposition of primary types]; Morge 1975: 446 [list, Meigen plates], 1976: plate 245 [Meigen illustrations, 9a-e]; Evenhuis *et al.* 2010: 121 [publication date]. **NEW SYNONYM.**

Alticomerus trinotatus Rondani, 1856: 121. Italy. ST [sex not stated] MZLS. Syn. Rondani 1875.

Milichia femorata Schiner, 1863: 298. Austria. HT [sex not stated] NMW. Hendel 1920: 117 [junior synonym of *maculata*]. **NEW SYNONYM.**

Odinia maculata? Schiner [not Meigen]. Syn. Rondani 1875.

Odinia maculuta. Misspelling. Rondani 1875: 170 [note].

Odinia maculata. Becker 1905: 240 [generic combination, catalog, Palearctic, synonymy of *trinotata*]; Hendel 1920: 117 [key, syn-

onymy of *femorata*]; Séguy 1934: 628 [France]; Hennig 1938a: 8 [revision, immatures]; Collin 1952: 114 [review, locality data]; Trojan 1962: 4 [larvae], 6 [Poland, in key]; Papp 1978: 4 [key, Hungary], 1981: 227 [Hungary], 1998a: 268 [checklist, Switzerland], 2001: 312 [checklist, Hungary]; Krivosheina 1980: 672 [discussion], 1981: 143 [redescription, discussion], 1984: 261 [catalog, Palearctic], 1995: 9 [checklist, Italy]; Süss 1984: 9 [Bezzi collection, Italy]; Allen 1987: 42 [list, southeast London, England]; Máca 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany], 2007: 172 [list, Greece]; Bruyn 1991: 150 [checklist, Belgium]; Nowakowski 1991: 191 [checklist, Poland]; Carles-Tolrá *et al.* 1993: 87 [list, Spain]; Chandler 1998: 135 [checklist, British Isles]; Carles-Tolrá 2002: 176 [checklist, Spain]; Zuijlen 2002: 272 [checklist, Netherlands]; Máca *et al.* 2005: 283 [biology, Czech Republic]; Párvu 2007: 232 [Romania, discussion, key]; von Tschirnhaus 2008a: 84 [discussion, morphology; review literature; synonymy of *loewi*]; Schacht & Heuck 2010: 440 [key], 441 [Germany].

Odinia maculata variety *loewi* Collin, 1952: 115. Germany. Frankfurt. ST ♂♀ ZMHU (Riedel collection). No data, possibly Poland. Glogów, Malopolski [= Glogau]. ST ♂ ZMHU (Loew collection). Italy. Görz [= Gorizia]. ST ♂ NMW (Alte Sammlung). Máca 1978: 148 [Czech Republic]; Krivosheina 1981: 145 [redescription, discussion]; von Tschirnhaus 2008a: 84 [junior synonym of *maculata*]. **NEW SYNONYM.**

Odinia loewi. Papp 1977a: 173 [species status], 1978: 4 [key, Hungary], 1998a: 268 [checklist, Switzerland], 2001: 312 [checklist, Hungary]; Máca 1981: 302 [list, Czechoslovakia], 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany]; Krivosheina 1984: 261 [catalog, Palearctic]; Nowakowski 1991: 191 [checklist, Poland]; Pont 1995: 100 [notes on types]; Schacht & Heuck 2010: 439 [key], 441 [Germany].

williamsi Johnson. **NT:** Galápagos Islands.

Odinia williamsi Johnson, 1924: 90. Ecuador. Galápagos Islands: South Seymour. ST ♂♀ AMNH. Curran 1934: 332 [generic key, figure of head and wing]; Sabrosky 1959: 232 [review, New World]; Linsley & Usinger 1966: 170 [review, Galápagos insects]; Prado 1975: 1 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key].

xanthocera Collin. **NE:** Canada (British Columbia). **PA:** Czech Republic, Denmark, Finland, Germany, Great Britain, Ireland, Lithuania, Netherlands, Poland, Russia, Slovakia, Switzerland.

Odinia xanthocera Collin, 1952: 112. Czech Republic. Františkovy Lázně [= Franzensbad]. ST ♀ ZMHU. Germany. ST ♂ ZMHU (Riedel Collection). Netherlands. Baarn. ST ♂ ZMAN. Poland. ST 2♀ ZMHU (Loew Collection). Collin 1952: 112 [biology]; Shewell 1960: 630 [revision, biology]; Sabrosky 1965: 794 [catalog, Nearctic]; Cole 1969: 419 [western North America]; Stackelberg 1970: 233 [European Russia]; Máca 1978: 148 [Czech Republic], 1987b: 237 [checklist, Czech Republic, Slovakia], 1999: 168 [checklist, Germany]; Krivosheina 1981: 150 [redescription, discussion], 1984: 261 [catalog, Palearctic], 1999: 574 [review, Russian Far East]; Pulkkinen & Yang 1984: 11 [biology]; Yang 1984: 93 [biology, immatures]; Chandler 1989: 26 [note, Surrey, England], 1998: 135 [checklist, British Isles]; Nowakowski 1991: 191 [checklist, Poland]; Pakalniškis & Podénas 1992: 74 [biology, list, Lithuania]; Pont 1995: 175 [notes on types]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Papp 1998a: 268 [checklist, Switzerland], 2001: 312 [probable, checklist, Hungary]; Pakalniškis *et al.* 2000: 36 [checklist, Lithuania]; Zuijlen 2002: 272 [checklist, Netherlands]; Máca *et al.* 2005: 283 [biology, Czech Republic]; Gaimari 2010: 1051 [discussion, biology]; Schacht & Heuck 2010: 439 [key]; Kaharpää 2011: 46 [checklist, Finland].

Unidentified sp. Colless & McAlpine 1974: 95 [Australia]; Cogan 1989: 537 [catalog, Australasia/Oceania].

Unidentified sp. Gaimari (2011: 780) [United Arab Emirates, first family record on Arabian Peninsula; Turkey, first family record].

Unidentified sp. (*mejerei*-group). Báez 2000: 180 [Canary Islands, first family record].

Unidentified sp. (nr. *xanthocera*). Gimble & Knight 1970: 1315 [biology], 1971: 1420 [biology]; Grimble *et al.* 1971: 56 [biology].

Unidentified sp. Lyneborg 1969: 35 [Granada].

Genus **PROTODINIA** Hennig

Protodinia Hennig, 1965: 124. Type species, *electrica* Hennig, by original designation. Carpenter 1992: 440 [catalog, fossils]; Evenhuis 1994: 418 [catalog, fossils].

Protodinea. Misspelling. Spencer 1969: 13.

electrica Hennig. **PA:** Baltic Region (amber).

Protodinia electrica Hennig, 1965: 124. Fossil; Baltic Region (amber).
HT ♀ UZMC. McAlpine 1987: 866 [comment]; Carpenter 1992: 440 [catalog, fossils]; Evenhuis 1994: 418 [catalog, fossils]; Papp 1998b: 240 [comment]; von Tschirnhaus & Hoffeins 2009: 191 [in key, Baltic amber acalyprates].

Genus **TURANODINIA** Stackelberg

Turanodinia Stackelberg, 1944: 127. Type species, *coccidarum* Stackelberg, by original designation. Cogan 1975: 479 [review, Afrotropics], 1980: 637 [catalog, Afrotropics]; Krivosheina 1980: 672 [clarification of genus definition], 1984: 262 [catalog, Palearctic]; Krivosheina & Krivosheina 1996: 141 [key, revision, Middle Asia]; Papp 2001: 313 [checklist, Hungary].

Odinia (*Turanodinia*). Papp 1987: 287 [Hungary].

coccidarum Stackelberg. **PA:** Turkmenistan, Uzbekistan.

Turanodinia coccidarum Stackelberg, 1944: 127. Uzbekistan. Vicinity of Tashkent. HT ♂ ZISP. Krivosheina 1980: 672 [redescription, biology], 1984: 262 [catalog, Palearctic]; Krivosheina & Krivosheina 1996: 144 [redescription, biology]; Nartshuk 2003: 211 [discussion, biology]; Gaimari 2010: 1051 [discussion, biology].

nigripalpis Papp. **PA:** Hungary.

Turanodinia nigripalpis Papp, 2002: 144. Hungary. Budapest. HT ♀ HNHM.

stackelbergi Krivosheina & Krivosheina. **PA:** Turkmenistan, Uzbekistan.

Turanodinia stackelbergi Krivosheina & Krivosheina, 1996: 141. Turkmenistan. Geok-Tepe District: Ashgabat suburbs. HT ♂ ZMM. Krivosheina & Krivosheina 1996: 141 [biology, immatures].

stackelbergi graciosa Krivosheina & Krivosheina. **PA:** Kazakhstan, Turkmenistan.

Turanodinia stackelbergi graciosa Krivosheina & Krivosheina, 1996: 143. Kazakhstan. Dokuchaevka. HT ♂ ZMM.

tisciae (Papp). **PA:** Hungary.

Odinia (*Turanodinia*) *tisciae* Papp, 1987: 287. Hungary. Kiskunság National Park. HT ♂ HNHM.

Turanodinia tisciae. Papp 1995: 19 [generic combination, discussion, biology, immatures], 2001: 313 [checklist, Hungary].

Subfamily TRAGINOPINAE Hennig

Traginopinae Hennig, 1965: 120 [family-group status]. Type genus, *Traginops* Coquillett. Hennig 1969: 617 [classification], 1973: 60 [discussion]; Sabrosky 1999: 310 [family-group catalog]; Gaimari 2007: 2 [in key, New World], 2010: 1052 [in key, New World, Central America, discussion].

Genus COGANODINIA Gaimari & Mathis, gen. nov.

Coganodinia Gaimari & Mathis gen. nov. Type species, *Turanodinia cornesi* Cogan, by present designation. Diagnosis. In describing *Turanodinia cornesi* and rediagnosing the genus, the characters cited by Cogan (1975) are specifically in opposition to the later circumscription of *Turanodinia* (Krivosheina 1980; Krivosheina & Krivosheina 1996), and provided other information to determine that this species does not belong to a described genus of Odiniidae, which was verified through study of the Holotype. The new genus is characterized as follows: head with lunule large, extending half the distance between antennal base and anterior ocellus, such that face more or less in line with frons; mesonotum grayish brown, without dark markings; dorsocentral setae 4 (1+3); prescutellar acrostichal seta absent or reduced; wing hyaline, lacking cross-vein dm-cu. The genus differs specifically from *Turanodinia* by the above characteristics and by the globular condition of the first flagellomere (slightly longer than high in *Turanodinia*), the eye is higher than long (longer than high in *Turanodinia*), and there are 2 short spurs on the middle tibia (only one in *Turanodinia*). See Cogan (1975) for additional characteristics and figures (head, wing). Other relevant diagnostic characteristics include: ocellar triangle equilateral, placed forward from vertex; frons sloping in same plane with lunule and frons; genal seta absent. Etymology. Named in honor of Brian H. Cogan, for his introducing the odiniid fauna of Africa. The generic name is feminine.

cornesi (Cogan). **AF:** Nigeria.

Turanodinia cornesi Cogan, 1975: 479. Nigeria. Western Nigeria: Lagos, Ikoyi. HT ♀ BMNH. Cogan 1980: 637 [catalog, Afrotropics]; Krivosheina 1980: 672 [discussion, exclusion from *Turanodinia* but without alternate placement], 1984: 260 [discussion].

Coganodinia cornesi. **NEW COMBINATION.**

Genus HELGREELIA Gaimari

Helgreelia Gaimari, 2007: 3. Type species, *albeto* Gaimari, by original designation. Gaimari 2007: 3 [in key, New World genera; key to species], 2010: 1053 [in key, New World genera, Central America]; Filho *et al.* 2009: 66 [in key].

albeto Gaimari. NT: Costa Rica.

Helgreelia albeto Gaimari, 2007: 4. Costa Rica. Guanacaste: Estación Maritza, Rio Tempisquito Sur. HT ♀ INBIO. Gaimari 2007: 3 [in key to species], 2010: 1053 [Central America]; Filho *et al.* 2009: 66 [in key].

gaimarii Filho, Esposito & dos Santos. NT: Brazil.

Helgreelia gaimarii Filho, Esposito & dos Santos, 2009: 62. Brazil. Pará: Bragança, Fazenda Salina. HT ♂ MPEG. Gaimari 2010: 1053 [discussion].

parkeri Gaimari. NT: Costa Rica.

Helgreelia parkeri Gaimari, 2007: 5. Costa Rica. Guanacaste: 3km SE Rio Naranjo. HT ♂ USNM. Gaimari 2007: 3 [in key to species], 2010: 1053 [Central America]; Filho *et al.* 2009: 66 [in key].

Genus LOPESIODINIA Prado

Lopesiodinia Prado, 1973: 500. Type species, *diversa* Prado, by original designation. Prado 1973: 502 [key to species]; Gaimari 2007: 2 [in key, New World genera], 2010: 1053 [in key, New World genera, Central America]; Filho *et al.* 2009: 66 [in key].

Lopesiodinia. Misspelling. Prado 1975: 2 [catalog, Neotropics].

alvarengai Prado. NT: Brazil (Pará).

Lopesiodinia alvarengai Prado, 1973: 503. Brazil. Pará: Jacareacanga. HT ♀ MNRJ. Prado 1975: 2 [catalog, Neotropics]; Prado and Papavero 2002: 1 [list, Brazil]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1053 [discussion].

diversa Prado. NT: Brazil (Rio de Janeiro).

Lopesiodinia diversa Prado, 1973: 502. Brazil. Rio de Janeiro: Frago-so. HT ♂ MNRJ. Prado 1975: 2 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1053 [discussion].

Lopesiodinia lanei. *Lapsus*. Prado 1973: 504.

Genus NEOSCHILDOMYIA Gaimari

Neoschildomyia Gaimari, 2007: 6. Type species, *fusca* Gaimari, by original designation. Gaimari 2007: 6 [in key, New World genera], 2010: 1053 [in key, New World genera, Central America].

fusca Gaimari, 2007: 6. NT: Costa Rica.

Neoschildomyia fusca Gaimari, 2007: 6. Costa Rica. Alajuela: Upala. HT ♂ INBIO. Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1053 [Central America].

Genus NEOTRAGINOPS Prado

Neotraginops Prado, 1973: 504. Type species, *Traginops clathratus* Hendel, by original designation. Prado 1975: 2 [catalog, Neotropics]; Gaimari 2007: 2 [in key, New World genera], 2010: 1053 [in key, New World genera, Central America].

clathratus (Hendel). NT: Brazil (Espírito Santo, Goiás, Mato Grosso, Minas Gerais, Rio de Janeiro, Santa Catarina, São Paulo), Colombia, Paraguay, Peru.

Traginops clathrata Hendel, 1909: 52. Peru. Vilcanota. ST ♀ HNHM. Paraguay. ST ♀ HNHM. Shewell 1960: 628 [note, Brazil]; Hennig 1938b: 213 [discussion], 1971: 48 [figure].

Traginops clathratus. Steyskal 1963: 51 [correct spelling].

Neotraginops clathratus. Prado 1973: 506 [generic combination], 1975: 2 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1053 [discussion].

Genus PARATRAGINOPS Hendel

Paratraginops Hendel, 1917: 38. Type species, *Traginops pilicornis* Cresson, by original designation. Shewell 1960: 625 [review, New World]; Prado 1973: 487 [review, Neotropics], 1975: 2 [catalog, Neotropics]; Gaimari 2007: 2 [in key, New World genera], 2010: 1053 [in key, New World genera, Central America]; Filho *et al.* 2009: 66 [in key].

Traginops (Paratraginops). Cogan 1975: 483 [review, Afrotropics, new status as subgenus], 1980: 637 [catalog, Afrotropics].

pilicornis (Cresson). NT: Brazil (Mato Grosso, São Paulo), Guyana.

Traginops pilicornis Cresson, 1912: 395. Guyana. Bartica. HT ♂ ANSP [ANSP type number 5254].

Paratraginops pilicornis. Hendel 1917: 38 [generic combination]; Shewell 1960: 626 [key]; Prado 1973: 488 [revision, Brazil], 1975: 2 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [discussion].

plaumanni Shewell. **NT:** Brazil (Espírito Santo, Goiás, Minas Gerais, Rio de Janeiro, Santa Catarina, São Paulo), Panama.

Paratraginops plaumanni Shewell, 1960: 626. Brazil. Santa Catarina: Nova Teutônia, 300-500 m. HT ♂ CNC [CNC type number 7124]. Prado 1973: 490 [revision], 1975: 2 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [Central America].

ruwenzoricus (Cogan). **AF:** Uganda.

Traginops (Paratraginops) ruwenzoricus Cogan, 1975: 483. Uganda. Ruwenzori Range: Kilembe, 1372 m. HT ♀ BMNH. Cogan 1980: 637 [catalog, Afrotropics].

Paratraginops ruwenzoricus. **NEW COMBINATION.**

Genus PRADOMYIA Gaimari

Pradomyia Gaimari, 2007: 7. Type species, *hadromera* Gaimari, by original designation. Gaimari 2007: 2 [in key, New World genera], 2010: 1053 [in key, New World genera, Central America].

hadromera Gaimari 2007: 8. **NT:** Costa Rica.

Pradomyia hadromera Gaimari, 2007: 8. Costa Rica. Guanacaste: Guanacaste. HT ♂ INBIO. Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [Central America].

Genus SCHILDOMYIA Malloch

Schildomyia Malloch, 1926: 26. Type species, *vittithorax* Malloch, by original designation. Curran 1934: 332 [generic key]; Prado 1973: 491 [revision, Neotropics, key to world species], 1975: 2 [catalog, Neotropics]; Krivosheina 1984: 262 [catalog, Palearctic], 1999: 576 [review, Russian Far East]; Gaimari 2007: 2 [in key, New World genera], 2010: 1053 [in key, New World genera, Central America]; Filho *et al.* 2009: 66 [in key].

brevihirta Malloch. **NT:** Panama, Peru.

Schildomyia brevihirta Malloch, 1926: 27. Panama. Canal Zone: Gatún Lake, Cano Saddle. HT ♂ USNM [USNM type number 28461]. Prado 1975: 2 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [Central America].

flavida Prado. **NT:** Brazil (São Paulo).

Schildomyia flavida Prado, 1973: 499. Brazil. São Paulo: Cantareira. HT ♀ MNRJ. Prado 1975: 2 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key].

goyana Prado. **NT:** Brazil (Federal District).

Schildomyia goyana Prado, 1973: 498. Brazil. Federal District: Brasília (Parque Municipal). HT ♂ MNRJ. Prado 1975: 3 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key].

lanei Prado. **NT:** Brazil (Amapá, Mato Grosso).

Schildomyia lanei Prado, 1973: 492. Brazil. Mato Grosso: Chapada, 600 m. HT ♂ MZUSP. Prado 1975: 3 [catalog, Neotropics]; Prado and Papavero 2002: 1 [list, Brazil]; Filho *et al.* 2009: 66 [in key].

peruviana Hennig. **NT:** Peru.

Schildomyia peruviana Hennig, 1969: 618. Peru. Madre de Dios: Avispas, 400 m. HT ♂ CNC [CNC type number 9934]. Prado 1975: 3 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key].

punctifrons Malloch. **NT:** Brazil, Costa Rica, Panama.

Schildomyia punctifrons Malloch, 1926: 28. Costa Rica. Alajuela: San Mateo, Higuito. HT ♂ USNM [USNM type number 28462]. Prado 1975: 3 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [Central America].

reticulata Prado. **NT:** Belize, Brazil (São Paulo), Costa Rica, Mexico (Veracruz), Panama.

Schildomyia reticulata Prado, 1973: 494. Brazil. São Paulo: Andes. HT ♂ MZUSP. Prado 1975: 3 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [Central America].

trinidadensis Hennig. **NT:** Trinidad.

Schildomyia trinidadensis Hennig, 1969: 620. Trinidad. Arima Valley, 800-1200 ft. HT ♀ AMNH. Prado 1975: 3 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [Central America].

vittithorax Malloch. **NT:** Costa Rica, Panama, Peru.

Schildomyia vittithorax Malloch, 1926: 27. Costa Rica. Alajuela: San Mateo, Higuito. HT ♀ USNM [USNM type number 28460]. Hennig 1969: 618 [review, Peru]; Prado 1975: 3 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [Central America].

yushimai Kato. **PA:** Japan, Russia (Far East).

Schildomyia yushimai Kato, 1952: 4. Japan. Nagano: Nagaoka-mura. HT ♀ ITLJ. Krivosheina 1984: 262 [catalog, Palearctic], 1999: 577 [review, Russian Far East]; Morimoto 1989: 809 [checklist, Japan].

yushimai chinganensis Shatalkin. **PA:** Russia.

Schildomyia yushimai chinganensis Shatalkin, 1981: 42. Russia. Malyj Khingan: river Dičun, Khabarovskij kraj. HT ♂ ZMM. Krivosheina 1984: 262 [catalog, Palearctic], 1999: 577 [review, Russian Far East]; Ozerov 2010: 148 [type information].

Genus SHEWELLIA Hennig

Shewellia Hennig, 1969: 621. Type species, *agromyzina* Hennig, by original designation. Gaimari 2007: 3 [in key, New World genera], 2010: 1053 [in key, New World genera, Central America].

agromyzina Hennig. NT: Costa Rica, Panama, Peru.

Shewellia agromyzina Hennig, 1969: 621. Peru. Madre de Dios: Avispas, 400 m. HT ♂ CNC. Prado 1975: 2 [catalog, Neotropics]; Filho *et al.* 2009: 66 [in key]; Gaimari 2010: 1054 [Central America].

Genus TRAGINOPS Coquillett

Traginops Coquillett, 1900: 429. Type species, *irroratus* Coquillett, by original designation. Curran 1934: 332 [generic key]; Shewell 1960: 627 [review]; Sabrosky 1965: 794 [catalog, Nearctic]; Cole 1969: 419 [western North America]; Cogan 1975: 480 [review, Afrotropics], 1980: 637 [catalog, Afrotropics]; Steyskal 1977: 242 [catalog, Orient]; Shatalkin 1981: 40 [former USSR]; Krivosheina 1984: 262 [catalog, Palearctic], 1999: 575 [review, Russian Far East]; Morimoto 1989: 809 [checklist, Japan]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Gaimari 2007: 2 [in key, New World genera], 2010: 1053 [in key, New World genera].

Traganops. Misspelling. Johnson 1925: 289.

irroratus Coquillett. **NE:** Canada (Ontario, Quebec), USA (Florida, Georgia, Maryland, Massachusetts, Michigan, New Mexico, Pennsylvania, Tennessee, Virginia).

Traginops irrorata Coquillett, 1900: 430. USA. Georgia (southern). LT ♂ USNM (USNM type number 4392) [designated by Steyskal 1963: 52]. Aldrich 1905: 652 [catalog, Nearctic]; Johnson 1925: 289 [catalog, New England]; Hennig 1938b: 213 [discussion]; Steyskal 1951: 123 [biology]; Shewell 1960: 627 [review, larva and puparium].

Traginops irroratus. Steyskal, 1963: 51 [revision, correct spelling]; Sabrosky 1965: 794 [catalog, Nearctic]; Süss 1984: 10 [Bezzi col-

lection, Maryland]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Vlach *et al.* 2010: 82 [habitat association, Tennessee].

moremii Cogan. **AF:** Botswana.

Traginops (Traginops) moremii Cogan, 1975: 481. Botswana. Moremi Reserve. HT ♂ BMNH. Cogan 1980: 638 [catalog, Afrotropics].

orientalis Meijere. **OR:** Indonesia. **PA:** China, Russia.

Traginops orientalis Meijere, 1911: 428. Indonesia. Java: Semarang. HT [sex not stated] ZMAN [apparently lost (Jong 2000: 159)]. Hennig 1938b: 205 [discussion, illustrations, genitalia]; Steyskal 1977: 242 [catalog, Orient]; Shatalkin 1981: 40 [former USSR]; Krivosheina 1984: 262 [catalog, Palearctic], 1999: 576 [review, Russian Far East]; Jong 2000: 158 [type information].

Traginops polita. *Nomen nudum*. Hennig [attributed to Meijere], 1938b: 207 [in context, this was clearly an error referring to *Traginops orientalis*].

orientalis naganensis Kato. **PA:** Japan.

Traginops orientalis naganensis Kato, 1952: 6. Japan. Nagano: Nagaoka-mura. HT ♂ ITLJ. Krivosheina 1984: 262 [catalog, Palearctic], 1999: 576 [review, Russian Far East]; Morimoto 1989: 809 [checklist, Japan].

purpurops Steyskal. **NE:** USA (Georgia, Kansas, Maryland, Michigan, New Mexico, Texas, Virginia).

Traginops purpurops Steyskal, 1963: 53. USA. Michigan: Wayne, Detroit. HT ♂ USNM. Steyskal 1963: 53 [on trunk of *Robinia pseudoacacia*]; Sabrosky 1965: 794 [catalog, Nearctic]; Poole & Gentili 1996: 202 [checklist, Nearctic]; Gaimari 2010: 1051 [discussion, biology].

shewelli Cogan. **AF:** Uganda.

Traginops (Traginops) shewelli Cogan, 1975: 482. Uganda. Mulago: Kampala. HT ♂ BMNH. Cogan 1980: 638 [catalog, Afrotropics]. Unidentified sp. Colless & McAlpine 1974: 95 [Australia]; Cogan 1989: 537 [catalog, Australasia/Oceania].

Summary of taxonomic changes

Several taxonomic changes have resulted from the compilation of this catalog, and are summarized below:

NEW TAXON:

Coganodinia Gaimari & Mathis, description of new genus.

CHANGE IN STATUS:

Odinia trinotata Robineau-Desvoidy, resurrected from synonymy.

Paratraginops Hendel, elevated to full genus.

NEW SYNONYMS:

Milichia maculata Meigen, 1830 = *Odinia trinotata* Robineau-Desvoidy, 1830.

Milichia femorata Schiner, 1863 = *Odinia trinotata* Robineau-Desvoidy, 1830.

Odinia maculata var. *loewi* Collin, 1952 = *Odinia trinotata* Robineau-Desvoidy, 1830.

NEW COMBINATIONS:

Coganodinia cornesi (Cogan), from *Turanodinia* Stackelberg.

Paratraginops ruwenzoricus (Cogan), from *Traginops* Coquillett.

REMOVAL FROM FAMILY:

Odinia peleterii Robineau-Desvoidy, family placement unknown.

Taxa formerly considered to be Odiniidae

Odinia immaculata Coquillett

Odinia immaculata Coquillett, 1902: 185. USA. New Hampshire: Mt. Washington. HT ♀ USNM [USNM type number 6649]. Aldrich 1905: 651 [catalog, Nearctic]; Sabrosky 1959: 224 [as synonym of *Phytoliriomyza perpusilla* (Meigen) (Agromyzidae)].

Phytoliriomyza immaculata. Frick 1965: 803 [catalog, Nearctic].

Odinia peleterii Robineau-Desvoidy

Odinia peleterii Robineau-Desvoidy, 1830: 649. France. Paris. ST [sex and repository not stated]. Coquillett 1902: 185 [discussion]; Becker 1905: 240 [catalog, Palearctic]; Hennig 1938a: 9 [discussion]; Evenhuis *et al.* 2010: 121 [listing], 159 [remarks].

Note: Original description lacks characteristics to properly place species, and is not consistent with any known Odiniidae – specifically (translated from French): “Length, $\frac{3}{4}$ line. All the body black-brown; antennal base reddish; a little greyish-brown on the protho-

rax; the abdominal segments each with a small whitish transverse line at their insertion; knees and tarsi pale brown; wings rather clear." Possibly with no existing specimens – specifically (translated from French): "This insect was found in the woods of Paris by the Count of St. Fargeaux. I had initially placed it in the genus *Umbrina*. Not having any individual before my eyes today, I place it in the genus *Odinia*, which it appears to me to have all the characters." Evenhuis *et al.* (2010) interpreted Robineau-Desvoidy's use of the name *Umbrina* as the proposal of a new name, with *Odinia peleterii* as the type species. So, the genus was a proposal originally in synonymy with *Odinia*, but was later made available by Scudder (1882: 348), although it was preoccupied by the fish genus *Umbrina* Cuvier (1816: 297).

***Milichia tamaricis* Bigot**

Milichia tamaricis Bigot, 1888: 10. Tunisia. LT ♂ INRA. Munari & Pont 2004: 11 [rediscovery of type series, lectotype designation, discussion of identity, nomen oblitum, = *Tethina flavigenis* (Hendel) (Tethinidae) as nomen protectum]; Munari & Mathis 2010: 52 [catalog, in Canacidae, Tethininae].

Odinia tamaricis. Becker 1905: 240 [generic combination; catalog, Palearctic]; Hennig 1938a: 7 [revision, = *Rhinoessa pallipes* Loew (Tethinidae)]; Krivosheina 1984: 262 [catalog, Palearctic, as doubtful species of *Odinia*].

***Milichia tarsata* Zetterstedt**

Milichia tarsata Zetterstedt, 1848: 2723. Sweden. Öland [= Ölandia]: Gärdslösa. ST [sex not stated] ZIL. Gotland [= Gottlandia]: Öja. ST [sex not stated] ZIL. Schiner 1863: 298 [review, Europe]; Krivosheina 1984: 262 [moved to Milichiidae]; Papp 1984: 117 [catalog, Palearctic, = *Phyllomyza flavitarsis* (Meigen) (Milichiidae)].

Odinia tarsata. Becker 1905: 240 [generic combination, catalog, Palearctic].

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