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## **An Annotated Catalog of the Leiodidae (Coleoptera) of the Nearctic Region (Continental North America North of Mexico)**

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## AN ANNOTATED CATALOG OF THE LEIODIDAE (COLEOPTERA) OF THE NEARCTIC REGION (CONTINENTAL NORTH AMERICA NORTH OF MEXICO)

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### ABSTRACT

Presented is an annotated catalog of the 38 genera and 382 species of Leiodidae known to occur in the Nearctic Region of North America north of Mexico (the continental USA and Canada). Information on types, distributions, and biologies is included. Twelve of the species also or probably occur in Mexico, and 16 of the species also occur in Europe and/or Asia (*i.e.*, are Holarctic in distribution). *Ptomaphagus (Appadelopsis) neojonesi* Peck and Newton is proposed as a *nomen novum* (replacement name) for *Ptomaphagus (Adelops) jonesi* Peck, 1978, preoccupied by *Ptomaphagus valentinei jonesi* Jeannel, 1949. *Stereus arenarius* Peck and Cook, 2009 is transferred to *Pseudotriarthron* as *P. arenarium* (Peck and Cook, 2009), **new combination**.

Key Words: small carrion beetles, round fungus beetles, mammal nest beetles, USA, Canada, checklist

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## INTRODUCTION

The family Leiodidae is composed of small beetles, from 1 to 8 mm in length; usually of an ovoid and compact shape; and usually with 11-segmented antennae with an interrupted 5-segmented club, with segment 8 smaller than 7 or 9. What are grouped here have been placed under several family names, but all share the derived (but difficult to see) character of a usually nearly enclosed gutter ringing the antennal articulation on the distal face of several segments (usually 7, 9, and 10), and with internal sensory vesicles (sometimes called "Hamman's organs") studded with sense receptors (Peck 1977a). The receptors are assumed to be olfactory, but may also be hygroreceptors in at least some taxa (Lucarelli and Sbordoni 1977).

The higher classification used here follows advances reported by Lawrence (1982), Lawrence and Newton (1982), Newton (1984), Newton and Thayer (1992), and Lawrence and Newton (1995). These classifications are synthesized by Newton (1998), which is the basis for the higher classification used here. All the six world subfamilies of Leiodidae (*sensu lato*) occur in North America except Camiarinae, which is restricted to south temperate parts of the southern continents. Newton (2016) presented the most recent summary of the world distribution and diversity of Leiodidae (by subfamily and tribe) and discussed recent advances in our understanding of the monophyly and phylogenetic relationships of the family. As of mid-2015, the family included 4,135 described species placed in 374 genera (Newton 2016).

Members of the Leiodidae are, for the most part, scavengers or fungivores, feeding on fungi or various decaying organic materials (often carrion) in moist habitats or the microorganisms of decay. The two biggest subfamilies are the Leiodinae and Cholevininae.

The Leiodinae, also called the round fungus beetles, are often globose and compact in body

shape, and many species are capable of contracting into a ball-like form. Some species are specialized for digging in loose or sandy soils where they feed on certain subterranean fungi; some are specialized predators on plasmodia or spores of slime molds (Russell 1979; Lawrence and Newton 1980; Stephenson *et al.* 1994); and others feed on soft fungi or are more generally saprophagous (Wheeler 1984b).

The Cholevininae (= Catopidae, Leptodiridae), also called the small carrion beetles, are more elliptical in body shape and feed on carrion, dung, and other rotting matter. Some species are specialized as scavenging occupants of ant nests, caves, or the nests and burrows of vertebrates.

The very interesting subfamily Platypsyllinae is composed of species that are scavengers or ectoparasites in the nests or on the bodies of various insectivore and rodent mammal hosts. These beetles are small (2–5 mm in length) and usually reddish or yellowish brown in color, with a flattened, oblong body, reduced or absent eyes and wings, and abundant short, recumbent body hairs or spines. They can be called the mammal nest beetles, because all species, as adults and larvae, are found in the nests of their hosts and sometimes in their fur.

The subfamilies Catopocerinae and Coloninae have no established common names, and probably all feed on subterranean fungi.

Collecting must usually concentrate on the particular habits or habitats of the genera or species sought. Many can be taken at baits or in baited pitfall traps; by sifting and Berlese, Tullgren, or Winkler extraction of litter or fungi; by sweeping low forest vegetation on still, warm, and humid evenings; by use of large-area flight intercept traps (Peck and Davies 1980); or use of car-mounted nets when driving through suitable habitat at dusk (Peck and Cook 1992). Specimens are only rarely taken in light traps.

Keys for identification (missing newly described genera) to most of the North American genera are in Peck (1990, 2000a).

General local studies of North American Leiodidae were by Chandler and Peck (1992) (New Hampshire), Peck and Anderson (1985) (Ontario), and Levesque and Levesque (1984) (Québec). The fauna of Atlantic Canada is summarized by Majka and Langor (2008). The fauna for all of Canada and Alaska is summarized by Bousquet *et al.* (2013), with a total of 182 species. The Leiodidae of Mexico were reviewed by Peck (2000b), of Costa Rica by Peck and Newton (2001), and of the West Indies by Peck and Cook (2016a). Peck *et al.* (1998) is now an outdated catalog of the Leiodidae of the West Indies, Mexico, Central America, and South America. Some of these publications contain keys to genera of the leiodids in their geographic areas. Additional references to species of Cholevinae and Platyp-syllinae within and outside of North America can be found in Perreau (2000), and the most recent summary of the distribution of Palaearctic Leiodidae (including several Holarctic species) is in Perreau (2015).

Marske and Ivie (2003), in a summary of species diversity of the beetle families of the USA and Canada, ranked the Leiodidae, then with 30 genera and 324 species, as the 17<sup>th</sup> largest among the 129 beetle families known in America north of Mexico, with 1.29% of the total of beetle species of North America. The present total of 38 genera and 382 species does not change the ranking. The regions with the generally greatest generic and species abundances are the states of the southern Appalachian Mountains and the states and provinces of the Pacific Northwest, but numbers vary by differences in geographic area and collecting and identification efforts. Twelve of the species also or probably occur in northern Mexico, and sixteen of the species occur in Europe and/or Asia (*i.e.*, they are Holarctic in distribution).

All genera have received modern review or revision and the level of knowledge of this family for North America is now at a mature level. A summary of the fauna is appropriate.

#### CONSTRUCTION OF THE CATALOG

The higher classification used here is that of Newton (1998) with further documentation from Bouchard *et al.* (2011). All taxa are arranged in alphabetical order, including by subgenera or species groups (if relevant). Each generic entry indicates the type species in its original combination, and the overall distribution and current number of described species worldwide (these data are drawn from an up-to-date world database catalog of the family maintained by AFN). Generic synonyms are also indicated unless they are not relevant to the North American fauna. Each species entry indicates the valid name (with original genus in parentheses if

not the current genus), major references, status and location of primary type specimens (*i.e.*, holotypes, lectotypes, neotypes, or syntypes), type locality, North American distribution by state or province, extra-limital distributions, and notes and pertinent references on larvae, biology, etc. Synonyms also list this information, and are cited in their original generic combination if different from the current combination, but synonyms not relevant to the North American fauna are excluded. Mis-identifications and misspellings are generally not included unless of long-term significance. Only primary literature is cited. Lists and catalogs are not referenced unless of nomenclatural or distributional relevance. Acronyms for museums or collections containing type specimens usually follow those of Arnett *et al.* (1997). The collections with types of North American species (north of Mexico) are as follows:

AMNH	American Museum of Natural History, New York, NY, USA
BMNH	The Natural History Museum, London, UK
CASC	California Academy of Sciences, San Francisco, CA, USA
CDAE	California Department of Food and Agriculture, Sacramento, CA, USA
CMNC	Canadian Museum of Nature, Ottawa, ON, Canada
CMNH	Carnegie Museum of Natural History, Pittsburgh, PA, USA
CNCI	Canadian National Collection of Insects, Ottawa, ON, Canada
CUIC	Department of Entomology, Cornell University, Ithaca, NY, USA
DENH	University of New Hampshire Insect Collection, Durham, NH, USA
FMNH	Field Museum of Natural History, Chicago, IL, USA
FSCA	Florida State Collection of Arthropods, Gainesville, FL, USA
HDPC	Hermann Daffner private collection, Günzenhausen, Fuchsbergstrasse 19, D-8057 Eching, Germany
HNHM	Hungarian Natural History Museum, Budapest, Hungary
INHS	Illinois Natural History Survey, Urbana, IL, USA
MCZC	Museum of Comparative Zoology, Harvard University, Cambridge, MA, USA
MNHN	Museum National d'Histoire Naturelle, Paris, France
MZHF	Zoological Museum, Helsinki, Finland
MZLU	Museum of Zoology, Lund University, Lund, Sweden
NHRS	Naturhistoriska Riksmuseet, Stockholm, Sweden

NMPC	National Museum (Natural History), Prague, Czech Republic	CA	California	123 species
OSUC	The Ohio State University, Colum- bus, OH, USA	CO	Colorado	21 species
OSUC	The Ohio State University, Colum- bus, OH, USA	CT	Connecticut	21 species
OSUC	The Ohio State University, Colum- bus, OH, USA	DC	District of Columbia	30 species
OSUO	Oregon State University, Corvallis, OR, USA (containing the Melville Hatch collection)	DE	Delaware	3 species
OSUO	Oregon State University, Corvallis, OR, USA (containing the Melville Hatch collection)	FL	Florida	42 species
OSUO	Oregon State University, Corvallis, OR, USA (containing the Melville Hatch collection)	GA	Georgia	58 species
OXUM	Hope Entomological Collections, Oxford University, Oxford, UK	GL	Greenland	0 species
OXUM	Hope Entomological Collections, Oxford University, Oxford, UK	IA	Iowa	22 species
PURC	Purdue University, West Lafayette, IN, USA	ID	Idaho	39 species
PURC	Purdue University, West Lafayette, IN, USA	IL	Illinois	52 species
RMNH	Nationaal Natuurhistorische Museum, Leiden, Netherlands	IN	Indiana	39 species
RMNH	Nationaal Natuurhistorische Museum, Leiden, Netherlands	KS	Kansas	18 species
SIIS	Staten Island Institute of Arts and Sciences, Staten Island, NY, USA	KY	Kentucky	55 species
SIIS	Staten Island Institute of Arts and Sciences, Staten Island, NY, USA	LA	Louisiana	25 species
SMDV	Spencer Entomological Museum, University of British Columbia, Vancouver, BC, Canada	LB	Labrador	10 species
SMDV	Spencer Entomological Museum, University of British Columbia, Vancouver, BC, Canada	MA	Massachusetts	51 species
SMDV	Spencer Entomological Museum, University of British Columbia, Vancouver, BC, Canada	MB	Manitoba	60 species
TAMU	Texas A&M University, College Station, TX, USA	MD	Maryland	29 species
TAMU	Texas A&M University, College Station, TX, USA	ME	Maine	50 species
UADE	Department of Entomology Collec- tion, University of Arkansas, Fayette- ville, AR, USA	MI	Michigan	54 species
UADE	Department of Entomology Collec- tion, University of Arkansas, Fayette- ville, AR, USA	MN	Minnesota	32 species
UMSP	University of Minnesota, St. Paul, MN, USA	MO	Missouri	25 species
UMSP	University of Minnesota, St. Paul, MN, USA	MS	Mississippi	29 species
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC, USA	MT	Montana	35 species
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC, USA	NB	New Brunswick	47 species
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC, USA	NC	North Carolina	69 species
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC, USA	ND	North Dakota	7 species
UZIUI	Museum of Evolution, Zoology section (formerly Zoological Mu- seum), Uppsala University, Uppsala, Sweden	NE	Nebraska	9 species
UZIUI	Museum of Evolution, Zoology section (formerly Zoological Mu- seum), Uppsala University, Uppsala, Sweden	NF	Newfoundland	32 species
UZIUI	Museum of Evolution, Zoology section (formerly Zoological Mu- seum), Uppsala University, Uppsala, Sweden	NH	New Hampshire	77 species
WFBM	W. F. Barr Entomological Museum, University of Idaho, Moscow, ID, USA	NJ	New Jersey	33 species
WFBM	W. F. Barr Entomological Museum, University of Idaho, Moscow, ID, USA	NM	New Mexico	27 species
WFBM	W. F. Barr Entomological Museum, University of Idaho, Moscow, ID, USA	NS	Nova Scotia	53 species
WSUC	Maurice T. James Entomological Collection, Washington State Uni- versity, Pullman, WA, USA	NT	Northwest Territories	17 species
WSUC	Maurice T. James Entomological Collection, Washington State Uni- versity, Pullman, WA, USA	NU	Nunavut	1 species
WSUC	Maurice T. James Entomological Collection, Washington State Uni- versity, Pullman, WA, USA	NV	Nevada	22 species
ZMAS	Zoological Museum of the Academy of Sciences, St. Petersburg, Russia	NY	New York	56 species
ZMAS	Zoological Museum of the Academy of Sciences, St. Petersburg, Russia	OH	Ohio	28 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	OK	Oklahoma	40 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	ON	Ontario	111 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	OR	Oregon	80 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	PA	Pennsylvania	47 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	PE	Prince Edward Island	2 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	PM	St. Pierre-Miquelon	1 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	QC	Québec	101 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	RI	Rhode Island	9 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	SC	South Carolina	41 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	SD	South Dakota	14 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	SK	Saskatchewan	40 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	TN	Tennessee	48 species
ZMHB	Zoological Museum, Humboldt Uni- versity, Berlin, Germany	TX	Texas	52 species
AB	Alberta	UT	Utah	20 species
AK	Alaska	VA	Virginia	67 species
AL	Alabama	VT	Vermont	25 species
AR	Arkansas	WA	Washington	66 species
AZ	Arizona	WI	Wisconsin	26 species
BC	British Columbia	WV	West Virginia	36 species

Distributions by USA states and Canadian provinces are indicated by two letter US Postal Service and Canada Post abbreviations (except LB and NF are used instead of being combined under NL). The number of species recorded per province or state varies from 0 to 123. Note that the islands of St. Pierre-Miquelon (PM) are an overseas collectivity of France.

WY	Wyoming	19 species
YT	Yukon Territory	39 species

## CATALOG AND CHECKLIST

### Family LEIODIDAE Fleming

**Leiodesidae** Fleming, 1821: 51 (incorrect original spelling) [stem: *Leiod-*]. Type genus: *Leiodes* Latreille, 1797.

**Comment.** Incorrect original stem formation; not in prevailing usage. See Halliday and Majka (2010) for discussion of availability of the names *Leiodes* Latreille, 1796 and Leiodidae Fleming, 1821.

**Notes.** Used by various authors to include, in varying senses, Agathidiidae, Anisotomidae, Camiariidae, Catopidae, Cholevidae, Colonidae, Leptodiridae, Liodesidae, Liodidae, Leptinidae, and Platypsyllidae. For keys to North American subfamilies, tribes, and most genera, see Peck (2000a). Updates with additional genera are in Miller and Wheeler (2005a) for the tribe Agathidiini, Peck and Cook (2007) for the tribe Anemadini, Peck and Cook (2009) for the tribe Sogdini, and Peck and Cook (2011) for the subfamily Catopocerinae. For Latin America and the West Indies, see Peck *et al.* (1998) and Peck and Cook (2014).

#### Subfamily CATOPOCERINAE Hatch

**Catopocerini** Hatch, 1927: 4, in key [stem: *Catopocer-*]. Type genus: *Catopocerus* Motschulsky, 1870.

**Comment.** Use of family-group name conserved over Pinodytinae Horn, 1880 (ICZN 1999: Art. 40.20) (see Newton and Thayer 1992).

**Distribution.** Nearctic, E Palearctic, Chile (undescribed).

#### Tribe CATOPOCERINI Hatch

**Catopocerini** Hatch, 1927: 4, in key [stem: *Catopocer-*]. Type genus: *Catopocerus* Motschulsky, 1870.

**Comment.** New name for Pinodytini Horn, 1880 because of synonymy of type genus; use of family-group name conserved over Pinodytini Horn, 1880 (ICZN 1999: Art. 40.2) (see Newton and Thayer 1992).

**Distribution.** Nearctic, E Palearctic; outside areas of Pleistocene glaciation. =Pinodytini Horn, 1880: 248 [stem: *Pinodyt-*]. Type genus *Pinodytes* Horn, 1880.

**Comment.** Use of younger family-group name Catopocerini Hatch, 1927 conserved (ICZN 1999: Art. 40.2) (see Newton and Thayer 1992).

#### Genus CATOPOCERUS Motschulsky, 1870

**Catopocerus** Motschulsky, 1870: 351. Type species: *Catopocerus politus* Motschulsky, 1870 (by monotypy).

**Biology.** All species are eyeless and flightless soil inhabitants (edaphobites), probably feeding on subterranean fungi, and are sometimes collected in caves.

**Distribution.** E Nearctic (unglaciated lands east of the Mississippi River) (5 species).

**C. alabamae** Peck, 1975d: 393. Holotype male in MCZC. Type locality: Cave Spring Cave, Chapman Mountain, Huntsville, Madison County, Alabama. North American distribution: **USA:** AL. Biology: Known only from the type collected from the stomach of a salamander.

**C. appalachianus** Peck, 1975d: 387. Holotype male in MCZC. Type locality: Balsam Gap, Mt. Mitchell, Yancey County, North Carolina. North American distribution. **USA:** AL, IL, KY, NC, TN, VA, WV. Larva: Newton (1991). Biology: Adults and larvae were reared in the laboratory at 12°C on baker's yeast in clay-floored Petri dishes.

**C. hamiltoni** (Horn, 1892: 45) (*Pinodytes*). Lectotype female in MCZC (designated by Peck 1975d: 381). Type locality: vicinity of Allegheny City [Pittsburgh], Pennsylvania. North American distribution. **USA:** PA. Note: Peck (1975d) incorrectly figured the female genitalia as the aedeagus.

**C. jonesi** Peck, 1975d: 392. Holotype male in MCZC. Type locality: Eudy Cave, 1 mi S Oleander, Marshall County, Alabama. North American distribution. **USA:** AL. Biology: Known only from carrion baits in caves in three counties in north-eastern Alabama.

**C. politus** Motschulsky, 1870: 351; Portevin 1922: 2 (synonymy); Peck and Cook 2011: 13 (resurrected from synonymy, redescription). Neotype female in CNCI (designated by Peck and Cook 2011: 13) (= holotype of *Catopocerus ulkei*). Type locality: District of Columbia. Original type specimen not found in Motschulsky collection in Moscow by SBP in 2003. Original type locality: "North America." North American Distribution: **USA:** DC, MD, NC, PA, VA, WV. Note: The type was thought to be from Alaska or California and collected by Motschulsky himself, but he was never in Alaska or California. He did collect in the eastern USA (DC to AL).

=*C. ulkei* Brown, 1933b: 215; Peck 1975d: 383; Peck and Cook 2011: 13 (synonymy). Holotype female in CNCI. Type locality: District of Columbia.

#### Genus PINODYTES Horn, 1880

**Pinodytes** Horn, 1880: 248. Type species: *Catops cryptophagoides* Mannerheim, 1852 (by monotypy). Portevin 1922: 2 (as synonym of *Catopocerus*); Peck and Cook 2011: 14 (resurrected as valid genus).

**Biology.** All species are eyeless and flightless soil inhabitants (edaphobites), probably feed on subterranean fungi, and are sometimes collected in caves.

**Distribution.** W Nearctic (unglaciated lands west of the Mississippi River) (42 species).

=*Homeosoma* Austin, 1880: 16 (attributed to Horn; preoccupied, not Curtis, 1833). Type species: *Catops cryptophagoides* Mannerheim, 1852 (by monotypy). Hatch 1928: 72 (synonymy).

**Note.** As *Homaosoma* in Neave (1939–40)

=*Typhloleiodes* Hatch, 1935: 116. Type species: *Typhloleiodes subterraneus* Hatch, 1935 (by original designation). Hatch 1957: 19 (synonymy).

***P. angulatus*** Peck and Cook, 2011: 43. Holotype male in CMNC. Type locality: Green Creek, Forest Road 1177, 14 mi N and 22 mi E Sweet Home, Willamette National Forest, Linn County, Oregon. North American distribution: **USA: OR.**

***P. borealis*** Peck and Cook, 2011: 18. Holotype male in CMNC. Type locality: Chena Ridge, 5 mi W Fairbanks, Alaska. North American distribution: **USA: AK;** occurring north of the limits of Pleistocene glaciations as a probable relict of a wider Tertiary distribution.

***P. capizzii*** (Hatch, 1957: 21) (*Catopocerus*); Peck and Cook 2011: 41. Holotype male in USNM. Type locality: Humbug Mt., Curry County, Oregon. North American distribution: **USA: ID, OR, WA.** Biology: Fogel and Peck (1975).

***P. chandleri*** Peck and Cook, 2011: 22. Holotype male in FMNH. Type locality: 6 mi W Log Springs, Mendocino National Forest, Tehama County, California. North American distribution: **USA: CA.**

***P. colorado*** Peck and Cook, 2011: 20. Holotype male in CMNC. Type locality: 10 mi N Wolcott, Eagle County, Colorado. North American distribution: **USA: CO.**

***P. constrictus*** Peck and Cook, 2011: 23. Holotype male in FMNH. Type locality: 2.0 km off on Forest Road 2N46, Angeles Crest Highway, Los Angeles County, California. North American distribution: **USA: CA.**

***P. contortus*** Peck and Cook, 2011: 23. Holotype male in CDAE. Type locality: 5 mi E Placerville on highway 50, El Dorado County, California. North American distribution: **USA: CA.**

***P. cryptophagoides*** (Mannerheim, 1852: 333) (*Catops*); Horn 1880: 249 (*Pinodytes*); Hatch 1928: 72, 1957: 20 (*Catopocerus*); Peck and Cook 2011: 38 (distribution restricted). Lectotype in MCZC (designated by Peck and Cook 2011: 38); paralectotype in MZHF (in Mannerheim coll.) (Silfverberg 1987: 49). Type locality: "Sitka" {Sitka}, Alaska. North American distribution: **Canada: BC. USA: AK, WA** (misidentified from Washington, DC by Horn (1880: 249) and from

California by (Leng 1920: 87), *teste* Peck and Cook (2011)). Biology: Fogel and Peck (1975); Peck and Cook (2011).

***P. delnorte*** Peck and Cook, 2011: 44. Holotype male in CMNC. Type locality: 10 km E Crescent City, Jed Smith Redwood State Park, Del Norte County, California. North American distribution: **USA: CA.**

***P. eldorado*** Peck and Cook, 2011: 24. Holotype male in CDAE. Type locality: 1.6 mi W Quinette, El Dorado County, California. North American distribution: **USA: CA.**

***P. fresno*** Peck and Cook, 2011: 25. Holotype male in FMNH. Type locality: Tamarack Ridge, 3.4 mi SE Highway 168, Sierra National Forest, Fresno County, California. North American distribution: **USA: CA.**

***P. garibaldi*** Peck and Cook, 2011: 45. Holotype male in OSUO. Type locality: 2 mi N Garibaldi, Tillamook County, Oregon. North American distribution: **USA: OR** (not WA).

***P. gibbosus*** Peck and Cook, 2011: 25. Holotype male in CMNC. Type locality: 20 km SW Lake Elsinore, Route 74, Orange County, California. North American distribution: **USA: CA.**

***P. haidagwaii*** Peck and Cook, 2011: 45. Holotype male in CNCI. Type locality: Kiusta, Graham Island, Queen Charlotte Island, British Columbia. North American distribution: **Canada: BC.**

***P. humboldtensis*** Peck and Cook, 2011: 27. Holotype male in CMNC. Type locality: Orick, Lady Byrd Johnson Grove, Redwood National Park, Humboldt County, California. North American distribution: **USA: CA.**

***P. idaho*** Peck and Cook, 2011: 28. Holotype male in WFBM. Type locality: 10 mi E Slate Creek, Slate Creek Campground, Idaho County, Idaho. North American distribution: **USA: ID.**

***P. imbricatus*** (Hatch, 1957: 20) (*Catopocerus*); Peck and Cook 2011: 40. Holotype female in USNM. Type locality: 6 mi N Buxton, Washington County, Oregon. North American distribution: **USA: OR.**

***P. isabella*** Peck and Cook, 2011: 46. Holotype male in WFBM. Type locality: Isabella Creek, Clearwater County, Idaho. North American distribution: **USA: ID.**

***P. klamathensis*** Peck and Cook, 2011: 28. Holotype male in CMNC. Type locality: 18 km NE Crescent City, Myrtle Creek Botanical Reserve, Del Norte County, California. North American distribution: **USA: CA, OR.**

***P. losangeles*** Peck and Cook, 2011: 29. Holotype male in USNM. Type locality: No precise location, Los Angeles County, California. North American distribution: **USA: CA.**

***P. marinensis*** Peck and Cook, 2011: 30. Holotype male in FMNH. Type locality: Tocaloma, Marin



- County, California. North American distribution: **USA: CA.**
- P. minutus* Peck and Cook, 2011: 31. Holotype male in FMNH. Type locality: 4.9 mi W Pine Grove, Amador County, California. North American distribution: **USA: CA.**
- P. monterey* Peck and Cook, 2011: 31. Holotype male in CDAE. Type locality: 2.2 mi W Bottchers Gap, Monterey County, California. North American distribution: **USA: CA.**
- P. newelli* (Hatch, 1957: 20) (*Catopocerus*); Peck and Cook 2011: 41. Holotype male in USNM. Type locality: Coos Head, Coos County, Oregon. North American distribution: **USA: OR, WA.**
- P. newtoni* Peck and Cook, 2011: 17. Holotype male in UADE. Type locality: Queen Wilhelmina State Park, Polk County, Arkansas. North American distribution: **USA: AR, MO, TX.**
- P. orca* Peck and Cook, 2011: 47. Holotype male in CMNC. Type locality: Oregon Cave, Oregon Caves National Monument, Josephine County, Oregon. North American distribution: **USA: OR.**
- P. ovatus* Hatch, 1957: 21 (*Catopocerus*); Peck and Cook 2011: 21. Holotype male in USNM. Type locality: 5 mi N Gold Beach, Oregon. Peck and Cook 2011: 21. North American distribution: **USA: OR.** Biology: Fogel and Peck (1975).
- P. parvus* Peck and Cook, 2011: 32. Holotype male in CDAE. Type locality: 5 mi S Gasquet, Del Norte County, California. North American distribution: **USA: CA.**
- P. punctatus* Peck and Cook, 2011: 19. Holotype male in FMNH. Type locality: Mt. Spokane, Spokane County, Washington. North American distribution: **USA: ID, WA.**
- P. pusio* Horn, 1892: 45; Hatch 1928: 72 (*Catopocerus*); Peck and Cook 2011: 21. Lectotype male in MCZC (designated by Peck and Cook 2011: 21). Type locality: Alameda County, California. North American distribution: **USA: CA.**
- P. rothi* Hatch, 1957: 21 (*Catopocerus*); Peck and Cook 2011: 42. Holotype male in USNM. Type locality: 6 mi N Buxton, Washington County, Oregon. North American distribution: **USA: CA, OR.** Biology: Fogel and Peck (1975).
- P. sanjacinto* Peck and Cook, 2011: 33. Holotype male in CMNC. Type locality: Lake Fulmor, 15 km NW Idyllwild, San Jacinto Mountains, Riverside County, California. North American distribution: **USA: CA.**
- P. sequoia* Peck and Cook, 2011: 34. Holotype male in CMNC. Type locality: Carmoe Crevice Cave, Tulare County, California. North American distribution: **USA: CA.**
- P. setosus* Peck and Cook, 2011: 48. Holotype male in FMNH. Type locality: 6.7 mi NE Brookings, Curry County, Oregon. North American distribution: **USA: CA, OR.**
- P. shasta* Peck and Cook, 2011: 35. Holotype male in FMNH. Type locality: Buckhorn Pass, Highway 299, Shasta-Trinity County line, California. North American distribution: **USA: CA.**
- P. shoshone* Peck and Cook, 2011: 48. Holotype male in WFBM. Type locality: Hobo Cedar Grove, Shoshone County, Idaho. North American distribution: **USA: ID.**
- P. sinuatus* Peck and Cook, 2011: 49. Holotype male in CMNC. Type locality: 7 mi S, 13 mi E, Ashland, Soda Mountain Road, Jackson County, Oregon. North American distribution: **USA: OR.**
- P. spinus* Peck and Cook, 2011: 36. Holotype male in CDAE. Type locality: 5 mi NE Butte Meadows, Butte County, California. North American distribution: **USA: CA.**
- P. subterraneus* (Hatch, 1935: 115) (*Typhloleiodes*); Hatch 1957: 19 (*Catopocerus*); Peck and Cook 2011: 39 (distribution restricted, not BC). Holotype male in USNM. Type locality: Seaside, Clatsop County, Oregon. North American distribution: **USA: OR.** Biology: Fogel and Peck (1975).
- P. tehama* Peck and Cook, 2011: 36. Holotype male in **DENH**. Type locality: 5 mi SE Manton, Bluff Springs, Tehama County, California. North American distribution: **USA: CA.**
- P. tibialis* (Hatch, 1957: 20) (*Catopocerus*); Peck and Cook 2011: 43. Holotype male in USNM. Type locality: Gold Beach, Curry County, Oregon. North American distribution: **USA: OR.**
- P. tuolumne* Peck and Cook, 2011: 37. Holotype male in CMNC. Type locality: Harden Flat, Tuolumne County, California. North American distribution: **USA: CA.**

#### Tribe GLACICAVICOLINI Westcott

**Glacicavicolini** Westcott, 1968: 1 [stem: *Glacicavicol-*].  
Type genus: *Glacicavicola* Westcott, 1968.  
**Distribution.** NW Nearctic.

#### Genus GLACICAVICOLA Westcott, 1968

*Glacicavicola* Westcott, 1968: 3. Type species: *Glacicavicola bathysciodes* Westcott, 1968 (by original designation).  
**Distribution.** NW Nearctic (Idaho, Wyoming) (1 sp.).

*G. bathysciodes* Westcott, 1968: 3. Holotype male in CASC. Type locality: Crystal Falls Cave (lava tube), **Clark** County, Idaho. North American distribution: **USA: ID, WY** (Fossil Mountain Ice Cave (limestone cave)). Unpublished new records (Dave Hubbard, personal communication 2001; specimens seen by T. C. Barr): **ID**; Clark County, Sand Lake Cave (ice cave), Icecapades Cave (ice cave), Fremont County, London Tunnel Cave (no ice). Gooding County, Jaw

Dropper Cave (no ice). Biology: Eyeless inhabitant of lava tubes and limestone caves in habitats usually at near-freezing temperatures (Westcott 1968; Peck 1974, 1981); also possibly in deep cold-humid rock crevices or talus slopes. Brain-eye histology: Optic lobes absent (Larsen *et al.* 1979).

#### Subfamily CHOLEVINAE Kirby

The small carrion beetles

**Cholevidae** Kirby, 1837: 108 [stem: *Cholev.*]. Type genus: *Choleva* Latreille, 1797.

**Distribution.** Worldwide. See Perea (2000) for a world catalog.

#### Tribe ANEMADINI Hatch

**Anemadina** Hatch, 1928: 159 [stem: *Anemad.*].

Type genus: *Anemadus* Reitter, 1884.

**Distribution.** Holarctic, Oriental, Australia, New Zealand, Neotropical.

#### Subtribe EUNEMADINA Newton

**Eunemadina** Newton, 1998: 103 [stem: *Eunemad.*].

Type genus: *Eunemadus* Portevin, 1914.

**Distribution.** Nearctic, Neotropical, Australia, New Zealand, Indonesia, New Guinea.

#### Genus DISSOCHAETUS Reitter, 1884

**Dissochaetus** Reitter, 1884b: 39. Type species: *Dissochaetus hetschkoi* Reitter, 1884 (designated by Jeannel 1922a: 41).

**Distribution.** Nearctic, Neotropical (64 species).

**Note:** Salgado (2010) provides a system of species-groups in this large genus.

**D. arizonensis** Hatch, 1933: 197; Jeannel 1936: 172 (*Echinocoleus*); Peck 1999: 182. Holotype male in CASC. Type locality: Cave Creek, Chiricahua Mts., 8000', Cochise County, Arizona. North American distribution: **USA:** AZ, CO, NM, TX, WY.

**D. oblitus** (LeConte, 1853: 282) (*Catops*); Murray 1856: 459 (*Catops*); Horn 1880: 263 (*Ptomaphagus*); Blatchley 1910: 261 (*Ptomaphagus*); Jeannel 1922a: 41, 1936: 154; Hatch 1933: 198; Peck 1999: 181; Salgado 1999: 37. Lectotype male in MCZC (designated by Peck 1999: 181). Type locality: "Georgia". North American distribution: **Canada:** ON. **USA:** AL, AR, DC, FL, GA, IL, IN, KS, KY, LA, MD, MO, MS, NC, NJ, NY, OH, OK, ON, PA, SC, TN, TX, VA, WV.

**D. texanus** Peck and Cook, 2016: 96; Peck 1999: 184 (misidentified and reported as *D. mexicanus* Jeannel, 1936). Holotype in CMNC. Type locality: Big Bend National Park, Brewster County, Texas. North American distribution: **USA:** TX (Big Bend National Park, Brewster County). Extra-limital distribution: probably Mexico. To

be expected in the adjacent Mexican states of Chihuahua and Coahuila.

#### Subtribe EOCA TOPINA Jeannel

**Eocatopina** Jeannel, 1936: 124, in key [stem: *Eocatop.*]. Type genus: *Eocatops* Peyerimhoff, 1924.

**Distribution.** Nearctic, W and C Palearctic, Pakistan.

#### Genus NEOEOCATOPS Peck and Cook, 2007

**Neoeocatops** Peck and Cook, 2007: 93. Type species: *Choleva decipiens* Horn, 1880 (by original designation).

**Distribution.** W Nearctic (1 species).

**N. decipiens** (Horn, 1880: 259) (*Choleva*); Hatch 1928: 201 (*Catops*), 1933: 198 (*Dissochaetus*), 1957: 43 (*Nemadus*); Jeannel 1936: 151, 154 (*Dissochaetus*); Peck and Cook 2007: 94. Lectotype male in MCZC (designated by Peck and Cook 2007: 94). Type locality: Olympia, Washington. North American distribution: **Canada:** BC. **USA:** CA, OR, WA.

#### Subtribe NEMADINA Jeannel

**Nemadinae** Jeannel, 1936: 96. [stem: *Nemad.*].

Type genus: *Nemadus* C. G. Thomson, 1867.

**Distribution.** Holarctic, N India, Nepal.

#### Genus NEMADUS Thomson, 1867

**Nemadus** Thomson, 1867: 351. Type species: *Catops colonoides* Kraatz, 1851 (by monotypy).

**Distribution.** Holarctic, Nepal, N India (24 species).

#### Subgenus Laferius Perkovsky, 1994

**Laferius** Perkovsky, 1994: 13 (as subgenus of *Nemadus*). Type species *Nemadus (Laferius) kurbatovi* Perkovsky, 1994 (by original designation).

**Distribution.** Holarctic (E Siberia, N Nearctic) (2 species).

**N. brachyderus** (LeConte, 1863: 25) (*Catops*); Horn 1880: 264 (*Ptomaphagus*); Hatch 1933: 196 (*Dissochaetus*); Jeannel 1936: 171; Majka and Langor 2008: 387. Lectotype male in MCZC (designated by Peck and Cook 2007: 96). Type locality: Cambridge, Massachusetts. North American distribution: **Canada:** MB, NB?, NS, ON, QC. **USA:** MA, ME, MI, MN, ND, NH, NJ, NY, SD, VT, WI. Biology: Myrmecophile, recorded from nests of the ants *Camponotus novaboracensis* (Fitch) and *Camponotus herculeanus* (Linnaeus).

#### Subgenus Nemadus Thomson, 1867

**Distribution.** Holarctic, Nepal, N India (22 species).

**The colonoides species-group**

- N. hornii* Hatch, 1933: 194; Jeannel 1936: 169; Fall 1937: 337; Peck and Skelley 2001: 141; Salgado 1999: 37; Peck and Cook 2007: 98. Holotype male in USNM. Type locality: Framingham, Massachusetts. North American distribution: **Canada:** ON, QC. **USA:** AL, AR, DC, FL, GA, IA, IL, IN, KY, LA, MA, MD, MI, MO, NC, NH, NJ, NY, OH, PA, SC, TN, TX, VA, VT, WI. Larva: Newton (1991) (with “?”).  
 =*N. ellipticus* Jeannel, 1936: 170; Peck and Cook 2007: 98 (synonymy). Holotype male in MNHN. Type locality: Cincinnati, Ohio.
- N. pusio* (LeConte, 1859a: 282) (*Catops*); Horn 1880: 264 (*Ptomaphagus*); Blatchley 1910: 282 (*Ptomaphagus*); Hatch 1933: 195, 1957: 43; Jeannel 1936: 169; Fall 1937: 337; Salgado 1999: 37; Peck and Cook 2007: 99. Lectotype male in MCZC (designated by Peck and Cook 2007: 99). Type locality: Punto de los Reyes [Point Reyes], California. North American distribution: **Canada:** BC. **USA:** CA, OR, WA.

**The parasitus species-group**

- N. browni* Peck and Cook, 2007: 101. Holotype male in CNCI. Type locality: Riding Mountain National Park, Manitoba, Canada. North American distribution: **Canada:** MB, ON, QC. **USA:** ME, MN, NH, SD. Biology: Myrmecophile in nests of the ant *Formica aserva* Forel.
- N. criddlei* Peck and Cook, 2007: 102. Holotype male in CMNC. Type locality: Township 29, Range 5, Meridian 5 West, Alberta. North American distribution: **Canada:** AB, MB. Biology: Myrmecophile in nests of *Formica* ants, including *Formica ulkei* Emery.
- N. falli* Peck and Cook, 2007: 103. Holotype male in CMNC. Type locality: 3 mi W of rt 33 on rt 16, Hocking County, Ohio. North American distribution: **USA:** DC, MA, MD, NJ, OH, PA, VA. Biology: Myrmecophile in nests of the ant *Formica integra* Nylander.
- N. gracilicornis* Fall, 1937: 339; Peck and Cook 2007: 105. Holotype male in MCZC. Type locality: Cornwall, Connecticut. North American distribution: **Canada:** MB, QC. **USA:** CT, MA, NH, NJ, NY. Biology: Myrmecophile in nests of the ant *Formica exsectoides* Forel.
- N. integer* Fall, 1937: 338; Peck and Cook 2007: 105; Majka and Langor 2008: 387. Holotype female in MCZC. Type locality: Tyngsboro, Massachusetts. North American distribution: **Canada:** NS. **USA:** MA, ME, NH, NJ, NC. Biology: Myrmecophile in nests of *F. integra*.
- N. myrmecophilus* Jeannel, 1936: 170; Peck and Cook 2007: 107. Holotype in MNHN. Type locality: Iowa City, Iowa. North American

- distribution: **USA:** IA, KS. Biology: Myrmecophile in nests of the ant *Formica subsericea* Say.
- N. parasitus* (LeConte, 1853: 282) (*Catops*); Murray 1856: 460 (*Catops*); Horn 1880: 264 (*Ptomaphagus*); Hamilton 1888: 162 (*Ptomaphagus*); Schwarz 1890: 242 (*Ptomaphagus*); Blatchley 1910: 281 (*Ptomaphagus*); Wasmann 1894: 127 (*Catopomorphus*); Jeannel 1922a: 43 (*Adelops*), 1936: 170; Hatch 1928: 169 (*Adelops*), 1933: 192; Fall 1937: 338; Salgado 1999: 37; Peck and Cook 2007: 108. Lectotype male in MCZC (designated by Peck and Cook 2007: 108). Type locality: New York [state]. North American distribution: **USA:** AL, CT, DC, MA, NH, NJ, NY, PA, VA. Biology: Myrmecophile in nests of *F. subsericea* and other ants.
- N. tenuitarsis* Jeannel, 1936: 170; Salgado 1999: 37; Peck and Cook 2007: 110. Holotype male in MNHN. Type locality: Jeannette, Pennsylvania. North American distribution: **Canada:** ON, QC. **USA:** IL, NY, OH, PA, WI. Biology: Myrmecophile in nests of *F. subsericea* and other *Formica* ants.
- N. triangulum* Jeannel, 1936: 171; Peck and Cook 2007: 115; Majka and Langor 2008: 387. Holotype male in MNHN. Type locality: Cincinnati, Ohio. North American distribution: **Canada:** NS, ON, QC. **USA:** AL, AR, CT, GA, IL, KY, MA, MD, ME, MO, NC, NH, NJ, NY, OH, PA, TN, VA. Biology: Myrmecophile in nests of *C. noveboracensis*, *Camponotus pennsylvanicus* De Geer, and other ants.
- =*N. obliquus* Fall, 1937: 339; Peck and Cook 2007: 115 (synonymy). Holotype female in MCZC. Type locality: Tyngsboro, Massachusetts.

**Tribe CHOLEVINI Kirby**

- Cholevidae** Kirby, 1837: 108 [stem: *Cholev*-]. Type genus: *Choleva* Latreille, 1797.  
**Distribution.** Holarctic, Oriental.

**Subtribe CATOPINA Chaudoir**

- Catopides** Chaudoir, 1845: 195 [stem: *Catop*-]. Type genus: *Catops* Paykull, 1798.  
**Distribution:** Holarctic, Oriental.

**Genus CATOPS Paykull, 1798**

- Catops* Paykull, 1798: 342. Type species: *Catops sericeus* Paykull, 1798 (designated by Jeannel 1922b: 44; *Helops fuscus* Panzer, 1794, designated by Thomson 1859: 59; Hatch 1928: 188 (not originally included); referred to *Tritoma sericea* Fabricius, 1787 [Sherborn, 1902] (= *C. fuscus* (Panzer, 1794)).  
**Distribution.** Holarctic, Oriental, Mexico (146 spp.).  
 =*Sciodrepa* Thomson, 1859: 60. Type species: *Catops alpinus* Gyllenhal, 1827 (by original

- designation; *Catops fumatus* Spence, designated by Hatch, 1928: 202).
- =*Lasiocatops* Reitter, 1901a: 47 (as subgenus of *Catops*). Type species: *Catops alpinus* Gyllenhal, 1827 (designated by Jeannel 1922a: 44).
- C. alpinus** Gyllenhal, 1827: 312; Jeannel 1936: 375; Szymczakowski 1976: 66; Peck and Cook 2002: 766 (finding no morphological evidence to support subspecies). Type in UZIU? Type locality: "Laponiae alpinus" [Lapland, Sweden]. North American distribution: **Canada:** BC, NT, YT. **USA:** AK. Extra-limital distribution: Sweden, Finland, Russia, Mongolia, Korea; a Holarctic species.
- =*C. alpinus sitkanus* Jeannel, 1936: 376; Peck and Cook 2002: 766 (synonymy). Holotype male in MNHN. Type locality: Amérique du Nord, Territoire de l'Alaska: Sitka, dans l'île Baranov [Baranov Island, Sitka].
- C. alsiosus alsiosus** (Horn, 1885: 136) (*Choleva*); Blatchley 1910: 279; Blanchard 1915: 294; Hatch 1933: 214 (*Catops*); Jeannel 1936: 366; Salgado 1999: 39; Peck and Cook 2002: 758 (not commenting on validity of subspecies); Majka and Langor 2008: 388. Holotype male in MCZC. Type locality: Yukon River, Alaska. North American distribution: **Canada:** AB, BC, MB, NB, NF, NS, NT, ON, QC, SK, YT. **USA:** AK, CO, MA, ME, MT, ND, NY, WA. Extra-limital distribution: Eastern Siberia, Mongolia, as *C. alsiosus mongolicus* Jeannel, 1936: 393; see Peck and Cook (2002) for additional references to Palearctic subspecies; a Holarctic species. Biology: Benton and Wilcox (1955); Peck and Anderson (1985) (most abundant in marshlands in Ontario).
- C. americanus** Hatch, 1928: 201 (replacement name for *Catops clavicornis* LeConte, 1853); Hatch 1933: 217; 1957: 45; Jeannel 1936: 378; Salgado 1999: 42; Peck and Cook 2002: 744; Majka and Langor 2008: 388. North American distribution: **Canada:** NS, ON, QC. **USA:** AL, CT, DC, FL, GA, IA, IL, IN, KS, LA, MA, MD, MO, MS, NC, NE, NH, NJ, NY, OH, OK, PA, SC, TN, TX, VA, WV.
- =*Catops clavicornis* LeConte, 1853: 281 (pre-occupied, not *Catops clavicornis* Stephens, 1830); Murray 1856: 307; Horn 1880: 259 (*Choleva*); Blatchley 1910: 280 (*Choleva*); Blanchard 1915: 294 (*Choleva*). Holotype female in MCZC. Type locality: New York [state].
- C. apterus** Peck and Cook, 2002: 756. Holotype male in CMNC. Type locality: 14 mi NE Santa Fe, Santa Fe County, New Mexico, 9,600 feet. North American distribution: **USA:** NM. Known only from the type locality; a micropterous, high elevation (tundra zone) species that may occur in other parts of the Sangre de Cristo Mountains of Colorado and New Mexico.
- C. basilaris** Say, 1823: 194; LeConte 1853: 282; Murray 1856: 394; Horn 1880: 258 (*Choleva*); Blatchley 1910: 280; Hatch 1933: 218, 1957: 44; Jeannel 1936: 376; Salgado 1999: 42; Peck and Cook 2002: 767; Majka and Langor 2008: 389. Neotype male in MCZC (designated by Peck and Cook 2002: 767). Type locality: "Missouri" [Territory]. North American distribution: **Canada:** AB, BC, LB, MB, NB, NF, NS, NT, ON, QC, SK, YT. **USA:** AK, AL, AZ, CA, CO, CT, DC, GA, IA, ID, IL, KS, KY, MA, MD, ME, MI, MN, MT, NC, NH, NM, NY, OR, PA, SC, SD, TN, UT, VA, VT, WA, WI, WV, WY. Biology: Benton and Wilcox (1955); Peck and Anderson (1985) (most abundant in coniferous forest in Ontario).
- =*Choleva spenciana* Kirby, 1837: 108; LeConte 1853: 282; Murray 1856: 304 (*Catops*); Horn 1876: 167 (*Catops*); Horn 1880: 259 (synonym of *C. basilaris*). Type depository BMNH? Type locality: "not stated"; "Boreal America" [somewhere along route of the 1825–1826 Franklin Arctic exploration expedition (probably in Canada) (Lindroth 1953)].
- =*Catops cadaverinus* Mannerheim, 1843: 254, 1853: 177; LeConte 1853: 282; Murray 1856: 304 (synonym of *C. spenciana*). Type depository not known, maybe MZHF (but not listed in Silfverberg 1987). Type locality: Sitka [Sitka] Island, Alaska.
- C. davidsoni** Salgado, 1999: 38; Cook and Peck 2002: 768. Type locality: Allegheny, Pennsylvania. Holotype male in CMNH. North American distribution: **Canada:** ON, QC. **USA:** AL, DC, KY, NC, PA, TN, WV.
- C. egenus** (Horn, 1880: 257) (*Choleva*); Hatch 1933: 220 (*Catops*), 1957: 44; Jeannel 1936: 376; Salgado 1999: 42; Peck and Cook 2002: 769. Lectotype male in MCZC (designated by Peck and Cook 2002: 769). Type locality: Alaska. North American distribution: **Canada:** AB, BC, LB, NT, SK, YT. **USA:** AK, CA, CO, ID, NM, OR, WA.
- C. geomysi** Peck and Skelley, 2001: 141. Holotype male in FSCA. Type locality: 1.1 mi NE Gresston, Dodge County, Georgia. North American distribution: **USA:** AL, AR, FL, GA, MS, OK, TX. Biology: In pocket gopher (*Geomys Rafinesque*) burrows and flying in winter in grasslands or forests. Connior *et al.* (2014b) report it from the burrows of *Geomys breviceps* (Baird) in Arkansas.
- C. gratiosus** (Blanchard, 1915: 294) (*Choleva*); Hatch 1933: 213, 1957: 45; Jeannel 1936: 382; Růžička 1993: 281; Salgado 1999: 39; Peck and Cook 2002: 762; Majka and Langor 2008: 390. Lectotype male in MCZC (designated by Peck and Cook 2002: 762). Type locality: Rangeley Lake, Maine. North American distribution: **Canada:**

- AB, BC, NF, NS, ON, QC, SK. **USA:** AL, CT, GA, IA, IL, IN, KY, MA, MD, ME, MI, MO, NH, NJ, NY, OH, OR, PA, SD, TN, VA, WA, WV. Biology: Often in caves in the southeastern USA.
- C. *luridipennis*** Mannerheim, 1853: 176; Murray 1856: 306; Horn 1880: 257 (*Choleva*); Jeannel 1936: 380 (as synonym of *C. simplex* Say); Hatch 1957: 45; Szymczakowski 1975: 776; Salgado 1999: 42; Peck and Cook 2002: 750. Lectotype male in MCZC (designated (as "type") by Szymczakowski 1975: 778. Type locality: Tschunuktnu River, Kenai Peninsula, Alaska. North American distribution: **Canada:** AB, BC, MB, NT, ON, QC, SK, YT. **USA:** AK, AZ, CO, NM, SD, UT, WY. Extra-limital distribution: Japan, Siberia, Tibet, and China; a Holarctic species. =*C. brunneipennis* J. Sahlberg, 1871: 428 (pre-occupied, not *C. brunneipennis* Mannerheim, 1853). Holotype in MZHF (Silfverberg 1987). Type locality: Muonio, Finland.
- C. *luteipes*** Thomson, 1884: 1033 (replacement name for *C. brunneipennis* J. Sahlberg, 1871); Silfverberg 1987: 49; Peck and Cook 2002: 51. North American distribution: **Canada:** NF, LB, YT. **USA:** AK. Extra-limital distribution: Sweden, Finland, northern Russia (Jeannel (1936) established *C. luteipes vinogradovi* in eastern Siberia); a Holarctic species. =*C. brunneipennis* Mannerheim, 1853: 176; Murray 1856: 305; Hatch 1933: 219, 1957: 45 (as synonym of *C. basilaris* Say); Jeannel 1936: 379; Szymczakowski 1975: 775 (synonymy). Lectotype female in MZHF (designated by Szymczakowski 1975: 778). Type locality: Tschunuktnu River, Kenai Peninsula, Alaska.
- C. *mathersi*** Hatch, 1957: 45; Salgado 1999: 39; Peck and Cook 2002: 771. Holotype male in SMDV. Type locality: Stanley [Park, Vancouver], British Columbia. North American distribution: **Canada:** AB, BC, NT, YT. **USA:** ID, MT, UT, WY.
- C. *neomeridionalis*** Peck and Cook, 2004: 76 (replacement name for *C. meridionalis* Peck and Cook, 2002). North American distribution: **USA:** AL, GA, IL, KY, MD, MS, SC, TX. =*C. meridionalis* Peck and Cook, 2002: 772 (pre-occupied, not *Catops meridionalis* Aubé, 1850). Holotype male in CMNC. Type locality: Jackson, Rankin County, Mississippi.
- C. *paramericanus*** Peck and Cook, 2002: 746; Majka and Langor 2008: 390. Holotype male in CMNC. Type locality: Dunrobin, 20 mi W Ottawa, Ontario. North American distribution: **Canada:** AB, BC, MB, NB, NS, ON, QC, SK. **USA:** ME, MI, NH, NY, NC, PA, SD, TN, WV, WY.
- C. *simplex*** Say, 1825: 184; LeConte 1853: 281; Murray 1856: 306; Horn 1880: 258 (*Choleva*); Blatchley 1910: 279 (*Choleva*); Hatch 1933: 215, 1957: 45; Jeannel 1936: 380; Salgado 1999: 42; Peck and Skelley 2001: 141; Peck and Cook 2002: 754; Majka and Langor 2008: 391. Neotype male in MCZC (designated by Peck and Cook 2002: 754). Type locality: "Arkansas" [Territory]. North American distribution: **Canada:** AB, BC, LB, MB, NB, NF, NS, ON, QC, SK. **USA:** AK, AL, AR, AZ, CA, CT, DC, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MO, MN, MS, NC, NJ, NM, NY, OH, OK, OR, PA, RI, SC, TN, TX, VA, VT, WA, WY.
- Genus *CATOPTRICHUS* Murray, 1856**
- Catoptrichus*** Murray, 1856: 461. Type species: *Catops frankenhaeuseri* Mannerheim, 1852 (by monotypy). **Distribution.** W Nearctic (1 species).
- C. *frankenhaeuseri*** (Mannerheim, 1852: 332) (*Catops*); Murray 1856: 462 (*Catoptrichus*); Horn 1880: 255; Hamilton 1894: 16; Keen 1895: 168; Hatch 1933: 227, 1957: 46; Jeannel 1936: 413; Salgado 1999: 42; Peck and Cook 2002: 732 (misspelled as *C. frankenhauseri*). Syntypes (2) in MZHF (Silfverberg 1987). Type locality: Sitkha [Sitka] Island, Alaska. North American distribution: **Canada:** BC. **USA:** AK, ID, OR, WA. Biology: Active in the winter months only; known from a variety of habitats but usually taken on carrion.
- Genus *SCIODREPOIDES* Hatch, 1933**
- Sciodrepoides*** Hatch, 1933: 224 (as subgenus of *Catops*). Type species: *Choleva watsoni* Spence, 1813 (by original designation). Jeannel 1936: 334 (as valid genus). **Revision.** Jeannel (1936). **Distribution.** Holarctic, China, Ryukyu Islands (13 species).
- S. *latinotum*** Peck and Cook, 2002: 734. Holotype male in CMNC. Type locality: Mammoth Cave National Park, Edmonson County, Kentucky. North American distribution: **USA:** AL, AR, FL, IL, IN, KS, KY, MD, MO, MS, NC, NJ, OH, OK, SC, TN, TX, VA.
- S. *terminans*** (LeConte, 1850: 218) (*Catops*); LeConte 1853: 282 (*Catops*); Murray 1856: 395 (*Catops*); Horn 1880: 260 (*Choleva*); Blatchley 1910: 280 (*Choleva*); Hatch 1933: 224 (*Catops*), 1957: 44 (*Sciodrepoides*, as subspecies of *S. fumatus* (Spence)); Jeannel 1936: 339; Peck and Cook 2002: 738 (resurrected as valid species); Majka and Langor 2008: 393. Lectotype male in MCZC (designated by Peck and Cook 2002: 738). Type locality: Pic River, North Side Lake Superior [Marathon, Ontario]. North American distribution: **Canada:** AB, BC, MB, NB, NF,



NS, ON, PE, QC, SK. **France:** PM. **USA:** AK, AL, AR, CT, DC, GA, IA, ID, IN, KY, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NY, OH, OK, OR, PA, RI, SD, TN, TX, VA, VT, WI, WV, WY. Biology: Benton and Wilcox (1955). **S. watsoni** (Spence, 1813: 156) (*Choleva*); Peck and Cook 2002: 739; Majka and Langor 2008: 394. Type: depository not known. Type locality: England. North American distribution: **Canada:** AB, BC, MB, NB, NF, ON, QC, SK. **USA:** AL, AR, AZ, CO, CT, DC, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NM, NY, OH, OK, OR, PA, RI, SD, TN, TX, VA, WA, WI, WV, WY. Extra-limital distribution: Widespread Palearctic; a Holarctic species. Biology: Jakubek (2015) (immatures); Kilian and Mađra 2015; Connior *et al.* (2014b) report it from the burrows of *G. breviceps* in Arkansas. =*Choleva horniana* Blanchard, 1915: 294; Hatch 1933: 223 (*Catops (Sciodrepa)*). Lectotype male in MCZC (designated by Peck and Cook 2002: 739). Type locality: Tyngsboro, MA. =*Sciodrepoides watsoni hornianus* (Blanchard, 1915); Jeannel 1936: 337; Hatch 1957: 43. Peck and Cook (2002) report no morphological evidence to support the subspecies status. Peck and Skelley (2001) give records from rodent burrows in IL and NE.

#### Subtribe CHOLEVINA Kirby

**Cholevidae** Kirby, 1837: 108 [stem: *Cholev*-.] Type genus: *Choleva* Latreille, 1797.

**Distribution.** Holarctic, Oriental.

#### Genus PRIONOCHAETA Horn, 1880

**Prionochoeta** Horn, 1880: 260. Type species: *Catops opacus* Say, 1825 (by monotypy).

**Distribution.** Nearctic, E Palearctic, China (4 species).

**P. opaca** (Say, 1825: 184) (*Catops*); LeConte 1853: 280; Murray 1856: 395; Horn 1880: 261 (*Prionochoeta*); Hatch 1933: 226; Jeannel 1936: 297; Peck and Cook 2002: 730; Majka and Langor 2008: 392. Type specimen lost or destroyed (Mawdsley 1993). Neotype designation not necessary. Type locality not designated. North American distribution: **Canada:** MB, NB, NS, ON, PE, QC. **USA:** AL, AR, CT, DC, FL, GA, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MS, NC, NH, NJ, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, WV. Biology: Peck (1977b). Often in caves in the southeastern USA. Larva: Böving and Craighead (1931).

#### Tribe LEPTODIRINI Lacordaire

**Leptodérides** Lacordaire, 1854: 195 [stem: *Leptodir*-.] Type genus: *Leptodirus* F. J. Schmidt, 1832

[as *Leptoderus*, unjustified emendation of type genus name by F. J. Schmidt, 1852, not in prevailing usage].

**Comment.** Use of family-group name conserved over Stagobiini Schiødte, 1849 (ICZN 1999: Art. 40.2) (Newton and Thayer 1992).

**Distribution.** Palearctic, W Nearctic. Venezuela in error.

#### Subtribe PLATYCHOLEINA Horn

**Platycholei** Horn, 1880: 251 [stem: *Platychole*-.] Type genus: *Platycholeus* Horn, 1880.

**Distribution.** W Nearctic.

#### Genus PLATYCHOLEUS Horn, 1880

**Platycholeus** Horn, 1880: 254. Type species: *Ptomaphagus leptinoides* Crotch, 1874 (by monotypy). Fresneda *et al.* 2011 (verification of tribal placement and recognition of the genus as the sister group of the rest of the tribe, which occurs in the Palearctic).

**Biology.** Found in or under bark of decaying conifer logs, free-living or with ants or termites nesting in the logs.

**Distribution.** W Nearctic (3 species).

**P. leptinoides** (Crotch, 1874: 77) (*Ptomaphagus*); Horn 1880: 254 (*Platycholeus*); Hatch 1933: 233, 1957: 46. Type depository not known. Type locality: Ft. Crook, Shasta County, California. North American distribution: **USA:** CA, NV, OR. Biology: Termitophile, in nests of the termites *Zootermopsis* spp. in decaying conifer logs.

**P. opacellus** Fall, 1909: 133; Hatch 1933: 234, 1957: 46; Salgado 1999: 43. Syntypes (5) in MCZC. Type locality: Lake Tahoe, California. North American distribution: **USA:** CA. Biology: Myrmecophile, in nests of the ant *Lasius pallitarsis* (Provancher) in decaying conifer logs.

**P. sp.**, undescribed species. Fresneda *et al.* (2011). North American distribution: **Canada:** BC. **USA:** OR, WA. Biology: Free-living under bark of decaying conifer logs. Larval description: Kilian and Newton (2016).

#### Tribe PTOMAPHAGINI Jeannel

**Ptomaphagini** Jeannel, 1911: 193 [stem: *Ptomaphag*-.] Type genus: *Ptomaphagus* Hellwig, 1795.

**Distribution.** Holarctic, Oriental, Neotropical.

#### Subtribe PTOMAPHAGINA Jeannel

**Ptomaphagini** Jeannel, 1911: 193 [stem: *Ptomaphag*-.] Type genus: *Ptomaphagus* Hellwig, 1795.

**Distribution.** Holarctic, Neotropical, N Oriental.

#### Genus PTOMAPHAGUS Hellwig, 1795

**Ptomaphagus** Hellwig, 1795: 358 (attributed to Knoch; published in synonymy with *Tritoma*).

Type species: *Tritoma sericea* Fabricius, 1787 (= *Ptomaphagus subvillosus* (Goeze, 1777) (by monotypy)).

**Evolution and Biogeography.** Peck (1973, 1983, 1986, 1998b, c).

**Localities of Alabama Cave Species.** Peck (1995).

**Distribution.** Holarctic, Neotropical, N Oriental (132 species).

#### Subgenus *Adelops* Tellkampff, 1844

*Adelops* Tellkampff, 1844: 318 (not Dejean 1833, [*nomen nudum*? in Scarabaeoidea]). Type species: *Adelops hirtus* Tellkampff, 1844 (by monotypy).

**Taxonomy.** Jeannel (1936); Peck (1973).

**Distribution.** North and Central America (72 species).

#### The *hirtus* species-group

*P. (A.) barri* Peck, 1973: 68, 1975a. Holotype male in MCZC. Type locality: Hen Peck Mill Cave, Cannon County, Tennessee. North American distribution: **USA:** TN. Biology: Troglobite in caves.

*P. (A.) chromolithus* Peck, 1984: 734. Holotype female in FMNH. Type locality: Williams Saltpeter Cave, Jackson County, Alabama. North American distribution: **USA:** AL. Biology: Troglobite in caves.

=*P. (A.) hatchi hatchi* form II. Peck 1973: 78.

*P. (A.) episcopus* Peck, 1973: 81, 1984: 732. Holotype male in MCZC. Type locality: McHardin Cave, Marshall County, Alabama. North American distribution: **USA:** AL. Biology: Troglobite in caves.

*P. (A.) fecundus* Barr, 1963: 57; Peck 1984: 734. Holotype male in AMNH. Type locality: Caney Hollow Cave, Franklin County, Tennessee. North American distribution: **USA:** TN. Biology: Troglobite in caves.

=*P. (A.) hatchi fecundus* Barr; Peck 1973: 80.

*P. (A.) fiskei* Peck, 1973: 71. Holotype male in MCZC. Type locality: Mountain Farm Cove Cave, Walker County, Georgia. North American distribution: **USA:** GA. Biology: Troglobite in caves.

*P. (A.) hatchi* Jeannel, 1933: 252; Jeannel 1936: 93, 1949: 101; Barr 1963: 54 Peck 1973: 76; 1984b: 733. Syntypes in MNHN. Type locality: Wonder Cave, Grundy County, Tennessee. North American distribution: **USA:** AL, TN. Biology: Troglobite in caves.

=*P. (A.) hatchi hatchi* form I; Peck 1973: 78.

=*P. (A.) henroti* Jeannel, 1949: 102; Barr 1963: 56; Peck 1973: 76 (synonymy). Holotype male in MNHN. Type locality: Aladdin Cave, Madison County, Alabama.

*P. (A.) hazelae* Peck, 1973: 69. Holotype male in MCZC. Type locality: Tumbling Rock Cave, Jackson County, Alabama. North American distribution: **USA:** AL. Biology: Troglobite in caves.

*P. (A.) hirtus* (Tellkampff, 1844: 318) (*Adelops*); Horn 1880: 265 (*Adelops*); Jeannel 1922a: 90 (*Adelops*), 1931: 408 (*Adelops*), 1936: 93, 1949: 99; Hatch 1933: 210 (*Adelops*); Barr 1963: 53, 1967c; Peck 1973: 82. Type depository not known. Type locality: Mammoth Cave, Edmonson County, Kentucky. North American distribution: **USA:** KY; not IL. Biology: Troglobite in caves; Packard (1888) (biology and pupa); Laing *et al.* 1976; Peck 1975c; Friedrich *et al.* 2011: 3534 (molecular biology of eyes). Larva: Packard (1874, 1876); Böving and Craighead 1931.

=*P. nicholasi* Barr, 1963: 53; Peck 1973: 84, 1984: 734 (synonymy); Peck and Lewis 1978: 52. Holotype male in AMNH. Type locality: Fogelpole Cave, Monroe County, IL. Description and locality in error based on mislabelled specimens.

*P. (A.) hubrichti* Barr, 1958: 170; Peck 1973: 85, 1975a. Holotype male in AMNH. Type locality: Cripps Mill Cave, DeKalb County, Tennessee. North American distribution: **USA:** TN. Biology: Troglobite in caves.

*P. (A.) julius* Peck, 1973: 67 (as subspecies of *P. loedingi* Hatch); Peck 1984: 734 (elevated to species rank). Holotype male in MCZC. Type locality: House of Happiness Cave, Jackson County, Alabama. North American distribution: **USA:** AL. Biology: Troglobite in caves.

*P. (A.) laticornis* Jeannel, 1949: 102; Barr 1963: 55; Peck 1973: 76 (as synonym of *P. hatchi*), 1984: 734. Holotype female in MNHN. Type locality: Scott Cave, Madison County, Alabama. North American distribution: **USA:** AL. Biology: Troglobite in caves.

=*P. (A.) hatchi hatchi* form III; Peck 1973: 78.

*P. (A.) loedingi* (Hatch, 1933: 209) (*Adelops lödingi*); Jeannel 1936: 93, 1949: 104; Barr 1963: 57; Peck 1973: 63, 1984: 734. Holotype male in USNM. Type locality: Shelta Cave, Huntsville, Madison County, Alabama. North American distribution: **USA:** AL. Biology: In caves as troglobite; Peck (1975b).

=*P. henroti ellipticus* Jeannel, 1949: 102; Barr 1963: 56; Peck 1973: 64 (synonymy). Holotype male in MNHN. Type locality: Shelta Cave, Huntsville, Madison County, Alabama.

=*P. valentinei jonesi* Jeannel, 1949: 103; Peck 1973: 63 (synonymy). Holotype male in MNHN. Type locality: Pitts Sinkhole Cave, Madison County, Alabama.

*P. (A.) longicornis* Jeannel, 1949: 103 (as subspecies of *P. valentinei* Jeannel); Barr 1963: 56

- (as subspecies of *P. valentinei*); Peck 1973: 66 (as subspecies of *P. loedingi*), 1976b: 314 (ecology), 1984: 734 (elevated to species rank). Holotype male in MNHN. Type locality: Cave Spring Cave (Hering Cave), Madison County, Alabama. North American distribution: **USA**: AL. Biology: Troglobite in caves.
- P. (A.) shapardi** Sanderson, 1939: 121; Jeannel 1949: 101; Barr 1963: 53; Peck 1973: 62. Holotype male in INHS. Type locality: Dresser Cave, 5 mi N Ft. Gibson, Cherokee County, Oklahoma. North American distribution: **USA**: AR, OK. Biology: Small-eyed forest soil and deep litter inhabitant; Peck (1982b).
- P. (A.) solanum** Peck, 1973: 67 (as subspecies of *P. loedingi*); Peck 1984: 734. Holotype male in MCZC. Type locality: Sheldons Cave, Jackson County, Alabama. North American distribution: **USA**: AL. Biology: Troglobite in caves.
- P. (A.) torodei** Peck, 1984: 734. Holotype female in FMNH. Type locality: Two Way Cave, Jackson County, Alabama. North American distribution: **USA**: AL. Biology: Troglobite in caves.
- P. (A.) valentinei** Jeannel, 1933: 252; Jeannel 1949: 103 (as species and nominal subspecies); Barr 1963: 56; Peck 1973: 75, 1984: 734. Syntypes in MNHN. Type locality: Sauta (= Old Salter) Cave, Jackson County, Alabama. North American distribution: **USA**: AL. Biology: Troglobite in caves.
- P. (A.) walteri** Peck, 1973: 73. Holotype male in MCZC. Type locality: Bryant Cave, Blount County, Alabama. North American distribution: **USA**: AL. Biology: Troglobite in caves.
- P. (A.) whiteselli** Barr, 1963: 55; Peck 1973: 74; Reeves and McCreddie 2001: 308 (ecology). Holotype male in AMNH. Type locality: Sittons Cave, Dade County, Georgia. North American distribution: **USA**: AL, GA. Biology: Troglobite in caves.
- The consobrinus species-group**
- P. (A.) brevior** Jeannel, 1949: 98; Peck 1973: 119. Holotype male in MNHN. Type locality: Putnam County, Indiana. North American distribution: **Canada**: ON, QC. **USA**: AL, CT, DC, GA, IA, IL, IN, KY, MA, MD, MI, MO, NJ, NC, NY, PA, TN, TX. Biology: Adults active in late spring.
- P. (A.) californicus** (LeConte, 1853: 281) (*Catops*); Horn 1880: 263; Hatch 1957: 42; Peck 1973: 109. Lectotype female in MCZC (designated by Peck 1973: 109). Type locality: San Jose, California. North American distribution: **USA**: CA. Biology: In nests and burrows of the tortoise *Gopherus agassizii* (Cooper), pack rats of the genus *Neotoma* Say and Ord, pocket gophers, shrews, and field mice, nests of waps of the genus *Vespula* Thomson, ant nests, and caves (MacKay 1980, 1982, 1983).
- =*P. latior* Hatch, 1933: 204; Hatch 1957: 42 (synonymy). Holotype male in CASC. Type locality: Northfork, CA.
- P. (A.) cocytus** Peck, 1973: 106; Peck 1980: 56. Holotype male in MCZC. Type locality: Roaring Springs Cave, Grand Canyon, Coconino County, Arizona. North American distribution: **USA**: AZ. Biology: Trolobite in caves.
- P. (A.) consobrinus** (LeConte, 1853: 281) (*Catops*); Horn 1880: 263; Hatch 1933: 206; Jeannel 1936: 92, 1949: 98; Peck 1973: 116. Lectotype female in MCZC (designated by Peck 1973: 116). Type locality: "Georgia". North American distribution: **USA**: AL, AR, FL, GA, LA, MS, NC, NJ, OK, SC, TN, TX. Biology: Sometimes in *Geomys* pocket gopher burrows (Peck and Skelley 2001; Tishechkin and Cline 2008). Notes: There are spermathecal differences to suggest that this may be a species complex, especially with populations west of the Mississippi River, notably Texas.
- =*Catops strigosus* LeConte, 1853: 281 (preoccupied, not *Catops strigosus* Kraatz, 1852). Holotype female in MCZC. Type locality: South Carolina.
- =*Catops lecontei* Murray, 1856: 459 (replacement name for *C. strigosus* LeConte, 1853).
- =*P. carolinensis* Schweiger, 1949: 1; Peck 1973: 116 (synonymy). Syntypes (3) in NHRS. Type locality: "South Carolina."
- P. (A.) fisus** Horn, 1885: 137; Hatch 1933: 204; Jeannel 1936: 91, 1949: 97; Peck 1973: 86; Peck and Skelley 2001: 145. Lectotype male in MCZC (designated by Peck 1973: 86). Type locality: "Arizona". North American distribution: **USA**: AZ, CA, ID, NM, NV, TX. Extra-limital distribution: Mexico: Chihuahua.
- =*P. (A.) inermis* Jeannel, 1936: 92; Peck 1973: 86 (synonymy). Syntypes in BMNH and MNHN. Type locality: Mexico (stated as "Iruqui" but no such place exists; it is a likely misreading of E. Truqui (?-1860), a collector and member of the consular corps of Sardinia to Mexico (Ball and Shpeley 2000).
- P. (A.) geomysi** Peck and Skelley, 2001: 145; Tishechkin and Cline 2008: 335. Holotype male in FSCA. Type locality: 1.1 mi. NE of Gresston, Dodge County, Georgia. North American distribution: **USA**: AL, AR, FL, GA, LA, TX. Biology: A specialist inhabitant of *Geomys* pocket gopher burrows. Connior *et al.* (2014b) report it from the burrows of *G. breviceps* in Arkansas.
- P. (A.) inyoensis** Peck and Gnaschini, 1997b: 770. Holotype male in CASC. Type locality: Poleta Cave, Inyo County, California. North American distribution: **USA**: CA. Biology: Small-eyed, high elevation, rock-crevice and cave inhabitant.



- P. (A.) lincolnensis* Peck, 1978a: 227. Holotype female in CNCI. Type locality: Monjeau Lookout, 9000', 10 mi NNW Ruidoso, Lincoln County, New Mexico. North American distribution: **USA:** NM. Biology: Small-eyed, montane soil inhabitant, found under partly buried large rocks on soil.
- P. (A.) manzano* Peck, 1978a: 230. Holotype female in CNCI. Type locality: Capillo Peak, 9300', 10 mi NW Manzano, Torrance County, New Mexico. North American distribution: **USA:** NM. Biology: Small-eyed, montane soil inhabitant, found under partly buried large rocks on soil. Note: Printing error caused deletion of species name from page 230 in Peck (1978a).
- P. (A.) nevadicus* Horn, 1880: 263; Hatch 1933: 203; Peck 1973: 113; Peck and Skelley 2001: 147. Lectotype female in MCZC (designated by Peck 1973: 113). Type locality: "Western Nevada" (probably vicinity of Lake Tahoe, Reno, or Carson City). North American distribution: **Canada:** AB, BC, MB. **USA:** AR, AZ, CA, CO, ID, KS, ND, NM, NV, OR, TX, UT, WA. Extralimital distribution: Mexico: Durango. Biology: Frequently in burrows of pocket gophers, mice, kangaroo rats, marmots, and burrowing owls. Connior *et al.* (2014b) report it from the burrows of *G. breviceps* in Arkansas. Note: The following synonymies should be re-examined with additional material.
- =*P. densus* Hatch, 1957: 42; Peck 1973: 113 (synonymy). Holotype male in USNM. Type locality: Forest Grove, Oregon.
- =*P. piperi* Hatch, 1933: 204; Jeannel 1936: 91; 1949: 97; Peck 1973: 113 (synonymy). Holotype female in USNM. Type locality: Pullman, Washington.
- =*P. thomomysi* Hatch, 1957: 42; Peck 1973: 113 (synonymy). Holotype female in SMDV. Type locality: Creston, British Columbia.
- P. (A.) parashant* Peck and Wynne, 2013: 309. Holotype male in CMNC. Type locality: Cave PARA-1001, Parashant National Monument, Mohave County, Arizona. North American distribution: **USA:** AZ. Biology: Troglodite in caves.
- P. (A.) schwarzi* Hatch, 1933: 203; Jeannel 1936: 91, 1949: 97; Peck 1973: 106; Peck and Skelley 2001: 147. Holotype male in USNM. Type locality: Crescent City, FL. North American distribution: **USA:** AL, FL, GA. Biology: Specialized inhabitant of *Geomys* pocket gopher burrows and sometimes in burrows of the gopher tortoise, *Gopherus polyphemus* (Bartram).
- P. (A.) texanus* Melander, 1902: 329; Jeannel 1936: 92; Peck 1973: 108; Peck and Skelley 2001: 148. Lectotype in USNM (designated by Peck 1973: 108). Type locality: Austin, Texas. North American distribution: **USA:** AL, FL, GA, TX. Biology:

Lives with harvester ants (*Pogonomyrmex* Mayr) and in *Geomys* pocket gopher burrows.

- P. (A.) ulkei* Horn, 1885: 137; Hatch 1933: 205; Jeannel 1933: 92, 1949: 98; Peck 1973: 122. Holotype male in MCZC (published as female; designated as lectotype in error by Peck 1973: 122). Type locality: District of Columbia. North American distribution: **USA:** AL, DC, GA, IN, KY, MD, NC, NY, VA.

#### The cavernicola species-group

- P. (A.) cavernicola cavernicola* Schwarz, 1898: 57; Hatch 1933: 204; Jeannel 1936: 92; 1949: 101; Sanderson 1939: 117; Barr 1963: 54; Peck 1970, 1973: 124. Holotype female in USNM. Type locality: Marble (= Marvel) Cave, Stone County, Missouri. North American distribution: **USA:** AL, AR, FL, GA, IA, IN, MO, SC, TX. Extralimital distribution: Mexico: Nuevo Leon (as *P. (A.) cavernicola aditus* Peck, 1973 in Cueva de la Boca). Biology: Lives in forests and caves; most records are from caves (Peck 1982a, b).

#### Subgenus *Appadelopsis* Gnaspini, 1996

- Appadelopsis* Gnaspini, 1996: 538 (as subgenus of *Ptomaphagus*). Type species: *Adelops mitchellensis* Hatch, 1933 (by original designation). Biology: Small-eyed, flightless soil-litter inhabitants (edaphobites).

**Distribution.** E Nearctic (17 species).

- P. (A.) alleghenyensis* (Peck, 1978b: 363) (*Adelopsis*). Holotype male in CNCI. Type locality: 5 mi S Witmer, Pendleton County, West Virginia. North American distribution: **USA:** WV.
- P. (A.) appalachianus* (Peck, 1978b: 366) (*Adelopsis*). Holotype male in CNCI. Type locality: Manitou Cave, Fort Payne, DeKalb County, Alabama. North American distribution: **USA:** AL, GA.
- P. (A.) bedfordensis* (Peck, 1978b: 369) (*Adelopsis*). Holotype male in FMNH. Type locality: Campbell Cave, Bedford County, Tennessee. North American distribution: **USA:** TN.
- P. (A.) cumberlandus* (Peck, 1978b: 369) (*Adelopsis*). Holotype male in CNCI. Type locality: 5 mi N Garth, Jackson County, Alabama. North American distribution: **USA:** AL.
- P. (A.) fumosus* (Peck, 1978b: 371) (*Adelopsis*). Holotype male in FMNH. Type locality: near Chimney Campground, 3600', Great Smoky Mts. National Park, Sevier County, Tennessee. North American distribution: **USA:** GA, NC, TN.
- P. (A.) joanna* (Peck, 1978b: 374) (*Adelopsis*). Holotype male in CNCI. Type locality: Joanna Bald, 4700', Andrews, Cherokee County, North Carolina. North American distribution: **USA:** NC.

- P. (A.) merritti* Tishechkin, 2007: 61. Holotype male in FMNH. Type locality: Appalachian Trail near Doe Knob, Great Smoky Mountains National Park Swain County, North Carolina. North American distribution: **USA:** NC, TN.
- P. (A.) mitchellensis* (Hatch, 1933: 208) (*Adelops*). Holotype male in AMNH. Type locality: Mt. Mitchell, North Carolina. North American distribution: **USA:** NC.
- P. (A.) nashvillensis* (Peck, 1978b: 371) (*Adelopsis*). Holotype male in USNM. Type locality: near Nashville, Davidson County, Tennessee. North American distribution: **USA:** TN.
- P. (A.) neojonesi* Peck and Newton, *nomen novum* (replacement name for *P. (A.) jonesi* (Peck)). North American distribution: **USA:** AL.  
=*Adelopsis jonesi* Peck, 1978b: 367 (preoccupied, not *Ptomaphagus valentinei jonesi* Jeannel, 1949: 103). Holotype male in CNCI. Type locality: Wolf Den Cave, near Maude, Colbert County, Alabama.
- P. (A.) orichalcum* (Peck, 1978b: 376) (*Adelopsis*). Holotype male in CNCI. Type locality: Brass-town Bald, Union County, Georgia. North American distribution: **USA:** GA.
- P. (A.) pecki* Gnaspini, 1996: 538, 555 (replacement name for *P. (A.) altus* (Peck, 1978)). North American distribution: **USA:** NC.  
=*Adelopsis altus* (Peck, 1978b: 373) (preoccupied, not *P. altus* Peck, 1973). Holotype male in USNM. Type locality: Mt. Mitchell, 6500', Yancey County, North Carolina.
- P. (A.) pisgahensis* (Peck, 1978b: 376) (*Adelopsis*). Holotype male in MCZC. Type locality: Mt. Pisgah, 1475 m, Haywood-Transylvania Cos., North Carolina. North American distribution: **USA:** NC.
- P. (A.) richlandensis* (Peck, 1978b: 365) (*Adelopsis*). Holotype male in CNCI. Type locality: Richland Balsam, 6000', Haywood County, North Carolina. North American distribution: **USA:** NC.
- P. (A.) scottsboroensis* (Peck, 1978b: 370) (*Adelopsis*). Holotype male in CNCI. Type locality: 10 mi N Scottsboro, Jackson County, Alabama. North American distribution: **USA:** AL.
- P. (A.) steevesi* (Peck, 1978b: 362) (*Adelopsis*). Holotype male in CNCI. Type locality: Coweeta Hydrological Lab., Norton, Macon County, North Carolina. North American distribution: **USA:** NC.
- P. (A.) suteri* (Peck, 1978b: 363) (*Adelopsis*). Holotype male in CNCI. Type locality: Black Rock Mountain State Park, Mountain City, Rabun County, Georgia. North American distribution: **USA:** GA.

#### Subgenus *Echinocoleus* Horn, 1885

- Echinocoleus* Horn, 1885: 136. Type species: *Echinocoleus setiger* Horn, 1885 (by monotypy).

Transferred from genus to subgenus status by Peck and Gnaspini (1997a).

**Distribution.** S USA, possibly Mexico (4 species).

- P. (E.) acutus* Peck and Gnaspini, 1997a: 98. Holotype male in FSCA. Type locality: near Deerland, Okaloosa County, FL. North American distribution: **USA:** AL, FL, GA. Biology: Inhabitant of harvester ant nests.
- P. (E.) chihuahuensis* (Peck, 1976a: 56) (*Echinocoleus*); Peck and Gnaspini 1997a: 101. Holotype female in MCZC. Type locality: 5.5 mi N Pine Springs, 5300' elev., Guadalupe Mts., Culberson County, Texas. North American distribution: **USA:** CO, ID, NM, TX, UT. Biology: Inhabits harvester ant nests. Extra-limital distribution: Probably Mexico.
- P. (E.) setiger* (Horn, 1885: 136) (*Echinocoleus*); Peck 1976a: 53 (*Echinocoleus*); Peck and Gnaspini 1997a: 102. Lectotype male in MCZC (designated by Peck 1976a: 53). Type locality: "Arizona". North American distribution: **USA:** CA, AZ. Biology: Inhabits nests of harvester ants (*Pogonomyrmex* and *Aphaenogaster* Mayr (= *Novomessor* Emery)) (MacKay and MacKay 1983; MacKay 1983). Extra-limital distribution: Probably Mexico.
- P. (E.) sonorensis* (Peck, 1976a: 54) (*Echinocoleus*); Peck and Gnaspini 1997a: 103. Holotype male in MCZC. Type locality: Tucson, Pima County, Arizona. North American distribution: **USA:** AZ. Biology: Inhabits harvester ant (*Pogonomyrmex*) nests. Extra-limital distribution: Probably Mexico.

#### Subfamily COLONINAE Horn

**Colones** Horn 1880: 266 [stem: *Colon-*]. Type genus: *Colon* Herbst, 1797 [the original spelling of *Kolon* was placed on the Official Index of Rejected and Suppressed Generic Names in Zoology. *Colon* was considered the correct original spelling of the genus and placed on the Official List of Generic Names in Zoology (ICZN 1995)].

**Comment.** Use of family-group name conserved over *Myloechina* C. G. Thomson, 1859 (ICZN 1999: Art. 40.2) (Newton and Thayer 1992).

**Distribution.** Worldwide.

=*Myloechina* C. G. Thomson, 1859: 60 [stem: *Myloech-*]. Type genus: *Myloechus* Latreille, 1806 [synonym of *Colon* Herbst, 1797].

**Comment.** Use of younger family-group name *Coloninae* Horn, 1880 conserved (ICZN 1999: Art. 40.2) (Newton and Thayer 1992).

#### Genus *COLON* Herbst, 1797

*Colon* Herbst, 1797: 224 (as *Kolon*, designated an incorrect original spelling and corrected to *Colon* by ICZN (1995)). Type species: *Kolon viennensis*

Herbst, 1797 (designated by Thomson 1859: 60; *Myloechus brunneus* Latreille, 1806 designated by Shuckard 1839: 158 (not originally included)).  
**North American Taxonomy.** Peck and Stephan (1996).

**Biology.** The larvae are unknown. Adults and larvae are suspected of feeding on subterranean fungi, but no records are known.

**Distribution.** Worldwide, few in the tropics (149 species).

=*Colan*; Illiger 1801: 133 (designated as correct original spelling of *Kolon* by ICZN (1995)).

#### Subgenus *Colan* Herbst, 1797

**Distribution.** Holarctic, Myanmar (17 species).

**C. (*C.*) *arcum*** Peck and Stephan, 1996: 698. Holotype male in CMNC. Type locality: Oconee State Park, Oconee County, South Carolina. North American distribution: **Canada:** AB, BC, MB, NB, NS, ON, QC, SK. **USA:** AK, CA, ID, IL, KY, MA, ME, MI, MN, MT, NJ, OR, WA, VT.

**C. (*C.*) *asperatum*** Horn, 1880: 274; Hatch 1933: 233 (subgenus *Myloechus*); Peck and Stephan 1996: 693; Majka and Langor 2008: 365. Lectotype male in MCZC (designated by Peck and Stephan 1996: 693). Type locality: "Michigan". North American distribution: **Canada:** AB, BC, MB, NB, NS, ON, QC, SK. **USA:** AK, CA, ID, IL, KY, MA, ME, MI, MN, MT, NJ, OR, WA, VT.

=*C. (*C.*) *serripoides** Hatch, 1957: 40; Peck and Stephan 1996: 693 (synonymy). Holotype male in USNM. Type locality: Seattle, Washington.

**C. (*C.*) *bidentatum*** (C. R. Sahlberg, 1822 (1817–1834): 95) (*Catops*); Horn 1880: 269; Hatch 1933: 228 (subgenus *Curvimanon*); Peck and Stephan 1996: 699; Majka and Langor 2008: 365. Holotype in MZHF (Silfverberg 1987). Type locality: Finland. North American distribution: **Canada:** AB, BC, MB, NB, NF, NS, ON, QC, SK, YT. **USA:** AK, IL, MA, ME, MI, MN, NC, NH, NJ, NY, PA, VA, WA, WI, WV. Extralimital distribution: Europe; a Holarctic species.

=*C. *clavatus** Mannerheim, 1853: 178; Horn 1880: 273 (mixed series); Peck and Stephan 1996: 699 (synonymy). Holotype female in ZMAS. Type locality: Tschunuktnu River, Kenai Peninsula, Alaska.

=*C. *paradoxum** Horn, 1880: 270; Peck and Stephan 1996: 700 (synonymy). Lectotype male in MCZC (designated by Peck and Stephan 1996: 700). Type locality: "Pennsylvania".

**C. (*C.*) *horni*** Szymczakowski, 1981: 408 (subgenus *Myloechus*); Peck and Stephan 1996: 695; Majka and Langor 2008: 365. Holotype male in USNM. Type locality: Wyandanch, Long Island, New York; North American distribution: **Canada:** MB, NB, NS, ON, QC. **USA:** MA, ME, MI, MN, NH, NY, VT, WI.

**C. (*C.*) *lanceolatum*** Hatch, 1957: 39 (subgenus *Myloechus*); Peck and Stephan 1996: 700. Holotype male in USNM. Type locality: Seattle, Washington. North American distribution: **Canada:** AB, BC, SK. **USA:** MT, OR, WA.

=*C. (*C.*) *femoralis** Hatch, 1957: 41; Peck and Stephan 1996: 700 (synonymy). Holotype male in SMDV. Type locality: Creston, British Columbia.

**C. (*C.*) *nitidum*** Peck and Stephan, 1996: 692. Holotype male in MZLU. Type locality: Sequoia National Park, Tulare County, California. North American distribution: **USA:** CA.

**C. (*C.*) *politum*** Peck and Stephan, 1996: 696; Majka and Langor 2008: 366. Holotype male in CNCI. Type locality: mile 28, Dempster Highway, Yukon Territory. North American distribution: **Canada:** AB, LB, NT, SK, YT. **USA:** AK, CO.

**C. (*C.*) *tibiale*** Hatch, 1957: 40 (as *tibialis*); Peck and Stephan 1996: 691. Holotype male in SMDV. Type locality: Creston, British Columbia. North American distribution: **Canada:** AB, BC, ON, QC, YT. **USA:** AK, CA, MI, MT, NM, UT, WA.

**C. (*C.*) *vancouverense*** Peck and Stephan, 1996: 694. Holotype male in SMDV. Type locality: Royal Oak, Vancouver Island, British Columbia. North American distribution: **Canada:** BC.

#### Subgenus *Eurycolon* Ganglbauer, 1899

*Eurycolon* Ganglbauer, 1899: 146 (as subgenus of *Colan*). Type species: *Colan latus* Kraatz, 1850 (by monotypy).

**Distribution.** Holarctic (8 species).

=*Curvimanon* Fleischer, 1909: 246 (as subgenus of *Colan*). Type species: *Colan rufescens* Kraatz, 1850 (designated by Szymczakowski 1969: 306; *Catops bidentatus* C. R. Sahlberg, designated by Hatch 1928: 214 (not originally included)); Szymczakowski 1969: 306 (synonymy).

**C. (*E.*) *magnicolle*** Mannerheim, 1853: 177; Horn 1880: 272; Hatch 1933: 233, 1957: 40 (subgenus *Myloechus*); Peck and Stephan 1996: 702; Majka and Langor 2008: 367. Holotype male in ZMAS. Type locality: Kenai Peninsula, Alaska. North American distribution: **Canada:** AB, BC, LB, MB, NB, NF, NS, NT, ON, QC, SK, YT. **USA:** AK, CA, CO, ID, MD, ME, MT, NH, WI, VT.

**C. (*E.*) *oblongum*** Blatchley, 1910: 129; Peck and Stephan 1996: 703; Majka and Langor 2008: 367. Lectotype male in PURC (designated by Blatchley 1930: 33). Type locality: Posey County, Indiana. North American distribution: **Canada:** AB, NS, ON, QC. **USA:** AL, DC, IL, KS, KY, MA, MI, MO, MT, NC, NH, NY, OK, VA, VT, WI, WV.

=*C. (*E.*) *mannerheimi** Szymczakowski, 1981: 40; Peck and Stephan 1996: 703 (synonymy). Holotype male in USNM. Type locality: Washington, DC.



### Subgenus *Myloechus* Latreille, 1806

*Myloechus* Latreille, 1806: 30. Type species: *Myloechus brunneus* Latreille, 1806 (by monotypy).

**Distribution.** Holarctic, Mexico, N Oriental, New Caledonia, C Africa (86 species).

=*Myloecus* Agassiz, 1846: 242 (unjustified emendation of *Myloechus*).

- C. (*M.*) *aedeagosum*** Hatch, 1957: 38; Peck and Stephan 1996: 727. Holotype male in CASC. Type locality: Easton, Washington. North American distribution: **Canada:** AB, BC. **USA:** CA, OR, WA.
- C. (*M.*) *basale*** Hatch, 1957: 38; Peck and Stephan 1996: 738. Holotype male in USNM. Type locality: Forest Grove, Oregon. North American distribution: **Canada:** BC. **USA:** CA, OR.
- C. (*M.*) *boreale*** Peck and Stephan, 1996: 730; Bouchard 2001: 130; Majka and Langor 2008: 367. Holotype male in CMNC. Type locality: 25 km W Ignace, Ontario. North American distribution: **Canada:** AB, MB, NB, NS, ON, QC, YT. **USA:** AK, IL, ME, NH, NJ, SC, WV.
- C. (*M.*) *californicum*** Peck and Stephan, 1996: 715. Holotype male in MZLU. Type locality: 15 mi E Fort Bragg, Mendocino County, California. North American distribution: **USA:** CA.
- C. (*M.*) *celatum*** Horn, 1880: 271; Peck and Stephan 1996: 725. Holotype male in MCZC. Type locality: "western Nevada" (probably vicinity of Lake Tahoe, Reno, or Carson City). North American distribution: **Canada:** AB, BC. **USA:** CA, MI, NV, OR.
- =*C. nevadense* Horn, 1880: 275; Hatch 1957: 40; Peck and Stephan 1996: 725 (synonymy). Lectotype female in MCZC (designated by Peck and Stephan 1996: 725). Type locality: "Nevada" (probably vicinity of Lake Tahoe, Reno, or Carson City).
- =*C. (*M.*) complicatum* Hatch, 1957: 37; Peck and Stephan 1996: 725 (synonymy). Holotype male in SMDV (Hatch 1957) or USNM (Peck and Stephan 1996). Type locality: Creston, British Columbia.
- C. (*M.*) *chihuahua*** Peck and Stephan, 1996: 720. Holotype male in CASC. Type locality: Creel, Durango, Mexico. North American distribution: **USA:** AZ? Extra-limital distribution: Mexico: Chihuahua.
- C. (*M.*) *chiricahua*** Peck and Stephan, 1996: 718. Holotype male in CASC. Type locality: 1 mi S Portal, Cochise County, Arizona. North American distribution: **USA:** AZ. Extra-limital distribution: Probably Mexico.
- C. (*M.*) *dentatum*** LeConte, 1853: 282 (as *dentatus*); Horn 1880: 271; Peck and Stephan 1996: 737. Lectotype male in MCZC (designated by Peck and Stephan 1996: 737). Type locality: York, Pennsylvania. North American distribution: **Canada:** ON, QC. **USA:** AL, DC, IA, IL, IN, KS, MA, MD, MI, MS, NH, NY, OK, PA, SC, TX, VA, WV.
- =*C. pusillum* Horn, 1880: 273; Hatch 1933: 233; Peck and Stephan 1996: 738 (synonymy). Lectotype male in MCZC (designated by Peck and Stephan 1996: 738). Type locality: "District of Columbia."
- =*C. putum* Horn, 1880: 272; Hatch 1928: 225 (misspelled *putatum*), 1933: 299; Peck and Stephan 1996: 738 (synonymy). Lectotype male in MCZC (designated by Peck and Stephan 1996: 738). Type locality: "Pennsylvania."
- =*C. (*M.*) rufum* Hatch, 1933: 230; Peck and Stephan 1996: 738 (synonymy). Holotype male in USNM. Type locality: Macon County, Illinois.
- C. (*M.*) *discretum*** Hatch, 1933: 230; Peck and Stephan 1996: 728. Holotype male in CNCI. Type locality: Lorna, British Columbia. North American distribution: **Canada:** AB, BC, YT. **USA:** AK, CA, MT, OR, WA, WY.
- =*C. (*M.*) schuhi* Hatch, 1957: 39; Peck and Stephan 1996: 728 (synonymy). Holotype male in USNM. Type locality: MacKenzie Bridge, Oregon.
- C. (*M.*) *elongatum*** Notman, 1919: 98; Peck and Stephan 1996: 708. Holotype female in SIIS. Type locality: Cochrane, Ontario. North American distribution: **Canada:** AB, BC, MB, ON, QC, SK, YT. **USA:** AK.
- C. (*M.*) *forceps*** Hatch, 1957: 39; Peck and Stephan 1996: 734; Majka and Langor 2008: 368. Holotype male in USNM. Type locality: Forest Grove, Oregon. North American distribution: **Canada:** AB, BC, MB, NS, ON, QC. **USA:** CA, IL, IN, KY, ME, NH.
- C. (*M.*) *grossum*** Peck and Stephan, 1996: 721. Holotype male in FMNH. Type locality: Marshall County, Oklahoma. North American distribution: **USA:** OK.
- C. (*M.*) *hatchi*** Peck and Stephan, 1996: 716. Holotype male in MCZC. Type locality: Alameda County, California. North American distribution: **USA:** CA.
- C. (*M.*) *hesperium*** Peck and Stephan, 1996: 716. Holotype male in FSCA. Type locality: Chiricahua Mountains, Cochise County, Arizona. North American distribution: **USA:** AZ.
- C. (*M.*) *hubbardi*** Horn, 1880: 270; Peck and Stephan 1996: 710; Majka and Langor 2008: 368. Lectotype male in MCZC (designated by Peck and Stephan 1996: 710). Type locality: "Michigan." North American distribution: **Canada:** AB, BC, MB, NF, NS, ON, QC, SK, YT. **USA:** AK, AL, AR, CA, CO, DC, FL, GA, IA, IL, IN, KY, LA, MA, ME, MI, MN,

- MT, NC, NH, NJ, NV, OK, OR, SC, TX, UT, VA, VT, WA, WI, WV.
- =*C. (M.) excisum* Hatch, 1933: 229; Peck and Stephan 1996: 710 (synonymy). Holotype male in AMNH. Type locality: Black Mountains, North Carolina. North American distribution: **USA:** NC.
- =*C. (M.) kincaidi* Hatch, 1933: 229; Peck and Stephan 1996: 710 (synonymy). Holotype male in USNM. Type locality: Seattle, Washington.
- =*C. (M.) productum* Hatch, 1933: 229; Peck and Stephan 1996: 710 (synonymy). Holotype male in USNM. Type locality: Detroit, Michigan.
- C. (M.) incisum* Peck and Stephan, 1996: 722; Majka and Langor 2008: 369. Holotype male in CMNC. Type locality: Gloucester, Ontario. North American distribution: **Canada:** BC, MB, NS, ON, QC. **USA:** MN, MT, WA.
- C. (M.) liebecki* Wickham, 1902: 181; Peck and Stephan 1996: 729. Lectotype male in USNM (designated by Peck and Stephan 1996: 729). Type locality: Breckenridge, 9,600–10,000 ft., Colorado. North American distribution: **Canada:** MB, YT. **USA:** AK, CO.
- =*C. (M.) pribilof* Hatch, 1933: 231; Peck and Stephan 1996: 730 (synonymy). Holotype in USNM. Type locality: St. Paul Island, Alaska.
- C. (M.) longitarsum* Peck and Stephan, 1996: 709. Holotype male in CASC. Type locality: Sonoma, California. North American distribution: **USA:** CA, OR.
- C. (M.) megasetosum* Peck and Stephan, 1996: 712. Holotype male in CMNC. Type locality: Stone Mountain State Park Road, Allegheny County, North Carolina. North American distribution: **Canada:** ON, QC. **USA:** AL, AR, DC, FL, GA, KY, NC, NH, OH, PA, SC, VA, VT, WI, WV.
- C. (M.) mesum* Peck and Stephan, 1996: 733. Holotype male in CMNC. Type locality: Demmitt, 3 km W, 90 km NW Grand Prairie, Alberta. North American distribution: **Canada:** AB, BC, ON, QC, SK. **USA:** AK, NH, OR.
- C. (M.) monstrosum* Peck and Stephan, 1996: 714. Holotype male in CMNC. Type locality: Beecher City, Illinois. North American distribution: **USA:** KY, IL, NC, SC, VA.
- C. (M.) pararectum* Peck and Stephan, 1996: 736. Holotype male in CMNC. Type locality: Manitoulin Island, Ontario. North American distribution: **Canada:** ON, QC. **USA:** IN, KY.
- C. (M.) rectum* Hatch, 1933: 231; Peck and Stephan, 1996: 735. Holotype male in USNM. Type locality: Fort Pendleton, West Virginia. North American distribution: **Canada:** AB, ON, QC. **USA:** KY, ME, NH, WV.
- C. (M.) schwarzi* Hatch, 1933: 232; Peck and Stephan 1996: 724; Majka and Langor 2008: 369; Majka *et al.* 2011: 74. Holotype male in USNM. Type locality: Round Knob, North Carolina. North American distribution: **Canada:** NS, ON, QC. **USA:** AR, IN, KS, KY, ME, MS, NC, NH, OK.
- C. (M.) serratum* Hatch, 1957: 38; Peck and Stephan, 1996: 712. Holotype male in USNM. Type locality: Forest Grove, Oregon. North American distribution: **Canada:** AB, BC. **USA:** AK, CA, OR, WA.
- C. (M.) similare* Peck and Stephan, 1996: 732. Holotype male in CMNC. Type locality: Petawawa Forest Institute, Chalk River, Ontario. North American distribution: **Canada:** ON, QC.

#### Subgenus *Striatocolon* Peck and Stephan, 1996

*Striatocolon* Peck and Stephan, 1996: 687 (as subgenus of *Colon*). Type species: *Colon thoracicum* Horn, 1880 (by original designation).

**Distribution.** E Nearctic (1 species).

*C. (S.) thoracicum* Horn, 1880: 274; Hatch 1933: 233 (subgenus *Myloechus*); Peck and Stephan 1996: 688. Lectotype male in MCZC (designated by Peck and Stephan 1996: 688). Type locality: "Missouri". North American distribution: **Canada:** ON, QC. **USA:** AL, DC, IL, IN, ME, MI, MO, NC, NH, OK, PA, VA, WV.

=*C. decoris* Casey, 1884: 84; Peck and Stephan 1996: 688 (synonymy). Holotype female in USNM. Type locality: "Pennsylvania."

#### Subgenus *Tricolon* Peck and Stephan, 1996

*Tricolon* Peck and Stephan, 1996: 684 (as subgenus of *Colon*). Type species: *Colon (Tricolon) pacificum* Peck and Stephan, 1996 (by original designation).

**Distribution.** Nearctic, Japan (3 species).

*C. (T.) blatchleyi* Peck and Stephan, 1996: 686. Holotype male in USNM. Type locality: Flagler County, Florida. North American distribution: **USA:** FL.

*C. (T.) pacificum* Peck and Stephan, 1996: 684. Holotype male in CNCI. Type locality: Langley, British Columbia. North American distribution: **Canada:** BC. **USA:** MT.

#### *Incertae sedis*

*C. inerme* Mannerheim, 1852: 333 (as *inermis*); Hatch 1957: 39 (subgenus *Myloechus*); Peck and Stephan 1996: 739 (not placed in subgenus). Type depository in MZHF? (type not seen). Type locality: "Sitkha [Sitka] Island, Alaska." North American distribution: **USA:** AK. Literature records of CA, CO, OR, and BC not verified. Note: Status of validity of species not settled.

**Subfamily LEIODINAE Fleming**

The round fungus beetles

**Leiodesidae** Fleming, 1821: 51 [stem: *Leiod-*].Type genus: *Leiodes* Latreille, 1797.**Distribution.** Worldwide.**Tribe AGATHIDIINI Westwood****Agathidiidae** Westwood, 1838: 10 [stem: *Agathidi-*].Type genus: *Agathidium* Panzer, 1797.

**Notes.** See Miller and Wheeler (2005a) for keys to world genera and Wheeler and Miller (2005) for keys to genera of North and Central America, although this does not contain the genus *Gelae* Miller and Wheeler. Angelini (2010) is a world catalogue of the tribe. Park *et al.* (2014) is a phylogeny of the tribe.

**Larvae.** Kilian (1998).**Distribution.** Holarctic, Afrotropical, Oriental, Neotropical (Mexico to Bolivia).=Anisotomidae Stephens, 1828: 99 [stem: *Anisotom-*].Type genus: *Anisotoma* Panzer, 1797.

**Comment.** Family-group name unavailable (ICZN 1999: Art. 11.7.1.1), not based on a genus used as valid at the time (Newton and Thayer 1992).

=Anisotomidae Reitter, 1884b: 6 [stem: *Anisotom-*].Type genus: *Anisotoma* Panzer, 1797.

**Comment.** An application would need to be submitted to the ICZN Commission to suppress Anisotomidae Erichson, 1845 (based on the misidentified type genus *Anisotoma sensu* Schmidt (1841)) for the Principles of Priority and Homonymy (ICZN 1999: Art. 65.2.1) if this name were to be used as valid.

**Genus AGATHIDIUM Panzer, 1797**

**Agathidium** Panzer, 1797: 13. Type species: *Tetratoma globosa* Herbst, 1791 (= *A. seminulum* (Linnaeus, 1758)) (by monotypy).

**Note.** Authority given as Illiger in Kugelann (1794) (Neave 1939–1940), but that refers to page 13 in Panzer (1797).

**Taxonomy.** Fall (1934a), Newton (1984), Wheeler (1984a, b), Miller and Wheeler (2005a, b), and Wheeler and Miller (2005). North American species below are arranged following Wheeler and Miller (2005) and Miller and Wheeler (2005b), and these publications contain keys for identification.

**Biology.** Adults and larvae of the species generally eat plasmodia or fruiting bodies of Myxomycetacea slime molds (Lawrence and Newton 1982; Newton 1984; Wheeler and Miller 2005).

**Distribution.** Holarctic, Oriental, New Guinea, Mexico, Guatemala, Dominican Republic (825 species). New (unpublished) state and province records are included in the distributions below based on SBP voucher specimens deposited in CMNC. =*Volvox* Kugelann, 1794: 535 (NOT preoccupied by *Volvox* Linnaeus). Type species: *Tetratoma*

*globosa* Herbst, 1791 (= *A. seminulum* (Linnaeus, 1758) (designated by Newton 1998: 95)). *Nomen oblitum* (Wheeler and Miller 2005: 34).

=*Agathidium* Illiger, 1798: 81. New name for *Volvox* (in part, supposedly preoccupied by *Volvox* Linnaeus, 1758).

=*Chaetoceble* Sainte-Claire-Deville, 1899: 292 (as subgenus of *Agathidium*). Type species: *Agathidium pilosum* Sainte-Claire-Deville, 1899 (by original designation). Subgenus not currently used in Nearctic region (Wheeler and Miller 2005).

=*Cyphocele* C. G. Thomson, 1859: 59. Type species: *Anisotoma staphylaeum* Gyllenhal, 1810 (= *A. nigrum* Sturm, 1807) (by original designation). Subgenus (*e.g.*, Hatch 1929: 78) not currently used in Nearctic region (Wheeler and Miller 2005).

=*Saccocele* Gozis, 1886: 17 (as subgenus of *Agathidium*). Type species: *Agathidium discoideum* Erichson (by original designation). Synonym of subgenus *Cyphocele*.

=*Eurycele* Hlissnikovský, 1964: 123 (as subgenus of *Agathidium*). Type species: *Agathidium antennatum* Hlissnikovský, 1964 (by original designation). Subgenus not currently used in Nearctic region (Wheeler and Miller 2005).

=*Macrocele* Angelini, 1993: 30 (as subgenus of *Agathidium*). Type species: *Agathidium sherma-thangense* Angelini and De Marzo, 1981 (by original designation). Subgenus not currently used in Nearctic region (Wheeler and Miller 2005).

=*Microcele* Angelini and De Marzo, 1986: 439 (as subgenus of *Agathidium*). Type species: *Agathidium grouvellei* Portevin, 1907 (by original designation). Subgenus not currently used in Nearctic region (Wheeler and Miller 2005).

=*Neocele* Gozis, 1886: 16 (as subgenus of *Agathidium*). Type species: *Agathidium marginatum* Sturm, 1807 (by original designation). Subgenus not currently used in Nearctic region (Wheeler and Miller 2005).

=*Stigmocele* Hlissnikovský, 1964: 119 (as subgenus of *Agathidium*). Type species: *Agathidium longicorne* Portevin, 1908 (by original designation). Angelini 1986: 149 (synonym of subgenus *Neocele*).

=*Rhabdoelytrum* Hlissnikovský, 1964: 31 (as subgenus of *Agathidium*). Type species: *Agathidium sexstriatum* Horn, 1880 (by original designation). Subgenus not currently used in Nearctic region (Wheeler and Miller 2005).

**The brevisternum species-group**

***A. brevisternum*** Fall, 1934a: 122; Hatch 1936: 39, 1957: 34; Hlissnikovský 1964: 46; Wheeler and Miller 2005: 49. Holotype male in MCZC. Type

locality: Eureka, California. North American distribution: **USA:** CA, OR.

- A. dioperculum* Wheeler and Miller, 2005: 54. Holotype male in AMNH. Type locality: Crescent City, Del Norte County, California. North American distribution: **USA:** CA, OR.
- A. rhinocerellum* Wheeler and Miller, 2005: 52. Holotype male in OSUC. Type locality: Spensers Butte, 2 mi S Eugene, Lane County, Oregon. North American distribution: **USA:** OR.

#### The compressidens species-group

- A. compressidens* Fall, 1934a: 106; Hatch 1936: 39; Hlisenkovský 1964: 198; Miller and Wheeler 2005b: 68. Holotype female in MCZC. Type locality: Round Knob, North Carolina. North American distribution: **Canada:** MB, ON. **USA:** NC, NH, SC, TN, VA.
- A. fenderi* Hatch, 1957: 36; Wheeler 1977a: 137; Miller and Wheeler 2005b: 64. Holotype female in USNM. Type locality: Boyer, Lincoln County, Oregon. North American distribution: **USA:** CA, OR.
- A. vesperpressidens* Miller and Wheeler, 2005b: 67. Holotype female in CASC. Type locality: Cherry Hill Campground, 5 mi NE Butte Meadows, Butte County, California. North American distribution: **USA:** CA.

#### The concinnum species-group

**Note.** Apparently corresponding to the subgenus *Cyphocele*.

- A. akallebregma* Miller and Wheeler, 2005b: 11. Holotype male in CASC. Type locality: 5 mi SE Tehachapi, Kern County, California. North American distribution: **USA:** CA, OR.
- A. angulare* Mannerheim, 1852: 369; Horn 1880: 302; Fall 1934a: 116; Hatch 1936: 39, 1957: 32; Hlisenkovský 1964: 20; Miller and Wheeler 2005b: 14. Lectotype male in MCZC (designated by Miller and Wheeler 2005b: 14). Type locality: Sitka [Sitka], Alaska. North American distribution: **Canada:** AB, BC, MB, NF, ON, QC, SK, YT. **USA:** AK, AR, AZ, CA, CO, IN, MI, MT, NH, NY, OR, SC, UT, WA. Biology: Fungal associates (Stephenson *et al.* 1994). Male mandibular horns: Miller and Wheeler (2005c). Larva: Kilian (2006).
- = *A. assimile* Fall, 1934a: 128; Hatch 1936: 39; Hlisenkovský 1964: 24; Miller and Wheeler 2005b: 154 (synonymy); Bouchard 2001: 130 (biology). Holotype male in MCZC. Type locality: Indianapolis, Indiana.
- = *A. temporale* Fall, 1934a: 127 (preoccupied by *A. temporale* J. Sahlberg, 1908). Holotype male in MCZC. Type locality: Randolph, New Hampshire.
- = *A. municeps* Fall, 1934b: 171 (replacement name for *A. temporale*); Hatch 1936: 39; Hlisenkovský

1964: 21; Miller and Wheeler 2005b: 14 (synonymy).

- = *A. falli* Hatch, 1957: 32 (unnecessary replacement name for *A. temporale*); Miller and Wheeler 2005b: 14 (synonymy).
- A. concinnum* Mannerheim, 1852: 370; Horn 1880: 302; Fall 1934a: 120; Hatch 1936: 39, 1957: 33; Hlisenkovský 1964: 24; Miller and Wheeler 2005b: 21. Lectotype female in MCZC (designated by Miller and Wheeler 2005b: 21). Type locality: Sitka, Alaska. North American distribution: **Canada:** BC. **USA:** AK, AZ, CA, CO, ID, MT, NV, NM, OR, UT, WA.
- = *A. castaneum* Mannerheim, 1852: 370 (as synonym of *A. concinnum*). Unavailable (ICZN 1999: Art. 11.6).
- = *A. effluens* Mannerheim, 1853: 202. Lectotype female in MCZC (designated and synonymy by Miller and Wheeler 2005b: 21). Type locality: Kenai, Alaska.
- A. hatchi* Wheeler, 1977a: 137 (replacement name for *Anisotoma fenderi* Hatch, 1957: 32); Miller and Wheeler 2005b: 19; Majka and Langor 2008: 378. North American distribution: **USA:** OR. The record of NB, Canada (Majka and Langor 2009: 378) is probably in error and should be re-examined.
- = *Anisotoma fenderi* Hatch, 1957: 32 (preoccupied in *Agathidium*, not *Agathidium fenderi* Hatch, 1957). Holotype female in OSUO. Type locality: Ocean Park, Oregon.
- A. mollinum* Fall, 1934a: 128; Hatch 1936: 39; Hlisenkovský 1964: 21; Miller and Wheeler 2005b: 13; Majka and Langor 2008: 379. Holotype male in MCZC. Type locality: White Mountains, New Hampshire. North American distribution: **Canada:** NB, NF, NS, ON, QC. **USA:** ME, MI, NH, NC, NY, VA.

#### The oniscoides species-group

**Note.** This group corresponds to the subgenus *Agathidium* of authors.

#### The dentigerum subgroup

- A. akrogeios* Miller and Wheeler, 2005b: 133. Holotype male in CMNC. Type locality: Cloudland Canyon State Park, Dade County, GA. North American distribution: **USA:** AL, GA, KY, LA, TN, TX, VA.
- A. appalachium* Miller and Wheeler, 2005b: 137. Holotype male in CMNC. Type locality: 1.5 mi S Norton, Wise County, Virginia. North American distribution: **USA:** VA. Known only from the holotype.
- A. bushi* Miller and Wheeler, 2005b: 143. Holotype male in CMNC. Type locality: near Skylight Cave, Cumberland Gap National Park, Lee

- County, Virginia. North American distribution: **USA:** NC, OH, VA.
- A. carolinense** Miller and Wheeler, 2005b: 139. Holotype male in AMNH. Type locality: 8 mi W Franklin, Macon County, North Carolina. North American distribution: **USA:** NC.
- A. dentigerum** Horn, 1880: 303; Fall 1934a: 107; Hatch 1936: 39; Hlisnikovský 1964: 200; Miller and Wheeler 2005b: 130. Lectotype male in MCZC (designated by Miller and Wheeler 2005b: 130). Type locality: Stone Creek, Lee County, Virginia. North American distribution: **USA:** TN, VA.
- A. divaricatum** Miller and Wheeler, 2005b: 142. Holotype male in CMNC. Type locality: Mile 317, Blue Ridge Parkway, Linville Falls, Avery County, North Carolina. North American distribution: **USA:** KY, NC, TN.
- A. framea** Miller and Wheeler, 2005b: 134. Holotype male in CMNC. Type locality: Mile 272, Blue Ridge Parkway, Jeffress Park, Wilkes County, North Carolina. North American distribution: **USA:** GA, NC, TN, VA.
- A. gallitillo** Miller and Wheeler, 2005b: 140. Holotype male in AMNH. Type locality: Highlands, Macon County, North Carolina. North American distribution: **USA:** AL, GA, NC, SC, TN.
- A. georgiaense** Miller and Wheeler, 2005b: 144. Holotype male in CMNC. Type locality: Cloudland Canyon State Park, Dade County, Georgia. North American distribution: **USA:** GA. Known only from type locality.
- A. pochontasae** Miller and Wheeler, 2005b: 138. Holotype male in CNCI. Type locality: 2 mi N Mountain Lake, Mountain Lake Biology Station, Virginia. North American distribution: **USA:** VA, WV.
- A. stephani** Miller and Wheeler, 2005b: 131. Holotype male in CMNC. Type locality: Jasper, Walker County, Alabama. North American distribution: **USA:** AL, AR, KY, LA, OK.
- (error); Blatchley 1910: 289; Fall 1934a: 106; Hatch 1936: 39; Hlisnikovský 1964: 148; Miller and Wheeler 2005b: 156. Lectotype male in MCZC (designated by Miller and Wheeler 2005b: 156). Type locality: "Pennsylvania." North American distribution: **Canada:** AB, BC, MB, NB, ON, QC, SK. **USA:** AK, AL, AR, CA, CO, CT, DC, GA, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NH, NJ, NV, NY, NC, OH, OK, PA, SC, TN, TX, VA, WI. Biology: Fungal associates (Stephenson *et al.* 1994).
- = *A. minutum* F. E. Melsheimer, 1844: 103 (as synonym of *A. exiguum*). Unavailable (ICZN 1999: Art. 11.6).
- = *A. ruficorne* LeConte, 1850: 222, 1853: 280; Miller and Wheeler 2005b: 156 (synonymy). Lectotype female in MCZC (designated by Miller and Wheeler 2005b: 158). Type locality: "North shore Lake Superior" [Ontario].
- = *A. californicum* Horn, 1880: 303; Matthews 1887: 75 (error); Fall 1934a: 108; Hatch 1936: 39, 1957: 36; Hlisnikovský 1964: 229; Miller and Wheeler 2005b: 156 (synonymy). Lectotype male in MCZC (designated by Miller and Wheeler 2005b: 158). Type locality: "Cal"[ifornia].
- = *A. alutaceum* Fall, 1934a: 107; Hatch 1936: 39; Hlisnikovský 1964: 213; Miller and Wheeler 2005b: 156 (synonymy). Holotype female in MCZC. Type locality: "Alaska."
- A. fawcettae** Miller and Wheeler, 2005b: 161; Majka and Langor 2008: 378. Holotype male in AMNH. Type locality: Highlands, Macon County, Georgia. North American distribution: **Canada:** BC, MB, NB, NS, ON, QC. **USA:** AL, GA, IL, KY, MA, MN, NC, NH, NY, PA, SC, TN, VA, WV.
- A. oniscoides** Palisot de Beauvois, 1817 (not 1805): 160; LeConte 1853: 285; Horn 1880: 302; Matthews 1887: 74 (error); Blatchley 1910: 290; Fall 1934a: 105; Hatch 1936: 39; Hlisnikovský 1964: 147; Miller and Wheeler 2005b: 149; Majka and Langor 2008: 380. Type depository not known, presumably MNHN. Type locality: "Caroline du Sud" [South Carolina]. North American distribution: **Canada:** NS, ON, QC. **USA:** AL, AR, CT, DE, DC, GA, IL, IN, KY, LA, MA, ME, MD, MI, MN, MS, NC, NH, NJ, NY, OH, OK, PA, SC, TN, TX, VA, VT, WI, WV. Larva: Wheeler (1990a, b).
- = *Agatidium* [sic] *piceum* F. V. Melsheimer, 1806: 13 (attributed to Knoch; *nomen nudum*); F. E. Melsheimer, 1844: 103 (as synonym of *A. piceum* F. E. Melsheimer).
- = *A. piceum* F. E. Melsheimer, 1844: 103. Holotype in MCZC. Type locality: "Pennsylvania."
- = *A. globatile* LeConte, 1878: 598; Horn 1880 (synonymy). Lectotype female in MCZC

#### The kimberlae subgroup

- A. kimberlae** Miller and Wheeler, 2005b: 89. Holotype male in AMNH. Type locality: 2 mi NW Highlands, Nantahala National Forest, Macon County, North Carolina. North American distribution: **USA:** GA, NC, TN, VA.
- A. vaderi** Miller and Wheeler, 2005b: 87. Holotype male in AMNH. Type locality: Clingmans Dome, Great Smoky Mountains National Park, North Carolina. North American distribution: **USA:** GA, NC, TN.

#### The oniscoides subgroup

- A. exiguum** F. E. Melsheimer, 1844: 103; LeConte 1853: 285; Horn 1880: 301; Matthews 1887: 75



(designated by Miller and Wheeler 2005b: 149).  
Type locality: Detroit, Michigan.

- A. rubellum** Fall, 1934a: 105; Hatch 1936: 39; Hlisnikovský 1964: 138; Miller and Wheeler 2005b: 154; Majka and Langor 2008: 381. Lectotype male in MCZC (designated by Miller and Wheeler 2005b: 154). Type locality: "North Carolina." North American distribution: **Canada:** NB, NS. **USA:** AL, AR, IA, IL, KY, MA, MI, MO, NE, NC, NH, NY, PA, SC, VA, WV.

#### The pulchrum species-group

**Note.** The group includes species attributed to the subgenus *Neoceble*.

- A. amae** Miller and Wheeler, 2005b: 45. Holotype male in CASC. Type locality: Kings Beach, along Griff Creek, Placer County, California. North American distribution: **USA:** CA, WA.
- A. aristerium** Wheeler, 1987: 399; Miller and Wheeler 2005b: 54. Holotype male in CUIC. Type locality: Henry A. Smith Woods, Trumansberg, Tompkins County, New York. North American distribution: **Canada:** MB, NB, NS, ON, QC. **USA:** IL, MI, MN, NH, NY, OH. Larva: Wheeler (1990a, b).
- A. athabaskanum** Fall, 1934a: 119; Hatch 1936: 39; Hlisnikovský 1964: 68; Miller and Wheeler 2005b: 47. Holotype male in MCZC. Type locality: Jasper Park, Alberta. North American distribution: **Canada:** AB, BC, MB, NT, YT. **USA:** AK, NH.
- = *A. alticola* Fall, 1934a: 120; Hatch 1936: 39; Hlisnikovský 1964: 68; Wheeler and Miller 2005: 47 (synonymy). Holotype male in MCZC. Type locality: White Mountains, New Hampshire.
- A. atronitens** Fall, 1934a: 122; Hatch 1936: 39; Hlisnikovský 1964: 74; Miller and Wheeler 2005b: 55; Majka and Langor 2008: 376. Holotype female in MCZC. Type locality: Urbana, Illinois. North American distribution: **Canada:** AB, NB, NS, ON, QC, SK. **USA:** AL, DC, IL, KY, LA, MO, NH, NY, OH, OK, PA, TN, VA.
- A. columbianum** Fall, 1934a: 121; Hatch 1936: 39; 1957: 34; Hlisnikovský 1964: 65; Miller and Wheeler 2005b: 49. Holotype male in MCZC. Type locality: Terrace, British Columbia. North American distribution: **Canada:** BC. **USA:** OR.
- A. difforme** (LeConte, 1850: 222) (*Phalacrus*); LeConte 1853: 286 (*Agathidium*); Horn 1880: 302; Fall 1934a: 130; Hatch 1936: 39; Hlisnikovský 1964: 74; Miller and Wheeler 2005b: 32; Majka and Langor 2008: 377. Lectotype male in MCZC (designated by Miller and Wheeler 2005b: 32). Type locality: "North shore Lake Superior" (Ontario). North American distribution: **Canada:** AB, BC, NB, NF, NS, ON, QC, SK, YT. **USA:** AK, CA, MT, NV, NH, OR.
- = *A. canadensis* Brown, 1930: 89; Fall 1934a (synonymy); Miller and Wheeler 2005b: 32. Holotype male in CNCI. Type locality: Britannia [Ottawa], Ontario.
- A. hamulum** Miller and Wheeler, 2005b: 61. Holotype male in AMNH. Type locality: Curtin, Frontier County, Nebraska. North American distribution: **Canada:** AB, ON, QC, SK. **USA:** NE, NH.
- A. laetum** Fall, 1934a: 118; Hatch 1936: 39; Hlisnikovský 1964: 76; Miller and Wheeler 2005b: 46. Lectotype female in MCZC (designated by Miller and Wheeler 2005b: 46). Type locality: Pasadena, California. North American distribution: **USA:** CA.
- A. maculosum** Brown, 1928: 145 (as *maulosum*, incorrect original spelling according to ICZN 1999: Art. 33.3.1, never used subsequently); Fall 1934a: 125; Hatch 1936: 39, 1957: 35; Hlisnikovský 1964: 39; Miller and Wheeler 2005b: 39. Holotype female in CNCI. Type locality: Victoria, British Columbia. North American distribution: **Canada:** BC. **USA:** CA, OR, WA.
- = *A. maculosum franciscanum* Fall, 1934a: 126; Hlisnikovský 1964: 40. Holotype male in MCZC. Type locality: Berkeley, California.
- A. marae** Miller and Wheeler, 2005b: 52. Holotype male in WSUC. Type locality: Near Bald Knob Campground, Mt. Spokane State Park, Spokane County, Washington. North American distribution: **Canada:** AB, BC. **USA:** AK, MT, OR, WA.
- A. oregonense** Miller and Wheeler, 2005b: 58. Holotype male in CMNC. Type locality: 10 mi N, 10 mi E Government Camp, Mt. Hood road, Clackamas County, Oregon. North American distribution: **USA:** OR. Known only from type locality.
- A. picipes** Fall, 1934a: 130; Hatch 1936: 39; Hlisnikovský 1964: 75; Miller and Wheeler 2005b: 59. Holotype male in MCZC. Type locality: Santa Cruz, California. North American distribution: **Canada:** BC. **USA:** CA, OR, WA.
- = *A. contiguum* Fall, 1934a: 119; Hatch 1936: 39; 1957: 33; Hlisnikovský 1964: 76; Miller and Wheeler 2005b: 59 (synonymy). Holotype male in MCZC. Type locality: "Washington State."
- = *A. contiguum* var. *varipunctatum* Hatch, 1936: 40; Hlisnikovský 1964: 75; Miller and Wheeler 2005b: 59 (synonymy). Holotype male in USNM. Type locality: Seattle, Washington.
- = *A. striolum* Hatch, 1957: 33; Miller and Wheeler 2005b: 59 (synonymy). Holotype male in USNM. Type locality: Seattle, Washington.
- A. politum** LeConte, 1866: 370; Horn 1880: 302; Blatchley 1910: 290; Fall 1934a: 124; Hatch 1936: 39; Hlisnikovský 1964: 71; Miller and

- Wheeler 2005b: 62. Holotype male in MCZC. Type locality: York County, Pennsylvania. North American distribution: **USA:** PA. Known only from type specimen. Other records not confirmed are for Canada (ON) and USA (KY, MO, PA), and these are probably *A. atronitens* (Miller and Wheeler 2005b).
- A. pulchrum** LeConte, 1853: 286; Horn 1880: 302; Blatchley 1910: 290; Fall 1934a: 129; Hatch 1936: 39, 1957: 34; Hlisnikovský 1964: 72; Lundberg 1977 (reported from Finland and Sweden); Silfverberg 1979: 11 (with *A. pulchellum* Wankowicz 1869 as synonym); Daffner 1985b (*A. pulchellum* resurrected as valid name for European records, *A. pulchrum* as Nearctic only); Miller and Wheeler 2005b: 41; Majka and Langor 2008: 380. Lectotype male in MCZC (designated by Miller and Wheeler 2005b: 41). Type locality: San Jose, California. North American distribution: **Canada:** AB, BC, NB, NF, NS, ON, QC, YT. **USA:** AK, CA, CO, ID, MT, NH, OR, UT, WA, WV. Extra-limital distribution: none (Europe in error). Biology: Miller and Wheeler (2005c) (male mandibular horns, behavior). Larva: Wheeler (1990a, b).
- =*A. mandibulatum* Mannerheim, 1853: 203; Horn 1880: 303 (synonymized with *A. pulchrum*). Syntype in MZHF (Silfverberg 1987: 48). Type locality: Sitka [Sitka], Alaska.
- A. repentinum** Horn, 1880: 304; Fall 1934a: 123; Hatch 1936: 39; Hlisnikovský 1964: 104; Miller and Wheeler 2005b: 50; Majka and Langor 2008: 381. Holotype female in MCZC. Type locality: White Mts., New Hampshire. North American distribution: **Canada:** AB, MB, NF, YT. **USA:** AK, NH.
- A. rotundulum** Mannerheim, 1852: 370; Horn 1880: 302; Fall 1934a: 121; Hatch 1936: 39, 1957: 34; Hlisnikovský 1964: 47; Miller and Wheeler 2005b: 53. Lectotype male in MCZC (designated by Miller and Wheeler 2005: 53). Type locality: Sitka [Sitka], Alaska. North American distribution: **Canada:** AB, BC. **USA:** AK, CA, OR, WA.
- =*A. kincaidi* Hatch, 1936: 39, 1957: 34 (synonymized with *A. rotundulum*); Hlisnikovský 1964: 109). Holotype female in USNM. Type locality: Loveland, Washington.
- A. rusticum** Fall, 1934a: 117; Hatch 1936: 39; Hlisnikovský 1964: 112; Miller and Wheeler 2005b: 49; Majka and Langor 2008: 382. Holotype male in MCZC. Type locality: Crawford Notch, White Mountains, New Hampshire. North American distribution: **Canada:** BC, MB, NB, NS, ON, QC. **USA:** MA, NH, NY.

### The revolvens species-group

**Note.** Apparently related to members of the subgenus *Neoceble*, centered around *A. nigripenne* Fabricius.

**A. angustoperculum** Wheeler and Miller, 2005: 81. Holotype male in AMNH. Type locality: Sveadal, Santa Clara County, California. North American distribution: **Canada:** BC. **USA:** CA, OR.

**A. cavisternum** Fall, 1934a: 111; Hatch 1936: 39, 1957: 35; Hlisnikovský 1964: 135; Wheeler and Miller 2005: 72. Holotype male in MCZC. Type locality: Terrace, British Columbia. North American distribution: **Canada:** BC. **USA:** AK.

**A. conjunctum** Brown, 1933a: 46; Fall 1934a: 113; Wheeler and Miller 2005: 79. Holotype male in CNCI. Type locality: Langley, British Columbia. North American distribution: **Canada:** BC. **USA:** CA, ID, MT, NV, OR, WA.

=*A. obtusum* Hatch, 1957: 36; Wheeler and Miller 2005: 79 (synonymy). Holotype male in USNM. Type locality: Creston, British Columbia.

**A. depressum** Fall, 1934a: 108; Hatch 1936: 39, 1957: 35; Hlisnikovský 1964: 146; Wheeler and Miller 2005: 65; Majka and Langor 2008: 377. Holotype male in MCZC. Type locality: Terrace, British Columbia. North American distribution: **Canada:** AB, BC, MB, NS, ON, QC. **USA:** AK, CA, CO, ID, IL, NV, OR, WA, WY.

**A. dubitanoides** Wheeler and Miller, 2005: 69. Holotype male in AMNH. Type locality: Bozeman Creek, Gallatin County, Montana. North American distribution: **USA:** ID, MT.

**A. dubitans** Fall, 1934a: 110; Hatch 1936: 39; Hlisnikovský 1964: 136; Wheeler and Miller 2005: 67. Holotype male in MCZC. Type locality: Cloudcroft, New Mexico. North American distribution: **USA:** AZ, NM, OH, PA, TN.

**A. falcatoperculum** Wheeler and Miller, 2005: 83. Holotype male in FMNH. Type locality: Olympic National Park, Jefferson County, Washington. North American distribution: **USA:** CA, WA.

**A. jasperanum** Fall, 1934a: 109; Hatch 1936: 39; Wheeler and Miller 2005: 63. Holotype male in MCZC. Type locality: Jasper Park, Alberta. North American distribution: **Canada:** AB, YT. =*A. jasperinum*, Hatch 1957: 35; Hlisnikovský 1964: 135 (misspelling).

**A. omissum** Fall, 1934a: 113; Hatch 1936: 39; Hlisnikovský 1964: 138; Wheeler and Miller 2005: 70. Holotype male in MCZC. Type locality: Glacier Park, Montana. North American distribution: **Canada:** BC. **USA:** CO, ID, MT, NM.

=*A. conjunctum* Brown, 1933a: 46; Fall 1934a: 113; Hatch 1936: 39, 1957: 36 (misidentification); Wheeler and Miller 2005: 70.

- A. revolvens* LeConte, 1850: 222; Horn 1880: 303; Fall 1934a: 110; Hatch 1936: 39; Hlisnikovský 1964: 134; Wheeler and Miller 2005: 59. Holotype female in MCZC. Type locality: "North shore of Lake Superior" [Ontario]. North American distribution: **Canada:** ON. Known only from the type locality.
- A. virile* Fall, 1901: 219, 1934: 112; Hatch 1936: 39; Hlisnikovský 1964: 136; Wheeler and Miller 2005: 74. Holotype male in MCZC. Type locality: Pomona, California. North American distribution: **USA:** CA (abundant), OR.
- = *A. hebetanum* Hatch, 1957: 35; Wheeler and Miller 2005: 74 (synonymy). Holotype male in USNM. Type locality: McMinnville, Yamhill County, Oregon.

#### The sexstriatum species-group

**Note.** Hlisnikovský (1964) proposed the subgenus *Rhabdoelytrum* for the species in this group. They may be related to the species in the genus *Stetholiodes* Fall or other genera (Wheeler and Miller 2005).

- A. bistratum* Horn, 1880: 304; Fall 1934a: 115; Hatch 1936: 39; Hlisnikovský 1964: 32; Wheeler and Miller 2005: 41. Lectotype male in MCZC (designated by Wheeler and Miller 2005: 41). Type locality: "western Nevada" (probably vicinity of Lake Tahoe, Reno, or Carson City). North American distribution: **USA:** CA, NV.
- A. estriatum* Horn, 1880: 304; Fall 1934a: 115; Hatch 1936: 39; Hlisnikovský 1964: 123; Wheeler and Miller 2005: 45. Holotype male in MCZC. Type locality: [Fort] Garland, Costilla County, Colorado. North American distribution: **Canada:** AB, BC, SK. **USA:** AZ, CA, CO, MT, NM, OR, WA.
- A. sexstriatum* Horn, 1880: 303; Fall 1934a: 114; Hatch 1936: 39; Hlisnikovský 1964: 32; Wheeler and Miller 2005: 43. Lectotype male in MCZC (designated by Wheeler and Miller 2005: 43). Type locality: "western Nevada" (probably vicinity of Lake Tahoe, Reno, or Carson City). North American distribution: **Canada:** BC. **USA:** CA, NV.

#### *Nomen dubium*

- A. pallidum* Say, 1824: 91; Horn 1880: 281; Hatch 1929: 11 (possible synonym of *Hydnobius matthewsii* Crotch); Peck and Cook 2009: 40; Angelini 2010: 4 (not Sogdini, assumed Agathidiini but not placed to genus). Type material lost (Mawdsley 1993). Type locality: Engineer Cantonment, Missouri Territory [Nebraska, near Omaha, *teste* Peck and Cook (2009) and Angelini (2010)]. Nomenclatural Note: In *Agathidium*, this name is a senior secondary homonym of

*A. pallidum* (Gyllenhal, 1827), but since we regard it as a *nomen dubium* of uncertain generic assignment, we propose no replacement of the Gyllenhal name. North American distribution: **USA:** NE.

#### Genus *ANISOTOMA* Panzer, 1797

*Anisotoma* Panzer, 1797: 8. Type species: *Tritoma glabra* Fabricius, 1787 (designated by Hatch, 1929b: 50; "*A. picea* (Illig)" designated by Thomson 1859: 58).

**Note.** Authority given as Knoch in Kugelann (1794) (Neave 1939–49); two original species ("*picea* Kug.," "*glabra* Kug.").

**North American Revision.** Wheeler (1979) and Wheeler and Miller (2005).

**Biology.** The species generally eat plasmodia or fruiting bodies of Myxomycetes slime molds (e.g., Wheeler 1979; Lawrence and Newton 1980; Newton 1984; Wheeler 1984a, b).

**Distribution.** Holarctic, Nepal, China, Taiwan, N Neotropical (to Panama) (57 species). New (unpublished) state and province records are included in the distributions below based on SBP voucher specimens deposited in CMNC.

= *Pentatoma* Schneider, 1792: 339 (preoccupied, not Olivier, 1789). Type species: *Sphaeridium humerale* Olivier, 1790 (cited as Fabricius, 1792) (designated by Hatch 1929b: 50).

= *Anisotoma* Illiger, 1798: 69 (attributed to Knoch). Type species: none designated? (13 original species, including "*piceum* Panzer" and "*glabrum* Panzer").

= *Leiodes*; Schmidt 1841: 132 (misidentification of *Leiodes* Latreille, 1797).

= *Eucyrta* Portevin, 1927: 82 (preoccupied, not Felder 1874); Wheeler 1979: 267 (synonymy). Type species: *Eucyrta didymata* Portevin, 1927 (designated by Hatch, 1929b: 57).

*A. amica* Brown, 1937b: 201; Hatch 1957: 31; Wheeler 1979: 293. Holotype male in CNCI. Type locality: Mt. Layall, Quebec. North American distribution: **Canada:** AB, BC, MB, NF, ON, QC. **USA:** AK, AZ, CO, NM, WA. Biology: Fungal associates (Stephenson *et al.* 1994).

*A. basalis* (LeConte, 1853: 285) (*Leiodes*); Horn 1880: 299 (*Liodes*); Brown 1937b: 200; Wheeler 1979: 292; Majka and Langor 2008: 382. Lectotype female in MCZC (designated by Wheeler 1979: 292). Type locality: Pennsylvania or New Jersey. North American distribution: **Canada:** MB, NB, NF, NS, ON, QC. **USA:** AL, AR, CT, GA, IL, IN, KY, LA, MA, MD, ME, MI, MN, MS, NC, NH, NJ, NY, OK, PA, RI, SC, TX, VA, VT, WI. Larva: Wheeler (1990a, b). Biology: Fungal associates (Wheeler and Hoebeke 1990; Stephenson *et al.* 1994).

- =*Leiodes dichroa* LeConte, 1853: 285; Wheeler 1979: 292 (synonymy). Lectotype male in MCZC (designated by Wheeler 1979: 292). Type locality: Ann Arbor, Michigan.
- A. *bifoveata*** Wheeler, 1979: 273. Holotype male in MCZC. Type locality: Conkles Hollow, Hocking County, Ohio. North American distribution: **Canada:** ON. **USA:** AL, AR, CT, GA, IL, IN, KY, LA, MI, MO, MS, NC, NY, PA, SC, TX, VA, WV.
- A. *blanchardi*** (Horn, 1880: 295) (*Liodes*); Brown 1937b: 196; Wheeler 1979: 273; Majka and Langor 2008: 383. Lectotype male in MCZC (designated by Wheeler 1979: 273). Type locality: Tewksbury, Massachusetts. North American distribution: **Canada:** MB, NB, NS, ON, QC. **USA:** AL, FL, GA, IL, KY, LA, MA, MD, ME, MI, MN, NC, NH, OH, PA, SC, TN, TX, VA, VT. Larva: Kilian (2005a). Biology: Fungal associates (Stephenson *et al.* 1994).
- A. *confusa*** (Horn, 1880: 299) (*Liodes*); Brown 1937b: 197; Hatch 1957: 31; Wheeler 1979: 288. Holotype male in MCZC. Type locality: "Western Nevada" (probably vicinity of Lake Tahoe, Reno, or Carson City). North American distribution: **Canada:** AB, BC. **USA:** AK, CA, OR, NV, WA.
- =*A. interstitialis* Hatch, 1936: 38; Brown 1937b: 197; Wheeler 1979: 288 (synonymy). Holotype in USNM. Type locality: Seattle, Washington.
- A. *discolor*** (F. E. Melsheimer, 1844: 103) (*Leiodes*); LeConte 1853: 285; Horn 1880: 298; Brown 1937b: 202; Wheeler 1979: 295; Majka and Langor 2008: 384. Lectotype female in MCZC (designated by Wheeler 1979: 295). Type locality: "Pennsylvania." North American distribution: **Canada:** BC, MB, NB, NS, ON, QC. **USA:** AL, AR, CT, DC, FL, GA, IA, IL, IN, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, NH, NJ, NY, OH, OK, PA, RI, SC, TN, TX, VA, WV. Larva: Kilian (2003).
- =*Anistoma* [sic] *piceum* F. V. Melsheimer, 1806: 12 (attributed to Knoch; *nomen nudum*); F. E. Melsheimer 1844: 103 (as synonym of *Leiodes discolor* F. E. Melsheimer); Wheeler 1979: 288 (synonymy).
- A. *errans*** Brown, 1937b: 202; Hatch 1957: 32; Wheeler 1979: 277; Majka and Langor 2008: 384. Holotype male in CNCI. Type locality: Biscotasing, Ontario. North American distribution: **Canada:** AB, BC, NB, NF, NS, ON, QC, SK, YT. **USA:** AK, CA, ID, ME, MI, NH, OR, RI, VT, WA, WY. Biology: Fungal associates (Stephenson *et al.* 1994). Larva: Newton (1991).
- A. *expolita*** Brown, 1937b: 199 (replacement name for *Leiodes polita* LeConte, 1853); Wheeler 1979: 300. North American distribution: **USA:** AR, IL, IN, KY, PA, SC.
- =*Leiodes polita* LeConte, 1853: 285 (preoccupied, not *Silpha polita* Marsham, 1802, not now congeneric but replaced before 1961 and replacement name in use (ICZN 1999: Art. 59.3)); Horn 1880: 297 (*Liodes*). Holotype male in MCZC. Type locality: "South Carolina."
- A. *geminata*** (Horn, 1880: 299) (*Liodes*); Brown 1937b: 196; Wheeler 1979: 288; Majka and Langor 2008: 385. Lectotype male in MCZC (designated by Wheeler 1979: 288). Type locality: Tyngsboro, Massachusetts. North American distribution: **Canada:** BC, NB, NF, NS, ON, QC. **USA:** CT, GA, IL, IN, KY, MA, ME, MI, NC, NH, NJ, NY, OH, PA, RI, SC, TN, TX, VA, WI. Biology: Fungal associates (Stephenson *et al.* 1994).
- A. *globososa*** Hatch, 1929b: 56 (replacement name for *A. globosa* (LeConte, 1850)); Hatch 1957: 31; Brown 1937b: 197; Wheeler 1979a: 298; Majka and Langor 2008: 386. North American distribution: **Canada:** AB, BC, MB, NF, ON, QC, SK. **USA:** AK, CO, CT, ID, MA, ME, MI, NH, SD, TX, WA, WI. Biology: Fungal associates (Stephenson *et al.* 1994).
- =*Cyrtusa globosa* LeConte, 1850: 222 (preoccupied in *Anisotoma*, not *Tetratoma globosa* Herbst, 1791; not now congeneric, but replaced before 1961 and replacement name in use (ICZN 1999: Art. 59.3)); LeConte 1853: 285 (*Leiodes*); Horn 1880: 297 (*Liodes*). Lectotype male in MCZC (designated by Wheeler 1979: 298). Type locality: Sault Ste Marie, Michigan.
- A. *humeralis*** (Olivier, 1790: 15) (*Sphaeridium*); Hatch 1929b: 51; Wheeler 1979: 290. Type in MNHN? Type locality: "environs de Paris". North American distribution: **Canada:** BC. **USA:** IN. Extra-limital distribution: Europe; a Holarctic species. Larva: Ratajczak (1995) and Kilian (1998).
- A. *inops*** Brown, 1937b: 198; Wheeler 1979: 299; Majka and Langor 2008: 386; Bouchard 2001: 130. Holotype male in CNCI. Type locality: Arnprior, Ontario. North American distribution: **Canada:** NB, NF, NS, ON, QC. **USA:** ME, NC, NH, NY.
- A. *nevadensis*** Brown, 1937b: 199 (replacement name for *Liodes globosa* var. *bicolor* Horn, 1880); Hatch 1957: 31; Wheeler 1979: 300. North American distribution: **USA:** CA, NV, OR, WA.
- =*Liodes globosa* var. *bicolor* Horn, 1880: 297 (preoccupied by *Anisotoma bicolor* Schmidt, 1841). Lectotype male in MCZC (designated by Wheeler 1979: 300). Type locality: "Nevada" [probably vicinity of Lake Tahoe, Reno, or Carson City].
- A. *obsoleta*** (Horn, 1880: 298) (*Liodes*); Brown 1937b: 201; Majka and Langor 2008: 386 (revalidation of name). Lectotype male in MCZC (designated by Wheeler 1979: 276). Type

locality: none given, range stated as "New Hampshire to Virginia and Canada." North American distribution: **Canada:** BC, MB, NB, NF, NS, ON, QC. **USA:** AL, AR, CT, FL, GA, IA, IL, KY, LA, MA, ME, MI, MN, MS, NC, NH, NY, OH, PA, SC, TN, VA, VT, WI, WV. Biology: Fungal associates Stephenson *et al.* 1994). Larva: Kilian (2005b) (as *A. horni* Wheeler).

=*A. horni* Wheeler, 1979: 276 (unnecessary replacement name for *Liodes obsoleta* Horn, 1880, incorrectly thought to be preoccupied by *Pallodes obsoletus* F. E. Melsheimer, 1844 (now in *Anogdus* LeConte)). Biology: Bouchard (2001).

**A. reticulonota** Wheeler, 1979: 298. Holotype male in MCZC. Type locality: White Mountains, Apache County, Arizona. North American distribution: **USA:** AZ, NM.

#### Genus *GELAE* Miller and Wheeler, 2005

**Gelae** Miller and Wheeler, 2005a: 469. Type species: *Gelae donut* Miller and Wheeler, 2005 (by original designation).

**Key to Species.** Miller and Wheeler (2005a).

**Distribution.** Nearctic, Neotropical (8 species). New (unpublished) state and province records are included in the distributions below based on SBP voucher specimens deposited in CMNC.

**G. parile** (Fall, 1934a: 117) (*Agathidium*); Hatch 1936: 39; Hlisenkovský 1964: 77; Miller and Wheeler 2005a: 476 (new combination in *Gelae*); Majka and Langor 2008: 382. Lectotype male in MCZC (designated by Miller and Wheeler 2005a: 476). Type locality: Sugar Pine, California. North American distribution: **Canada:** BC, MB, NB, NF, NS, ON, QC. **USA:** CA, NH, NY, NC, PA, VT, VA.

**G. parvulum** (LeConte, 1878: 598) (*Agathidium*); Horn 1880 (synonymized with *A. politum* LeConte); Fall 1934a: 117 (resurrected from synonymy with *A. politum*); Hatch 1936: 39; Hlisenkovský 1964: 65; Miller and Wheeler 2005a: 477 (new combination in *Gelae*). Syn-type male in MCZC (as holotype in error, Miller and Wheeler 2005: 477). Type locality: Marquette, Michigan. North American distribution: **USA:** CA (Amador and El Dorado Counties), MI.

**G. rol** Wheeler and Miller in Miller and Wheeler, 2005a: 480. Holotype male in CNCI. Type locality: Workman Creek, Sierra Ancha Mountains, Gila County, Arizona. North American distribution: **USA:** AZ (Coconino, Gila, and Graham Counties).

#### Genus *STETHLIODES* Fall, 1910

**Stethliodes** Fall, 1910: 4. Type species: *Stethliodes laticollis* Fall, 1910 (by monotypy).

Wheeler 1981: 165; Wheeler and Miller 2005: 34.

**Distribution.** E Palearctic, N Oriental, USA (IN) (14 species).

=*Agathodes* Portevin, 1926: 80 (preoccupied, not Guénée, 1854). Type species *Agathodes striatipenne* Portevin, 1926 (by monotypy).

=*Agathidiodes* Portevin, 1944: 169 (replacement name for *Agathodes* Portevin); Newton 1983a (synonymy).

**S. laticollis** Fall, 1910: 4; Wheeler 1981: 165. Holotype male in MCZC. Type locality: Steuben County, Indiana. North American distribution: **USA:** IN. Biology: Blatchley (1910). Host: *Sphagnum* moss.

#### Tribe LEIODINI Fleming

**Leiodesidae** Fleming, 1821: 51 [stem: *Leiod-*].

Type genus: *Leiodes* Latreille, 1797.

**Comment.** Incorrect original stem formation, not in prevailing usage; correction of stem by Newton and Thayer (1992).

**Distribution.** Worldwide.

=Anisotomidae Erichson, 1845: 41 [stem: *Anisotom-*].

Type genus: *Anisotoma sensu* Schmidt, 1841 [not *Anisotoma* Panzer, 1797; synonym of *Leiodes* Latreille, 1797].

**Comment.** Based on a misidentified type genus; an application would need to be submitted to the Commission to suppress this name for the Principles of Priority and Homonymy (ICZN 1999: Art. 65.2.1) if Anisotomidae Reiter, 1884 in Leiodinae: Agathidiini were to be used as valid in the future.

=*Cyrtusina* Perkovsky, 1997: 168; 2002: 16 [stem: *Cyrtus-*]. Type genus: *Cyrtusa* Erichson, 1842.

**Comment.** Unavailable family-group name, proposed after 1930 without description or bibliographic reference to such a description (ICZN 1999: Art. 13.1).

=*Hypolioidina* Perkovsky, 2002: 15 [stem: *Hypolioid-*].

Type genus: *Hypoliodes* Portevin, 1908.

**Comment.** Unavailable family-group name, proposed after 1930 without description or bibliographic reference to such a description (Art. 13.1).

#### Genus *ANOGDUS* LeConte, 1866

**Anogdus** LeConte, 1866: 369. Type species: *Anogdus capitatus* LeConte, 1866 (by monotypy). **Revision.** Peck and Cook (2013a).

**Distribution.** Nearctic, ?S Africa (17 species).

=*Neocyrtusa* Brown, 1937a: 161. Type species: *Pallodes obsoletus* F. E. Melsheimer, 1844 (by original designation). Daffner 1989: 271 (synonymy).

**A. alachua** Peck and Cook, 2013a: 15. Holotype male in FSCA. Type locality: Alachua County, Florida. North American distribution: **USA:** FL.

- A. capitatus* LeConte, 1866: 369; Horn 1880: 283; Brown 1937a: 170; Daffner 1989: 274; Peck and Cook 2013a: 4. Holotype female in MCZC. Type locality: "Florida." North American distribution: **USA:** FL, GA.
- A. cochise* Peck and Cook, 2013a: 16. Holotype male in CDAE. Type locality: Southwest Research Station, Portal, Cochise County, Arizona. North American distribution: **USA:** AZ.
- A. dissimilis* Blatchley, 1916: 93; Brown 1937a: 170; Daffner 1989: 274; Majka and Langor 2008: 371; Peck and Cook 2013a: 5. Lectotype male in PURC (designated by Blatchley 1930: 39). Type locality: Dunedin, Florida. North American distribution: **Canada:** LB, NF, NS. **USA:** FL, GA, IL, NE, NJ, NM, TX.
- A. fusciclavus* (Fall, 1925: 311) (*Anisotoma*); Daffner 1989: 277; Peck and Cook 2013a: 6. Holotype male in MCZC. Type locality: Ojai, Ventura County, California. North American distribution: **Canada:** BC. **USA:** CA, NV, OR, WA. The Texas record from Daffner (1989) is based on a misidentification (Peck and Cook 2013a).
- =*Neocyrtusa sternita* Hatch, 1957: 28; Daffner 1989: 277 (synonymy). Holotype male in USNM. Type locality: Forest Grove, Oregon.
- A. huachuca* Peck and Cook, 2013a: 16. Holotype male in FSCA. Type locality: Sunnyside, Huachuca Mts., Cochise County, Arizona. North American distribution: **USA:** AZ.
- A. insolitus* (Brown, 1937a: 170) (*Neocyrtusa*); Daffner 1989: 276; Peck and Cook 2013a: 7. Holotype male in CNCI. Type locality: Penticton, British Columbia. North American distribution: **Canada:** BC, SK. **USA:** CA, CO, NV, OR, WA.
- A. obsoletus* (F. E. Melsheimer, 1844: 107) (*Pallodes*); Brown 1937a: 163 (*Neocyrtusa*); Daffner 1989: 278; Peck and Cook 2013a: 8. Lectotype female in MCZC (designated by Daffner 1989: 278). Type locality: "Pennsylvania." North American distribution: **Canada:** ON, QC. **USA:** AL, IL, IN, KY, MA, MD, MI, NC, OK, PA, TX, VA.
- =*Cyrtusa blandissima* Zimmermann, 1869: 250; Horn 1880: 294. Daffner 1989: 278 (synonymy). Syntype female in MCZC. Type locality: "North Carolina."
- A. potens* (Brown, 1932: 205) (*Leiodes*), 1937a: 165 (*Neocyrtusa*); Daffner 1989: 281; Majka and Langor 2008: 371; Peck and Cook 2013a: 10. Holotype male in CNCI. Type locality: "Thunder River" [Riviere-au-Tonnerre], Québec. North American distribution: **Canada:** NB, ON, QC, (NOT BC). **USA:** ME, MI, ND.
- A. puritanus* (Fall, 1925: 310) (*Anisotoma*); Brown 1937a: 164 (*Neocyrtusa*); Daffner 1989: 280; Peck and Cook 2013a: 11. Lectotype female in MCZC (designated by Daffner 1989: 280). Type locality: Tyngsboro, Massachusetts. North American distribution: **Canada:** MB, ON, QC. **USA:** MA, NC, SC.
- A. rileyi* Peck and Cook, 2013a: 17. Holotype male in TAMU. Type locality: Lake Austin, Travis County, Texas. North American distribution: **USA:** TX.
- A. sculpturatus* (Fall, 1910: 6) (*Anisotoma*); Daffner 1989: 282; Peck and Cook 2013a: 12. Holotype female in MCZC. Type locality: Flagstaff, Arizona. North American distribution: **USA:** AZ.
- A. secretus* (Brown, 1937a: 163) (*Neocyrtusa*); Daffner 1989: 278; Peck and Cook 2013a: 13. Holotype male in CNCI. Type locality: Arnprior, Ontario. North American distribution: **Canada:** ON, QC. **USA:** NY, OK, TX, VA.
- A. superans* (Fall, 1910: 7) (*Cyrtusa*); Brown 1937a: 164 (*Neocyrtusa*); Daffner 1989: 284; Peck and Cook 2013a: 14. Holotype male in MCZC. Type locality: Tyngsboro, Massachusetts. North American distribution: **Canada:** AB, MB, ON, QC. **USA:** CO, FL, GA, MA, MS, NH.
- A. texanus* Peck and Cook, 2013a: 18. Holotype male in TAMU. Type locality: Italy, Ellis County, Texas. North American distribution: **USA:** OK, TX.
- A. tridens* Peck and Cook, 2013a: 19. Holotype male in FSCA. Type locality: Latimer County, Oklahoma. North American distribution: **USA:** AR, AZ, IL, IN, OK, TX.

#### Genus *CYRTUSA* Erichson, 1842

*Cyrtusa* Erichson, 1842: 221. Type species: *Anisotoma subtetacea* Gyllenhal, 1813 (designated by Thomson 1859: 58). Daffner 1982: 209, 1983: 136; 1989: 292.

**Revision.** Peck and Cook (2013b).

**Distribution.** Holarctic, Oriental, ?Brazil (17 species).

=*Caenocyrtus* Brown, 1937a: 172. Type species: *Amphicyllis picipennis* LeConte, 1863 (by original designation). Daffner 1989: 292 (synonymy).

*C. grossepunctata* Daffner, 1989: 295; Peck and Cook 2013b: 6. Holotype male in HDPC. Type locality: Sagehen Creek, Nevada County, California. North American distribution: **USA:** CA, OR.

*C. subtetacea* (Gyllenhal, 1813: 707) (*Anisotoma*); Horn 1880: 294 (*Cyrtusa*); Brown 1937a: 172 (*Caenocyrtus*); Hatch 1957: 30 (*Caenocyrtus*); Daffner 1983: 138, 1989: 294; Majka and Langor 2008: 371; Peck and Cook 2013b: 4. Syntypes (2) in UZIU. Type locality: Gottland, Sweden. North American distribution: **Canada:** BC, MB, NB, NS, ON, QC. **USA:** CA, CO, DC, ID, IA, IL,

MA, ME, MI, MN, MT, NV, NM, NY, OR, UT, VT, VA, WA. Extra-limital distribution: Europe; Siberia; a Holarctic species.

= *Amphicyllis picipennis* LeConte, 1863: 25. Daffner 1989: 294 (synonymy). Lectotype male in MCZC (designated by inference as holotype by Daffner 1989: 294). Type locality: "northern New York."

**Note.** The status of this as a junior synonym was questioned by Peck and Cook (2013b).

#### Genus *ECARINOSPHAERULA* Hatch, 1929

*Ecarinosphaerula* Hatch, 1929a: 2. Type species: *Anisotoma ecarinata* Horn, 1880 (by original designation).

**Distribution.** W Nearctic (1 species).

*E. ecarinata* (Horn, 1880: 292) (*Anisotoma*); Hatch, 1929a: 2, 1929b: 14 (*Leiodes*), 1957: 29; Peck and Cook 2013b: 22. Syntypes (2) in MCZC. Type locality: "western Nevada" (probably vicinity of Lake Tahoe, Reno, or Carson City). North American distribution: **Canada:** BC. **USA:** CA, NV.

**Note.** An undescribed species is also known, undetermined specimens are also from CA (Peck and Cook 2013b), and an unconfirmed record from BC was reported by Hatch (1957).

#### Genus *ISOPLASTUS* Horn, 1880

*Isoplastus* Horn, 1880: 295. Type species: *Isoplastus fossor* Horn, 1880 (by monotypy).

**Revision:** Peck and Cook (2013b).

**Distribution.** E Nearctic, Mexico, Dominican Republic (3–4 species).

*I. floridanus* Peck and Cook, 2013b: 8. Holotype male in CMNC. Type locality: Archbold Biological Station, Lake Placid, Highlands County, Florida. North American distribution: **USA:** FL (peninsular Florida only).

*I. fossor* Horn, 1880: 295; Brown 1937a: 174; Daffner 1989: 302; Peck and Cook 2013b: 7. Lectotype male in MCZC (designated by Daffner 1989: 302). Type locality: District of Columbia. North American distribution: **Canada:** ON, QC. **USA:** AL, AR, AZ, DC, FL, GA, IN, KY, LA, MI, MS, NC, OK, SC, TX, VA. Extra-limital distribution: Mexico?

= *I. uncus* Wheeler, 1977b: 77; Daffner 1989: 302 (synonymy). Holotype male in MCZC. Type locality: Fortin de las Flores, Veracruz, Mexico.

**Note.** The question of synonymy needs re-examination (Peck and Cook 2013b).

#### Genus *LEIODES* Latreille, 1797

*Leiodes* Latreille, 1797: 22. Type species: *Sphaeridium ferrugineum* Fabricius, 1787 (by subsequent monotypy by Latreille 1802: 163).

**Revisions.** Daffner (1983); Baranowski (1993) (North American fauna, subgenera not used); Švec (2000) (Asian fauna).

**Distribution.** Holarctic, N Oriental, N Neotropical (to Panama), S Africa (252 spp.).

= *Anisotoma* of Schmidt 1841: 143 (misidentification of *Anisotoma* Panzer, 1797).

= *Liodes* Erichson, 1845: 87 (unjustified emendation of *Leiodes* Latreille, 1797; used in misidentified sense of Schmidt 1841 (= *Anisotoma*)).

**Note.** Used in a correctly identified sense by Reitter (1884b).

= *Oosphaerula* Ganglbauer, 1896: 181 (as subgenus of *Leiodes*); Baranowski, 1993: 16 (synonymy). Type species: *Anisotoma badium* Sturm, 1807 (designated by Hatch 1929b: 39; *Liodes carpathica* Ganglbauer, 1896, designated by Daffner 1983: 108).

= *Oreosphaerula* Ganglbauer, 1899: 228 (as subgenus of *Leiodes*). Type species: *Anisotoma nitidula* Erichson, 1845 (designated by Hatch 1929b: 37).

= *Pseudohydnoebius* Ganglbauer, 1899: 208 (as subgenus of *Leiodes*). Type species: *Anisotoma punctulatum* Gyllenhal, 1810 (by monotypy).

= *Trichosphaerula* Fleischer, 1904: 261 (as subgenus of *Leiodes*). Type species: *Anisotoma scita* Erichson, 1845 (= *L. ferruginea* (Fabricius, 1787)) (by monotypy).

**Note.** Daffner (1983) corrected the misidentification of Reitter (1884b).

= *Pteromerula* Fleischer, 1905: 314 (as subgenus of *Leiodes*). Type species: *Anisotoma pallens* Sturm, 1807 (designated by Hatch 1929b: 15).

= *Parahydnoebius*; Fleischer, 1908: 29 (*lapsus calami* for *Pseudohydnoebius*).

= *Strigoliodes* Fleischer, 1908: 32 (as subgenus of *Leiodes*; unavailable, not formally proposed). Type species: *Leiodes rugosa* Stephens, 1829 (by monotypy).

**Note.** Suggested for *L. rugosa* and possibly other species, but withheld.

= *Eremosphaerula* Hlisenkovský, 1967b: 260 (as subgenus of *Leiodes*). Type species: *Liodes terricola* Hlisenkovský, 1967b (= *Liodes sparsreschneideri* Strand, 1943) (by original designation).

#### The antennata species-group

*L. alesi* Baranowski, 1993: 121. Holotype male in MZLU. Type locality: Mabel Lake, Squaw Valley, British Columbia. North American distribution: **Canada:** AB, BC. **USA:** ID, WA.

*L. antennata* (Fall, 1910: 6) (*Anisotoma*); Baranowski 1993: 118. Lectotype male in MCZC (designated by Baranowski 1993: 118). Type locality: Pasadena, California. North American distribution: **USA:** CA.

### The *assimilis* species-group

- L. appalachiana* Baranowski, 1993: 57; Majka *et al.* 2011: 75. Holotype male in CNCI. Type locality: 16 km S Strasburg, Shenandoah County, Virginia. North American distribution: **USA:** KY, ME, NC, NY, PA, SC, VA, WV.
- L. assimilis* (LeConte, 1850: 221) (*Anisotoma*), 1853: 283; Horn 1880: 287 (*Anisotoma? ex parte*); Blatchley 1910: 285; Hatch 1957: 27 (? *ex parte*); Baranowski 1993: 51; Majka and Langor 2008: 371. Lectotype male in MCZC (designated by Baranowski 1993: 51). Type locality: Eagle Harbor, Michigan. North American distribution: **Canada:** AB, BC, MB, NB, NF, NS, NT, ON, QC, SK, YT. **USA:** AK, MA, ME, MI, MN, NH, NY, OR, SD, VT, WA, WI.
- L. assimiloides* Baranowski, 1993: 56. Holotype male in MCZC. Type locality: 4 mi W Durham, Strafford County, New Hampshire. North American distribution: **USA:** ME, NH, VA.
- L. collaris* (LeConte, 1850: 221) (*Anisotoma*), 1853: 283; Horn 1880: 289 (*Anisotoma? ex parte*); Hatch 1957: 27 (? *ex parte*); Baranowski 1993: 47; Majka and Langor 2008: 372. Lectotype female in MCZC (designated by Baranowski 1993: 47). Type locality: Eagle Harbor, Michigan. North American distribution: **Canada:** AB, BC, LB, MB, NB, NF, ON, QC, YT. **USA:** AK, MA, ME, MI, NH, WY.
- L. contaminabilis* Baranowski, 1993: 58; Majka and Langor 2008: 373. Holotype male in MCZC. Type locality: Framingham, Massachusetts. North American distribution: **Canada:** NB, ON. **USA:** CT, MA, ME, NH, NJ, NY.
- L. lostine* (Hatch, 1957: 29) (*Neocyrtusa*); Baranowski 1993: 46. Holotype female in USNM. Type locality: Lostine, Oregon. North American distribution: **Canada:** AB, BC. **USA:** AZ, ID, UT, WA.
- L. punctostriata* Kirby, 1837: 110 (as *punctostriatus*); Mannerheim 1853: 201 (*Hydnobius*); LeConte, 1873: 327 (*Anisotoma*); Baranowski 1993: 60; Majka and Langor 2008: 374. Holotype male in BMNH. Type locality: "Latitude 65°" [south shore Great Bear Lake; Northwest Territory]. North American distribution: **Canada:** BC, MB, NB, NF, NS, NT, ON, QC, YT. **USA:** AK, ME, MI, MN, NH, RI. Note: Baranowski (1993) states that the type locality is probably Alaska. This is an error. The specimen was collected on the 1825–1826 Franklin Arctic exploration expedition, and the map of the route of this shows the locality to be Great Bear Lake as stated above (Lindroth 1953).
- =*Anisotoma indistincta* LeConte, 1850: 221, 1853: 283; Melsheimer 1853: 37; Horn 1876: 167 (synonymy). Lectotype female in MCZC

- (designated by Baranowski 1993: 61). Type locality: northern shore Lake Superior [Ontario] (*teste* Baranowski 1993).
- =*Anisotoma punctato-striata* F. E. Melsheimer, 1853: 37 (misspelling); Horn 1876: 167, 1880: 285, 288; Hamilton 1894: 16; Hatch 1957: 27.
- L. quebecensis* Baranowski, 1993: 59. Holotype male in MZLU. Type locality: Gatineau Park, Gatineau, Québec. North American distribution: **Canada:** ON, QC. **USA:** MA, PA.
- L. rhaetica* (Erichson, 1845: 57) (*Anisotoma*); Baranowski 1993: 50. Holotype male in ZMHB. Type locality: "Tirol" (Central Europe). North American distribution: **USA:** AK. Extra-limital distribution: Europe, Russian Asia, Siberia, Mongolia; a Holarctic species.
- L. rufobasalis* Baranowski, 1993: 64. Holotype male in MZLU. Type locality: Near Mabel Lake, Squaw Valley, British Columbia. North American distribution: **Canada:** BC. **USA:** ID.
- L. serripes* Hatch, 1957: 27; Baranowski 1993: 55. Holotype male in USNM. Type locality: Seattle, Washington. North American distribution: **Canada:** AB, BC, SK. **USA:** AZ, CA, ID, OR, WA, WY.
- =*L. tenuis* Hatch, 1957: 28; Baranowski 1993: 55 (synonymy). Holotype male in SMDV. Type locality: Nicola, British Columbia.

### The *californica* species-group

- L. californica* Baranowski, 1993: 79. Holotype male in CASC. Type locality: El Mirador, Tulare County, California. North American distribution: **USA:** CA.

### The *conjuncta* species-group

- L. conjuncta* Baranowski, 1993: 131. Holotype male in CNCI. Type locality: Balsam Mt., Haywood County, North Carolina. North American distribution: **Canada:** AB, BC, MB, ON, QC, SK, YT. **USA:** NC, NH, NY.
- L. pygmaea* Baranowski, 1993: 133. Holotype male in CNCI. Type locality: Carleton Place, Ontario. North American distribution: **Canada:** ON. **USA:** NH, NY.

### The *lateritia* species-group

- L. campbelli* Baranowski, 1993: 113; Majka *et al.* 2011: 75. Holotype male in MZLU. Type locality: 3 mi SE Mechanicsburg, Bland County, Virginia. North American distribution: **Canada:** ON, QC. **USA:** ME, NH, VA.
- L. grandipes* Baranowski, 1993: 109. Holotype male in CNCI. Type locality: Babcock State Park, Clifftop, Fayette County, West Virginia. North American distribution: **USA:** KY, NC, TN, VA, WV.



*L. horni* Hatch, 1929b: 36 (replacement name for *Anisotoma humeralis* Horn, 1880), 1957: 26; Baranowski 1993: 112. North American distribution: **USA:** CA, OR.

=*Anisotoma humeralis* Horn, 1880: 286 (preoccupied, not *Sphaeridium humerale* Olivier, 1790 (secondary homonym in *Anisotoma*, not now congeneric)), (not *Anisotoma humeralis* Thomson, 1874). Lectotype male in MCZC (designated by Baranowski 1993: 112). Type locality: "N California and Oregon".

*L. lateritia* (Mannerheim, 1852: 345) (*Anisotoma*); Rye 1873: 133; Horn 1880: 292; Hamilton 1894: 16; Hatch 1957: 28; Baranowski 1993: 107. Type depository in MZHF? (not listed in Silfverberg (1987)). Type locality: Sitkha [Sitka], Alaska. North American distribution: **Canada:** BC. **USA:** AK, CA, OR, WA.

*L. merkeliana* (Horn, 1895: 234) (*Anisotoma*); Hatch 1936: 36, 1957: 27; Baranowski 1993: 115. Holotype male in MCZC. Type locality: "Washington State". North American distribution: **Canada:** BC. **USA:** ID, WA.

*L. pacifica* Baranowski, 1993: 113. Holotype male in MZLU. Type locality: 3 mi NW Pauma Valley, San Diego County, California. North American distribution: **USA:** CA.

#### The longitarsis species-group

*L. longitarsis* Baranowski, 1993: 43. Holotype male in CNCI. Type locality: Banff National Park, Alberta. North American distribution: **Canada:** AB, BC, MB. **USA:** AZ, CO.

#### The morula species-group

*L. karinae* Baranowski, 1993: 103. Holotype male in MZLU. Type locality: 15 mi E Fort Bragg, Mendocino County, California. North American distribution: **Canada:** BC. **USA:** CA, OR, WA.

*L. morula* (LeConte, 1859a: 282) (*Anisotoma*); Horn 1880: 317 (as synonym of *Anisotoma curvata* Mannerheim, 1853); Baranowski 1993: 101. Holotype female in MCZC. Type locality: Punto de los Reyes [Point Reyes], California. North American distribution: **USA:** CA, OR.

#### The multidentata species-group

*L. multidentata* Baranowski, 1993: 91. Holotype male in CNCI. Type locality: Stittsville, Ontario. North American distribution: **Canada:** ON. **USA:** NH.

#### The neglecta species-group

*L. cascadenis* Baranowski, 1993: 75. Holotype male in CASC. Type locality: Seattle, Washington. North American distribution: **USA:** OR, WA.

*L. difficilis* (Horn, 1880: 288) (*Anisotoma*); Baranowski 1993: 71. Lectotype male in MCZC (designated by Baranowski 1993: 71). Type locality: Owen's Valley, California. North American distribution: **Canada:** AB. **USA:** CA, CO, NM, UT.

*L. grossa* Hatch, 1957: 27; Baranowski 1993: 73. Holotype male in CASC. Type locality: Oliver, British Columbia. North American distribution: **Canada:** AB, BC. **USA:** CA, ID, MT, OR, WA.

=*Anogdus mirabilis* Hatch, 1957: 29; Baranowski 1993: 73 (synonymy). Holotype female in SMDV. Type locality: Creston, British Columbia.

*L. interjecta* Baranowski, 1993: 68. Holotype male in MCZC. Type locality: [Fort] Garland, Colorado. North American distribution: **USA:** CA, CO, OR, UT.

*L. neglecta* Baranowski, 1993: 67; Majka and Langor 2008: 374. Holotype male in CNCI. Type locality: 20 mi W Endako, British Columbia. North American distribution: **Canada:** AB, BC, MB, NB, NS, ON, QC, SK. **USA:** IL, IN, ME, MI, MN, WI.

*L. sierranevadae* Baranowski, 1993: 70. Holotype male in MZLU. Type locality: Halstead Creek, Sequoia National Park, Tulare County, California. North American distribution: **USA:** CA.

*L. similis* (Fall, 1910: 5) (*Anisotoma*); Baranowski 1993: 69. Lectotype male in MCZC (designated by Baranowski 1993: 69). Type locality: Santa Monica, California. North American distribution: **USA:** CA.

*L. subtilicornis* Baranowski, 1993: 76. Holotype male in MZLU. Type locality: Carleton Place, Ontario. North American distribution: **Canada:** ON, QC. **USA:** MA, MI, NH, VT.

#### The opacipennis species-group

*L. opacipennis* (Fall, 1910: 5) (*Anisotoma*); Baranowski 1993: 28. Lectotype female in MCZC (designated by Baranowski 1993: 28). Type locality: El Paso, Texas. North American distribution: **USA:** TX. Extra-limital distribution: possibly Mexico.

#### The puncticolis species-group

*L. curvata* (Mannerheim, 1853: 202) (*Anisotoma*); Horn 1880: 289 (*Anisotoma*); Hamilton 1894: 16 (as *Anisotoma curvator*); Hatch 1957: 27; Daffner 1983: 106; Baranowski 1993: 95. Lectotype male in MZHF (designated by Baranowski 1993: 95). Type locality: Tschunuktnu River, Kenai Peninsula, Alaska. North American distribution: **Canada:** AB, BC. **USA:** AK.

=*Anisotoma laeta* Mannerheim, 1853: 201; Baranowski 1993: 95 (synonymy). Lectotype male in MZHF (designated by Baranowski 1993: 95). Type locality: Sitkha [Sitka], Alaska.

=*L. dilatata* Hatch, 1957: 28; Baranowski 1993: 95 (synonymy). Holotype male in SMDV. Type locality: Bakerville, British Columbia.

**L. puncticollis** (Thomson, 1862: 39) (*Anisotoma*); Baranowski 1993: 93; Majka and Langor 2008: 374. Lectotype in MZLU (designated by Daffner 1983: 106). Type locality: Lapland [northern Sweden]. North American distribution: **Canada:** AB, BC, MB, NS, ON, QC, SK, YT. **USA:** AK, NH. Extra-limital distribution: Europe; a Holarctic species.

=*L. bradorata* Brown, 1932: 204; Baranowski 1993: 93 (synonymy). Holotype female in CNCI. Type locality: Bradore Bay [Brador], Québec.

**L. soerenssoni** Baranowski, 1993: 97 (as *soerenssoni*, incorrect original spelling (ICZN 1999: Art. 32.5.2.1)). Holotype male in MZLU. Type locality: Lake Superior Provincial Park, Algoma County, Ontario. North American distribution: **Canada:** ON, QC. **USA:** ME, NC, NH, NY, PA.

#### The punctulata species-group

**L. conferta** (LeConte, 1866: 368) (*Anisotoma*); Horn 1880: 290; Blatchley 1910: 285; Hatch 1933: 36; Baranowski 1993: 82. Holotype male in MCZC. Type locality: "Illinois." North American distribution: **Canada:** ON, QC. **USA:** IL.

**L. impersonata** Brown, 1932: 203; Baranowski 1993: 88; Majka and Langor 2008: 373; Majka *et al.* 2011: 75. Holotype male in CNCI. Type locality: "Thunder River" [Rivière-au-Tonnerre], Québec. North American distribution: **Canada:** NB, NS, ON, QC. **USA:** MA, ME, NH.

**L. paludicola** (Crotch, 1874: 74) (*Anisotoma*); Horn 1880: 290; Hatch 1936: 36; Baranowski 1993: 89. Lectotype male in MCZC (designated by Baranowski 1993: 89). Type locality: El Cajon Ranch, near San Diego, California. North American distribution: **Canada:** BC. **USA:** CA.

**L. punctulata** (Gyllenhal, 1810: 566) (*Anisotoma*); Baranowski 1993: 85. Type material in UZIU? (not found, probably lost, *teste* Baranowski (1993)). Type locality: Finland. North American distribution: **Canada:** AB, BC, MB, NT, ON, QC, YT. **USA:** AK, NH. Extra-limital distribution: Europe, Siberia; a Holarctic species.

#### The rufipes species-group

**L. alternata** F. E. Melsheimer, 1844: 103, 1853: 37; LeConte 1853: 283 (*Anisotoma*); Horn 1880: 285 (*Anisotoma*); Hatch 1929b: 36; Baranowski 1993: 37. Lectotype male in MCZC (designated by Baranowski 1993: 37). Type locality: "Pennsylvania." North American distribution: **USA:** GA, KY, MS, OK, PA. Biology: Only collected in the winter months (October–April).

=*Anistoma* [sic] *americanum* F. V. Melsheimer, 1806: 12 (attributed to Knoch; *nomen nudum*); F. E. Melsheimer 1844: 103 (as synonym of *Leiodes alternata* F. E. Melsheimer).

=*Anisotoma oklahomensis* Brown, 1928: 142; Baranowski 1993: 37 (synonymy). Holotype male in CNCI. Type locality: Payne County, Oklahoma.

**L. autumnalis** Baranowski, 1993: 38. Holotype male in CNCI. Type locality: Staten Island, New York. North American distribution: **USA:** MA, NY, VA. Biology: probably autumn active.

**L. rufipes** (Gebler, 1833: 289) (*Anisotoma*); Baranowski 1993: 39; Majka and Langor 2008: 375. Type depository unknown (not found by Baranowski (1993)). Type locality: Altai, Siberia. North American distribution: **Canada:** AB, BC, MB, NT, NS, ON, SK, YT. **USA:** AK, MT, WA. Extra-limital distribution: China, Mongolia, Russian Asia, Siberia; a Holarctic species.

**L. valida** (Horn, 1880: 287) (*Anisotoma*); Hatch 1957: 27; Baranowski 1993: 41; Majka and Langor 2008: 375. Lectotype male in MCZC (designated by Baranowski 1993: 41). Type locality: "NH" [New Hampshire]. North American distribution: **Canada:** AB, BC, LB, MB, NB, NF, NS, NT, ON, QC. **USA:** CO, ME, NH.

#### The sphaerula species-group

**L. sphaerula** Baranowski, 1993: 144. Holotype male in CNCI. Type locality: Cochrane, Ontario. North American distribution: **Canada:** ON.

#### The stephani species-group

**L. stephani** Baranowski, 1993: 125. Holotype male in USNM. Type locality: Latimer County, Oklahoma. North American distribution: **USA:** FL, IL, KY, NC, OK, VA.

#### The strigata species-group

**L. strigata** (LeConte, 1850: 221) (*Anisotoma*), 1853: 284 (*Anisotoma*); Horn 1880: 291 (*Anisotoma*); Hatch 1957: 28; Baranowski 1993: 99; Majka and Langor 2008: 375. Holotype (see LeConte 1853: 284) in MCZC (designated as lectotype female by Baranowski 1993: 99). Type locality: "Eagle Harbor" [Michigan] (*teste* LeConte 1853). North American distribution: **Canada:** AB, BC, LB, NB, NF. **USA:** AK, CA, CO, MA, MI, NH, NY, TX, WA.

#### The triepkei species-group

**L. impressa** Baranowski, 1993: 34; Majka *et al.* 2011: 75. Holotype male in CMNC. Type locality: Balsam Mountain, Haywood County, North Carolina. North American distribution: **Canada:** ON, QC. **USA:** GA, KY, ME, NC, NH, PA, SC, TN, VA, WV.

*L. triepkei* (Schmidt, 1841: 153) (*Anisotoma*); Baranowski 1993: 31; Majka and Langor 2008: 375. Lectotype male in ZMHB (designated by Daffner 1983: 64). Type locality: "Pommern, Posen [now in NE Germany and NW Poland] auch in Schweden [also in Sweden]". North American distribution: **Canada:** AB, MB, NB, NT, ON, QC, SK, YT. **USA:** CA, MA, MI, MN, NH, VT, WV. Extra-limital distribution: Europe, Mongolia, Siberia, Russian Asia; a Holarctic species.

= *Anisotoma canadensis* Brown, 1928: 141; Hatch 1929b: 36 (*Leiodes*); Baranowski 1993: 31 (synonymy). Holotype male in CNCI. Type locality: Saskatoon, Saskatchewan.

#### The variipennis species-group

*L. variipennis* Baranowski, 1993: 78. Holotype male in CNCI. Type locality: Balsam Mountain, Haywood County, North Carolina. North American distribution: **Canada:** QC. **USA:** AL, AR, MS, NC, NH, OK, WV.

#### Incertae sedis

*L. dilutipes* J. Sahlberg, 1903: 14 (*Liodes*); Daffner 1983: 100 (Québec); Baranowski 1993: 49 (not Québec, rejected as a North American species). Holotype male in MZHF (Silfverberg 1987). Type locality: Ust-Kut, Lena-Super. [upper Lena River, Siberia, Russia]. North American distribution: **Canada:** QC; record rejected by Baranowski (1993) Extra-limital distribution: Russia (Siberia), Kyrgyzstan, Mongolia, China (Xinjiang); a Palaearctic species. Note: Baranowski (1993) considered the Québec record as "undoubtedly ... *L. collaris*."

#### Genus *LIOCYRTUSA* Daffner, 1982

*Liocyrtusa* Daffner, 1982: 202. Type species: *Anisotoma minuta* Ahrens, 1812 (by original designation). Daffner 1983: 132.

**Revision.** Peck and Cook (2013b).

**Distribution.** Holarctic, India, Thailand, China (14 species).

*L. luggeri* (Hatch, 1927: 17) (*Anogdus*), 1957: 30 (*Cyrtusa*); Brown 1937a: 171 (*Cyrtusa*); Daffner 1983: 132, 1985a: 695, 1989: 284; Majka and Langor 2008: 376; Peck and Cook 2013b: 10. Holotype female in UMSP. Type locality: "Minnesota," no other data. North American distribution: **Canada:** AB, BC, MB, NB, ON, QC, SK. **USA:** AZ, CA, ID, MN, OR, UT, WA.

*L. nigriclavus* (Hlisenkovský, 1967: 240) (*Cyrtusa*); Daffner 1983: 134, 1988: 285; Peck and Cook 2013b: 11. Holotype male in HNHM. Type locality: Cojbalsan aimak, 20 km S Somon Bajanuul, Mongolia. North American distribution:

**Canada:** AB, BC, MB, NU, ON, QC, SK, YT. **USA:** AK, ID, IN, NC, NV, OR, UT, VA, WA, WY. Extra-limital distribution: Eastern Europe, Mongolia, Siberia; a Holarctic species.

*L. stephani* Daffner, 1989: 288; Peck and Cook 2013b: 12. Holotype male in HDPC. Type locality: Latimer County, Oklahoma. North American distribution: **USA:** AL, NE, OK.

#### Genus *LIONOTHUS* Brown, 1937

*Lionothus* Brown, 1937a: 170. Type species: *Lionothus ulkei* Brown, 1937 (by original designation). **Revision.** Peck and Cook (2013b).

**Distribution.** Nearctic, Mexico, Colombia (6 species).

= *Pseudocyrtusa* Portevin, 1942: 78. Type species: *Pseudocyrtusa australis* Portevin, 1942 (by monotypy). Newton 1983b: 175 (synonymy).

*L. bidentatus* Peck and Cook, 2013b: 16. Holotype male in TAMU. Type locality: 1 km W Youngsport, Bell County, Texas. North American distribution: **USA:** OK, TX.

*L. exiguus* Peck and Cook, 2013b: 17. Holotype male in CMNC. Type locality: 15 km SE Brownsville, Cameron County, Texas. North American distribution: **USA:** FL, TX.

*L. forticornis* Daffner, 1989: 291; Peck and Cook 2013b: 14. Holotype male in HDPC. Type locality: Mark Twain National Forest, Missouri. North American distribution: **Canada:** ON, QC. **USA:** AL, AR, FL, GA, IL, IN, KY, LA, MA, MI, MN, MS, NC, NJ, NY, OK, SC, TN, TX, VA. Extra-limital distribution: Mexico: Estado de México, 2 mi NE Tenancingo (doubtful identification and record).

*L. parvovulus* Peck and Cook, 2013b: 17. Holotype male in CMNC. Type locality: 15 mi NW Ruidoso, Lincoln County, New Mexico. North American distribution: **USA:** AZ, NM.

*L. ulkei* Brown, 1937a: 171; Daffner 1989: 290; Peck and Cook 2013b: 13. Holotype male in CMNH. Type locality: District of Columbia. North American distribution: **USA:** DC, FL, GA, MD, MS, OK, TX, VA. Not AZ (error).

#### Genus *ZEADOLOPUS* Broun, 1903

*Zeadolopus* Broun, 1903: 614. Type species: *Zeadolopus spinipes* Broun, 1903 (by monotypy). Daffner 1982: 211, 1983: 138, 1988: 295; Newton 1983b: 174.

**Revision.** Peck and Cook (2013b).

**Distribution.** Worldwide (94 species).

= *Apheloplastus* Brown, 1937a: 173. Type species: *Cyrtusa egena* LeConte, 1853 (by original designation). Newton, 1983b: 174 (synonymy).

*Z. bifoveolatus* Daffner, 1989: 301; Peck and Cook 2013b: 18. Holotype male in CMNC. Type

locality: Sugarloaf Key, Monroe County, Florida. North American distribution: **USA:** FL (only in extreme south, Monroe and Dade Counties).

**Z. egenus** (LeConte, 1853: 284) (*Cyrtusa*); Horn 1880: 295 (*Cyrtusa*); Brown 1937a: 173 (*Apheloplastus*); Newton 1983b: 173; Daffner 1989: 296; Peck and Cook 2013b: 19. Lectotype male in MCZC (designated by Daffner 1989: 296). Type locality: Habersham County, Georgia. North American distribution: **Canada:** ON, QC. **USA:** AL, DC, FL, GA, IL, IN, KY, MA, MD, MI, NC, SC, TX, VA, VT.

=*Cyrtusa impubis* Zimmermann, 1869: 251; Brown 1937a: 173 (*Apheloplastus*; synonymy). Lectotype female in MCZC (designated by inference of holotype by Daffner 1989: 296). Type locality: North Carolina or District of Columbia.

**Z. oklahomensis** Daffner, 1989: 298; Peck and Cook 2013b: 20. Holotype male in HDPC. Type locality: Red Oak, Oklahoma. North American distribution: **USA:** AL, AR, FL, OK, TX, VA.

**Z. rubicornis** Daffner, 1989: 299; Peck and Cook 2013b: 21. Holotype male in CMNC. Type locality: S Miami, Dade County, Florida. North American distribution: **USA:** FL (only in extreme south, in Dade and Monroe Counties).

#### Tribe PSEUDOLIODINI Portevin

**Pseudoliodini** Portevin, 1926: 75 [stem: *Pseudoliod-*]. Type genus: *Pseudoliodes* Portevin, 1926 [synonym of *Pseudocolenis* Reitter, 1884]. Newton 1998: 89 (new tribal concept).

**Distribution.** Worldwide.

=*Dermatohomoeini* Hlisenkovský, 1963: 311 [stem: *Dermatohomoe-*]. Type genus: *Dermatohomoeus* Hlisenkovský, 1963. Newton 1998: 89 (synonymy).

#### Genus CAINOSTERNUM Notman, 1921

**Cainosternum** Notman, 1921: 147. Type species: *Cainosternum imbricatum* Notman, 1921 (by monotypy). Wheeler 1986: 377 (redescription).

**Distribution.** E USA (1 species).

**C. imbricatum** Notman, 1921: 148; Wheeler 1986: 377. Holotype female in SIIS. Type locality: Westfield, Chautauqua County, New York. North American distribution: **USA:** NC, NY. Note: Placed in Agathidiini by Wheeler (1986) and Wheeler and Miller (2005); transferred to Pseudoliodini by Newton (1998).

#### Genus COLENIS Erichson, 1842

**Colenis** Erichson, 1842: 221. Type species: *Anisotoma dentipes* Gyllenhal, 1810 (= *Colenis immunda* Sturm, 1807) (designated by Thomson 1859: 58).

**Revision.** Peck (1998a).

**Distribution.** Holarctic, N Neotropical (to Panama), Oriental, New Guinea, New Caledonia, C Africa (77 species).

=*Mathewsionia* Hlisenkovský, 1965: 397. Type species: *Colenis punctulata* Matthews, 1887 (by original designation). Newton 1998: 91 (synonymy).

=*Carcharodes* Hlisenkovský, 1965: 400 (as subgenus of *Colenis*) (preoccupied, not *Carcharodes* Strand 1912; also spelled *Carcharodus*). Type species: *Colenis macrocephaloides* Hlisenkovský, 1965 (= *C. bonnairii* Jacquelin du Val, 1859) (by monotypy). Note: Both spellings preoccupied.

=*Carcharodus*: Hlisenkovský 1965: 399, 409 (misspelling of *Carcharodes*; not *Carcharodus* Huebner, 1819).

=*Colenodes* Peck, 1998a: 57 (as subgenus of *Colenis*; replacement name for *Carcharodes* Hlisenkovský, 1965). Subgenus not in North America.

#### Subgenus COLENIS Erichson, 1842

**Distribution.** Holarctic, N Neotropical (to Panama), N Oriental (10 species).

**C. bifida** Peck, 1998a: 62. Holotype male in CMNC. Type locality: Chaffey's Locks, Ontario. North American distribution: **Canada:** ON. **USA:** AL, AR, FL, GA, IL, KS, KY, LA, MA, MS, NC, SC, VA.

**C. impunctata** LeConte, 1853: 284; Horn 1880: 293; Hatch 1957: 30; Peck 1998a: 59; Majka and Langor 2008: 376. Lectotype male in MCZC (designated by Peck 1998a: 59). Type locality: "southeastern United States." North American distribution: **Canada:** BC, MB, NB, NS, ON, QC. **USA:** AL, AR, CT, DE, GA, FL, IA, IL, IN, KS, KY, MA, MD, MI, MN, MO, MS, NC, NH, NJ, NY, OH, OK, PA, SC, TN, TX, VA, VT, WI, WV. Larva: Newton (1991).

**C. ora** Peck, 1998a: 63. Holotype male in CMNC. Type locality: Suwanee River State Park, Suwanee County, Florida. North American distribution: **USA:** AL, FL, KS, LA, MS, NH, NJ, SC, TX, VA.

**C. stephani** Peck, 1998a: 61. Holotype male in CMNC. Type locality: Latimer County, Oklahoma. North American distribution: **USA:** GA, OK.

#### Tribe SCOTOCRYPTINI Reitter

**Scotocryptini** Reitter, 1884b: 91 [stem: *Scotocrypt-*]. Type genus: *Scotocryptus* Girard, 1874. Newton 1998: 92 (new tribal concept).

**Distribution.** Worldwide except New Zealand and southern South America.

#### Genus AGLYPTINUS Cockerell, 1906

**Aglyptinus** Cockerell, 1906: 240 (replacement name for *Aglyptus* LeConte, 1866).

**Review.** Peck (2004).

**Distribution.** E Nearctic, Neotropical, England, New Guinea (42 species).

=*Aglyptus* LeConte, 1866: 369 (preoccupied, not Foerster, 1856). Type species: *Colenis laevis* LeConte, 1853 (by monotypy).

=*Aglyptonotus* Champion, 1913: 65 (unnecessary replacement name for *Aglyptus* LeConte, 1866).

*A. laevis* (LeConte, 1853: 284) (*Colenis*); Horn 1880: 308 (*Aglyptus*); Peck 2004: 374. Lectotype in MCZC (designated by Peck 2004: 374). Type locality: "Georgia." North American distribution: **Canada:** ON, QC. **USA:** AL, AR, FL, GA, IA, IL, IN, KS, KY, LA, MI, MO, MS, NC, NY, OH, OK, SC, TN, TX, VA, WI. Biology: Feeds on soft fungi or slime molds. Fungal associates (Stephenson *et al.* 1994).

### Tribe SOGDINI Lopatin

**Sogdiidae** Lopatin, 1961: 121 [stem: *Sogd-*]. Type genus: *Sogda* Lopatin, 1961.

**Comment.** Incorrect original stem formation, not in prevailing usage; correction of stem by Newton and Thayer (1992).

**Distribution.** Holarctic and south temperate (S Afrotropical, Australia, New Zealand, S Neotropical). =*Triarthri* Jeannel, 1962b: 486 [stem: *Triarthr-*]. Type genus: *Triarthron* Märkel, 1840.

**Comment.** Junior homonym of *Triarthridae* Ulrich, 1930 (type genus *Triarthrus* Green, 1832) in Trilobita: Olenidae. This case needs to be referred to the ICZN Commission to remove this homonymy (ICZN 1999: Art. 55.3.1).

=*Hydnobiini* Jeannel, 1962b: 492 [stem: *Hydnobi-*]. Type genus: *Hydnobius* Schmidt, 1841.

=*Stereina* Perkovsky, 2002: 15 [stem: *Stere-*]. Type genus: *Stereus* Wollaston, 1857 (preoccupied genus name, not *Stereus* Mannerheim, 1846 [Coleoptera: Curculionidae] [synonym of *Deltoctenemis* J. Sahlberg, 1886]).

**Comment.** Unavailable family-group name, proposed after 1930 without description or bibliographic reference to such a description (ICZN 1999: Art. 13.1.).

### Genus *HYDNOBIUS* Schmidt, 1841

*Hydnobius* Schmidt, 1841: 193. Type species: *Anisotoma punctatum* Sturm, 1807 (designated by Thomson 1859: 58).

**Revision.** Peck and Cook (2009).

**Distribution.** Holarctic, China, India (23 species).

*H. acarinus* Peck and Cook, 2009: 22. Holotype male in USNM. Type locality: Kern River, Kern County, California. North American distribution: **USA:** CA.

*H. autumnalis* Peck and Cook, 2009: 24. Holotype male in CMNC. Type locality: Wolford Township, Grenville County, Ontario. North American distribution: **Canada:** ON.

*H. kiseri* Hatch, 1936: 35; Hatch 1957: 26 (as synonym of *H. pumilus* LeConte); Peck and Cook 2009: 20 (resurrected from synonymy). Holotype male in USNM. Type locality: Harper, Washington. North American distribution: **Canada:** BC. **USA:** CA, OR, WA.

*H. laticeps* Notman, 1920: 27; Peck and Cook 2009: 19. Holotype male in SIIS. Type locality: Schoharie, Schoharie County, New York. North American distribution: **Canada:** MB, ON, QC. **USA:** IL, NY, VT, WI.

*H. longidens* LeConte, 1879: 511; Horn 1880: 281 (as synonym of *H. longulus* LeConte); Peck and Cook 2009: 17 (resurrected from synonymy). Holotype male in MCZC. Type locality: [Fort] Garland, Colorado. North American distribution: **Canada:** BC, MB, ON, QC, SK, YT. **USA:** AR, AZ, CA, CO, ID, IN, MN, MT, NC, NM, OH, OK, OR, UT, VA, WA. Not WV (an error).

=*H. lobatus* Hatch, 1936: 35, 1957: 25; Peck and Cook 2009: 17 (synonymy). Holotype female in USNM. Type locality: Manchester, Washington.

*H. pumilus* LeConte, 1879: 511; Hatch 1957: 26; Peck and Cook 2009: 14. Lectotype male in MCZC (designated by Peck and Cook 2009: 15). Type locality: South La Veta Pass, Colorado. North American distribution: **Canada:** AB, BC, MB, NB, ON, QC, YT. **USA:** AK, CO, MT, OR, WA, WI, WY.

=*H. latidens* LeConte, 1879: 512; Horn 1880: 282, 317; Hatch 1929b: 11 (synonymy). Syntype male in MCZC (as holotype in error in Peck and Cook 2009: 15). Type locality: Anticosti Island, Québec.

*H. substriatus* LeConte, 1863: 25; Horn 1880: 282; Peck and Cook 2009: 13; Majka and Langor 2008: 370. Lectotype in MCZC (designated by Peck and Cook 2009: 13). Type locality: New York. North American distribution: **Canada:** AB, BC, MB, NB, NF, NS, ON, QC, YT. **USA:** AK, CA, CO, ME, MI, MN, MT, NH, NM, NY, OR, UT, WY. Note: The Palearctic species *H. tibialis* J. Sahlberg, 1903 was reported from Québec by Daffner (1983), but this is probably based on misidentified specimens of *H. substriatus* (Peck and Cook 2009).

=*H. curvidens* LeConte, 1879: 511; Horn 1880: 282 (synonymy); Peck and Cook 2009: 13. Holotype male in MCZC. Type locality: South La Veta Pass, Colorado.

=*H. luggeri* Hatch, 1927: 18; Peck and Cook 2009: 13 (synonymy). Holotype male in UMSP. Type locality: "Alaska."

**Genus KALOHYDNOBIUS Peck and Cook, 2009**

*Kalohydnobius* Peck and Cook, 2009: 31. Type species: *Hydnobius strigilatus* Horn, 1880 (by original designation).

**Revision.** Peck and Cook (2009).

**Distribution.** Nearctic (3 species).

*K. californicus* Peck and Cook, 2009: 33. Holotype male in CMNC. Type locality: 20 km SW Lake Elsinore, Orange County, California. North American distribution: **USA:** CA.

*K. dentatus* Peck and Cook, 2009: 35. Holotype male in CMNC. Type locality: 5 mi N Garth, Jackson County, Alabama. North American distribution: **USA:** AL, KY, NC, TN.

*K. strigilatus* (Horn, 1880: 281) (*Hydnobius*); Hatch 1957: 24 (*Hydnobius*); Peck and Cook 2009: 32 (new combination). Lectotype male in MCZC (designated by Peck and Cook 2009: 32). Type locality: "Nevada" (probably vicinity of Lake Tahoe, Reno, or Carson City). North American distribution: **Canada:** BC. **USA:** AZ, CA, CO, MT, NV, OR, WA.

=*Hydnobius femoratus* Hatch, 1936: 36, 1957: 25; Peck and Cook 2009: 32 (synonymy). Holotype male in USNM. Type locality: Seattle, Washington.

**Genus MACROHYDNOBIUS Peck and Cook, 2009**

*Macrohydnobius* Peck and Cook, 2009: 37. Type species: *Hydnobius matthewsi* Crotch, 1874 (by original designation).

**Revision.** Peck and Cook (2009).

**Distribution.** Nearctic (6 species).

*M. contortus* (Hatch, 1957: 24) (*Hydnobius*); Peck and Cook 2009: 44. Holotype male in SMDV. Type locality: Creston, British Columbia. North American distribution: **Canada:** BC. **USA:** CA, MT, OR, UT.

*M. crestonensis* (Hatch, 1957: 23) (*Hydnobius*); Peck and Cook 2009: 41. Holotype male in SMDV. Type locality: Creston, British Columbia. North American distribution: **Canada:** AB, BC. **USA:** CA, ID, MT, OR, WY. Larva: Newton (1991) (as *Hydnobius*).

*M. matthewsii* (Crotch, 1874: 74) (*Hydnobius*); Horn 1880: 280 (*Hydnobius*); Hatch 1957: 24 (*Hydnobius*); Peck and Cook 2009: 38. Lectotype male in MCZC (designated by Peck and Cook 2009: 38). Type locality: Gold Stream, Vancouver Island, British Columbia. North American distribution: **Canada:** BC. **USA:** CA, CO, ID, MT, NV, OR, WA, WY.

=*Hydnobius stace-smithi* Hatch, 1957: 24; Peck and Cook 2009: 38 (synonymy). Holotype male in SMDV. Type locality: Copper Mountain, British Columbia.

*M. montanus* Peck and Cook, 2009: 47. Holotype male in CMNC. Type locality: 16 km E Golden, British Columbia. North American distribution: **Canada:** AB, BC. **USA:** CA, ID, MT, NV, OR.

*M. simulator* (Brown, 1932: 6) (*Hydnobius*); Hatch 1957: 24 (*Hydnobius*); Peck and Cook 2009: 40. Holotype male in CNCI. Type locality: Creston, British Columbia. North American distribution: **Canada:** AB, BC. **USA:** ID, MT, WA.

*M. tibioalcaris* Peck and Cook, 2009: 50. Holotype male in CMNC. Type locality: Queens University Biology Station, Chaffey's Locks, Ontario. North American distribution: **Canada:** ON.

**Genus PLATYHYDNOBIUS Peck and Cook, 2009**

*Platyhydnobius* Peck and Cook, 2009: 51. Type species: *Hydnobius arizonensis* Horn, 1885 (by original designation).

**Revision.** Peck and Cook (2009).

**Distribution.** Nearctic, Mexico, Honduras (8 species).

*P. arizonensis* (Horn, 1885: 138) (*Hydnobius*); Peck and Cook 2009: 52; Majka and Langor 2008: 369. Holotype female in MCZC. Type locality: "Arizona". North American distribution: **Canada:** AB, BC, MB, NB, NS, NF, ON, QC, SK. **USA:** AK, AZ.

*P. validus* (Brown, 1932: 202) (*Hydnobius*); Peck and Cook 2009: 54. Holotype male in CNCI. Type locality: "Thunder River" [Rivière-au-Tonnerre], Québec. North American distribution: **Canada:** AB, MB, QC, YT. **USA:** AK, NM.

**Genus PSEUDOTRIARTHON Normand, 1938**

*Pseudotriarthron* Normand, 1938: 346. Type species: *Pseudotriarthron numidicum* Normand, 1938 (by monotypy). Perkovsky 1991 (as *Stereus*); Sáez Bolaño *et al.* 2013 (as valid name for genus).

**Revisions.** Daffner (1983) (as *Stereus*); Peck and Cook (2009) (as *Stereus*).

**Distribution.** W Palearctic, W Nearctic (5 species).

=*Stereus* Wollaston, 1857: 148 (preoccupied, not *Stereus* Mannerheim, 1846). Type species: *Stereus cercyonides* Wollaston, 1857 (by monotypy). Sáez Bolaño *et al.* 2013: 7 (synonymy).

*P. arenarium* (Peck and Cook, 2009: 26) (*Stereus*), **new combination.** Holotype male in CNCI. Type locality: Great Sand Dunes National Monument, Alamosa County, Colorado. North American distribution: **Canada:** AB. **USA:** CO. Biology: Collections of specimens are all from sand dunes or sandy areas.

**Genus *SOGDA* Lopatin, 1961**

*Sogda* Lopatin, 1961: 121. Type species: *Sogda pavlovskii* Lopatin, 1961 (by original designation).

**Revision.** Peck and Cook (2009).

**Distribution.** Holarctic (9 species).

= *Trichohyd nobius* Vogt, 1961: 154 (as subgenus of *Hyd nobius*). Type species: *Hyd nobius perrisii* Fairmaire, 1855 (= *S. suturalis* (Zetterstedt, 1828)) (by original designation). Daffner 1983 (as valid genus); Perkovsky 1988 (synonymy).

**S. *enigma*** Peck and Cook, 2009: 30. Holotype male in CMNC. Type locality: Stittsville, Ontario. North American distribution: **Canada:** ON. **USA:** MD.

**S. *obtusa*** (LeConte, 1879: 511) (*Hyd nobius*); Horn 1880: 282 (*Hyd nobius*); Hatch 1957: 5 (*Hyd nobius*); Peck and Cook 2009: 28. Lectotype male in MCZC (designated by Peck and Cook 2009: 28). Type locality: Fort Garland, Costilla County, Colorado. North American distribution: **Canada:** AB, BC, MB, NT, ON, QC, SK, YT. **USA:** AK, CA, CO, MI, NM, OR, UT, WA.

= *Hyd nobius longulus* LeConte, 1879: 511; Horn 1880: 281; Hatch 1957: 26; Peck and Cook 2009: 28 (synonymy). Lectotype female in MCZC (designated by Peck and Cook 2009: 29). Type locality: "e. Cal." [eastern California].

**Genus *TRIARTHRON* Märkel, 1840**

*Triarthron* Märkel, 1840: 141. Type species: *Triarthron maerkelii* Märkel, 1840 (by monotypy).

**Revision.** Peck and Cook (2009).

**Distribution.** Holarctic (2 species).

= *Triarthrum* Agassiz, 1847: 375 (unjustified emendation of *Triarthron*).

**T. *lecontei*** Horn, 1868: 131; Hatch 1957: 26; Peck and Cook 2009: 8. Holotype male in MCZC. Type locality: High Sierras, east of Visalia, California. North American distribution: **Canada:** BC, ON. **USA:** CA, MA, MI, MT, NH, OR, PA, VA, WA, WV.

= *T. cedonulli* Schaufuss, 1882: 43; Horn 1883: 284 (synonymy). Syntypes (2) originally in "Museum Ludwig Salvator, Dresden"; now in NMPC. Type localities: Cisco and Sacramento, California.

= *T. pennsylvanicum* Horn, 1883: 284; Peck and Cook 2009: 8 (synonymy). Lectotype female in MCZC. Type locality: Hazelton, Pennsylvania.

**Subfamily PLATYPSYLLINAE Ritsema**

The mammal nest beetles

**Platypsyllidae** Ritsema, 1869b: [38] [stem: *Platypsyll*-].

Type genus: *Platypsyllus* Ritsema, 1869.

**Notes.** Worldwide, the subfamily contains only four genera: *Leptinus* Müller with six Palearctic and three Nearctic species; *Leptinillus* Horn with two

Nearctic species; *Silphopsyllus* Olsufiev with one Palearctic species; and *Platypsyllus* with one Holarctic species. The extreme flea- or louse-like modifications of *Platypsyllus*, for living in the fur of beaver, led to its original placement in a separate family and order. The platypsyllines may be allied with the Cholevinae and share derived family characters of Leiodidae, so they may be suitably placed as a subfamily of the Leiodidae (Lawrence and Newton 1982, 1995). The unusual biology and morphology of this small ectoparasitic subfamily has stimulated a disproportionate number of research publications.

**Distribution.** Holarctic.

= Leptinidae LeConte, 1872: 802 [stem: *Leptin*-].

Type genus: *Leptinus* Müller, 1817.

**Comment.** This family-group name has been attributed to LeConte (1866) in the literature. However, LeConte (1866) did not give a name to the implied new taxon, and therefore it is not available (Newton and Thayer (1992).

= Achreioptera Westwood, 1869: 118 (as order; unavailable, not based on a genus; for *Platypsyllus* Westwood, 1869, not Ritsema, 1869).

= Platypsyllidae LeConte, 1872: 799. Type genus: *Platypsyllus* Ritsema, 1869.

**Genus *LEPTINILLUS* Horn, 1882**

*Leptinillus* Horn, 1882: 113. Type species: *Leptinus validus* Horn, 1872 (by monotypy).

**Distribution.** Nearctic (2 species).

**L. *aplodontiae*** Ferris, 1918: 125; Peck 2007: 5. Holotype female in CASC. Type locality: Fallen Leaf Lake, Plumas County, California. North American distribution: **USA:** CA, OR, WA. Host: *Aplodontia rufa* (Rafinesque), the mountain beaver, the oldest known group of living rodents. Biology: Summarized in Peck (2007).

**L. *validus*** (Horn, 1872: 145) (*Leptinus*); Horn 1882: 113; Hatch 1957: 17; Peck 2007: 2. Syntype in MCZC. Type locality: "Hudsons Bay Region". North American distribution (summarized in Peck 2007): **Canada:** AB, BC, NB, NF (record in Majka and Langor 2008), NT, ON, QC, SK, YT. **USA:** AK, ME, MI, MN, NH, SD, WI. Host: *Castor canadensis* Kuhl, the American beaver. Immatures: Parks and Barnes (1955); Wood (1965). Biology: Wood (1965; summarized by Peck 2007).

**Genus *LEPTINUS* Müller, 1817**

*Leptinus* Müller, 1817: 266. Type species: *Leptinus testaceus* Müller, 1817 (by monotypy). **Notes.**

Earlier work on the morphology, taxonomy, biology, and larvae of the Palearctic species includes Besuchet (1980), Buckle (1976), Casale (1975), and Ising (1969). Work on the North

American species is reviewed by Parks and Barnes (1955), Peck (1982c), and Wood (1965). In the earlier literature on the North American fauna, the use of the name *Leptinus testaceus* Müller, 1817: 266 (type locality: Germany. Distribution: Europe) for North American records is in error, as is the use of the name *Leptinus americanus* LeConte for populations east of the Mississippi River or west of the Rocky Mountains; records prior to Peck (1982c) represent one of the three species below.

**Immatures.** Casale (1975); Ising (1969); Reid (1942).

**Taxonomy.** Besuchet (1980); Peck (1982c).

**Redescription.** Agazzi and Decou (1961); Jeannel (1922b).

**Biology.** Artz (1975); Buckle (1976); Ising (1969); Paulian (1943). The six western Palearctic species of *Leptinus* are known from several rodent and insectivore hosts in Europe.

**Distribution.** W Palearctic, Nearctic (9 species).

*L. americanus* LeConte, 1866: 367; Peck 1982c: 1519. Lectotype female in MCZC (designated by Peck 1982c: 1519). Type locality: Keokuk, Iowa. North American distribution: **USA:** (central states west of the Mississippi River) AR, IA, KS, LA, MO, SD, TX. Biology: Known to occur on five species of small rodent and insectivore hosts (Peck 1982; Connior *et al.* 2014a).

*L. occidentamericanus* Peck, 1982c: 1523; Hatch 1957: 17 (as *L. americanus*). Holotype male in CNCI. Type locality: H. J. Andrews Experimental Forest, Lane County, Oregon. North American distribution: **Canada:** BC, YT. **USA:** AK, CA, OR. Biology: Known to occur on 11 species of small rodent and insectivore mammal hosts (Maser and Hooven 1971; Peck 1982c; Eckerlin and Painter 1993).

*L. orientamericanus* Peck, 1982c: 1519. Holotype male in INHS. Type locality: Giant City State Park, Jackson County, Illinois. North American distribution: **USA:** (eastern states east of the Mississippi River) AL, DC, DE, FL, GA, IL, IN, KY, MD, NC, NJ, NY, OH, PA, SC, TN, VA, WV. Biology: Known to occur on seven species of small rodent and insectivore hosts (Park 1929; Werner and Edwards 1948; Benton and Peck 1980; Peck 1982c). Immatures: Böving and Craighead (1931); Dybas (1976); Parks and Barnes (1955); Peterson (1951).

#### Genus *PLATYPSYLLUS* Ritsema, 1869

*Platypsillus* Ritsema, 1869a: [23]. Type species: *Platypsillus castoris* Ritsema, 1869 (by monotypy).

**Distribution.** Europe, Nearctic (1–2 species). = *Platypsillus* Westwood, 1869: 118 (preoccupied, not Ritsema 1869). Type species: *Platypsillus*

*castorinus* Westwood, 1869 (= *Platypsillus castoris* Ritsema, 1869) (by monotypy). = *Platypsilla* Ritsema; LeConte 1872: 804 (misspelling).

*P. castoris* Ritsema, 1869a: [23], 1870: 185; LeConte 1872: 804 (as *Platypsilla*); Horn 1882: 114 (as *Platypsilla*); Reitter 1884a: 20 (as *Platypsilla*); Desneux 1906: 3; Jeannel 1922b: 569; Bugnion and du Buysson 1924: 83; Hatch 1957: 18; Winter 1979: 456; Peck 2006: 86; Majka *et al.* 2011: 74. The beaver beetle. Syntypes in RMNH. Type locality: Rotherdam [Rotterdam], Holland (on American beaver in zoo). North American distribution (summarized by Peck 2006): **Canada:** AB, BC, NF (Majka and Langor 2008), NS, ON, QC, SK. **USA:** AK, AL, CA, DC, FL, IA, ID, IL, LA, ME, MI, MN, MO, MS, MT, NC (Doby 2016), ND, NE, NJ (Moskowitz 2011), NY, OK, OR, PA, SD, TX (Kelley and Mills 2010), WA, WY. Extra-limital distribution: Europe; a Holarctic species. Immatures: Bugnion and du Buysson (1924); Böving and Craighead (1931); Wood (1965); Neumann and Piechocki (1985); Riley (1888). Biology: Piechocki (1959); Janzen (1963); Wood (1965); Waage (1979); Winter (1979). Ectoparasitic. Hosts: The American beaver, *C. canadensis*, and the European beaver, *Castor fiber* Linnaeus. Belfiore (2006) recorded a capture of the beetle on the North American river otter in California, but it seems that this is a minor secondary host if not an accidental record. Peck (2006) developed an argument that the Eurasian populations may represent a cryptic species different from the one named for North America, and preliminary DNA barcode data (SBP, unpublished) support this. = *P. castorinus* Westwood, 1869: 119; Ritsema 1869b: [38] (synonymy). Syntypes probably in OXUM. Type locality: not stated, but presumably North America (found on *C. canadensis*).

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