Catalogue of Geadephaga (Coleoptera, Adephaga) of America, north of Mexico

Part 1
Trachypachidae – Trechini

Yves Bousquet

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Catalogue of Geadephaga (Coleoptera, Adephaga) of America, north of Mexico

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Abstract

All scientific names of Trachypachidae, Rhysodidae, and Carabidae (including cicindelines) recorded from America north of Mexico are catalogued. Available species-group names are listed in their original combinations with the author(s), year of publication, page citation, type locality, location of the name-bearing type, and etymology for many patronymic names. In addition, the reference in which a given species-group name is first synonymized is recorded for invalid taxa. Genus-group names are listed with the author(s), year of publication, page citation, type species with way of fixation, and etymology for most. The reference in which a given genus-group name is first synonymized is recorded for many invalid taxa. Family-group names are listed with the author(s), year of publication, page citation, and type genus. The geographical distribution of all species-group taxa is briefly summarized and their state and province records are indicated.

One new genus-group taxon, *Randallius* new subgenus (type species: *Chlaenius purpuricollis* Randall, 1838), one new replacement name, *Pterostichus amadeus* new name for *Pterostichus vexatus* Bousquet, 1985, and three changes in precedence, *Ellipsoptera rubicunda* (Harris, 1911) for *Ellipsoptera marutha* (Dow, 1911), *Badister micans* LeConte, 1844 for *Badister ocularis* Casey, 1920, and *Agonum deplanatum* Ménétriés, 1843 for *Agonum fallianum* (Leng, 1919), are proposed. Five new genus-group synonymies and 65 new species-group synonymies, one new species-group status, and 12 new combinations (see Appendix 5) are established.

The work also includes a discussion of the notable private North American carabid collections, a synopsis of all extant world geadephagan tribes and subfamilies, a brief faunistic assessment of the fauna, a list of valid species-group taxa, a list of North American fossil Geadephaga (Appendix 1), a list of North American Geadephaga larvae described or illustrated (Appendix 2), a list of Geadephaga species described from specimens mislabeled as from North America (Appendix 3), a list of unavailable Geadephaga names listed from North America (Appendix 4), a list of nomenclatural acts included in this catalogue (Appendix 5), a complete bibliography with indication of the dates of publication in addition to the year, and indices of personal names, supraspecific names, and species-group names.

Keywords
Ground beetles, Trachypachidae, Rhysodidae, Carabidae, North America

Introduction

The Adephaga, a name coined by the Swiss entomologist and botanist Joseph Philippe de Clairville [1742-1830] in 1806, represents the second largest suborder of Coleoptera with an estimated 39,300 species described to 2005. The group is undisputedly natural, based on the presence of several synapomorphies in the adult and immature stages (Beutel and Ribera 2005: 53; Beutel et al. 2008; Lawrence et al. 2011). The term Adephaga comes from the Greek word *adephagos* meaning gluttonous, greedy, in reference to the predaceous habits of adults and larvae of the vast majority of the species. Conventionally the Adephaga are divided into two groups, the Geadephaga for the terrestrial families and the Hydradephaga for the aquatic families.

The extant hydradephagan families include the Gyrinidae (about 875 species), Haliplidae (about 220 species), Noteridae (about 250 species), Amphizoidae (five species), Hygrobiidae (six species), Dytiscidae (about 3,700 species), Aspidytidae (two species), and Meruidae (one species). Some studies, based on structural features of the adult (Burmeister 1976; Baehr 1979) and larva (Ruhnau 1986) as well as molecular data (Shull et al. 2001; Ribera et al. 2002; Hunt et al. 2007), suggest that the Hydradephaga is monophyletic. Other studies, including recent DNA sequence analyses (Maddison et al. 2009), indicate a polyphyletic origin for the complex.

The extant geadephagan groups include the trachypachids (six species), rhysodids (about 355 species), cicindelids (about 2,415 species), and carabids (about 31,490 species). The monophyletic origin of the Geadephaga was supported in some structural and molecular studies but rejected in others (see Maddison et al. 2009 for an overview). While the taxonomic concept of the hydradephagan families is stable, that of the geadephagan families is not. Several authors consider either the trachypachids, rhysodids, or cicindelids as Carabidae.

This work catalogues all geadephagan taxa of America, north of Mexico. The last catalogue covering the Geadephaga of the region is that of Bousquet and Larochelle in 1993. Since then relatively few taxonomic studies have been published on the North American fauna. The increased interest toward the inadequately known but amazingly rich Neotropical Region is probably one of the reasons behind the situation. So, is there a need for this catalogue? For one, it is more informative than the previous one. It includes, besides the usual information on nomenclature, the type locality of each available species, locations of the primary type specimens, references to the original synonymies of invalid names, and a short description of the geographical distribution of each species. Furthermore, a number of errors were discovered in the previous catalogue and needed to be corrected.

Brief history

The first checklist / catalogue covering the North American Geadephaga was the checklist of beetles of the United States by Friedrich Ernst Melsheimer [1784-1873] published in July 1853. The interest for this work originated with the establishment in 1842 of the first entomological society in America, The Entomological Society of Pennsylvania. The compilation of this list was one of the main objects of the Society (Sorensen 1995: 17) and it prevailed upon Melsheimer, the first and only President of the Society, to complete the task. The manuscript was delivered in 1848 to the Smithsonian Institution in Washington. Its secretary, Joseph Henry, asked Samuel S. Haldeman and John L. LeConte to advise on its publication. The two gentlemen volunteered to update the manuscript, which delayed its release considerably. The work was a straightforward list of valid species, with abridged references and synonyms but without distributional data, arranged under the valid generic names. Although limited to the United States, it included more than 90% of the species known from North America at the time. Melsheimer, a physician by profession, was the son of Frederick Valentine Melsheimer [1749-1814] who in 1806 published the first book on American entomology, a 60-page booklet entitled "*Catalogue of insects of Pennsylvania. Part first*." It enumerates 111 genera and 1,363 species of Coleoptera (Meisel 1929: 367), though almost all of them are *nomina nuda*.

In April 1866, John Lawrence LeConte [1825-1883] published the first part of a checklist of the Coleoptera of North America (north of Mexico) for the Smithsonian Institution. It covered the Adephaga and a large section of the Polyphaga. The first 49 pages, which included the Adephaga, were reprinted with minor modifications from a list already issued in March 1863. The list included synonyms but no geographical information. The second part of the checklist, covering the Chrysomeloidea and Curculionoidea, was never published. Two additional checklists of North American beetles would be published in the United States during the XIX Century, both straightforward lists without geographical data. The first one, issued in 1874, was authored by George Robert Crotch [1842-1874], a British coleopterist who at the time was assistant to Hermann Hagen at the Museum of Comparative Zoology. A supplement to Crotch's checklist was authored in 1880 by Edward Payson Austin, an amateur coleopterist and member of the Cambridge Entomological Club in its early years. The second checklist was published in 1885 by Samuel Henshaw [1852-1941], then assistant to Professor Hyatt at Lowell Technological Institute. Three supplements, in 1887, 1889, and 1895, were later issued by Henshaw.

In Europe, the German Max Gemminger [1820-1887] and Freiherr Edgar von Harold [1830-1886] published, between 1868 and 1876, a checklist of beetles of the world in 12 volumes, compiling 77,008 species over 3,800 pages. The Geadephaga were included in the first (Carabidae including cicindelids and trachypachids), second (paussids on pages 700-706), and third volumes (rhysodids on pages 867-868), all issued in 1868. Along with each specific name the authors listed the publication year as well as the original reference and region(s) of capture. This work spurred a large

number of additions and corrections by many coleopterists. It stood alone in its class until the publication of the *Coleopterorum Catalogus* under the editorship of Walther Junk and Sigmund Schenkling. Published between 1909 and 1940, this catalogue was issued in 170 parts forming 30 volumes and involved the participation of more than 60 entomologists. A list by parts and another by families can be found in Blackwelder (1957: 1022-1034). The Geadephaga were covered in parts 1 (Rhysodidae by Raffaello Gestro in 1910), 5 (Paussinae by R. Gestro in 1910), 86 (Cicindelinae by Walther Horn in 1926), 91, 92, 97, 98, 104, 112, 115, 121, 124, 126, and 127 (Carabidae, including trachypachids, by Ernst Csiki between 1927 and 1933). Second editions of the Rhysodidae, by Walter D. Hincks in 1950, and Paussinae, by Emile Janssens in 1953, were issued much later.

While the *Coleopterorum Catalogus* was being published in Berlin, Charles William Leng [1859-1941], then director of the museum at the Staten Island Institute of Arts and Sciences, released in 1920 his catalogue of the Coleoptera of America, north of Mexico, still known as the "Leng catalogue." His goal was "to enumerate systematically all the species of Coleoptera described prior to January 1, 1919 ... with consecutive numbers, synonyms, citation of original description, and an indication of distribution." Leng and Andrew J. Mutchler in 1927 (covering the years 1919-1924) and 1933 (for 1925-1932), Richard E. Blackwelder in 1939 (for 1933-1938), and Blackwelder and his wife, Ruth M. Blackwelder, in 1948 (for 1939-1947) published supplements to Leng's catalogue.

In 1972, Ross H. Arnett, Jr. [1919-1999], the catalyst behind the birth of the Coleopterist's Society and its journal *The Coleopterists Bulletin*, initiated the "North American beetle fauna project" (NABF) with the help of a small group of coleopterists. The main goal of this cooperative adventure was to "produce a series of manuals for the identification of the species of beetles of the United States and adjacent Canada, and adjacent Mexico." Although no such book was ever published, a preliminary checklist of North American beetles, known as the "Red Version," was compiled by 1976 by Richard E. Blackwelder and Arnett. This version was used as a "working copy" for the next one, the "Yellow Version" defined as the "definitive checklist and the one which will be kept up-to-date." Of this version, only two families would be compiled and published (July 1977), the Cupedidae by Arnett and the Carabidae (including trachypachids but excluding cicindelids) by Terry L. Erwin, Donald R. Whitehead, and George E. Ball. The "Red Version" was reissued with modifications in 1983 under the editorship of Arnett.

In November 1978, the Science and Educational Administration, USDA, released its first fascicle, covering the family Heteroceridae, of "A catalogue of the Coleoptera of America north of Mexico." The goal was to "supplant the Leng catalogue and supply additional essential information." A total of 34 fascicles, treating various family-group taxa, would be published up to February 1997. Among the fascicles, one only, the Rhysodidae by Ross T. Bell in 1985, deals with Geadephaga.

In 1993, Bousquet and Larochelle published the first catalogue specifically devoted to the geadephagan beetles of North America. They listed, for the first time, the original combination of every available species-group taxon and provided a general idea of the distribution of each species by listing state and province records. One of the goals behind their work was to stimulate interest toward publication of distributional records as done regularly in Europe.

In 1998, Wolfgang Lorenz issued the first edition of his "Systematic list of extant ground beetles of the world" compiling 32,567 species (in 1861 genera) of Geadephaga. Despite being limited to scientific names with their authors and publication years, the list soon became a useful tool to those interested in carabids. A second edition was released in 2005, compiling the same information for 34,281 extant species, placed in 1929 genera.

The first catalogue of the world Coleoptera published is that of Schönherr issued in four parts, 1806, 1808, 1817 and 1826. The Carabidae were grouped in the following genera: *Scarites* (23 species), *Cychrus* (seven species), *Manticora* (two species), *Carabus* (340 species), *Calosoma* (12 species), *Galerita* (nine species), *Brachinus* (16 species), *Anthia* (27 species), *Agra* (three species), *Collyris* (four species), *Odocantha* [sic!] (seven species), *Drypta* (four species), *Cicindela* (67 species), *Elaphrus* (11 species), *Scolytes* [sic!] (three species), all included in the first volume (1806), and *Paussus* (ten species) and *Cerapterus* (two species) included in the third volume (1817). Overall 547 species of Geadephaga were listed along with references and synonyms. By comparison, the number of Carabidae (including Cicindelinae) listed in the four catalogue editions of the Dejean collection amounted to 104 (first edition, 1802), 908 (second edition, 1821), 2494 (third edition, 1833), and 2791 (fourth edition, 1836).

A comparison of the number of valid species and genera between this and previous checklists / catalogues is presented in Table 1.

Table 1. North American Geadephaga species/genera counts in checklists.

Publications	**Trachyp**	**Rhysod**	**Cicindel**	**Carabid**	**Total**
Melsheimer 1853	0	3/1	64/4	935/112	1002/117
LeConte 1866	2/1	2/2	65/4	1090/107	1159/117
Gemminger & Harold 1868	2/1	2/1	61/5	1167/124	1232/131
Crotch 1874*a*	2/1	2/2	67/4	1097/118	1168/125
Henshaw 1885	2/1	4/2	70/4	1179/114	1255/121
Leng 1920	2/1	4/2	114/4	2207/207	2327/214
Coleopterorum catalogus 1926-33	6/1	4/2	70/4	2916/144	2996/151
Erwin et al. 1977	3/1	9/2[1]	109/4[2]	2308/169	2429/176
Bousquet & Larochelle 1993	3/1	8/2	107/4	2230/183	2348/190
Present catalogue	3/1	8/2	112/12	2316/193	2439/208

[1] Species count from Bell (1985*b*)

[2] Species count from Boyd (1982)

Nomenclatural and distributional information

The information on species-group taxa comprises a nomenclatural and a distributional component. The nomenclatural component consists of the scientific name with its author, date and page of publication, the type locality (see section *Type locality* under "Nomenclature" below), and the repository of the name-bearing type of each valid and invalid taxon. In addition, the reference in which a given scientific name is first synonymized is listed. Such references were difficult to find for several names, simply because they were never compiled before. Taxa listed as varieties subsequently to their original descriptions were not considered as listed in synonymy but those listed as aberrations or as "simple varieties" were. Codens used for collection repositories are given in the next section. When available, the accession numbers of name-bearing types for each institution are recorded.

This catalogue deals with extant available taxa. Fossil taxa are listed in Appendix 1. Unavailable names found in the literature are listed in Appendix 4 without comment. Listings of valid species-group names are alphabetic but listings of invalid names are chronologic. Synonyms of adventive and Holarctic species found in North America are selective. Misidentifications by subsequent authors are not listed. All species-group names are given in their original combinations.

The distributional component consists of a list of state and province records, using the same two-letter postal service style abbreviations used in the 1993 catalogue (Table 3), and a short description of the distribution, usually referring to the northeasternmost, northwesternmost, southwesternmost, and southeasternmost states or provinces. In addition, records for Cape Breton Island, the Queen Charlotte Islands, Vancouver Island, and the Channel Islands are indicated in parentheses after their respective provinces or states. Western Hemisphere countries are listed for species found south of the area covered. States and provinces placed in quotation marks in the descriptive section indicate that only the state or province was given without further precision in the reference cited. The starting point for the distributional records used in this work is Bousquet and Larochelle's (1993) catalogue. However, many of their records were undocumented or came from old lists and were not always reliable. State and province records undocumented or considered doubtful are shown in square brackets following the accepted records. Except for the *Amara* records which come from identifications generally made by Fritz Hieke, almost all records from CMNH specimens are based on identifications made by Robert L. Davidson, those from LSAM specimens on identifications made by Igor Sokolov, and those from CNC, MCZ, and USNM specimens from identifications or confirmations made by myself. The records provided by Ken Karns and Brian Raber are based on identifications made by Robert L. Davidson.

The information on supraspecific taxa consists of the scientific name with its author and date and page of publication. Type species of genus-group taxa are also given, in their original combinations, followed by the valid names in parentheses when applicable, and type genera are listed for family-group taxa. Etymology is given for all

Table 2. Two-letter abbreviations for political regions covered by this catalogue.

AB	Alberta	MA	Massachusetts	OH	Ohio
AK	Alaska	MB	Manitoba	OK	Oklahoma
AL	Alabama	MD	Maryland	ON	Ontario
AR	Arkansas	ME	Maine	OR	Oregon
AZ	Arizona	MI	Michigan	PA	Pennsylvania
BC	British Columbia	MN	Minnesota	PE	Prince Edward Island
CA	California	MO	Missouri	PM	St.Pierre and Miquelon
CO	Colorado	MS	Mississippi	QC	Quebec
CT	Connecticut	MT	Montana	RI	Rhode Island
DC	District of Columbia	NB	New Brunswick	SC	South Carolina
DE	Delaware	NC	North Carolina	SD	South Dakota
FL	Florida	ND	North Dakota	SK	Saskatchewan
GA	Georgia	NE	Nebraska	TN	Tennessee
GL	Greenland	NF	Newfoundland	TX	Texas
IA	Iowa	NH	New Hampshire	UT	Utah
ID	Idaho	NJ	New Jersey	VA	Virginia
IL	Illinois	NM	New Mexico	VT	Vermont
IN	Indiana	NS	Nova Scotia	WA	Washington
KS	Kansas	NT	Northwest Territories	WI	Wisconsin
KY	Kentucky	NU	Nunavut	WV	West Virginia
LA	Louisiana	NV	Nevada	WY	Wyoming
LB	Labrador	NY	New York	YT	Yukon Territory

valid generic names and for some of the invalid names; the works of Brown (1956) and Cailleux and Komorn (1981) have been particularly useful.

The listing of valid supraspecific taxa is "phylogenetic," starting with taxa putatively branching off early along the evolutionary path of the group. Synonyms of supraspecific taxa are listed chronologically. If readily available, the first reference in which a given genus-group name is synonymized is included.

In the references section, titles of journals are cited in full. Titles of papers and books using alphabets other than Latin have been translated into English and the original language listed in square brackets after the title. An improvised title is given in square brackets, in the language used by the author(s), to papers without formal title. Unless otherwise noted, all references listed were seen. Except when only the year was found, the date of publication [DP] is given in square brackets at the end of each citation.

Institution / collection acronyms and abbreviations

Collections cited in the catalogue are referred to by the abbreviations listed below.

ALM Alabama Museum of Natural History, Tuscaloosa, Alabama, USA
AMNH American Museum of Natural History, New York, New York, USA

ANSP	Academy of Natural Sciences, Philadelphia, Pennsylvania, USA
BMNH	The Natural History Museum, London, United Kingdom
BYUC	Brigham Young University, Provo, Utah, USA
CAS	California Academy of Sciences, San Francisco, California, USA
CMC	Cincinnati Museum of Natural History, Cincinnati, Ohio, USA
CMN	Canadian Museum of Nature, Gatineau, Quebec, Canada
CMNH	Carnegie Museum of Natural History, Pittsburgh, Pennsylvania, USA
CNC	Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Ontario, Canada
CUIC	Cornell University Insect Collection, Cornell University, Ithaca, New York, USA
DAPC	Darren A. Pollock collection, Eastern New Mexico University, Portales, New Mexico, USA
DEI	Institute für Pfanzenschutzforschung (formerly Deutsches Entomologisches Institut), Kleinmachnow, Eberswalde, Germany
EMEC	Essig Museum of Entomology Collection, University of California, Berkeley, California, USA
ETHZ	Entomologisches Institut, Eidgenössische Technische Hochschule, Zürich, Switzerland
FFPC	Foster Forbes Purrington collection, The Ohio State University, Columbus, Ohio, USA
FMNH	Field Museum of Natural History, Chicago, Illinois, USA
FSCA	Florida State Collection of Arthropods, Gainesville, Florida, USA
GNM	Göteborgs Naturhistoriska Museum, Göteborg, Sweden
HMUG	Hunterian Museum, University of Glasgow, Glasgow, United Kingdom
INHS	Illinois Natural History Survey, Champaign (Urbana), Illinois, USA
IRSN	Institut Royal des Sciences Naturelles, Brussels, Belgium
IZWP	Museum and Institute of Zoology of the Polish Academy of Sciences, Warszawa, Poland
KSUC	Kansas State University, Manhattan, Kansas, USA
LACM	Los Angeles County Museum of Natural History, Los Angeles, California, USA
LMMC	Lyman Entomological Museum, McGill University, Macdonald Campus, Sainte-Anne-de-Bellevue, Quebec, Canada
LSAM	Louisiana State Arthropod Museum, Baton Rouge, Louisiana, USA
LSL	Linnean Society, London, United Kingdom
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, USA
MHNG	Muséum d'Histoire Naturelle, Geneva, Switzerland
MHNP	Muséum National d'Histoire Naturelle, Paris, France
MSB	Museum of Southwestern Biology, University of New Mexico, Albuquerque, New Mexico, USA
MSNG	Museo Civico di Storia Naturale, Genoa, Italy

MSNM Museo Civico di Storia Naturale, Milano, Italy
MSNT Museo Civico di Storia Naturale, Trieste, Italy
MSUE Michigan State University, East Lansing, Michigan, USA
MVM Museum Victoria, Melbourne, Australia
NCSU North Carolina State University, Raleigh, North Carolina, USA
NHMW Naturhistorisches Museum Wien, Wien, Austria
NIAS National Institute for Agro-environmental Sciences, Tsukuba, Japan [formerly National Institute of Agricultural Sciences, Tokyo]
NMNS National Museum of Nature and Science, Tokyo, Japan
NMP National Museum, Prague, Czech Republic
NRSS Naturhistoriska Riksmuseet, Stockholm, Sweden
NSNH Nova Scotia Museum of Natural History, Halifax, Nova Scotia, Canada
ODAC Oregon Department of Agriculture, Plant Division, Salem, Oregon, USA
ORUM Collection Ouellet-Robert, Université de Montréal, Montreal, Quebec, Canada
OSAC Oregon State Arthropod Collection, Oregon State University, Corvallis, Oregon, USA
OSUO Ohio State University, Columbus, Ohio, USA
PMNH Peabody Museum of Natural History, Yale University, New Haven, Connecticut, USA
PURC Purdue State University, West Lafayette, Indiana, USA
SIM Staten Island Museum, Staten Island, New York, USA
SMEK Snow Museum of Entomology, University of Kansas, Lawrence, Kansas, USA
SMTD Staatliches Museum für Tierkunde, Dresden, Germany
TAMU Texas A&M University, College Station, Texas, USA
TMB Magyar Természettudományi Múzeum, Budapest, Hungary
TME Texas Museum of Entomology, Pipe Creek, Texas, USA
UAIC University of Arkansas, Fayetteville, Arkansas, USA
UASM Strickland Museum, University of Alberta, Edmonton, Alberta, Canada
UBC Spencer Entomological Museum, University of British Columbia, Vancouver, British Columbia, Canada
UCD University of California, Davis, California, USA
UCM University of Colorado Museum, Boulder, Colorado, USA
UICU University of Illinois, Urbana, Illinois, USA
UMAA University of Michigan, Ann Arbor, Michigan, USA
UMM Philipps-Universität Marburg, Zoologische Sammlung, Marburg, Germany
UMO The University Museum, University of Oxford, Oxford, United Kingdom
UMSP University of Minnesota, Saint Paul, Minnesota, USA
USMT Ueno Science Museum, Tokyo, Japan
USNM National Museum of Natural History, Smithsonian Institute, Washington, DC, USA
USS University of Sydney, Sydney, Australia

UZIU	Uppsala Universitet, Zoologiska Museum, Uppsala, Sweden
VMNH	Virginia Museum of Natural History, Martinsville, Virginia, USA
WSU	Washington State University, Pullman, Washington, USA
ZILR	Zoological Institute, Academy of Sciences, Saint Petersburg, Russia
ZMH	Zoologiska Museum, University of Helsinki, Helsinki, Finland
ZMHB	Zoologisches Museum, Humboldt Universität, Berlin, Germany
ZMLS	Zoological Museum, Lund University, Lund, Sweden
ZMMU	Zoological Museum, Moscow University, Moscow, Russia
ZMUA	Zoologisch Museum, Universiteit van Amsterdam, Amsterdam, The Netherlands
ZMUC	Zoologisk Museum, Universitets Copenhagen, Copenhagen, Denmark
ZMUO	Zoological Museum, University of Oslo, Oslo, Norway
ZMUT	Zoological Museum, University of Turku, Turku (= Åbo), Finland

Besides those used for provinces and states (see Table 2), the following abbreviations are used in the text:

B.P.	Before Present
CAN	Canada
CBI	Cape Breton Island
CHI	Channel Islands (Santa Barbara Islands)
DEN	Denmark
DP	Date of publication
FRA	France
ICZN	International Commission on Zoological Nomenclature
QCI	Queen Charlotte Islands
USA	United States of America
VCI	Vancouver Island

In addition, the International Commission on Zoological Nomenclature is sometimes abridged to "Commission" and United States of America to "United States."

Geographical terms

For simplicity, North America, north of Mexico, is referred to simply as North America in the text. Middle America refers to Mexico and the republics of Central America taken collectively. The West Indies refers to the Greater and Lesser Antilles and the Bahamas. The North American continent proper is referred to as North and Middle America.

For practical reasons, the zoogeographical regions of the world are defined following national boundaries as much as possible. The Nearctic Region corresponds to Canada, the continental United States, Saint-Pierre and Miquelon, and Greenland. Although the region extends into Mexico, its southern limit is difficult to define and

often varies depending on the group under study. This concept implies that North America and the Nearctic Region are equivalent in this work. The Neotropical Region comprises Middle America and South America. The Afrotropical Region consists of Africa, including Madagascar and a number of smaller islands of the Indian Ocean, such as the Comoros, the Mascarene Islands, and the Seychelles, and of the Atlantic Ocean, such as Cape Verde Islands and São Tomé, but excludes the northern countries of Morocco (including Western Sahara), Algeria, Tunisia, Libya, and Egypt west of the Suez Canal, and the Canary and Madeira Islands. The limits of the Palaearctic Region are similar to those used in the *Catalogue of Palaearctic Coleoptera* (Löbl and Smetana 2003: 8). The region thus comprises Europe, Africa north of the Sahara, and Asia as far south as the Arabian Peninsula, Pakistan, Jammu and Kashmir, Himachal Pradesh, Uttar Pradesh, Nepal, Sikkim, Bhutan, Arunachal Pradesh, China, and Taiwan. The Oriental Region is Asia south of the regions used to define the southern limit of the Palaearctic Region. It includes all the Malay Archipelago (except New Guinea). The Australian Region comprises Australia, New Zealand, New Guinea, and some smaller islands of the Pacific, such as Fiji, New Britain, New Caledonia, and Solomon Islands.

The New World consists of the Nearctic, Neotropical, and Australian Regions combined and the Old World of the Oriental, Palaearctic, and Afrotropical Regions grouped. The Northern Hemisphere is the Nearctic and Palaearctic Regions combined and the Southern Hemisphere is the Afrotropical, Oriental, Australian, and Neotropical Regions united. The Western Hemisphere consists of the Nearctic and Neotropical Regions and the Eastern Hemisphere of the Palaearctic, Afrotropical, Oriental, and Australian Regions. Far East used in reference to the Palaearctic Region includes the Russian Far Eastern Region, the Korean Peninsula, Japan, Taiwan, and China excluding the Autonomous Regions of Inner Mongolia, Sinkian Uighur, and Tibet. Middle East is used for the southwestern Asian countries, including Egypt, Turkey, Syria, Lebanon, Israel, Jordan, Saudi Arabia, Yemen, Oman, Iraq, Iran, Afghanistan, and Pakistan.

The adjective "Holarctic" is used to denote a taxon that occurs naturally in both the Nearctic and Palaearctic Regions. The adjective "Australian" (as in "Australian species") refers to the zoogeographical region, not to the country itself. The adjective "worldwide" is used to denote a genus-group or family-group taxon represented by at least one native species in all six zoogeographical regions as defined above including both the European and Asian parts of the Palaearctic Region. The adjective "endemic" indicates that the taxon is found only in the region listed.

Names of geographical places are given in their current English forms based on *Merriam-Webster's Geographical Dictionary*, third edition (1997).

Nomenclature

The rules outlined in the fourth edition of the International Code of Zoological Nomenclatural, published in 1999, have been followed throughout this catalogue. The following are comments about some nomenclatural issues.

Principle of priority. Priority for identical taxa made available the same year, whether under the same name or not, is determined by the date, other than the year, of publication. If not specified in the work itself, the publication date is the earliest day or month on which the work is demonstrated to be in existence (ICZN 1999: Article 21.3). When both works are published or assumed to be published the same day, precedence is determined by the First Reviser (Article 24.2). Unless listed in the work itself, dates of publication besides the year can be demonstrated only for some works. Those without specific dates are listed as published the last day of the year (Article 21.3.2) and priority goes to the work with a "demonstrated" date of publication. However, the situation is subject to change with new bibliographic discoveries, which could challenge the validity of synonyms (as well as relative precedence of homonyms and validity of nomenclatural acts) and bring nomenclatural instability. In this catalogue, priority was given to the publication "in prevailing usage" when the dates of publication were determined from external sources.

New taxa. In the XVIII and first half of the XIX Century it was common practice for authors not to indicate the attribution of the new species-group taxa. Instead, some authors added the word *mihi* after the specific name, usually to indicate a taxon that the author, himself, was describing. Several collectors provided names for their specimens, even for undescribed ones, and these specimens often circulated among European coleopterists through exchange, gift, or sale. Many undescribed species were subsequently described or illustrated under the collector's names by different authors. For these, citations are provided in this catalogue only to the first description or illustration of each species unless the term "new species" or an equivalent expression (such as an asterisk preceding the specific epithet as in Say 1823a[1]) was included with the species-group name subsequently described or illustrated. Sometimes a species was described / illustrated by different authors the same year under the same names. One example concerned several species (i.e., *Patrobus foveocollis*, *Patrobus fossifrons*, *Pterostichus adstrictus*, *Pterostichus ventricosus*, and *Pterostichus pinguedineus*)[2] described by Eschscholtz in 1823 in the *Mémoires de la Société Impériale des Naturalistes de Moscou* (volume 6) and illustrated by Fischer von Waldheim on plates available the same year (Sherborn 1922: liii), but included in his *Entomographie de la Russie* (volume 2) issued in 1824. In such cases, citations are given for the oldest description / illustration (for exceptions see previous entry, *Principle of priority*) but references to subsequent descriptions / illustrations are noted after the entry of the valid name.

New taxa first published as synonyms. The International Commission on Zoological Nomenclature admits the availability of taxa first published in an available work as

[1] These asterisks were dropped in the publication of Say's entomological works by LeConte.

[2] These names have been credited to Eschscholtz by almost all authors I have seen although there are proper citations of Fischer von Waldheim's plates in Eschscholtz's work. This suggests that the plates were available before the publication of Eschscholtz's work. However because Fischer von Waldheim's validation of the names is through illustrations, it is always possible that Fischer von Waldheim simply gave Eschscholtz the position of these species on his forthcoming plates.

junior synonyms and adopted before 1961 as valid taxa or treated as senior homonyms (ICZN 1999: Article 11.6.1). In such cases the taxa date from their first publication as synonyms. Even though this ruling has existed since the publication of the ICZN first edition in 1960, it has rarely been enforced in the carabid literature. A few cases were found during the preparation of this catalogue. For example, *Notiophilus sylvaticus* has been credited in the past to Eschscholtz (1833: 24) but the name was first proposed as a junior synonym of *Notiophilus biguttatus* Fabricius by Dejean (1831: 589). The name is credited to Dejean (1831) in this catalogue. It is possible that other cases like this one will eventually be found.

Lectotype. Prior to 2000, a lectotype could be selected by using the term "the type" instead of "lectotype" (ICZN 1999: Article 74.5). The words "type" and "holotype" are also acceptable if the author unambiguously selects a particular syntype to act as the unique name-bearing type of the taxon. This is the case for almost all designations using the word "type" or "holotype" relating to North American Carabidae published after 1950, in particular by George E. Ball and his students. In this catalogue the expression "lectotype [as type]" or "lectotype [as holotype]" applies to such cases. Unfortunately the Commission does not mandate the addition of "lectotype" labels to selected specimens, which often creates ambiguity when authors fail to do so.

Type locality. According to the ICZN (1999: Article 76.1), the type locality is the geographical place of capture of the primary type (holotype or lectotype). In the absence of a primary type, the type locality encompasses the localities of all the syntypes (Article 73.2.3). This information can be obtained from labels attached to primary types or to syntypes or from the original publication (referred to as "original citation" in the text) whichever is more inclusive, or inferred from the title of the publication or even from the name of the species. When a neotype is designated, its place of capture becomes the type locality (Article 76.3) even if the specimen was collected outside the original area. In this catalogue, type localities taken from labels or from original publications are listed as indicated although the order of the elements is sometimes changed; any additional information is placed in square brackets. Many species described in the XVIII and XIX Centuries had but little informative place of origin, such as a country, state, province, or large geographical area (e.g., Rocky Mountains or Lake Superior). Lindroth (1961-1969) restricted the type locality of several of these North American species by selecting a specific locality or a county within the original region specified. This practice is followed in this catalogue and specific type localities are selected for several species-group taxa. Of course, only localities where a given species was actually collected can be selected.

Notable private carabid collections

Many North American species of carabids described in the XIX and beginning of the XX Centuries were from specimens held in private collections. The whereabouts of these collections are important to taxonomists. Some of the more significant ones are discussed.

Pierre François Marie Auguste Dejean (1780-1845) Collection

Dejean, a French military officer by profession, certainly held the largest private beetle collection of his time, which he built through exchanges, purchases, gifts, and his own collecting in various parts of Europe. He described a total of 289 new carabid species-group taxa from North America, of which 182 (63%) had not been described earlier according to the present catalogue. At the sale of his collection in 1840, the carabid section (which also included the agyrtid genus *Pteroloma*) was the most significant, not only because it contained 3,014 species and 17,914 specimens, but because it was the only one to include name-bearing types. Dejean did not describe a new species-group taxon during his lifetime that he did not consider a carabid. Dejean's carabid collection (including tiger beetles) was purchased for 7,000 francs by Marquis F. Thibault de LaFerté-Sénectère who sold it, along with his own carabids, to Baron Maximilien de Chaudoir [*q.v.*] in 1859. Dejean's carabid specimens are at MHNP today. Lindroth (1955b) discussed the name-bearing types and status of almost all North American species described by Dejean.

Thomas Say (1787-1834) Collection

Say was the first naturalist born in North America to describe new species of beetles from this continent. In the course of 17 years (1817-1834), he described 164 carabid species from North American material which he believed were new to science. Based on their current status, 142 (87%) had effectively not been previously described. Say left his collection by verbal bequest through his wife to the Academy of Natural Sciences in Philadelphia in 1834 (Weiss 1936: 277). After his death, which occurred in October of the same year, the collection was shipped from New Harmony, Indiana, to Philadelphia through New Orleans. In 1836, Charles Pickering sent Say's insects to Thaddeus W. Harris in Cambridge, Massachusetts, in order to "put them in good order, and return them in a condition to be preserved" (Harris to D.H. Storer, 2 November 1836). In the same letter Harris reported "They [Say's specimens] arrived about the middle of July; but on examination were found to be in a deplorable condition, most of the pins having become loose, the labels detached, and the insects themselves without heads, antennae and legs, or devoured by destructive larvae, and ground to powder by the perilous shakings which they had received in their transportation from New Harmony." In a letter to C.J. Ward, dated 8 March 1837, Harris wrote "I assure you that Mr. Say's cabinet does not contain one half of the species which he has described; of the insects in it, many are without names, and all more or less mutilated, and so badly preserved that most of them are now absolutely worthless." On July 16, 1838, Harris indicated in a letter to S.G. Morton (see Fox 1902: 11) that he had "been obliged to bake a considerable part of the insects lately belonging to Mr. Say twice, and some of them three times, in order to destroy the vermin with which they are infested." Say's collection was returned to the Academy of Natural Sciences in Philadelphia in March 1842 "in such a state of ruin and dilapidation as to be almost useless" (Ruschenberger 1852: 25).

During his life, Say sent some of his specimens abroad including many to Dejean in Paris (see Dejean 1826: vi). Fortunately Dejean's carabid collection has remained

intact and in good condition to this day. In their attempt to bring taxonomic stability to Say's names, Lindroth and Freitag (1969) selected lectotypes for eight carabid species described by Say for which Say's authentic specimens could be located in Dejean's collection. They also designated neotypes from the MCZ material for 131 of the remaining 156 of Say's species leaving the tiger beetles (14 species) and a few taxa, all currently considered invalid, without type specimens. Say's species were interpreted by Lindroth and Freitag from LeConte's concept according to his collection. LeConte never saw Say's collection and his interpretation of Say's species came exclusively from the original descriptions which he considered adequate: "The entire destruction of his [Say's] original specimens would be the subject of much greater regret, were it not for the fact that his descriptions are so clear as to leave scarcely a doubt regarding the object designated. I am thus enabled to assign to nearly all of his Coleoptera their proper place in the modern system" (LeConte 1859d: vi).

Thaddeus William Harris (1795-1856) Collection

Harris, well known for his work in economic entomology (his profile having appeared on every cover of the *Journal of Economic Entomology* for more than 35 years), described 28 new carabid species from North America. Ten (36%) are considered valid in this catalogue. To his defence, several of his species were made available by the posthumous publication of some of his letters several decades after they were written. At Say's suggestion, Harris sent his entire collection to Thomas Say in Philadelphia, in 1825, who labeled the specimens as well as he could. Harris' collection, which included "4,838 specimens in 2,241 species of Coleoptera," contained "many typical specimens described by Harris, Say, and others" (Scudder 1860: 72). It was bought by friends in 1858 and presented to the Boston Society of Natural History. Harris' collection was transferred to the Museum of Comparative Zoology at Cambridge in April 1941 (Darlington 1941b: 273) where it stands separately from the general collection in two standard 25 drawer cabinets.

Gustav Graf von Mannerheim (1797-1854) Collection

Mannerheim, a Finnish noble by birth and wealthy by inheritance, described 72 new North American carabid species, all from Alaska and California. Of these, 23 (32%) had not been described previously. Mannerheim never visited the New World and his descriptions were based on specimens brought back chiefly by Russian collectors such as Johann F. Eschscholtz, Eduard L. Blaschke, Egor L. Tschernikh, and Il'ia G. Vosnesensky. His library and personal collection, which consisted, at the end, of 18,000 species and nearly 100,000 specimens, were sold for the sum of 8,000 silver rubles by his widow, Countess Eva Mannerheim, in 1855 to the University of Helsinki. The money used to buy the collection came from a loan made by the Emperor to the University with the understanding that the University will pay back annually the sum of 500 rubles to the Imperial Bank of Finland which will use it for poor- and workhouses in the country (Rein 1857). Mannerheim's collection is kept separately at the University of Helsinki (Silfverberg 1995: 43).

Jules Antoine Adolphe Henri Putzeys (1809-1882) Collection

Putzeys described 38 new North American species of carabids; 15 (39%) are listed as valid in this catalogue. He worked in close collaboration with Chaudoir, the leading carabidologist of the time, and described several new species from specimens in Chaudoir's collection. These specimens are now in MHNP. He also gave many of his own types to Chaudoir. His personal collection was bequeathed in 1885 to the *Société Royale Belge d'Entomologie* under the care of the *Musée Royal d'Histoire Naturelle* in Brussels. Putzeys' collection consisted of 26,429 specimens of carabids (including cicindelids) and 6,123 species (Preudhomme de Borre 1885: clx) as well as many other beetles and various insects.

Victor de Motschulsky (1810-1871) Collection

Motschulsky, a Russian Imperial Army Colonel, described 121 new geadephagan species from North America; 27 (22%) were undescribed at the time based on current practice. A large part of this material came from a 10-month trip he made in 1853-54 to the United States and Panama. He collected at several locations including New York, Niagara Falls, Cleveland, Cincinnati, Cawington, Lexington, the Mammoth Cave, Nashville, Louisville, New Orleans, Mobile, Montgomery, Atlanta, Washington, D.C., and Philadelphia. In the last city, he visited LeConte, Haldeman, Melsheimer, and Zeigler. The first three gentlemen gave Motschulsky several specimens from their collections including "types" (Motschulsky 1856: 16). LeConte also identified part of the beetles Motschulsky collected in Louisiana, Alabama, Georgia, and Carolina. Motschulsky's main collection, which included almost 60,000 specimens and about 4,000 types of beetles, was bequeathed to the *Société Impériale des Naturalistes de Moscou*. It was stored in poor condition and suffered considerable damage before it was acquired in 1911 by the Zoological Museum, Moscow Lomonosov State University (Antonova 1991: 72). Keleinikova (1976) catalogued the carabid syntypes of Motschulsky's collection at ZMMU.

Samuel Stehman Haldeman (1812-1880) Collection

Haldeman described 45 new carabid species from North America; 22 (49%) had not been described previously. In 1869 Haldeman, who had purchased Hentz's collection, sold his collection of beetles to Simon Snyder Rathvon of Lancaster, Pennsylvania, "for about what the cases cost" (Rathvon in Geist 1881: 125). Rathvon's collection and library were purchased for $1,000 by Henry Bobb of East Greenville, Pennsylvania, and presented to the Franklin and Marshall College in Lancaster, Pennsylvania, as a memorial of his son (Dubbs 1903: 369). In a letter dated April 1875 and addressed to Alexander Agassiz (see below), John L. LeConte stated that he owned "all the unique types" of Haldeman. This leads one to speculate that Haldeman, a close friend of LeConte, gave his name-bearing specimens to LeConte prior to selling his collection to Rathvon.

Maximilien Stanislavovitch Baron de Chaudoir (1816-1881) Collection

Russian aristocrat of French origin, Chaudoir was not the typical insect collector. He made a single extensive collecting trip in his life, a 40 day-journey to the Caucasus in

company of M.H. Hochhuth in 1845. His collection was mostly built through purchases and gifts. The single most significant purchase was LaFerté-Sénectère's carabid collection in 1859 which included Dejean's original specimens. In January 1874 Chaudoir gave his tiger beetle specimens, representing 713 species, to MHNP. After his death in May 1881 his collection passed into the hands of René Oberthür in Rennes as agreed upon between Chaudoir and the Oberthür brothers. Over nearly five decades, Chaudoir described 126 new carabid species based on specimens collected in North America; 58 (46%) had not been described earlier based on this catalogue.

René Oberthür died in April 1944 and his collection, certainly one of the two largest private beetle collections ever built, was classified as "monument historique" in January 1948 by the French government. The collection, which included at least five million specimens, was acquired for the sum of 32 million francs by the Muséum d'Histoire Naturelle in Paris (MHNP) in 1951 (Cambefort 2006: 249).

Henry Ulke (1821-1910) Collection

Although Ulke described only two North American carabids in his life, *Bembidion nevadense* in 1875 and *Pterostichus johnsoni* in 1889, his collection, which he sold in 1900 to the Carnegie Museum in Pittsburgh, was used extensively by LeConte and Horn and contains numerous syntypes of new species described by the two coleopterists. However, recognition of many of these syntypes can be difficult. Sometimes all syntypes were retained by LeConte and Horn while on other occasions all or some of them were returned to Ulke. Furthermore, syntypes returned to Ulke were often reincorporated in his collection with others of the same species from the same place. Usually these were marked with a number or colored square, but since many syntypes were left unmarked at the time, it is sometimes impossible to recognize them at the Carnegie Museum (Robert L. Davidson pers. comm. 2008).

John Lawrence LeConte (1825-1883) Collection

LeConte is without doubt the most outstanding North American coleopterist of the xix Century, not only because he described 514 new genus-group and about 4,730 new species-group taxa of beetles (Henshaw 1882: 270), but because he was the first to work seriously on the classification of the North American fauna. During his scientific activity, which lasted almost 40 years, he described 724 new species-group taxa of Geadephaga from North America, 439 (61%) of which were not previously described. LeConte built his collection through his own collecting but also from gifts he received and identifications he provided to many persons from whom he usually retained all or some of the specimens. There is also little doubt that his father, Major John Eatton LeConte[3], left his collection to his son. Evidence supporting this can be found in

[3] By 1825, Major LeConte had sent Dejean more than 600 species of beetles (Dejean 1825: xxv). He also visited Paris in 1828 and gave Dejean a huge ["une immense"] collection of insects from the United States (Dejean 1828: vi). All species named "*lecontei*" by Dejean were in the honour of the Major and not his son.

LeConte (1856a: 49) when he indicated that his second specimen of *Cicindela blanda* "came from the old collection of my father." LeConte was a generous man and often offered some of his specimens to visitors (such as Motschulsky [*q.v.*]) or sent some to acquaintances (such as Chaudoir [*q.v.*] and Putzeys [*q.v.*]) though it seems that he retained at least one specimen of each species. Unfortunately in the XIX Century the type concept for species-group taxa was not developed and LeConte sometimes gave the only syntype he had in his collection and retained one or more specimens that he acquired after the original descriptions. Therefore, syntypes of some of LeConte's species are not in his collection. Moreover, syntypes of some of his species are difficult to find in his collection. LeConte had the habit of mixing the specimens of the new species he considered later as synonyms with those of the valid species. Since many of his specimens only bear a colored disc for label, syntypes of several of his species are not readily ascertainable.

In April 1875, LeConte wrote to his friend Alexander Agassiz, director of the Museum of Comparative Zoology in Cambridge, and expressed the wish that his collection be deposited at the museum after his death[4]. His collection was packed and transported by his longtime friend George Horn. It now stands separate from the general collection along with that of Horn.

LeConte used small colored paper disks to indicate the provenance of his specimens. The color system used is as follows:

Pale blue	Lake Superior, Canada
Pink	Middle states, i.e., Maryland, Delaware, New York, New Jersey, Pennsylvania, and possibly also Connecticut and Rhode Island
Pale pink	Vermont, New Hampshire, Massachusetts
White	Northern and eastern states, Canada, and possibly also Alaska
Orange (brick red)	Southern and Gulf states, i.e., Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, and possibly also eastern Tennessee and Arkansas
Dark red	Texas
Yellow	Ohio, Illinois, Indiana, Missouri, western Tennessee, Kentucky, and possibly Iowa and the southern edge of the Great Lakes
Pale green	Nebraska, Kansas, North Dakota, South Dakota, Oklahoma, Colorado, Wyoming, Montana
Dark green	New Mexico
Black	Utah
Silver	Arizona and Valley of Gila (so including also southwestern New Mexico)

[4] A copy of the letter was published in *The Coleopterists Bulletin* in December 1961.

Silver with edge cut	Baja California, Mexico
Gold	California
Dark blue	Oregon, Washington
Brown	Russian America, i.e., probably the region around Colony Ross, a farming community about 75 miles north of San Francisco along the coast in California, and Alaska

George Henry Horn (1840-1897) Collection

A physician by profession, Horn authored or coauthored more than 250 papers, in which he described 154 new genera and more than 1,600 new species of beetles, including 103 North American Geadephaga. Based on the current classification, 75 (73%) of his new geadephagan species had not been described previously. His collection and library were bequeathed to the American Entomological Society, which deposited them at the Academy of Natural Sciences in Philadelphia. In October 1974, the Horn and William G. Dietz collections were delivered to the Museum of Comparative Zoology in return for the Scudder and Morse orthopteroid insects of the MCZ (Philip D. Perkins pers. comm. 2004; see Lawrence 1973: 151). Horn's collection is preserved along with that of LeConte apart from the general collection.

Thomas Lincoln Casey (1857-1925) Collection

From 1884 to the end of his life, Casey described 1,864 new species-group taxa of North American Geadephaga; only 307 (16%) had not been described previously based on current concepts. Still many of his remaining "valid species" have not been subsequently studied, particularly those belonging to small species of the tribe Harpalini, and a substantial proportion will certainly end up in synonymy. Furthermore, several of Casey's species are valid simply by chance as he did not recognize or study the proper characters (such as the male genitalia) that distinguished them from their closely related taxa known at the time. His collection, consisting of almost 117,000 specimens, including name-bearing types for more than 9,200 species-group taxa (Buchanan 1935: 7; Blackwelder 1950: 65), was built through Casey's own collecting and by purchases. It was bequeathed to the United States National Museum in Washington, D.C. Casey (1918: 291) stated that "about a dozen" of his types "disappeared from ... [his] collection while temporarily at the Cambridge Museum." The syntypes of some of these species (e.g., *Bembidion militare*, *Tachys occultator*, *Amara pallida*, *Amara ferruginea*, and *Amara marylandica* among Carabidae) are at the MCZ. Casey did not designate holotypes as such and therefore, unless he expressly indicated in the original description that he had but a single specimen or that a lectotype had been designated, all type specimens in his collection are syntypes.

Willis Stanley Blatchley (1859-1940) Collection

Blatchley described 12 new North American carabid species; only two (17%) are considered valid in this work. His library and large insect collection, which included 470

name-bearing specimens, were given to Purdue University. Blatchley did not select type specimens in his publications but subsequently designated lectotypes [as types] for all the new species he had described (Blatchley 1930: 33-50).

Charles Frederic August Schaeffer (1860-1934) Collection

Schaeffer, curator of the insect collection at the Museum of the Brooklyn Institute of Arts and Sciences, described 30 new carabid species; 22 (73%) are still valid today. In 1929, the Brooklyn Museum transferred 37,100 insect specimens, including many of Schaeffer's carabid types, to the USNM (Debbie Feher pers. comm. 2008). Currently the type material of 25 (possibly 26) of Schaeffer's species-group taxa are in the USNM. It is clear in his 1910 paper that Schaeffer was selecting one of the specimens from his series as "the type." However he may not have labeled them as such because lectotypes have been designated for several of his new species by various authors.

Henry Clinton Fall (1862-1939) Collection

A teacher by profession, Fall owned one of the largest private collections of North American beetles toward the end of his life, with an estimated 250,000 specimens (including those of Charles Liebeck which came to Fall in the 1930s) representing between 14,000 and 15,000 species or about 90% of the fauna of the time (Darlington 1940a: 46) if one excludes the "species" described by Casey. Over a period of about 40 years, Fall described 47 new North American carabid species-group taxa; 31 (66%) are still considered valid today. He left his collection, together with his correspondence, notebooks, and reprints, to the Museum of Comparative Zoology at Harvard University where his specimens are kept separately at the end of each genus in the general collection. In one of his 1910 papers, Fall designated holotypes (as "the type") for the first time. From this publication, "type" specimens labeled as such in his collection are considered holotypes. All original specimens of his new species described prior to 1910 should be considered syntypes. Type labels on some of these specimens were probably added after the publication of the original descriptions.

Roland Hayward (1865-1906) Collection

Hayward, a member of the Boston Stock Exchange and of the Boston Society of Natural History, described 42 new species of carabids from North America, all in the tribe Bembidiini and the genus *Amara*. Currently 32 (76%) are considered valid. His collection, which he built through purchases, gifts, exchanges, and his own collecting in New England as well as in Colorado, Manitoba, and New Brunswick, was bequeathed to the Museum of Comparative Zoology in Cambridge. Hayward did not designate type specimens for his new species.

Edwin Cooper Van Dyke (1869-1952) Collection

Professor Van Dyke described 73 new carabid and one new trachypachid species from North America; 54 (73%) of which had not been described previously based on their

current status. His collection, consisting of about 200,000 specimens (Essig 1953: 88), was presented to the California Academy of Sciences in 1924 where the holotypes of all but three of his 74 new species of Geadephaga are currently stored.

Howard Notman (1881-1966) Collection

Notman described 38 new carabid species from North America between 1919 and 1929; 21 (55%) had not been described previously based on their current status. In 1948 he donated his entire collection to the Staten Island Institute of Arts and Sciences, where it is still today (Smetana and Herman 2001: 118). Based on Hennessey's (1990) type catalogue of that institution, type specimens of all new species Notman collected himself, most from the Adirondacks where he owned a summer home, are in his collection in SIM (18 in total). He also described several new species from material owned by institutions, such as the USNM. Notman did not designate type specimens in his papers of 1919 and 1920 but did so after.

Classification of Geadephaga

Unfortunately, there is no consensus among coleopterists concerning the classification of Geadephaga even at the family level. Some authors rank the cicindelids, rhysodids, and trachypachids as Carabidae while others consider one, two, or all three groups as distinct families. Even the paussines are sometimes raised to family level by modern authors. At this time, I prefer to classify the Geadephaga into three families, i.e., Trachypachidae, Rhysodidae, and Carabidae.

Following Jeannel's (1941b-1942) classification of the carabids of France, a number of authors, mostly French and Spanish taxonomists, still recognized several families of "ground beetles." Such an approach does not add anything to the understanding of carabid evolution. It simply adds another level to the Linnaean classification. If Jeannel's approach is followed, it could and should have an impact on the classification of the other adephagan groups, particularly the dytiscids. Since I have been under the influence of Lindroth's work on the carabids of Canada and Alaska, Jeannel's approach seems to me unjustified.

Following is a discussion of the family-group taxa of Geadephaga.

Family Trachypachidae. Monophyly of this family is well supported by larval and adult apomorphies (Arndt and Beutel 1995; Beutel 1994; Beutel 1998). The systematic position of this group, however, is contentious. Bell (1966b, 1967), Bils (1976), Evans (1977a, 1985), Hammond (1979), Ward (1979), Burmeister (1980), Roughley (1981), Nichols (1985c), Beutel and Belkaceme (1986), Ruhnau (1986), Beutel and Roughley (1988), Acorn and Ball (1991), Arndt (1993), Deuve (1993), Arndt and Beutel (1995), Arndt (1998), and Beutel (1998) provided or discussed elements suggesting that trachypachids are more closely related to hydradephagans or part of Hydradephaga (i.e., Dytiscoidea) than to carabids. While most authors have regarded

the Hydradephaga and Carabidae as distinct phyletic lineages, Bils (1976) and Nichols (1985c) argued that the hydradephagan-trachypachid lineage may have arisen within the Carabidae. Kavanaugh (1986) reevaluated the evidence supporting relationships of Trachypachidae with Hydradephaga. He concluded that trachypachids could be the sister-group of carabids and ranked the group as a subfamily within the Carabidae. Ponomarenko (1977) also postulated, from fossil evidence, that trachypachids and carabids are sister-groups that evolved from a common eodromeid ancestor. Beutel and Haas (1996), Kavanaugh (1998: 337), Fedorenko (2009), Dressler and Beutel (2010), and Martínez-Navarro et al. (2011) found support for monophyly of a clade including trachypachids and carabids. Recent molecular studies also suggested that trachypachids are more closely related to Geadephaga than to Hydradephaga (Shull et al. 2001; Maddison et al. 2009). In addition, pygidial gland compounds in trachypachids are more similar to those known from Carabidae than from Hydradephaga (Attygalle et al. 2004: 586). In this catalogue, trachypachids are included in the Geadephaga and given family rank.

The Trachypachidae includes two extant genera: *Systolosoma* Solier with two species in Chile and Argentina and *Trachypachus* Motschulsky with four species, one in Eurasia and three in western North America.

Many putative trachypachid fossils were found in Mesozoic deposits of Asia. Ponomarenko (1977), who studied the material, included all seven genera of trachypachid fossils in a distinct subfamily, Eodromeinae. Beutel (1998: 83) pointed out that the affinities between trachypachids and eodromeines are unclear because there are no apparent synapomorphic character states between the two groups.

Family Rhysodidae. Traditionally ranked as a distinct family, rhysodids (also known as wrinkled bark beetles) have been included within the family Carabidae in recent years by several authors following evidence or discussion provided by Bell and Bell (1962), Bell (1970), Forsyth (1972), Reichardt (1977), Baehr (1979), Beutel (1990, 1992c), Yahiro (1996), Bell (1998), Liebherr and Will (1998), and others. Some authors have treated the group as a tribe related to Scaritini or Clivinini. Reichardt (1977: 393) stated that rhysodids were "closest" to salcediines and Bell (1998: 268) even suggested that the genus *Solenogenys* Westwood, traditionally included within the Salcediini, is the sister-group to rhysodids. Erwin (1991a: 10) on the other hand included rhysodids within his subfamily Psydrinae along with gehringiines, psydrines, moriomorphines, patrobines, trechines, zolines, pogonines, and bembidiines. Molecular data published by Maddison et al. (1999: 125) suggest that rhysodids could be the sister-group to cicindelids and that both could be closely related to the subfamily Harpalinae. Others taxonomists, however, have continued to treat the rhysodids as a distinct family. Regenfuss (1975) and Nagel (1979) suggested that the Rhysodidae could be the sister-group of the remaining Geadephaga; Deuve (1993: 100) the sister-group to the other Adephaga (with the possible exception of Gehringiinae); Beutel and Roughley (1988) the sister-group of the remaining Adephaga excluding Gyrinidae; Beutel (1992a, 1993, 1998) the sister-group to Car-

abidae (without trachypachids). Recently Makarov (2008) found no evidence from the larval morphology suggesting that rhysodids are specialized Carabidae. Instead rhysodid larvae share several features with those of the suborder Archostemata. At this time, I prefer to rank rhysodids as a distinct family based on tradition but also on the fact that there is no solid morphological or molecular evidence presented to date pointing out that the Carabidae (with or without trachypachids) are paraphyletic in regard to rhysodids.

About 355 species of rhysodids are currently known and are placed into seven family-group taxa, namely Leoglymmiini, Medisorini, Rhysodini, Dhysorini, Sloanoglymmiini, Omoglymmiini, and Clinidiini. These taxa are usually ranked as subtribes when rhysodids are included in the carabids. I have followed Bousquet and Larochelle (1993) in listing them as tribes. Only the last two-mentioned tribes are represented in North America.

Tribe Leoglymmiini. This tribe contains a single species, *Leoglymmius lignarius* (Olliff), from Australia. Contrary to other rhysodids, the minor setae on antennomeres 5-10 are arranged in broad bands encircling the distal third of the segment and the mentum is separated from the ventral lobe of the gena by a distinct suture in its anterior half.

Tribe Medisorini. A single species, *Medisores abditus* Bell and Bell, belongs to this tribe. The few known specimens have been found in Cape Province in the Republic of South Africa.

Tribe Rhysodini. This tribe is confined to the Eastern Hemisphere and includes about 25 species in three genera: *Rhysodes* Germar (two Palaearctic species), *Kupeus* Bell and Bell (one New Zealand species), and *Kaveinga* Bell and Bell (23 Australian species).

Tribe Dhysorini. This tribe includes ten species placed in three genera, *Dhysores* Grouvelle in Africa, *Tangarona* Bell and Bell in New Zealand, and *Neodhysores* Bell and Bell in South America.

Tribe Sloanoglymmiini. This tribe has been proposed for one species, *Sloanoglymmius planatus* (Lea), endemic to southeastern Australia. The genus is taxonomically isolated and its relationship to other rhysodid genera is obscure.

Tribe Omoglymmiini. This tribe includes 180 species placed in eight genera. The group is represented in all zoogeographical regions but less so in Australia, Africa, and South America (Bell and Bell 1978: 66). The two North American species belong to the subgenus *Boreoglymmius* Bell and Bell, of the genus *Omoglymmius* Ganglbauer, along with one Japanese species. According to Bell and Bell (1983: 141), the two North American species are probably more closely related to each other than either is to the Japanese species.

Tribe Clinidiini. This tribe contains about 135 species placed in the genera *Clinidium* Kirby, *Rhyzodiastes* Fairmaire, and *Grouvellina* Bell and Bell. The species are found in all zoogeographical regions, including Madagascar, but are absent from the African continent. The North American fauna has only six species, five in the east and one in the west, included in the subgenus *Arctoclinidium* Bell of the genus *Clinidium*. This subgenus also contains three Palaearctic species, one in Japan and two in Europe. According to Bell and Bell (1985: 77), the North American species and the Japanese one form a clade and the European species another clade. These authors also placed the Japanese species, *C. veneficum* Lewis, as the sister-group to *C. valentinei* Bell of eastern North America.

Family Carabidae. Monophyly of the Carabidae, as defined here, is not evident. The layout of the prehypopharyngeal setae in the larvae (Beutel 1993) and the development of antennal pubescence in the adults (Beutel 1995) have been suggested as synapomorphies for the family. However, Arndt et al. (2005: 138) considered these character states not very convincing given the variation involved in the structures. Recent molecular sequence analyses conducted by Maddison et al. (2009) found little support for monophyly of the group no matter if the trachypachids, rhysodids, and/or cicindelids were included or excluded unless the Carabidae was considered equivalent to the Geadephaga. Therefore, the Carabidae, as defined here, could be paraphyletic in regard to rhysodids, trachypachids, and possibly even to Hydradephaga.

Carabids are found on all continents, except Antarctica, and on most islands. They range from well above the arctic circle to Tierra del Fuego and South Georgia in the Southern Hemisphere. Based on Lorenz's (2005) checklist, 33,920 valid species are recognized.

The current classification of the Carabidae is based mainly on morphological data of adults although molecular sequence data have been used recently to discuss various aspects of carabid phylogeny. Despite several attempts there is no consensus on the classification of several subfamilies or tribes. This is particularly evident among 'basal grade' carabids.[5]

Fossils belonging to the family Carabidae are known from the early Jurassic (Ponomarenko 1977) which suggests that the family emergence dates back to the beginning of the Jurassic or the end of the Triassic (Kryzhanovskij 1983). Ponomarenko (1977) proposed two family-group taxa of Carabidae among Mesozoic fossils, the subfamily Protorabinae for five genera and the tribe Conjunctiini for two genera.

The world classification of family-group taxa, which has been adopted for the North American fauna in this catalogue, is outlined in Table 3.

[5] Following Maddison *et al.* (1999: 104), the expression 'basal grade carabids' is restricted to lineages branching off early along the evolutionary path of the family, 'middle grade carabids' to the lineages placed by Jeannel (1941b) in his 'Stylifera' and 'higher carabids' to the numerous lineages currently included in the subfamily Harpalinae.

Table 3. Classification of world family-group taxa of Carabidae. Taxa represented in North America are followed by a dot.

Subfamily Nebriinae
Tribe Pelophilini •
Tribe Opisthiini •
Tribe Nebriini •
Tribe Notiokasiini
Tribe Notiophilini •
Subfamily Cicindinae
Tribe Cicindini
Subfamily Carabinae
Tribe Cychrini •
Tribe Pamborini
Tribe Ceroglossini
Tribe Carabini •
Subfamily Cicindelinae
Tribe Amblycheilini •
Tribe Manticorini
Tribe Megacephalini •
Tribe Cicindelini •
Tribe Ctenostomatini
Tribe Collyridini
Subfamily Loricerinae
Tribe Loricerini •
Subfamily Elaphrinae
Tribe Elaphrini •
Subfamily Omophroninae
Tribe Omophronini •
Subfamily Migadopinae
Tribe Amarotypini
Tribe Migadopini
Subfamily Hiletinae
Tribe Hiletini
Subfamily Scaritinae
Tribe Pasimachini •
Tribe Carenini
Tribe Scaritini •
Tribe Clivinini •
Tribe Salcediini
Tribe Dyschiriini •
Tribe Promecognathini •
Tribe Dalyatini
Subfamily Broscinae
Tribe Broscini •
Subfamily Apotominae
Tribe Apotomini

Subfamily Siagoninae
Tribe Enceladini
Tribe Siagonini
Tribe Lupercini
Subfamily Melaeninae
Tribe Melaenini
Subfamily Gehringiinae
Tribe Gehringiini •
Subfamily Trechinae
Tribe Trechini •
Tribe Zolini
Tribe Bembidiini •
Tribe Pogonini •
Subfamily Patrobinae
Tribe Lissopogonini
Tribe Patrobini •
Subfamily Psydrinae
Tribe Psydrini •
Subfamily Moriomorphinae
Tribe Moriomorphini
Tribe Amblytelini
Subfamily Nototylinae
Tribe Nototylini
Subfamily Paussinae
Tribe Metriini •
Tribe Mystopomini
Tribe Ozaenini •
Tribe Protopaussini
Tribe Paussini
Subfamily Brachininae
Tribe Crepidogastrini
Tribe Brachinini •
Subfamily Harpalinae
Supertribe Pterostichitae
Tribe Morionini •
Tribe Cnemalobini
Tribe Microcheilini
Tribe Chaetodactylini
Tribe Cratocerini
Tribe Abacetini •
Tribe Pterostichini •
Tribe Zabrini •
Tribe Metiini
Tribe Drimostomatini

Tribe Chaetogenyini
Tribe Dercylini
Tribe Melanchitonini
Tribe Oodini •
Tribe Peleciini
Tribe Brachygnathini
Tribe Bascanini
Tribe Panagaeini •
Tribe Chlaeniini •
Tribe Cuneipectini
Tribe Orthogoniini
Tribe Idiomorphini
Tribe Glyptini
Tribe Amorphomerini
Supertribe Harpalitae
Tribe Licinini •
Tribe Harpalini •
Tribe Geobaenini
Tribe Omphreini
Tribe Sphodrini •
Tribe Platynini •
Tribe Perigonini •
Tribe Ginemini
Tribe Enoicini
Tribe Atranini •
Tribe Catapieseini
Tribe Lachnophorini •
Tribe Pentagonicini •
Tribe Odacanthini •
Tribe Calophaenini
Tribe Ctenodactylini •
Tribe Hexagoniini
Tribe Cyclosomini •
Tribe Somoplatini
Tribe Masoreini
Tribe Corsyrini
Tribe Sarothrocrepidini
Tribe Graphipterini
Tribe Lebiini •
Tribe Dryptini
Tribe Galeritini •
Tribe Zuphiini •
Tribe Physocrotaphini
Tribe Anthiini
Tribe Helluonini •
Tribe Xenaroswellianini
Tribe Pseudomorphini •

Subfamily Nebriinae. This subfamily includes the tribes Nebriini, Notiokasiini, Notiophilini, Opisthiini, and Pelophilini. All but notiokasiines are Northern Hemisphere elements and represented in North America. Evidence supporting monophyly of Nebriinae is not overwhelming. The only known synapomorphy in the adult stage is the asetose parameres (Kavanaugh and Nègre 1983), a character state found in other, clearly unrelated carabid lineages. Arndt (1993: 21) listed three putative synapomorphies upon examination of the larval morphology. The molecular data analyses by Maddison et al. (1999: 125) provided only moderate support for monophyly of the subfamily and Kavanaugh's (1998) phylogenetic analysis suggested that this subfamily represents a grade rather than a clade.

The subfamilies Nebriinae and Carabinae could be closely related as pointed out by Jeannel (1940: 7), Bell (1967: 105), Beutel (1992c: 57), and Su et al. (2004: 49). Both groups have open procoxal cavities, contrary to the remaining carabids. In addition, the external lamella of the metepimeron is completely covered and functionally replaced by an extension of the hind margin of the anepisternum (Beutel 1992c: 57). Some authors (e.g., Lorenz 2005: 125) also include the cicindines within the subfamily suggesting a close relationship between these groups. Based on similarities in the genitalia, Deuve (1993: 125) raised the possibility that the Hydradephaga, trachypachids, omophronines, and nebriines form a clade.

Tribe Pelophilini. This tribe includes a single genus, *Pelophila* Dejean, which has been retained in the tribe Nebriini until recently. Two species are known, both living in the boreal and subarctic regions: one is circumpolar, the other restricted to Canada and Alaska. Kavanaugh (1996: 34) suggested that the genus represents the sister-group to the remaining Nebriinae. One of Kavanaugh's (1998: Fig. 2) cladograms suggested that *Pelophila* is more closely related to the tribe Nebriini than are the Opisthiini, Notiophilini, and Notiokasiini.

Tribe Opisthiini. This tribe includes two genera with five species and is doubtless monophyletic. Kavanaugh and Nègre (1983: 564) argued that opisthiines could be the sister-group to the remaining Nebriinae. On the other hand, Kavanaugh's (1996: Fig. 1A) most parsimonious tree suggested that this tribe is the sister-group to Notiophilini and that these two tribes, along with Notiokasiini, form a clade which represents the sister-group to Nebriini.

Tribe Nebriini. This tribe contains about 600 species in the Palaearctic, Nearctic, and northern parts of the Oriental Regions. However, the group is clearly more diverse in the Palaearctic. The main genera of the tribe are *Leistus* Frölich, *Archastes* Jedlička, and particularly *Nebria* Latreille with more than 60% of the species. The limits of the genus *Nebria* are not quite settled. Kavanaugh (1995, 1996) regarded *Nippononebria* Uéno (including *Vancouveria* Kavanaugh) as the sister-group to *Leistus* while Ledoux and Roux (2005) listed *Nippononebria* and *Vancouveria* as subgenera of *Nebria* and suggested they form the sister-group to *Eonebria* Semenov and Znojko and *Sadonebria* Ledoux and Roux, a complex of 60 Palaearctic species.

Tribe Notiokasiini. This tribe contains a single species, *Notiokasis chaudoiri* Kavanaugh and Nègre, found in South America. Although the relationships of the tribe are obscure (Kavanaugh and Nègre 1983), Kavanaugh (1996: 33) found 12 synapomorphies supporting monophyly of a clade including notiokasiines, notiophilines, and opisthiines.

Tribe Notiophilini. The tribe includes a single genus, *Notiophilus* Duméril, very characteristic in the adult stage. The larvae, however, are similar in most structural features to those of Nebriini as pointed out by van Emden (1942). Jeannel (1941b: 175) included Notiophilini, Nebriini (with *Pelophila*), and Opisthiini in his family Nebriidae, suggesting implicitly a close relationship between the three groups. Kavanaugh's (1996: Fig. 1A) most parsimonious cladogram suggested a sister-group relationship between Notiophilini and Opisthiini based on adult and larval morphological data. Based on confluent procoxal cavities, Nichols (1985c: Fig. 5) considered the tribe to be the sister-group to {Omophronini + Trachypachini + Hydradephaga}. Erwin (1991a: 11) noted that notiophilines, along with omophronines, hiletines, and trachypachids, have the first mesotarsomere slightly dilated and with squamate setae underneath. However, it remains to ascertain whether this character state is synapomorphic or convergent. Based on female reproductive tracts, Liebherr and Will (1998: 146) suggested

that the tribe Notiophilini represents the sister-group to {Opisthiini + Nebriini (with *Pelophila*) + Omophronini}.

Notiophilines, with about 55 species described to date, live in the Nearctic and Palaearctic Regions and at higher altitudes in the northern parts of the Neotropical and Oriental Regions. They are more speciose in Asia than anywhere else. The phylogenetic relationships of the species have not been studied yet.

Subfamily Cicindinae. This subfamily includes two species, *Archaeocindis johnbeckeri* (Bänninger) from the Persian Gulf (Kuwait and Iran) and *Cicindis horni* Bruch from the Córdoba Province of Argentina. Very little can be said at this time about the relationships of the subfamily except that it represents a basal grade carabid taxon. Kryzhanovskij (1976a: 87) associated cicindines with paussines (excluding metriines) and nototylines; Nagel (1979, 1987) and Roig-Juñent et al. (2011) viewed them as the sister-group to paussines. Ball (1979: 100), however, doubted such proposed affinities between cicindines and paussines. Erwin (1985, 1991a), followed by Lorenz (2005: 125), included the Cicindini in the Nebriitae. Kavanaugh and Erwin (1991) studied the structural features and reviewed the relationships of the group. They concluded that cicindines are best placed in a distinct supertribe near the Nebriitae and Elaphritae (*sensu* Kryzhanovskij 1976a: 88). Kavanaugh's (1998: Fig. 3) phylogenetic analysis using 153 characters of adult external and male genitalic structures suggested that cicindines may be closely related to omophronines, carabines, cychrines, and cicindelines. Aspects of the behaviour and life history of the Argentine species have been published recently (Erwin and Aschero 2004).

Subfamily Carabinae. This subfamily contains about 1,300 species (Lorenz 2005: [i]) placed in four tribes: Cychrini, Pamborini, Ceroglossini, and Carabini. Most authors agree that the subfamily is monophyletic. According to Deuve (2004: 32), adults of this group are characterized by two significant autopomorphies: the presence of two strip-like apodemes flanking the basal orifice of the median lobe of the aedeagus and the presence of an alveolus on the epipleurite of the abdominal segment IX at the opening of the defensive gland. Arndt (1998: 179) noted several autopomorphies in larvae of Carabinae: an extensive decrease of number of setae on the tergites and sternites with an increase in the number of pores, size reduction of the sensorial appendage on antennomere III, and a markedly sclerotized body.

Tribe Cychrini. This well-defined and likely monophyletic group of about 200 species is restricted to the Northern Hemisphere. Osawa et al. (2004: 31) and Su et al. (2004: 49), based on molecular data, argued that the tribe is probably the sister-group to the remaining clades of the subfamily. Moore (1966b), Prüser and Mossakowski (1998: 316), and Arndt (1998: 180), based on morphological data, suggested that pamborines are the closest relatives to cychrines. Jeannel (1941b: 167) indicated that cychrines are more closely related to pamborines and ceroglossines than to carabines (*sensu stricto*) and calosomatines based on the shape of the parameres.

Relationships among the four genera have not been investigated. Whether or not *Sphaeroderus* Dejean and *Scaphinotus* Dejean, the two endemic North American genera, are sister-groups, as suggested by Erwin (2007a: 139), remains to be investigated. For example, Prüser and Mossakowski (1998: 316) listed several putative synapomorphies suggesting that *Cychrus* Fabricius and *Sphaeroderus* are sister-groups (*Cychropsis* Boileau was not included in their analysis). The phylogenetic tree by Osawa et al. (2004: Fig. 5.2) based on molecular sequence data suggested that *Scaphinotus* is the sister-group to the remaining Cychrini and *Sphaeroderus* the sister-group to *Cychropsis*.

Tribe Pamborini. The 13 species currently included in this tribe are placed in two genera: *Pamborus* Latreille from Australia and the monospecific *Maoripamborus* Brookes from New Zealand. Jeannel (1941b: 94) stated that pamborines are more closely related to ceroglossines than to any other Carabinae.

Tribe Ceroglossini. This tribe comprises only the genus *Ceroglossus* Solier (eight species and 46 subspecies) which is restricted to Chile and western Argentina. The genus has traditionally been included within the Carabini but recent analyses based on molecular sequence data suggest that ceroglossines are more closely related to pamborines than to carabines (Prüser and Mossakowski 1998: 297; Su et al. 2004: 50) or form the sister-group to the remaining members of Carabinae (Osawa et al. 2004: Fig. 5.2). Arndt (1998: 179) found evidence from the larval morphology to support the latter hypothesis.

Tribe Carabini. Carabines rank among the most popular groups for beetle collectors. Adults of many species are elegant, colorful, and large (often exceeding 15 mm). Such interest has generated a market for these beetles, particularly in Europe, and unfortunately also a race to describe new varieties, morphs, and aberrations. More than 1,080 species of Carabini are recognized today worldwide. They inhabit all zoogeographical regions but are much more diverse in the Palaearctic Region than anywhere else.

The supraspecific classification of Carabini is debated. Some authors recognize only two genera, *Carabus* Linnaeus and *Calosoma* Weber, while others admit many, more or less clearly defined genera which are often grouped in two subtribes: Carabina and Calosomatina. I have followed the first approach and list all North American species in the genera *Carabus* (15 species) and *Calosoma* (41 species). The main difference between the two genera is the regression (or complete disappearance) of the ostial ligula of the aedeagus in members of *Carabus* (Deuve 2004: 33).

Based on morphological (larvae and endophallus of adults) and molecular sequence data, Deuve (2004) recognized eight major lineages within the genus *Carabus*: Spinulati, Digitulati, Lipastrimorphi, Archicarabomorphi, Tachypogenici, Metacarabi, Arcifera, and Neocarabi. The North American species are arrayed in nine subgenera: *Carabus s.str.* belongs to the Digitulati, *Archicarabus* Seidlitz to Archicarabomorphi, *Tachypus* Weber to Tachypogenici, *Megodontus* Solier to Neocarabi, and *Diocarabus* Reitter, *Homoeocarabus* Reitter, *Aulonocarabus* Reitter, *Hemicarabus* Géhin, and *Tanaocarabus* Reitter to Metacarabi.

Jeannel (1940: 68) recognized two major lineages within the calosomatines: the *Calosomes lobés* with a membranous ligula at the proximal opening of the male median lobe and the *Calosomes ongulés* with a chitinized ligula. The first lineage is represented in the Australian and Palaearctic Regions, and by six species belonging to the genus-group taxa *Calosoma s.str.* and *Calodrepa* Motschulsky in the Nearctic Region, the West Indies, and Mexico. The second lineage was divided by Jeannel (1940: 69-71) into three clades, the phyletic series of *Castrida-Caminara* represented in North America by a single species belonging to the genus-group taxon *Castrida* Motschulsky, the phyletic series of *Callisthenes* represented in the Nearctic Region by 23 species of the taxa *Chrysostigma* Kirby and *Callistenia* Lapouge, and the phyletic series of *Callitropa* represented in North America by 11 species of *Blaptosoma* Géhin, *Carabosoma* Géhin, *Camegonia* Lapouge, and *Callitropa* Motschulsky.

The systematic position of *Aplothorax burchelli* Waterhouse, a species endemic to the island of Saint Helena off the west coast of Africa, is controversial. Jeannel (1940) included the taxon within his *Calosomes ongulés* but Basilewsky (1972: 18-22) was convinced that the species is a relict of an old clade that evolved before the splitting of the *Carabus* and *Calosoma* lineages. He advocated placing the species in a distinct tribe which, in his opinion, was as justified as those of Pamborini and Ceroglossini.

Subfamily Cicindelinae. This group, referred to as the tiger beetles, has been regarded traditionally as a distinct family, but more and more coleopterists include it within the carabids. There is little doubt, based on characters of adults and larvae, that cicindelines form a monophyletic lineage. Relationships of the group, however, remain uncertain. It has been regarded as the sister-group to the remaining Carabidae by Nichols (1985c) and as the sister-group to Carabidae (minus paussines) by Regenfuss (1975). A close affinity between this subfamily and the Carabinae has been suggested by Erwin and Sims (1984: 366), Deuve (1993: 160; 2004: 32), Kavanaugh (1998: 338), and Liebherr and Will (1998: 151), although Liebherr and Will also emphasized that the Cicindelinae could instead be closely related to Promecognathini and Amarotypini. Maddison et al. (1999) indicated that most of their phylogenetic analyses of 18 rDNA place the Cicindelinae and Rhysodidae as sister-groups, near the Harpalinae. They also pointed out that the alternative placement of the cicindelines outside the Carabidae was more parsimonious than placing them among the basal-grade carabids. Deuve (2004: 32) noted two exceptional and primitive character states shared between cicindelines and carabines: presence of the abdominal tergite X in the male and presence of a phallobase on the aedeagus. He also pointed out numerous similarities between the two groups: the ectodermal genital ducts of the females are almost identical with a vagina differentiated in a bursa copulatrix, the presence of a sclerotized ligular apophysis, the presence of a filiform spermatheca and absence of an accessory gland, the presence of rod-shaped apophyses on the female abdominal epipleurites VIII allowing the formation of a telescopic egg-laying tube, the parameres of the aedeagus are glabrous and symmetrical, the endophallus often shows comparable dentiform sclerites, the digestion is extra-oral,

and the ventral surface of the adult body often shows metallic coloration, an exceptional character state in the Adephaga.

This subfamily currently includes more than 2,500 species distributed worldwide, except Tasmania, Antarctica, and remote oceanic islands, with the greatest diversity in the tropics (Pearson 1988). Tiger beetles are classified by most authors, following Horn (1926), into two major lineages, *Alocosternales* with a very narrow and deeply longitudinally-furrowed metepisternum in the adult and *Platysternales* with a wider metepisternum that has either no longitudinal furrow or a horseshoe-shaped furrow posteriorly. These groups are often listed as supertribes Collyriditae and Cicindelitae respectively. However, based on a combined analysis of molecular and morphological data, Vogler and Barraclough (1998: 254) noted that collyridites nested within the cicindelites, rendering the latter paraphyletic. Arndt (1998: 178) also noted that, based on larval character states, Cicindelitae and the tribe Megacephalini are not monophyletic. Based on the above information, the species of Cicindelidae are simply placed here in six tribes without further grouping.

Tribe Amblycheilini. This tribe includes the genera *Omus* Eschscholtz and *Amblycheila* Say represented in North America and Mexico, and the genus *Pycnochila* Motschulsky with one species in the Strait of Magellan. Amblycheilines have been classified in the past within the megacephalines but larval characters (Arndt and Putchkov 1997) and mitochondrial and nuclear RNA gene sequences (Vogler and Barraclough 1998: 251) suggest a basal position for amblycheilines, well removed from the true megacephalines. The tribe, however, may well be a grade rather than a clade. For example, Arndt (1998: 178) placed *Omus* as the sister-group to the remaining Cicindelinae based on larval characters.

Tribe Manticorini. This tribe includes 14 species, arrayed in the genera *Mantica* Kolbe (one rarely collected species from southern Namibia) and *Manticora* Fabricius (13 Afrotropical species). Contrary to other tiger beetles, males of this tribe have asymmetric mandibles and unexpanded protarsomeres (Werner 2000: 22).

Tribe Megacephalini. This tribe includes about 200 species arrayed in 11 genera (see Naviaux 2007: 15). Even without the amblycheilines, monophyly of the tribe is doubtful. For example, the genus *Oxycheila* Dejean, traditionally considered a member of Megacephalini, nested with rather strong support within the basal groups of Cicindelini in Vogler and Barraclough's (1998: 254) cladistic analysis based on molecular and morphological data.

Tribe Cicindelini. This tribe is by far the most diversified clade of tiger beetles. The number of recognized genera varies to a great extent among taxonomists. In this work the 98 North American species (202 species-group taxa) are placed in nine genera. All but two (*Cylindera* and *Cicindela*) of these genera are New World endemics. Arndt (1998: 178) stated that Cicindelini forms the sister-group to {Ctenostomatini + Collyridini}.

Tribe Ctenostomatini. This tribe includes two genera: *Ctenostoma* Klug with about 115 Neotropical species, and *Pogonostoma* Klug with about 110 Madagascan species. Members of this tribe are synapomorphic in lacking the articulated hook at the extremity of the inner lobe of the maxilla (Jeannel 1946: 104).

Tribe Collyridini. This tribe contains about 335 species in Asia, of which one extends into the Australian Region. The species are arrayed in two subtribes: Tricondylina for the genera *Derocrania* Chaudoir (16 species) and *Tricondyla* Latreille (about 45 species), and Collyridina for the genera *Protocollyris* Mandl (16 species), *Neocollyris* Horn (about 250 species), and *Collyris* Fabricius (ten species). Naviaux (1994: 149) indicated the structural differences between the two subtribes.

Subfamily Loricerinae. This subfamily contains a single genus, *Loricera* Latreille, although some authors have treated *Elliptosoma* Wollaston, with one species from Madeira, as a distinct genus. The group is restricted to the Nearctic and Palaearctic Regions with some taxa found on mountains in the northern parts of the Neotropical and Oriental Regions. Loricerini is a basal grade taxon with obscure affinity. Jeannel (1941b: 80) associated loricerines with the Carabinae, Nebriinae, Cicindelinae, Elaphrinae, Omophroninae, and Siagoninae (including *Promecognathus*) in his *Caraboidea Simplicia*, characterized by the absence of metepimeric lobes (Jeannel 1941b: 93). Bell (1967: 105) included loricerines within his *Anisochaeta Isopleuri* along with elaphrines, scaritines, and cicindelines. Arndt (1993: 22) found several common derived larval features in larvae of Loricerinae and Cicindelinae to suggest a sister-group relationship between the two taxa. Maddison et al. (1999: 126) pointed out that placement of *Loricera* within {Migadopini + Amarotypini} received relatively strong support in their 18S rDNA analyses. These three taxa were also recovered as a monophyletic unit in analyses of the same gene by Ribera et al. (2005: 290). Vigna Taglianti and Rossi (1998: 515) indicated that loricerines could be closely related to elaphrines based on the presence of the same parasitic laboulbeniales species found on these groups. Erwin (2007a: 69) listed Elaphrini as the sister-group to Loricerini.

Recently Sciaky and Facchini (1999) described a new subgenus (*Plesioloricera*) for the new Chinese species *L. balli* which has eight, instead of 12 or more, striae. This species could possibly be the most basal taxon of the genus.

Klausnitzer (2003) described a new species, *Loricera electrica*, based on a larva found in Baltic amber. He believes the species probably belongs to the *pilicornis* group as defined by Ball and Erwin (1969).

Subfamily Elaphrinae. This subfamily includes a single tribe with obscure relationships. Bell (1967) listed the Elaphrini within his *Isopleuri* along with Loricerini, Scaritini, and Cicindelini. Following Jeannel's (1941b: 214) intuition, both Kryzhanovskij (1976a: 88) and Erwin (1985: 469) considered the elaphrines as the sister-group to Migadopini (with and without *Amarotypus* respectively) and this hypothesis was supported by Deuve's (1993: 160) study of the female genitalia and Roig-Juñent's (1998:

Figs 9-10) parsimony analysis using 33 adult and larval characters. On the other hand, Goulet (1983: 445) regarded Melaenini and the subtribe Broscina as the taxa most closely related to Elaphrini. This possibility was found most parsimonious by Maddison et al. (1999) based on their molecular sequence analysis which did not, however, include melaenine exemplars. In addition, Yahiro (1990: 42) reported a similar type of alimentary canal in elaphrines and broscines. Roig-Juñent's (1998) parsimony analysis shows that elaphrines are not related to broscines. Parsimony analysis based on the female reproductive tract characters placed Elaphrini as the sister-group to {Opisthiini + Nebriini + Notiophilini + Omophronini} or near the Promecognathini and Amarotypini (Liebherr and Will 1998: 146).

The tribe is represented only in the Northern Hemisphere and includes three genera, all represented in the Nearctic Region.

Subfamily Omophroninae. This subfamily includes a single genus, *Omophron* Latreille. Some authors have suggested that Omophronini, Trachypachidae, and the Hydradephaga form a monophyletic group. Putative synapomorphies proposed for the complex include the presence, in the larvae, of an undivided cardo and a dorsal insertion of the femoro-tibial extensor (Ruhnau 1986) and, in the adults, the atrophy of intertergal muscle M24 (Bils 1976), partial housing of the procoxae by the mesosternum, and the prominent prosternal process contacting the metasternum (Nichols 1985c). Deuve (1993: 160) noted the presence of a peculiar sclerotized structure (named "*sclerite helminthoïde*") in the female genitalia of omophronines, nebriines (*sensu lato*), trachypachids, and the Hydradephaga which raises the possibility of close phylogenetic affinities between these groups. Jeannel (1941b: 219) suggested that cicindelines were most closely related to omophronines. Bell (1967: 106) indicated that Omophronini might be aberrant *Hemipleuri*, a group including nebriines (*sensu lato*) and carabines (*sensu lato*). Kavanaugh (1998: 338), based on a parsimonious analysis of adult characters, suggested a close affinity between Omophroninae, Carabinae, and Cicindelinae. Liebherr and Will (1998: 156) listed several "potentially synapomorphic characters" supporting placement of omophronines with nebriines (*sensu lato*) and their preferred cladogram, based on 20 characters of female ovipositors and reproductive tracts, placed them as the sister-group to notiophilines. Many authors, however, have treated the Omophronini as a basal-grade taxon with unclear affinity. Based on larval character states, Landry and Bousquet (1984) found no evidence to indicate a sister-group to Omophronini. Such conclusions were also reached by Beutel (1991) from his study of the larval head and adult thoracic structures. Erwin (2007a: 63) indicated the possibility that cicindines were closely related to omophronines.

The genus *Omophron* includes about 70 species and is represented in all zoogeographical regions except the Australian one. There is no evidence yet known to suggest that the Nearctic or the Western Hemisphere species form a clade within the genus.

Subfamily Migadopinae. This subfamily currently consists of two tribes: Amarotypini and Migadopini. One of the main character states of the group is the presence of a

long scutellar stria reaching the apical declivity of the elytra (Jeannel 1938b: 4) as in members of *Pelophila*. This characteristic, however, is absent in members of the genus *Aquilex* Moret, which have a short scutellar stria (Moret 2005: 30). Jeannel (1938b) revised the species of migadopines (as Migadopidae) and classified them into two groups: Monolobinae for the Chilean genus *Monolobus* Solier (two species) and Migadopinae for the remaining genera which are represented in South America and in the Australian Region. He also postulated that elaphrines were without doubt the group most closely related to migadopines in the Northern Hemisphere (Jeannel 1938b: 10). Moore et al. (1987: 65) included the migadopines from Australia within the supertribe Elaphritae.

Tribe Amarotypini. This tribe includes a single species, *Amarotypus edwardsii* Bates, from New Zealand. Until recently the species was placed in the tribe Migadopini but it differs by having a setiform unguitractor plate between the tarsal claws which is missing in migadopines. Erwin (1985: 469) postulated that Amarotypini could be the sister-group to {Migadopini + Elaphrini}. In Liebherr and Will's (1998: Fig. 57) preferred cladogram, based on 20 characters of the female ovipositors and reproductive tract, amarotypines were positioned as the sister-group to promecognathines. In Roig-Juñent (2004: Fig. 1) phylogenetic analysis, based on 57 characters of the adult morphology, the genus *Amarotypus* Bates nested inside the remaining migadopine genera, as the sister-group to {*Calathosoma* + *Stichonotus*}.

Tribe Migadopini. This group of about 30 species in 15 genera is restricted to the temperate areas of the Neotropical and Australian Regions. Moret (2005: 30) recently proposed the subtribe Aquilicina for the genera *Aquilex* Moret (one species in Ecuador) and *Rhytidognathus* Chaudoir (one species in Uruguay). He also pointed out the close relationship between the South American genus *Lissopterus* Waterhouse (two species from the Tierra del Fuego Archipelago and Falkland Islands) and the New Zealand genera *Loxomerus* Chaudoir (five species) and *Calathosoma* Jeannel (one species). The phylogenetic analysis performed by Roig-Juñent (2004) do not support Moret's conclusions although *Aquilex* was recovered as the sister-group to the other migadopine genera. Liebherr and Will (1998: 147) alluded to the possibility that the tribe is not monophyletic.

Subfamily Hiletinae. This subfamily includes two genera, *Hiletus* Schiødte (= *Camaragnathus* Bocandé) with six species in tropical Africa and *Eucamaragnathus* Jeannel with 15 species in the Afrotropical (six species), Oriental (five species), and Neotropical (four species) Regions. Jeannel (1941b: 80; 1946: 209) postulated that hiletines were closely related to scaritines (*sensu lato*) based mainly on the fact that these two taxa were the only *disjuncti* (i.e., with disjunct mesocoxae) with the metepimera lobed as in the *conjuncti*. Erwin and Stork (1985: 445) believed that hiletines were related to cnemalobines (as Cnemacanthini), elaphrines, migadopines, promecognathines, pseudomorphines, scaritines, and siagonines based on some tarsal character states and suggested that this complex forms the sister-group to the paussine-brachinine clade based

on the presence of distinct epimera, brushy non-styliform parameres, long empodial unguitractor plates, and non-conjunct mesocoxae. They also concluded that hiletines represent the sister-group to {scaritines + cnemalobines (as Cnemacanthini) + pseudomorphines} and that this clade was characterized by having a single long guard seta at the apex of the fifth tarsomere which projects between the two tarsal claws.

Subfamily Scaritinae. This subfamily is inadequately defined and possibly polyphyletic. The species possess a mesothoracic peduncle which frees the prothorax from the elytra and allows greater mobility (Basilewsky 1973: 9). It includes about 1,870 species worldwide which are grouped in this work into eight tribes: Pasimachini, Carenini, Scaritini, Clivinini, Dyschiriini, Salcediini, Promecognathini, and Dalyatini. Until the subfamily is better defined, it is difficult to comment on its relationships. Jeannel (1938a: 206) underlined a number of morphological features in the adults suggesting that scaritines and hiletines shared a common ancestor. Lindroth (1969b: xxiii) hypothesized that the similarities in "habitus and general organization" between scaritines (including promecognathines, clivinines, and dyschiriines) and broscines are probably an indication of close affinity.

Tribe Pasimachini. This tribe is represented by the genera *Pasimachus* Bonelli, with 32 species ranging collectively from southern Canada to Panama, and *Mouhotia* Laporte, with three species in eastern Asia. Monophyly of this group is doubtful. Bänninger (1950: 484) noted that if pasimachines and carenines are retained as distinct subtribes, *Mouhotia* cannot be placed in either of them and a separate subtribe would need to be established. To avoid proposing a new family-group name, *Mouhotia* is included here in the Pasimachini. Lorenz (2005: 132) included it with the carenines.

Relationships of the tribe have been little discussed. Sloane (1905b: 103) retained pasimachines and carenines under one family-group name implying a close relationship between the two groups. Nichols (1988a: 214) argued that Pasimachini is the sister-group to the tribe Carenini.

Tribe Carenini. This clade, which is endemic to Australia, includes about 195 species placed in ten genera. The genus *Scaraphites* Westwood (seven Australian species), usually listed as a member of this tribe (e.g., Lorenz 2005: 133), has been removed from it and placed in the tribe Scaritini by Moore and Lawrence (1994: 512). According to Moore and Lawrence (1994: 503), carenines represent the sister-group to the remaining Scaritini (*sensu lato*, i.e., pasimachines, scaritines, clivinines, dyschiriines).

Tribe Scaritini. This tribe, with about 495 species in 42 genera, is represented in all zoogeographical regions but is predominantly tropical. Four subtribes are currently recognized: Acanthoscelitina (one Afrotropical species in *Acanthoscelis* Dejean), Oxylobina (about 30 Oriental species in *Oxylobus* Chaudoir), Scapterina (about 25 Australian-Oriental-Afrotropical species in *Passalidius* Chaudoir, *Scapterus* Dejean, *Parathlibops* Basilewsky, *Thlibops* Putzeys, and *Steganomma* Macleay), and Scaritina (including

the Madagascan storthodontines and dyscherines and the Afrotropical ochyropines [one species] and corintascarines [one species]), with the bulk of the species. Jeannel (1946: 220) assigned scapterines to his Clivinitae.

The North American fauna is represented by seven species of *Scarites* Fabricius.

Tribe Clivinini. This tribe is the most diversified group of the subfamily with about 60 genera. The inclusion of the clivinines within the Scaritinae has not been challenged often but parsimony analysis based on the female reproductive tract by Liebherr and Will (1998) suggests that clivinines could be more closely related to rhysodids than to scaritines. They also emphasized that the defensive secretions of the pygidial glands differ drastically between the two groups: clivinines use ketones or quinones while scaritines eject aliphatic acids.

At least three putative clades are recognized within the tribe and are usually ranked as subtribes. The forcipatorines, exclusively Neotropical, include the genera *Camptidius* Putzeys (one species), *Camptodontus* Dejean (14 species), *Forcipator* Maindron (four species), *Kultianella* Perrault (two species), *Obadius* Burmeister (two species), and *Stratiotes* Putzeys (two species). According to Perrault (1994: 686), members of this clade differ from those of remaining clivinines in having the ligula truncate and glabrous instead of prolonged and with at least one apical seta, the gula either vanishing posteriorly or very narrow instead of wide, the first antennomere asetose instead of having an apical seta (except in a few genera), the penultimate labial palpomere glabrous (except in one genus) instead of having two setae (except in some genera), and the clypeus glabrous (except in two species) instead of having a seta on each side. Another clade, the ardistomines, is restricted to the Western Hemisphere. Bousquet (2006c) restricted the group to the genera *Ardistomis* Putzeys, *Semiardistomis* Kult, and *Aspidoglossa* Putzeys whose members have a projection on pleurite VII. Kult (1950b) also included the genus *Neoreicheia* Kult. Whitehead (in Reichardt 1977: 386, 391) remarked that *Oxydrepanus* Putzeys was "doubtless related to *Neoreicheia*" and probably belonged to the ardistomine radiation along with such Old World genera as *Reicheia* Saulcy, *Syleter* Andrewes, and allies. Basilewsky (1973: 276) indicated that ardistomines are relatively closely related to dyschiriines. The third clade, the reicheiines, is represented only in the Old World and contains many genera including *Reicheia* Saulcy, *Trilophus* Andrewes, *Typhloreicheia* Holdhaus, *Trilophidius* Jeannel, and *Leleuporella* Basilewsky.

Iablokoff-Khnzorian (1960: 93) described a new genus, *Dyschiriomimus*, from Baltic amber which he viewed as an intermediate taxon between *Dyschirius* and *Clivina*. However, Fedorenko (1996: 37) believed the taxon is a typical clivinine more closely related to *Trilophus* and *Oxydrepanus* than to *Clivina.*

Tribe Salcediini. This tribe includes four genera placed in three subtribes following Bell (1998): *Salcedia* Fairmaire (nine Indo-African species) in Salcediina, *Holoprizus* Putzeys (one Amazonian species) and *Solenogenys* Westwood (three Brazilian species) in Solenogenyina, and *Androzelma* Dostal (one Vietnamese species) in Androzelmina. According to Bell (1998: 264), salcediines, forcipatorines, and clivinines form a well-

defined clade supported by the following synapomorphies: the metepimeron is lobate and overlaps the anterior corners of abdominal sternum 2; the elytron possesses a ventral carina in form of a projected lobe which engages the dorsal angles of abdominal sternum VII; the labial pits on the mentum each have a posterior duct opening into the submental suture contrary to other scaritines in which the ducts open anteriad the suture and distant from it. Bell (1998: 265) also indicated that rhysodids shared three synapomorphies with salcediines (excluding *Androzelma*): a kind of coating on the exoskeleton, minute and retractile palpi, and a distinct lobe on which the eye is located. Furthermore among salcediines, members of *Solenogenys* share two synapomorphies with rhysodids: the medial margins of the ventral groove of the head are oblique, nearly straight, and meet near the "neck" condyle and the mandible has a dorsolateral lobe. Based on the above evidence, Bell (1998: 269) concluded that *Solenogenys* is the sister-group to rhysodids.

Tribe Dyschiriini. Relationships of this tribe within the Scaritinae are not documented. Fedorenko (1996: 37) suggested that dyschiriines share a common ancestor with clivinines but failed to disclose any characteristics that would support this claim. Jeannel (1946: 214) combined the ardistomines and dyschiriines in his Dyschiriitae.

Tribe Promecognathini. This small and well-defined tribe includes one genus with two species in western North America and four genera with six species in Cape Province in South Africa. Jeannel (1941b: 244; 1946: 206) postulated that promecognathines were closely related to siagonines without, however, offering any evidence. Lindroth (1961a: 125) and Kryzhanovskij (1976a: 88) associated promecognathines with scaritines (*sensu lato*) implying a close relationship between the two groups. Several apomorphic features, including details of the chaetotaxy, structure of the mouthparts and thorax, and marked similarity in their specialized way of attacking millipedes suggest that promecognathines could be closely related to peleciines. However, Straneo and Ball (1989) regarded the similarities between the two groups as evolutionary convergence.

McKay (1991) described a fossil from Cretaceous crater lake deposits at Orapa, Botswana, under the name *Palaeoaxinidium orapensis*, which he believed represents the sister-group to the Promecognathini.

Tribe Dalyatini. Molecular (Ribera et al. 2005) and morphological (Mateu and Bellés 2004) data suggest that the single, highly modified cave species of this tribe, *Dalyat mirabilis* Mateu from southeastern Spain, could be the sister-group to promecognathines.

Subfamily Broscinae. This subfamily includes a single tribe with about 290 species in 34 genera, arrayed in five subtribes (see Roig-Juñent 2000): Axonyina (five species), Broscina (about 75 species), Nothobroscina (about 90 species), Barypodina (about 25 species), and Creobiina (about 95 species). Broscines are represented in all major regions of the world, except the Afrotropical Region, but are more diverse in the Australian Region than anywhere else. They live almost exclusively in temperate areas,

with only a few groups extending to the edges of the tropics. Several authors have suggested explicitly or implicitly that broscines are closely related to apotomines but Liebherr and Will's (1998) morphological data on the female reproductive tract and the molecular sequence data provided by Maddison et al. (1999) did not support such an association. Erwin (1991a: 10) included broscines, apotomines, melaenines, and cymbionotines in his subfamily Broscinae.

Roig-Juñent's (2000) parsimony analysis based on morphological characters of adults suggested that the three native North American genera (*Broscosoma*, *Zacotus*, and *Miscodera*) form a clade.

Subfamily Apotominae. This subfamily includes a single genus, *Apotomus* Illiger, with about 15 species in warm temperate and tropical regions of the Eastern Hemisphere and one species in Brazil. Kryzhanovskij (1976a: 88) and Moore et al. (1987: 122) associated apotomines with broscines and in several classifications these two groups are placed sequentially in the text. However, Roig-Juñent's (1998: Fig. 10) parsimony analysis using 33 characters placed apotomines as the sister-group to melaenines (no *Cymbionotum* exemplars were included). Liebherr and Will (1998: 150) noted that apotomines do not have conjunct mesocoxae as in broscines and the other members of Jeannel's *Stylifera* and that the placement of apotomines within the *Stylifera* should be rejected. They placed apotomines as a basal grade with clivinines and rhysodids but noted they could be closely related to scaritines and hiletines. Molecular data analyzed by Maddison et al. (1999: 128) did not provide support for a close relationship between apotomines and broscines.

Subfamily Siagoninae. This subfamily includes three genera, each arrayed in its own tribe: *Enceladus* Bonelli, *Luperca* Laporte, and *Siagona* Latreille. Relationships of the subfamily are obscure. Jeannel (1941b: 244; 1946: 206) associated siagonines with promecognathines. Erwin (1985: 467; 1991a: 9-10) listed siagonines with amarotypines, migadopines, elaphrines, promecognathines, hiletines, pseudomorphines, and scaritines (including cnemalobines, as Cnemacanthini) in his subfamily Scaritinae. The preferred cladogram of Liebherr and Will (1998: Fig. 57), based on the female reproductive tract, placed siagonines as the sister-group to the subfamily Carabinae. Some of the analyses on 18 rDNA performed by Maddison et al. (1999: 127) suggested that *Siagona* could be closely related to {*Gehringia* + *Cymbionotum*}. Based on a morphological study of larvae of *Siagona* and *Enceladus*, Grebennikov (1999: 9) did not find evidence to suggest a close relationship for siagonines.

Tribe Enceladini. Only the genus *Enceladus* belongs to this tribe, with one species found in the Guyana-Venezuelan area, possibly also in Amazonia (Reichardt 1977: 384).

Tribe Siagonini. This tribe contains only the genus *Siagona* with about 80 species in the Old World. Erwin (1978: 105) listed several apomorphic states shared by *Siagona* and *Cymbionotum* and stated that the two were undoubtedly closely related.

Tribe Lupercini. Two species of the genus *Luperca* are included in this tribe, one is found in tropical Africa, the other on the Indian subcontinent. Erwin (1978: 105) combined the genus with *Siagona* and *Cymbionotum* in his tribe Siagonini which he included in his subfamily Siagoninae along with the tribe Enceladini.

Subfamily Melaeninae. This subfamily includes one tribe with two genera: *Melaenus* Dejean with two species confined to the Oriental Region, Egypt, and the Afrotropical Region, excluding the Congo Basin and southern parts (Ball and Shpeley 2005: 37), and *Cymbionotum* Baudi di Selve with 20 species arrayed in two subgenera, *Procoscinia* Ball and Shpeley with two species in northern South America and *Cymbionotum s.str.* with 18 species confined to the warmer parts of the Old World. According to Ball and Shpeley (2005: 22), monophyly of this subfamily is indicated by the very long diverticulum of the spermathecal gland. Prior to these authors, the two genera had been variously classified. Several authors placed them in separate tribes though suggesting implicitly or explicitly that they were closely related (e.g., Erwin 1985: 469; Liebherr and Will 1998: 137). Others have separated the two rather widely. For example van Emden (1936a: 46) listed *Melaenus* in his *Harpalinae piliferae* from which the cymbionotines were excluded. Jeannel (1941b: 291-292) placed the genus *Melaenus* in his Psydritae along with psydrines, melisoderines (= moriomorphines), and meonines (= moriomorphines) and included *Cymbionotum* in a family-group taxon of its own which he considered closely related to siagonines (Jeannel 1946: 206).

Relationships of the subfamily are unclear. Liebherr and Will (1998: 150) suggested that Melaeninae could be closely related to Clivinini. Roig-Juñent's (1998) parsimony analysis using 33 characters showed *Melaenus* to be the sister-group to apotomines; *Cymbionotum* exemplars were not included in his analysis.

This group has been reported in publications of the xix and early xx Centuries under the name Granigerini, because *Graniger algirinus* Motschulsky, the sole species included by Motschulsky in his new genus *Graniger*, was listed in synonymy with *Coscinia semelederi* Chaudoir (Chaudoir 1876d: 63). Because *Coscinia* Dejean was a junior homonym of *Coscinia* Hübner, *Graniger* Motschulsky became the valid name for this genus. However, Andrewes (1933: 3) showed that Motschulsky's species was in fact identical with the ditomine *Carterophonus femoralis* Coquerel. *Cymbionotum* Baudi di Selve was the next available name for the species of *Coscinia* Dejean.

Subfamily Gehringiinae. This subfamily includes three genera placed in two subtribes: Gehringiina Darlington with a single western North American species, *Gehringia olympica* Darlington, and Helenaeina Deuve with four rarely collected species from Egypt, Turkey, Yemen, and Namibia placed in the genera *Helenaea* Schatzmayr and Koch and *Afrogehringia* Baehr, Schüle and Lorenz. The taxonomic position of the group is debated. Jeannel (1941b, 1946: 46) combined gehringiines with trachypachids and paussines (as *Caraboidea Isochaeta*) and both Lindroth (1969b) and Kryzhanovskij (1976a: 87) associated gehringiines with trachypachids. Bell (1967: 106) indicated that the form of the palpi and the anterior tibia suggest that gehringiines could be derived from

the genus *Tachys* but he also raised the possibility that gehringiines could belong to his *Hemipleuri*, a group comprising the nebriines and carabines. In Nagel's (1987: Fig. 2) cladistic analysis, gehringiines were positioned as the sister-group to {cicindines + paussines}. Beutel (1992c) indicated that the isochaetous protibia of gehringiines suggests that the group could be "an early offshoot of the metriine-paussine lineage." In listing the tribe in his supertribe Psydritae, Erwin (1985: 468) suggested implicitly that gehringiines could be closely related to psydrines and patrobines and Lorenz (2005: 243) placed the tribe Gehringiini within the Psydrinae. Deuve (2005) made a detailed analysis of the morphology of gehringiine adults and concluded that several character states suggest "a very basal position in the phylogeny of adephagan Coleoptera" for gehringiines. However he also noted that the peculiar "abdominal type" found in the group is similar to that of the genus *Cymbionotum*. A close affiliation between *Gehringia* and *Cymbionotum* received support from the molecular analysis of Maddison et al. (1999). Arndt et al. (2005: 140) pointed out that the condition of the protibial spurs in gehringiines could not be unambiguously assigned to either of the two types found in other carabids. They noted that if the protibial spurs of gehringiines are considered to be of the isochaete type, then gehringiines could be the sister-group to Paussinae and if considered to be of the anisochaete type, they could be the sister-group to Nebriinae.

Subfamily Trechinae. Several authors agree that the tribes Trechini, Zolini, Bembidiini, and Pogonini are closely related and probably constitute a clade. Monophyly is supported by characteristic features of the adult morphology (Roig-Juñent and Cicchino 2001), larval morphology (Grebennikov and Maddison 2000: 226; 2005: 44), and 18S ribosomal sequence data (Maddison et al. 1999). In addition, males of Trechinae studied lack chiasmata in meiosis (Serrano 1981) contrary to most other Carabidae, a notable synapomorphy (Maddison and Ober 2011: 243). Jeannel (1941b: 299) also included mecyclothoracines in the subfamily (as Trechidae) but most recent authors place them within the Moriomorphinae. Deuve (1993: 156) included patrobines within the Trechinae.

As discussed under Patrobinae, this subfamily is probably the sister-group to patrobines.

Tribe Trechini. A relatively well-defined and very diverse group with more than 2,500 species currently arranged in 170 genera or so. Although represented in all zoogeographical regions, the tribe is more diverse in the temperate zones than in the tropics. Many species are endogean or troglodytic and flightless. Casale and Laneyrie (1982: 7) classified the Trechini into six groups placed in two major complexes, one including cnidines, trechodines, and plocamotrechines characterized by the median lobe of the aedeagus being wide open dorsally, the basal orifice lying between two symmetric lobes, and one comprising the perileptines, aepines, and trechines with the median lobe partly closed dorsally, the basal orifice opening on the ventral surface of the basal bulb. However, this classification has been challenged in recent times. Uéno (1989: 12-13) presented arguments to combine cnidines with perileptines and Grebennikov and Maddison (2005: 46-47) found evidences in the larval characters that perileptines

were closely related to trechodines. In this work, the Trechini are grouped into two subtribes: Trechodina (including perileptines, cnidines, and plocamotrechines) and Trechina (including aepines).

Based on larval character states, Grebennikov and Maddison (2005) suggested that Trechini is the sister-group to {Zolini + Bembidiini + Pogonini}. Arndt's (1993: 33) analysis of larval characters suggested that trechines are closely related to tachyines.

The North American fauna comprises about 225 species grouped into nine genera, all belonging to the subtribe Trechina. Barr (1985a: 351) recognized four series among the North American genera, the *Trechus* series with *Trechus*, the *Trechoblemus* series with *Trechoblemus*, *Blemus*, *Pseudanophthalmus*, *Neaphaenops*, and *Nelsonites*, the *Darlingtonea* series with *Darlingtonea* and *Ameroduvalius*, and the *Aphaenops* series with *Xenotrechus*. The genus *Pseudanophthalmus*, whose members are cave inhabitants except for a few rare occurrences in forest floor humus and in abandoned coal mines, is closely related to *Duvaliopsis* Jeannel which includes six edaphic species in the Carpathian and Transylvanian Alps of eastern Europe. In fact, Barr (2004: 7) listed *Duvaliopsis* as a junior synonym of *Pseudanophthalmus* since both genera are not readily separable on purely morphological grounds. *Xenotrechus*, with two species in southeastern Missouri caves, is apparently the sister-group to the monospecific genus *Chaetoduvalius* Jeannel (Barr 2004: 10) of the Apuseni Mountains in the western Carpathians, Romania.

Tribe Zolini. The 57 species of this tribe are currently arrayed in ten genera and three subtribes: Zolina with 50 species in South America (genus *Merizodus* Solier) and the Australian Region (genera *Oopterus* Guérin-Méneville, *Zolus* Sharp, *Synteratus* Broun, *Percodermus* Sloane, *Idacarabus* Lea, *Sloaneana* Csiki, and *Pterocyrtus* Sloane), Sinozolina for the genus *Sinozolus* Deuve (six Chinese species), and Chalteniina for *Chaltenia patagonica* Roig-Juñent and Cicchino of Argentina. Jeannel (1962) recognized two lineages within Zolina based on structural features of the male genitalia.

Tribe Bembidiini. This relatively well-defined tribe is represented in all zoogeographical regions of the world. Adults possess characteristic subulate apical palpomeres (except in *Horologion*), a condition found otherwise only in gehringiines and a few trechines. Bembidiines are grouped into six subtribes: Bembidiina, with about 1,350 species, is distributed worldwide but is more diverse in the temperate regions than in the tropics; Xystosomina is represented in the New World and tropical Australia (Erwin 1994: 560) by about 125 species with only one (*Mioptachys flavicauda*) found in North America; Tachyina (including lymnastines) with nearly 800 species is also worldwide but, contrary to Bembidiina, is more diverse in the tropics; Anillina with about 375 minute, apterous, and blind species is distributed in all zoogeographical regions; Horologionina with a single cave-inhabiting species, known only from the holotype collected in West Virginia; and Lovriciina represented by four cavernicolous species, placed in three genera (see Giachino et al. 2011), found in the Balkans. Erwin (1982b: 459) postulated that anillines and horologionines represent a grade of several lineages derived from *Paratachys* Casey and allies, a hypothesis refuted by

Maddison and Ober (2011: 249). Arndt (1993: 33) found a number of putative synapomorphies in larvae of Tachyina and Trechini and suggested that the two taxa are sister-groups. Grebennikov (2002) and Grebennikov and Maddison (2005), working with larvae, found evidence suggesting that Anillina is the sister-group to {Tachyina + Xystosomina} and that xystosomines are probably nested within the tachyines. Van Emden (1936a) suggested that *Horologion* Valentine was closely related to psydrines and Jeannel (1949b: 93) believed it could be related to patrobines.

Tribe Pogonini. This tribe is found in all zoogeographical regions of the world but is more diverse, both in terms of species and lineages, in the Palaearctic Region. All 83 species currently recognized are more or less halobiont and live along sea coasts or near salt lakes. Jeannel (1941b: 552) stated that this group is related to mecyclothoracines (currently placed in the subfamily Moriomorphinae) of the Hawaiian islands and the Australian Region. Müller (1975) postulated that Pogonini is the sister-group to Bembidiini. Based on karyotypic data, Serrano and Galián (1998: 196) suggested that pogonines are closely related to Bembidiina. Arndt (1993: 33), working on larval characters, suggested a close relationship between pogonines and Bembidiini (excluding tachyines).

Subfamily Patrobinae. This subfamily, which includes the tribes Lissopogonini and Patrobini, is considered to be the sister-taxon to Trechinae by several authors based on male tarsal structure (Müller 1975), larval characteristics (Arndt 1993: 32), and similar abdominal morphology (Deuve 1993). This association is also supported by molecular sequence data (Maddison et al. 1999: 128; Maddison and Ober 2011: 243). Erwin (1985: 469) and Baehr (1998: 363) suggested that patrobines may be closely related to Moriomorphinae. Jeannel (1941b: 80-81) placed patrobines in his *Limbata Stylifera* along with apotomines, broscines, psydrines, moriomorphines, melaenines, trechines, bembidiines, pogonines, and zolines but indicated that some character states, particularly of the larvae, suggest that they may belong to the *Limbata Conchifera*.

This subfamily is found in the Northern Hemisphere and Oriental Region. Only the tribe Patrobini is represented in North America.

Tribe Lissopogonini. This tribe includes a single genus, *Lissopogonus* Andrewes, with eight species in Asia. The genus was originally described in the tribe Pogonini and subsequently transferred to the tribe Patrobini by Zamotajlov and Sciaky (1996: 40). Bousquet and Grebennikov (1999: 11) alluded to the possibility that *Lissopogonus* could be a highly derived taxon related to *Patrobus* and *Platypatrobus* based on the shared apomorphic condition of the median sulcus of the pronotum being wide and deep in the basal fifth and reaching the basal edge. Deuve and Tian (2002: 30) suggested that the genus could belong at the base of the Trechinae and Patrobinae lineages (their Trechidae).

Tribe Patrobini. The 215 species or so listed in this tribe are currently arrayed in four subtribes: Deltomerina with the genus *Deltomerus* Motschulsky only, Deltomerodina

with the genus *Deltomerodes* Deuve, Patrobina with 18 genera, and Platidiolina with *Platidiolus* Chaudoir. In a cladistic analysis conducted by Roig-Juñent and Cicchino (2001: Fig. 1), this tribe is positioned as the sister-group to Amblytelini (currently included in the Moriomorphinae).

Subfamily Psydrinae. Following Maddison and Ober (2011: 237), this subfamily is restricted to the tribe Psydrini and includes only six species. Two (*Laccocenus ambiguus* Sloane and *L. vicinus* Moore) lives in southeastern Australia, another one (*Psydrus piceus* LeConte) ranges widely across the northern parts of North America, extending southwards to the mountains of northern California, Arizona, and New Mexico, and the other three, all members of the genus *Nomius* Laporte, are restricted to central Africa and Madagascar (two species) or to the Northern Hemisphere although apparently extinct in Asia (*Nomius pygmaeus* Dejean). Baehr's (1998: Fig. 1) preliminary cladistic analysis using 19 characters of adults suggested that Psydrini could be the sister-group to {Patrobinae + the remaining Psydrinae [= Moriomorphinae]}. Relationships among the three genera of Psydrini have not been investigated.

Subfamily Moriomorphinae. Members of this subfamily were traditionally included in the Psydrinae but recent morphological (Baehr 1998) and molecular data (Maddison and Ober 2011: 237) studies suggest that the Moriomorphinae form a clade and that the group is not closely related to the true Psydrinae. Baehr (1998: 363) argued that Patrobinae could be the sister-group to Moriomorphinae. Many moriomorphines are similar to pterostichines in body form but the presence of a scrobal seta and setose parameres in almost all moriomorphines, unlike pterostichines, suggest that they are probably not closely related. Ober's (2002) phylogenetic analysis based on molecular sequence data suggested that the subfamily Moriomorphinae, termed "austral psydrines," could be the sister-group to {Brachininae + Harpalinae}.

This subfamily, which includes about 470 species, is represented only in the Southern Hemisphere and is particularly diverse in the Australian Region. Five tribes were traditionally recognized (see Baehr 2004): Mecyclothoracini with about 285 species placed in the genera *Neonomius* Moore and *Mecyclothorax* Sharp; Meonini with about 20 species in the genera *Raphetis* Moore, *Meonis* Laporte, *Selenochilus* Chaudoir, and *Meonochilus* Liebherr and Marris; Moriomorphini with six species in five genera, all endemic to southeastern Australia; Tropopterini with about 50 species in seven genera; and Amblytelini with six genera and about 95 species endemic to Australia, including Tasmania. Recently, Liebherr (2011) proposed an entirely new classification, dividing the moriomorphines into two groups based on characters of the parameres. His classification is adopted here.

The genus *Bembidiomorphum* Champion (two species in Chile), included in this group since van Emden (1936a: 51), belongs to the Broscini (Roig-Juñent et al. 2008: 212).

Tribe Moriomorphini. This group includes about 55 species, all endemic to the Australian Region, placed in 13 genera: *Celanida* Laporte (one species), *Melisodera*

Westwood (three species), *Molopsida* White (28 species), *Moriodema* Laporte (two species), *Moriomorpha* Laporte (one species), *Neonomius* Moore (three species), *Pterogmus* Sloane (one species), *Rhaebolestes* Sloane (two species), *Rossjoycea* Liebherr (one species), *Sitaphe* Moore (eight species), *Teraphis* Laporte (six species), *Theprisa* Moore (three species), and *Trephisa* Moore (one species). These species are characterized by having elongate, parallel-sided parameres that are glabrous or sparsely clothed with very short setae.

Tribe Amblytelini. This tribe contains about 415 species in 12 genera: *Amblytelus* Erichson (43 species), *Dystrichothorax* Blackburn (48 species), *Epelyx* Blackburn (five species), *Mecyclothorax* Sharp (about 280 species), *Meonis* Laporte (16 species), *Meonochilus* Liebherr and Marris (six species), *Paratrichothorax* Baehr (one species), *Pseudamblytelus* Baehr (one species), *Raphetis* Moore (three species), *Selenochilus* Chaudoir (six species), *Trichamblytelus* Baehr (one species), and *Tropopterus* Solier (four species). These species are restricted to Australia and New Zealand except those of *Mecyclothorax* which occur also in New Guinea, Borneo, Java, and the Polynesian islands in the Pacific Ocean and *Tropopterus* which are found in Chile and Peru. Amblytelines differ from members of Moriomorphini by having more setose parameres that are either shorter, basally broader and narrowly rounded apically or elongate with whiplike apex.

Subfamily Nototylinae. This subfamily includes a single species, *Nototylus fryi* (Schaum), known only from the female holotype collected in the state of Espírito Santo, Brazil, in the xix Century. The species is aberrant structurally: it lacks the grooming structures of the protibiae present in all other Geadephaga except Paussini and lacks the pubescence on antennomeres 5-10 which is present in other Geadephaga except Trachypachidae, Rhysodidae, and Gehringiinae (Deuve 1994b: 141). Bänninger (1927) suggested that *Nototylus* Gemminger and Harold was related to Ozaenini, Kryzhanovskij (1976a: 87) associated it with paussines (excluding metriines) and cicindines, and Erwin (1979: 591) postulated that the species was an independently adapted myrmecophile from an ozaenine stock. However, Ball (1979: 100) doubted the possibility of a close affinity between nototylines and paussines as suggested by the above-mentioned authors. Deuve (1994b) published a detailed description of the structural character states of the species and suggested, but with some doubt, a sister-group relationship between nototylines and paussines. He noted several synapomorphies between the two groups including the compressed protibia, the tergite IX which is differentiated into a thin transverse arch, the reduced and lateral position of the laterotergite IX, and the diffuse dorsal pubescence.

Subfamily Paussinae. There is little doubt that this subfamily constitutes a monophyletic lineage. The known larvae share a unique transformation of the abdomen in which the epipleurites of the 9th segment are greatly enlarged and fused with the tergum of the 8th segment to form a plate, displacing the urogomphi and the 10th segment in a vertical plane (Bousquet 1986). The relationship of the subfamily is highly

debated but it could be closely related to brachinines. Adults of both groups possess a two-chambered pygidial gland which produces a quinonoid secretion by mixing hydroquinones and hydrogen peroxide from the inner chamber with enzymes produced in the outer chamber (Schildknecht and Holoubek 1961); the secretion is discharged at temperatures of 55-100°C (Aneshansley et al. 1969; Aneshansley et al. 1983). The structure of the pygidial glands and the chemistry of the secretions are unique among beetles. However, based on structural dissimilarities, several authors, including Ball and McCleve (1990), Beutel (1992b), and Geiselhardt et al. (2007), believed that the similarities in the pygidial gland structures and secretions between the two groups are convergent.

Erwin and Stork (1985: 445) concluded that paussines and brachinines are closely related and form the sister-group to a large clade comprising {Elaphrini + Migadopini + Siagonini + Promecognathini + Hiletini + Pseudomorphini + Cnemacanthini (= Cnemalobini) + Scaritini} based on a suite of character states associated with tarsal claws. Deuve (1988), working on the structures of the last abdominal segments of adults, supported the view of a close relationship between paussines and brachinines. However, alternate placements of the paussines have been proposed. Jeannel (1941b: 89) placed trachypachids, gehringiines, and paussines in his *Isochaeta* based on the apical position of both protibial spurs. Kryzhanovskij (1976a: 87), followed by Lawrence and Newton (1995), included the Cicindini and Nototylini within the Paussinae, implying a close relationship between these three elements. Beutel (1995) suggested a close affinity between paussines and gehringiines. Liebherr and Will's (1998) preferred cladogram based on 20 characters of the female ovipositors and reproductive tract placed paussines as the sister-group to the remaining Geadephaga (excluding trachypachids). An interesting observation is that of Vigna Taglianti and Rossi (1998: 516) who noted the similarity between the laboulbeniale parasitic species found on the brachinine *Pheropsophus* Solier and paussine *Pachyteles* Perty. They added that paussines and brachinines "might be more closely related than suggested by morphological data, thus supporting the result of recent biochemical studies on explosive secretions of members of these groups."

Members of this subfamily are currently arrayed in five family-group taxa which have been ranked differently during the past few decades. In this catalogue, they are ranked as tribes. All five are probably monophyletic except for the Ozaenini which is likely paraphyletic. The phylogenetic relationships among extinct and extant genera have been expressed in a cladogram based on adult and larval characters by Geiselhardt et al. (2007: Fig. 1).

Tribe Metriini. This group includes two genera: *Metrius* Eschscholtz, with two species in western North America, and *Sinometrius* Wrase and Schmidt with a single species recently found in Hubei province in China. This tribe is usually listed as the sister-group to the remaining paussines because of the lack of the apico-lateral fold on each elytron (flange of Coanda of Stork 1985) characteristic of the remaining paussines. This fold, located at the opening of the defence gland, is apparently used to deflect

discharges of secretions from the defence glands as showed by Eisner and Aneshansley (1982) for the Neotropical genus *Goniotropis* Gray. However, Vigna Taglianti et al. (1998: 292), based on a set of 20 larval characters, considered {Metriini + Ozaenini} as the sister-group to Paussini, suggesting that the elytral fold was secondarily lost in metriines or that the fold evolved twice in the subfamily.

Tribe Mystropomini. This tribe includes only the genus *Mystropomus* Chaudoir, with two Australian species. It is probably the most primitive extant genus of the subfamily excluding metriines. Adult ozaenines, protopaussines, and paussines (*sensu stricto*) are synapomorphic in having the elytral fold short, the pterothorax and abdomen parallel-sided and the epimera and anepisterna largely covered by the elytral epipleura (Beutel 1992c: 56). In adults of *Mystropomus* the elytral fold is markedly long and extends over the apical half of the elytron (Jeannel 1946: 47).

Tribe Ozaenini. This group of about 160 species is mainly represented in the tropics; only a few species enter the southern parts of the Northern Hemisphere in Japan, China, Taiwan, and southern United States. Ozaenines differ from protopaussines and paussines by having the mouthparts not modified, and from paussines also in having all 11 antennomeres normally developed. Several authors (e.g., Ball and McCleve 1990; Nagel 1997: 356; Di Giulio and Moore 2004) believed that ozaenines are paraphyletic in regard to the remaining Paussinae (excluding mystropomines and metriines). Beutel (1992b; 1995) and Di Giulio et al. (2003) proposed that the ozaenine genus *Physea* Brullé is the sister-group to {protopaussines + paussines} while Ball (in Nagel 1997: 356) regarded *Ozaena* Olivier as the best candidate based on the enlarged first antennomere and the reduced antennal cleaner of the protibia.

Tribe Protopaussini. This tribe includes eight extant Asian species placed in the genus *Protopaussus* Gestro. Some authors (e.g., Basilewsky 1953a: 23, 1962a: 6-9; Nagel 1987: 27) associated protopaussines with ozaenines based on the presence of 11 antennomeres in both groups but most have associated them with paussines. Nagel (1997: 348, 356) did not find any derived character states shared between protopaussines and ozaenines but noted that the small lacinia lacking the dense brushlike pilosity, typical of other carabids, is a putative synapomorphy for protopaussines and paussines (*sensu stricto*). From a zoogeographic point of view, it is interesting to note that a Tertiary fossil species of *Protopaussus* has been described from Dominican amber (Nagel 1997).

Tribe Paussini. This group, also known under the vernacular name "ant nest beetles," currently includes about 565 myrmecophilous species arrayed in this work in seven subtribes: Carabidomemnina for the genera *Eohomopterus* Wasmann (two Neotropical species) and *Carabidomemnus* Kolbe (27 African species); Arthropterina for the Australian genera *Megalopaussus* Lea (one species) and *Arthropterus* Macleay (about 65 species); Cerapterina for the genera *Mesarthropterus* Wasmann (one species in Ethiopia) and *Cerapterus* Swederus (32 species in the Afrotropical and Oriental Regions with

two species extending into the Himalayas); Pentaplatarthrina for the genera *Hexaplatarthrus* Jeannel (one Madagascan species) and *Pentaplatarthrus* Westwood (eight Afrotropical species); Homopterina for the genus *Homopterus* Westwood (12 Neotropical species); Heteropaussina for the genus *Heteropaussus* Thomson (about 25 species in the Afrotropical and Oriental Regions); and Paussina for the remaining 12 genera (about 385 species). Luna de Carvalho (1989: 361) used a different approach and recognized three tribes among his extant Paussinae (Paussini in this work): Cerapterini (including carabidomemnines, homopterines, heteropaussines, and arthropterines), Pentaplatarthrini, and Paussini. Within his Paussini, he included the following subtribes: Platyrhopalina for the Asian genera *Platyrhopalopsis* Desneux (three species), *Platyrhopalus* Westwood (14 species), *Stenorhopalus* Wasmann (two species), *Lebioderus* Westwood (seven species), and *Euplatyrhopalus* Desneux (six species); Ceratoderina for the genera *Paussomorphus* Raffray (three Afrotropical species), *Melanospilus* Westwood (three Oriental species with one species extending into the Himalayas), and *Ceratoderus* Westwood (seven Asian species); Leleupaussina for the genus *Leleupaussus* Luna de Carvalho (one Afrotropical species); Hylotorina for the Afrotropical genera *Granulopaussus* Kolbe (four species), *Hylopaussus* Luna de Carvalho (two species), and *Hylotorus* Dalman (six species); and Paussina for numerous genera that some authors sink into one large genus, *Paussus* Linnaeus (about 330 species in the Old World of which only two, *P. favieri* Fairmaire and *P. turcicus* Frivaldszk von Frivald, reach Europe). Nagel (1987, 1997, as Carabidomemnitae) viewed the Carabidomemnina as the sister-group of the remaining Paussini.

Subfamily Brachininae. There is little doubt that this group, known under the vernacular name "bombardier beetles," constitutes a monophyletic lineage. The adults have seven (females) or eight (males) exposed abdominal sterna instead of six as in other carabids. Such modification provides a greater abdominal mobility, allowing a more efficient alignment of the defence spray. However, brachinines do not appear monophyletic in terms of their 18S rDNA (Maddison et al. 1999: 129). The group has a worldwide distribution but is clearly more diverse in the Southern Hemisphere. Most authors recognize two main lineages, ranked here as tribes, among brachinines: Brachinini, represented in most regions of the world including North America, and Crepidogastrini, restricted to southern India and Africa.

For a long time brachinines have been associated with the "Truncatipennes," an informal name use to group several tribes whose adults have more or less truncate elytra at the apex. Jeannel (1942, 1949a) included brachinines and pseudomorphines in his *Balteifera*, implicitly suggesting a close affinity between the two groups. Liebherr and Will (1998: 152-153) placed brachinines with the {Harpalinae + Trechinae + Moriomorphinae}in their study of the female reproductive tract. These authors also alluded to the possibility of a close relationship between brachinines and clivinines. Analysis of molecular data presented by Ribera et al. (2005: 289) indicated a close relationship between brachinines and the subfamily Harpalinae, not with the Paussinae. Maddison et al. (1999: 129) suggested, from 18S r-DNA sequence analyses, an intriguing pos-

sibility, that the paussines and brachinines are closely related and that both in turn are related to Harpalinae. In my opinion their hypothesis is credible.

Tribe Crepidogastrini. This tribe is mostly represented in the Afrotropical Region but a few species are found in the Indian subcontinent. It contains the genera *Brachynillus* Reitter (three species), *Crepidogaster* Boheman (about 100 species), *Crepidogastrillus* Basilewsky (one species), *Crepidogastrinus* Basilewsky (one species), *Crepidolomus* Basilewsky (two species), and *Crepidonellus* Basilewsky (five species).

According to Erwin (1970a: 27), adults of crepidogastrines differ from those of brachinines in having the mesepimeron absent or almost so (instead of broad), the adhesive setae on the male protarsi of the "spongy" type (instead of the "seriate" type), the terminal palpomeres swollen and usually securiform (instead of subcylindrical or wedge-shaped), and the gular suture convergent behind (instead of divergent).

Tribe Brachinini. This tribe includes about 540 species of which 50, all belonging to the genus *Brachinus* Weber, occur in North America. Erwin's (1970a: 175) study suggested that all New World species of *Brachinus*, along with a relict species found in the Himalayas, form a clade for which he proposed the subgeneric name *Neobrachinus*. He also postulated that the subgenus *Cnecostolus* Reitter, endemic to the Palaearctic Region, was the sister-group to *Neobrachinus*. Erwin (1970a: 28) arrayed the brachinine genera into four subtribes: Aptinina, Brachinina, Mastacina, and Pheropsophina. In his cladistic analysis (Erwin 1970a: Fig. 451), masticines were positioned as the sister-group to pheropsophines and the two form the sister-group to {aptinines + brachinines}.

Unlike most carabid larvae, those of brachinines are ectoparasites and feed on carabid and water beetle pupae.

Subfamily Harpalinae. Harpalinae is the largest subfamily of Carabidae and the one usually placed at the end of the carabid classification. Molecular data analyses (Maddison et al. 1999; Ober 2002; Ribera et al. 2005) suggest that the subfamily is monophyletic.

In this catalogue, members of Harpalinae are arrayed conveniently in two supertribes: Pterostichitae and Harpalitae. Adults of the vast majority of Pterostichitae, which includes the tribes Morionini, Abacetini, Pterostichini, Zabrini, Oodini, Panagaeini, and Chlaeniini in North America, have crossed epipleura and most secrete something else than formic acid as major constituent of the pygidial glands. Adults of Harpalitae have non-crossed epipleura and, except in the sole species of Pentagonicini studied, secrete formic acid as major constituent of their pygidial glands as far as known. The absence of a crossed epipleuron could be an evolutionary feature providing greater flexibility to aim the powerful formic acid secretion of the pygidial glands. The presence of a transverse membranous band on the stipes of larvae prompted Arndt (1998: 184) to suggest that the tribes Licinini and Harpalini, herein included in the Harpalitae, were closely related to members of Pterostichitae.

Tribe Morionini. This relatively well-defined, likely monophyletic tribe is represented in all zoogeographical regions of the world but is more diverse in the tropics than in temperate areas. Its relationships have been debated. Indeed, some larval character states suggest that morionines could be related to scaritines while some adult character states suggest they may be related to pterostichines. Bousquet (2001) discussed the larval character states of morionines in detail and concluded that they do not yield evidence to favor one hypothesis over the other. However, when features of the adults are also taken into account, there is little doubt that morionines are more closely related to pterostichines than to scaritines. Recently Will (2004: 218), following Liebherr and Will (1998: 156), found three "unambiguously optimized and unreversed synapomorphies" suggesting that cnemalobines and morionines are sister-groups. A review and cladistic analysis of the morionine genus-group taxa have been published recently (Will 2004).

Moore (1965: 5) included the Australian genus *Catadromus* Macleay (seven species) in the tribe Morionini but his view has not been retained by subsequent authors.

Tribe Cnemalobini. This tribe includes only the Neotropical genus *Cnemalobus* Guérin-Méneville (32 species in Chile, Argentina, and Uruguay). Jeannel (1941b: 286) stated that the genus should be placed near the perigonines and Reichardt (1977: 416) followed his suggestion. Erwin (1985: 467) associated cnemalobines (as Cnemacanthini) with scaritines and clivinines. Arndt (1993: 40) suggested that the tribes Cnemalobini and Harpalini form a clade based on larval characteristics. Roig-Juñent (1993: 12) suggested, from a preliminary analysis, that cnemalobines and zabrines are sister-groups and the two groups are closely related to morionines. Other cladistic analyses (Liebherr and Will 1998: 156; Will 2004: 217) placed morionines as the sister-group to cnemalobines. Molecular data (18S rDNA) analyses (Maddison et al. 1999: 129) did not endorse placement of cnemalobines with Scaritinae but supported an association with the subfamily Harpalinae.

Tribe Microcheilini. This tribe includes a single genus, *Microcheila* Brullé, with two Madagascan species. Besides their relatively aberrant facies, adults of this group possess a number of character states unusual for pterostichines. The penultimate labial palpomere has more than two setae, each sternum possesses a transverse row of setae, the protibia has a latero-apical dentiform protuberance, all tarsomeres are densely pubescent beneath, and the first four protarsomeres of the male have adhesive setae (Jeannel 1948a: 616). The elytral plica is well developed as in members of Pterostichini. The group was included, along with morionines, chaetodactylines, and pterostichines (including sphodrines and platynines), in Jeannel's (1948a: 380) family Pterostichidae.

Tribe Chaetodactylini. This group includes a single genus, *Chaetodactyla* Tschitschérine with 20 species endemic to Madagascar. The species superficially resemble several pterostichine taxa but the male protarsomeres are not expanded and have no adhesive setae (Jeannel 1948a: 619). The group was associated with morionines, metiines,

zabrines, microcheilines, and pterostichines (including sphodrines and platynines) in Jeannel's (1942: 734-735) family Pterostichidae.

Alluaud (1935: 28) reported that one of his colleagues rearing pupae of various insect groups for parasitic Hymenoptera discovered 14 adults of *Chaetodactyla* emerging from pupal chambers of two cetonid species. Jeannel (1948a: 620) postulated that *Chaetodactyla* females probably lay their eggs on the cetoniid larvae and that the carabid larvae remain inside the cetonid pupae, eventually feeding upon them.

Tribe Cratocerini. This tribe includes the genera *Cratocerus* Dejean with two Neotropical species and *Brachidius* Chaudoir with one australo-oriental species. Chaudoir (1873a) also listed *Basoleia* Westwood (= *Catapiesis* Solier) in this tribe and Lorenz (2005: 248) also included the genus *Oxyglychus* Straneo, with one Japanese species, previously included within the caelostomines (= drimostomatines). Cratocerines have been little studied and their taxonomic position is not well established. They are usually placed within the Pterostichini (e.g., Reichardt 1977: 407). Lorenz (2005: 248-252) combined cratocerines with catapieseines and drimostomatines in his subfamily Pterostichinae.

Tribe Abacetini. This tribe is proposed here to include the abacetines proper, the loxandrines, and the celioscheseines based on a preliminary cladistic analysis conducted by Will (2000) suggesting that these three groups are closely related. Van Emden (1949) and Arndt (1988) had already drawn attention to the fact that some putative apomorphic character states were shared by abacetines (with more than 95% of the species endemic to the Old World) and loxandrines (with more than 95% of the species restricted to the New World). As defined here, this tribe, as well as all three groups included in it, is inadequately characterized except for some abacetine genera which have an asymmetrical insertion of the second antennomere in the adults, and some loxandrine genera which have the first three protarsomeres of the males obliquely expanded. Monophyly of this tribe has not yet been demonstrated.

Tribe Pterostichini. This highly diverse tribe is represented in all continents, except Antarctica, and the species are found from the arctic regions to the tropics. There are no structural features yet discovered to suggest that the tribe, as currently conceived, forms a clade and there is little doubt, as suggested by Ball (1979: 102), that it represents a grade.

A number of putative clades have been recognized within the pterostichines and some of them have received formal scientific names. These include, among others, the **euchroines** with the genera *Bothynoproctus* Tschitschérine (one Neotropical species), *Euchroa* Brullé (38 Neotropical species), *Lobobrachus* Sharp (two Neotropical species), *Setalis* Laporte (three Australian species) and, according to Will (2000: 64), *Microcephalus* Dejean (15 Neotropical species); the Northern Hemisphere **myadines** with the genus-group taxa *Aristochroa* Tschitschérine (18 Asian species), *Myas* Sturm (with about 30 species in North America and Asia placed in the subgenus *Trigonognatha* Motschul-

sky and one European species), *Steropanus* Fairmaire (11 Asian species, some of them endemic to the Oriental Region), and *Xenion* Tschitschérine (one European species) to which *Stereocerus* Kirby (two Holarctic species) is probably closely related (Bousquet 1999: 85); the **trigonotomines** (including deliniines) with the genera *Delinius* Westwood (three Australian species), *Leiradira* Laporte (12 Australian species), *Lesticus* Dejean (about 100 Asio-Australian species), *Trigonotoma* Dejean (about 55 Asian species), and *Euryaptus* Bates (six Asian species), *Pareuryaptus* Dubault, Lassalle and Roux (17 Asian species); the Australian **darodiliines** (including cratogastrines) with the genera *Loxogenius* Sloane (one species), *Liopasa* Tschitschérine (one species), *Cratogaster* Blanchard (five species), and *Darodilia* Laporte (ten species); the New Caledonian **abacomorphines** with the genera *Abacoleptus* Fauvel (three species), *Abacomorphus* Chaudoir (two species), *Platysmodes* Fauvel (one species), and *Setalidius* Chaudoir (two species); the **molopines** with the North American genus *Cyclotrachelus* Chaudoir (45 species) and the western Palaearctic genera *Abax* Bonelli (18 species), *Henrotiochoromus* Busulini (one species), *Molopidius* Jeannel (one species), *Molops* Bonelli (40 species), *Oscadytes* Lagar Mascaro (one species), *Percus* Bonelli (19 species), *Speomolops* Patrizi (one species), *Stenochoromus* Miller (one species), *Styracoderus* Chaudoir (three species), *Tanythrix* Schaum (three species), *Typhlochoromus* Moczarski (two species), and *Zariquieya* Jeannel (one species) to which Jeannel (1948a: 450-451) added several Madagascan genera (*Abacodes* Jeannel, *Eucamptognathus* Chaudoir, *Eudromus* Klug, *Eurypercus* Jeannel, and *Molopinus* Jeannel); and the **poecilines** as defined by Jeannel (1942: 738) with the genera *Stomis* Clairville, *Pedius* Motschulsky, *Argutor* Dejean, *Orthomus* Chaudoir, *Poecilus* Bonelli, *Phonias* des Gozis, *Bothriopterus* Chaudoir, and *Melanius* Bonelli. Some of these groups, such as the poecilines, are probably polyphyletic.

Tribe Zabrini. Zabrines are most diversified in the Palaearctic and Nearctic Regions but are also represented in the mountains of the northern Neotropical, northern Oriental, and eastern Afrotropical Regions. Some authors have recognized several, more or less clearly defined genera in this tribe, others only two, *Amara* Bonelli and *Zabrus* Clairville, each with many subgenera. Adults of zabrines are structurally most similar to members of Pterostichini and probably represent a clade within the Pterostichini as presently conceived.

Tribe Metiini. This tribe includes about 75 species restricted to the southern part of South America, predominantly in Chile and extending north to Peru and east to southern Brazil, Uruguay, and Argentina. These species are arrayed in the following genera: *Kuschelinus* Straneo (one species), *Metius* Curtis (about 60 species), *Abropus* Waterhouse (one species), *Antarctiola* Straneo (four species) and, according to Will (2000: 60), *Feroniola* Tschitschérine (nine species). Metiines are often included within the Pterostichini.

This tribe has been known in the past under the name Antarctiini. However, because its type genus *Antarctia* Dejean is a junior homonym, the family-group name Antarctiini is permanently invalid (ICZN 1999: Article 39).

Tribe Drimostomatini (including cyrtolaines). The association of the Eastern Hemisphere drimostomatines (also known under the name caelostomines) with the Western Hemisphere cyrtolaines (*Cyrtolaus* Bates with 11 Middle American species and *Barylaus* Liebherr with two species in the West Indies) was proposed by Liebherr (1986) and supported by Will's (2000) preliminary cladistic analysis. The main characteristic of this group is the inverted aedeagus. However, this modification is absent in some groups (e.g., *Diceromerus* Chaudoir) traditionally placed within the drimostomatines and consequently monophyly of this tribe is uncertain. The drimostomatines include about 290 species arrayed in 29 genera (Lorenz 2005: 248-252, as Drimostomatina). The most speciose genera are *Caelostomus* Macleay (about 160 species, of which one is adventive in the West Indies), *Trichillinus* Straneo (21 species), *Platyxythrius* Lorenz (20 species), and *Strigomerus* Chaudoir (18 species).

The name Caelostomini, proposed by Burgeon (1935: 194), is often used for this tribe but Drimostomatini, established by Chaudoir (1872c: 283), is older and has priority. *Drimostoma* Dejean is usually treated as a junior synonym of *Caelostomus* Macleay but the family-group name Caelostomini was not proposed because of the synonymy of the type genus. Therefore, Article 40.2 of the ICZN (1999) does not apply in this case.

Tribe Chaetogenyini. This South American tribe includes five species of the genus *Chaetogenys* van Emden arrayed in two subgenera: *Chaetogenys s.str.* and *Camptotoma* Reiche. The group has been ranked as a subtribe of Pterostichini by some authors, including van Emden (1958), Straneo (1977), and Reichardt (1977: 408). However, the adhesive setae on the male protarsi are of the "spongy" type (Reichardt 1977: 408), not of the "seriate" type as in other pterostichines. Erwin (1985: 468) associated chaetogenyines with cuneipectines, chlaeniines, oodines, and licinines.

Tribe Dercylini. The 35 species of this exclusively Neotropical tribe are currently arrayed in one genus (*Dercylus* Laporte) with four subgenera (Moret and Bousquet 1995: 759): *Asporina* Laporte (two species), *Dercylus s.str.*, with *Dercylodes* Chaudoir and *Pterodercylus* Kuntzen as synonyms (12 species), *Eurydercylus* Moret and Bousquet (seven species), and *Licinodercylus* Kuntzen, with *Physomerus* Chaudoir (a junior homonym) as synonym (14 species). Chaudoir (1883), Reichardt (1977), and Ball (1979: 102) suggested that dercylines were closely related to oodines. Moret and Bousquet (1995: 759) stated that the character states of the adult and of the putative larva studied indicate that dercylines are more closely related to oodines and chlaeniines than to pterostichines. Bousquet (1996a: 449) commented that dercylines were closely related to {oodines + panagaeines + chlaeniines} but that the nature of the relationship remained to be ascertained. Jeannel (1948a: 626) related dercylines to melanchitonines and Kryzhanovskij (1976a: 89) to pterostichines, microcheilines, chaetodactylines, platynines, zabrines, and cuneipectines without mentioning any character state that would justify such grouping. The adhesive setae on the male protarsi are of the "spongy" type as in chaetogenyines, oodines, and chlaeniines.

Jeannel (1948a: 627) indicated that the genus *Dercylinus* (one North American species), of which he had seen no specimen, probably belongs to dercylines and Lorenz (2005: 327) listed the genus, along with *Evolenes* (one North American species), in the subtribe Dercylina. However, these two genera are typical oodines (see Bousquet 1996a).

Tribe Melanchitonini. This tribe currently includes three genera, *Melanchiton* Andrewes (a replacement name for *Melanodes* Chaudoir), *Melanchrous* Andrewes (a replacement name for *Patellus* Chaudoir), and *Dicaelindus* Macleay. The lineage contains about 70 Old World species. As for many other groups, relationships of melanchitonines are unclear. Chaudoir (1883) included *Melanchiton* and *Melanchrous* within the tribe Oodini, likely because of the similar adhesive setae on the male protarsi. Subsequently, the two genera have been placed by some authors within the Pterostichini. Jeannel (1948a: 626) included them with dercylines in his family Dercylidae but offered no pertinent evidence to suggest that the group is monophyletic.

Straneo (1950: 65) first included the genus *Dicaelindus*, previously placed in the Pterostichini, in this tribe. Adults of *Dicaelindus* are rather similar phenetically to those of *Melanchiton*, but the male protarsi are not dilated and lack adhesive setae. Monophyly of this tribe has not yet been demonstrated.

Tribe Oodini. Members of Oodini *sensu stricto* share several apomorphic character states in the adult stage (Bousquet 1996a: 448) suggesting the tribe is monophyletic. Several authors have included or associated oodines with chlaeniines but the pygidial gland components suggest rather that panagaeines and chlaeniines are more closely related to each other than to oodines (Bousquet 1987b). Oodines, panagaeines, and chlaeniines possibly constitute a clade since the adults (except in some chlaeniines) have the metepisterna coadunate with the elytral epipleura, a synapomorphic condition that has probably been secondarily lost in some chlaeniine lineages.

Some groups, such as dercylines, melanchitonines, and geobaenines, are sometimes included within the Oodini as distinct subtribes. However, there is little evidence that they are indeed closely related to oodines and in my opinion they should be treated as distinct tribes.

This tribe is represented in all zoogeographical regions of the world and includes about 295 species in 32 genera. Jeannel (1949a: 829) recognized three family-group taxa within the oodines: sphoerodines represented in the Afrotropical Region, oodines (*sensu stricto*) represented in all zoogeographical regions, and thryptocerines represented in the Afrotropical Region.

Tribe Peleciini. Relationships of peleciines are unclear. The group has been associated with panagaeines by Kryzhanovskij (1976a: 89), Ball (1979), and Erwin (1985: 468) and included in the superfamily Odacanthomorphi, along with odacanthines, perigonines, lachnophorines, and ctenodactylines, by Jeannel (1948a: 376). Many apomorphic features, including some details of the chaetotaxy, structure of the mouthparts and thorax, and marked similarity in their specialized way of attacking millipedes, suggest

that peleciines could be closely related to promecognathines. However, Straneo and Ball (1989) regarded these similarities as evolutionary convergence, not phylogenetic affinity. Larvae of *Eripus oaxacanus* Straneo and Ball, the only peleciine species known in its larval stage, are similar in some structural features to larvae of Brachinini and Pseudomorphini but Liebherr and Ball (1990) concluded that these similarities were an example of convergence due to a similar parasitic lifestyle. Arndt (1993: 36), based on larval features, suggested that peleciines, panagaeines, licinines, oodines, and chlaeniines form a clade. Liebherr and Will (1998: 156-157) noted from their analysis of the female reproductive tract that placement of peleciines as a basal group of pterostichine stock was firmly supported.

Peleciines are restricted to the Southern Hemisphere. Straneo and Ball (1989) recognized two subtribes: Agonicina for the genera *Pseudagonica* Moore and *Agonica* Sloane of Tasmania and adjacent southeastern Australia, and Peleciina (including dispshericines) for the remaining genera which are represented in the Afrotropical, Oriental, and Neotropical Regions. Vigna Taglianti and Rossi (1998: 515) noted that the laboulbeniale parasitic species found in *Agonica* and in the moriomorphine genera *Pterogmus* Sloane, *Theprisa* Moore, and *Sitaphe* Moore were very similar and alluded to the possibility of a close relationship between agonicines and moriomorphines.

Tribe Brachygnathini. This tribe contains only the Neotropical genus *Brachygnathus* Perty (seven species). Relationships of the genus are uncertain. Jeannel (1949a: 849) associated it with the genus *Microcephalus* Dejean (as *Tichonia* Semenov), under the subfamily name Tichoniitae, and placed it in his family Panagaeidae. Reichardt (1977: 404) noted that inclusion of *Brachygnathus* in the tribe Panagaeini was doubtful and that the adults show some similarities to those of peleciines.

Tribe Bascanini. This tribe contains a single genus, *Bascanus* Péringuey (including *Bascanidius* Péringuey), with a few species in eastern and southern Africa. Van Emden (1936a), Basilewsky (1953a: 164-165), and Erwin (1979) suggested that bascanines are closely related to panagaeines. Csiki (1933a: 1651) associated the genus with *Melaenus* Dejean.

Tribe Panagaeini. This moderately diverse group occurs in all continents except Antarctica but is much more diverse in the tropics than in temperate regions. Panagaeines, at least those that have been analysed, secrete phenol through their pygidial glands (see Schildknecht et al. 1968; Kanehisa and Murase 1977; Moore 1979). This compound is also found, as far as known, only in some chlaeniines, which suggests that panagaeines are probably most closely related to chlaeniines. On the other hand, several authors, including Kryzhanovskij (1976a: 89), consider peleciines as the group most closely related to panagaeines.

Jeannel (1949a: 849) associated the genus *Microcephala* Dejean (as *Tichonia* Semenov) with Panagaeini but most authors, including Reichardt (1977: 407), regard it as a member of Pterostichini.

Tribe Chlaeniini. Chlaeniines are found in all zoogeographical regions of the world but are more diverse, both in terms of lineages and species, in the Afrotropical and Oriental Regions than anywhere else. Jeannel (1949a: 776) recognized six tribes among chlaeniines and Basilewsky and Grundmann (1955) ten tribes and two subfamilies. However, following Ball (1960b) and Lindroth (1969a), all the species are grouped in a single tribe in this catalogue. Several authors have suggested a close relationship between chlaeniines, panagaeines, and oodines.

Two major groups among *Chlaenius* species could be distinguished based on defensive secretions of the pygidial glands (see Schildknecht et al. 1968; Kanehisa and Murase 1977; Moore 1979; Balestrazzi et al. 1985): one secretes phenol, like panagaeines; the other one quinone. In the first group, the secretory lobes of the pygidial glands are elongate, in the second one they are shorter and thicker (Kanehisa and Shiraga 1978). I believe these two groups should be recognized either as genera or subtribes. However, owing to the lack of information on the pygidial glands and their secretions for many chlaeniine lineages, such action is futile at this time.

This tribe includes almost a thousand species worldwide arranged in 18 genera and two subtribes. The 51 North American species are assigned to the genus *Chlaenius* Bonelli and arrayed in ten subgenera of which five, *Pseudanomoglossus* Bell (one species), *Anomoglossus* Chaudoir (three species), *Callistometus* Grundmann (one species), *Brachylobus* Chaudoir (one species), and *Randallius* n.subg. (one species), are North American endemics.

Tribe Cuneipectini. This tribe includes one genus, *Cuneipectus* Sloane, with two flightless species in western Australia. Members of this group have rarely been collected and very little is known about their way of life. Kryzhanovskij (1976a: 89) listed cuneipectines in his supertribe Pterostichitae along with dercylines, zabrines, platynines, chaetodactylines, microcheilines, and pterostichines. Erwin (1985: 468) associated them with chaetogenyines, chlaeniines, oodines, and licinines in his supertribe Callistitae (= Chlaeniitae). Moore et al. (1987: 215) included them with morionines, pterostichines, abacetines, geobaenines, drimostomatines, and platynines in their Pterostichitae.

Tribe Orthogoniini. This group includes six genera represented in Asia and Africa only: *Orthogonius* Macleay (about 240 species), *Neoorthogonius* Tian and Deuve (one species), *Hexachaetus* Chaudoir (nine species), *Actenoncus* Chaudoir (four species), *Anoncopeucus* Chaudoir (two species), and *Nepalorthogonius* Habu (one species). Relationships of the tribe remain unresolved and problematic. Jeannel (1948a: 377) indicated that orthogoniines and licinines are closely related based on the shape of the frontale on the cephalic capsule of the larvae. Basilewsky (1953a: 180) associated them with glyptines, Kryzhanovskij (1976a: 90) with lebiines, anthiines, helluonines, physocrotaphines, zuphiines, galeritines, and dryptines, and Erwin (1985: 468) with idiomorphines, catapieseines, and amorphomerines. Ober and Maddison (2008: 18) found strong support in their phylogenetic analyses based on molecular data sequences

for a clade comprising orthogoniines, graphipterines, and pseudomorphines. The genus *Glyptus* Brullé has been included by some authors within the tribe Orthogoniini, but both Jeannel (1948a) and Erwin (1985) believe that *Glyptus* and Orthogoniini are not closely related. Members of this tribe are termitophilous.

Tribe Idiomorphini. This tribe currently includes the genera *Idiomorphus* Chaudoir (three Indian species), *Perochnoristhus* Basilewsky (one species in Namibia), *Rathymus* Dejean (three Afrotropical species), and *Strigia* Brullé (three Oriental species) arrayed in two subtribes, Perochnoristhina for the genus *Perochnoristhus* and Idiomorphina for the remaining genera (Lorenz 2005: 391). Erwin (1984b: 378) also included the genus *Glyptus* in this tribe. Crowson (1980) stated that the genus *Perochnoristhus* could be closely related to broscines and apotomines.

Tribe Glyptini. Glyptini consists of two Afrotropical genera: *Neoglyptus* Basilewsky with six species and *Glyptus* Brullé with two species. Few authors agree on the systematic position of the group. Jeannel (1948a: 377) associated them with chlaeniines, Basilewsky (1953a: 180) with orthogoniines, and Erwin (1984b: 378) with idiomorphines. Both Chaudoir (1850a) and Lacordaire (1854) stated that glyptines were closely related to the genus *Idiomorphus* Chaudoir.

Tribe Amorphomerini. This group includes a single genus, *Amorphomerus* Sloane, represented by a few species in eastern Africa and Madagascar. Jeannel (1948a: 376) associated amorphomerines with pterostichines (*sensu lato*, including platynines), dercylines, and harpalines in his superfamily Harpalomorphi, characterized by having the mesotibiae spinose and the median lobes of the aedeagi more or less bent, with the basal bulbs well developed. He also stated (Jeannel 1948a: 731) that the tribe was more closely related to harpalines than to any other *Conchifera* groups. Kryzhanovskij (1976a: 89) associated amorphomerines with harpalines, cnemalobines (as Cnemacanthini), and agonicines (currently included in the Peleciini) and Erwin (1985: 468) associated them with idiomorphines, orthogoniines, and catapieseines. The tribe was listed as part of the tribe Lebiini by Erwin (1979).

Tribe Licinini. A clearly defined, likely monophyletic group with representatives in all zoogeographical regions of the world. Jeannel (1948a: 377) associated licinines with pentagonicines, orthogoniines, panagaeines, chlaeniines (including oodines), and glyptines, Kryzhanovskij (1976a: 89) with oodines and chlaeniines, and Erwin (1991a: 10) with oodines, chaetogenyines, chlaeniines, and cuneipectines. Ball (1992a) considered the tribe to be the sister-group to {Oodini + Chlaeniini + Panagaeini} and Ball and Bousquet (2000: 100) noted that members of the four tribes show similarities in structure of the male protarsi, genitalia, and larvae. Beutel (1992d) reported several putative synapomorphies in larval head structures between Licinini and Panagaeini, and Arndt (1993: 37) noted several synapomorphies in larvae of licinines, panagaeines, and peleciines. However, contrary to the oodine-chlaeniine-panagaeine complex, licinines have simple

(i.e., non-crossed) epipleura and secrete formic acid as the major constituent of their defensive glands like harpalines and *Truncatipennes* members. Also Ober and Maddison (2008: 19) found no close relationship between licinines and the chlaeniine-oodine-panagaeine complex based on their analyses derived from molecular data sequences. Recently Liebherr and Will (1998: 144) suggested that licinines, orthogonines, panagaeines, melanchitonines, graphipterines, and loxandrines form a clade based on the presence of a villous canal extended forward on the common oviduct.

The 235 or so species are arrayed in 23 genera distributed among four subtribes following Ball (1992a).

Tribe Harpalini. This is one of the largest and most diversified carabid tribes. Although its limits are fairly stable, there is as yet no strong evidence to substantiate that the tribe is monophyletic. Based on a study of the world fauna, Noonan (1976) recognized four subtribes among harpalines: Anisodactylina, Pelmatellina, Stenolophina (including polpochilines and pachytrachelines), and Harpalina which he divided into eight genus-groups, namely Harpali, Selenophori, Bradybaeni, Acinopi, Bleusei, Dapti, Amblystomi, and Ditomi. Based on a parsimony analysis of molecular sequence data, Martínez-Navarro et al. (2005) concluded that the subtribe Harpalina was polyphyletic, that daptines were related to stenolophines, not to Harpalina, that the Selenophori group was polyphyletic and not related to Harpalina but perhaps to anisodactylines, that the Amblystomi group may be related to stenolophines instead of Harpalina, and that the subtribe Pelmatellina was related to stenolophines (see also Martínez-Navarro et al. 2003) and that the latter could be paraphyletic in regard to the former. They also advocated raising selenophorines, ditomines, and amblystomines to subtribe level.

Relationships of harpalines to other carabid groups are not well established. In the course of his work on the French fauna, Jeannel (1942: 575) associated harpalines with perigonines, anchonoderines, lachnophorines, omphreines, pterostichines (including platynines), zabrines, chaetodactylines, morionines, and metiines in his superfamily Harpalomorphi. Later, working on the Madagascan fauna, Jeannel (1948a: 376) united the harpalines with amorphomerines, dercylines, melanchitonines, pterostichines (including platynines), morionines, microcheilines, and chaetodactylines. Kryzhanovskij (1976a: 89) listed harpalines with amorphomerines, cnemalobines, and agonicines (currently included in Peleciini) in his supertribe Harpalitae. Based on the presence of a membranous transverse band on the stipes lateroventrally in larvae, Arndt (1998: 184) associated harpalines with morionines, pterostichines, zabrines, panagaeines, peleciines, chlaeniines, oodines, licinines, and cnemalobines. In a cladistic analysis conducted by Roig-Juñent and Cicchino (2001: Fig. 1), this tribe was positioned as the sister-group to {Platynini + Sphodrini}. Ruiz et al. (2008) indicated that, based on their molecular data sequence analyses, the tribe Harpalini was the sister-group to {Sphodrini + Platynini + Pterostichini + Zabrini}.

Tribe Geobaenini. The Geobaenini includes a single genus, *Geobaenus* Dejean, with four flightless species: three occur in South Africa, one in Australia. The group

was first included within the tribe Harpalini and associated subsequently with pterostichines. Basilewsky (1949), because of similarity in the adhesive setae on the male protarsi, suggested that geobaenines could be closely related to melanchitonines, although later (1950, 1953, 1985) he associated the genus with platynines (as Anchomeninae or Platyninae). Liebherr and Will (1998: 144) in their study of the female reproductive tract found an "uncontested synapomorphy" uniting geobaenines with lachnophorines, odacanthines (including pentagonicines), and pseudomorphines. In these taxa, the spermathecal duct is joined to the common oviduct by an elongate sclerite.

Tribe Omphreini. This tribe includes a single genus, *Omphreus* Dejean (18 species), which is endemic to the Balkan Peninsula and Asia Minor. Omphreines have been included within the tribe Platynini by most authors but Jeannel (1942: 577), followed by Kryzhanovskij (1976a: 89), associated them with perigonines, anchonoderines (including atranines), and lachnophorines.

Tribe Sphodrini. Members of this group have been traditionally included within the Platynini. However, in recent decades numerous taxonomists dealing with the Palaearctic fauna, where this group is by far more diversified than anywhere else, rank this complex as a distinct tribe. Based on morphological characters, there seems to be little doubt that the two groups are closely related. However, from molecular data sequence analyses conducted by Ruiz et al. (2008), this relationship did not receive "the expected strong support, though it can not be completely dismissed." The Sphodrini include about 825 species, arranged in about 40 genera, and are grouped into the following six subtribes: Atranopsina (about 100 species), Calathina (about 185 species), Dolichina (17 species), Pristosiina (about 65 species), Synuchina (almost 100 species), and Sphodrina (about 360 species). Based on Casale's (1988: 130) cladogram, Dolichina and Synuchina are sister-groups, and Sphodrina, Calathina, and Pristosiina form a clade with Pristosiina the sister-group to the other two; the position of Atranopsina is ambiguous. From the molecular data sequence analyses conducted by Ruiz et al. (2008), only the position of the subtribe Atranopsina as the sister-group to all other subtribes was well supported.

Tribe Platynini. This is a large, complex, and worldwide group which is more diverse in the tropics than in temperate regions. There are no synapomorphies, in either adult or larval structures, yet discovered to suggest that the tribe represents a monophyletic lineage. Platynines are combined by various authors with pterostichines based on phenetic similarity between the two groups. I believe the two groups are not closely related because of the differences in elytral epipleuron configurations and pygidial gland structures and secretions. Basilewsky (1985, as Platyninae) gave an excellent introduction to the systematics of the group.

Relationships among the North American genus-group taxa have been addressed but are still inadequately understood. According to Liebherr (1991b: 5), *Tetraleucus*,

Anchomenus, *Sericoda*, and *Elliptoleus* form a clade characterized by the synapomorphic condition of the female spermatheca having a basal reservoir and a long apical filament. Within this clade *Tetraleucus* is the sister-group to the remaining taxa. Liebherr and Schmidt's (2004: 168) parsimony-based cladistic analysis led to the recognition of four subgenera within the genus *Agonum* forming two clades, {*Platynomicrus* Casey + *Europhilus* Chaudoir} and {*Agonum s.str.* + *Agonothorax* Motschulsky (= *Olisares* Motschulsky)}. Liebherr and Schmidt (2004: 153) suggested a sister-group relationship between the genus *Agonum* and the African taxa described in combination with *Agonidium* Jeannel and *Neobatenus* Jeannel as well as several others described under *Megalonychus* Chaudoir.

Tribe Perigonini. This small tribe is represented by about 115 species arranged in five genera. The place of the tribe within the carabids is unsettled. LeConte and Horn (1883: 35) and Sloane (1923: 248) included it as a separate group within the Platynini; Jeannel (1942: 577) as a distinct subfamily within his family Perigonidae along with anchonoderines, omphreines, and lachnophorines and later (Jeannel 1948a: 376) as a distinct family within his superfamily Odacanthomorphi along with lachnophorines, odacanthines, ctenodactylines, and peleciines. Kryzhanovskij (1976a: 89) followed Jeannel (1942) and combined the tribes Perigonini, Lachnophorini (including anchonoderines), and Omphreini in his supertribe Perigonitae. Erwin (1984b: 375) placed this tribe in his supertribe Lebiitae along with amorphomerines, catapieseines, graphipterines, tetragonoderines, masoreines, pentagonicines, odacanthines, and lebiines. Later (Erwin 1991a: 10) the amorphomerines and catapieseines were excluded from the Lebiitae.

The North American fauna includes two species of the genus *Perigona* Laporte which contains about 100 species worldwide. One of our species is adventive and the second one is endemic to the eastern part of the continent.

Tribe Ginemini. This tribe includes a single species, *Ginema thomasi* Ball and Shpeley, known from a single female specimen collected in the departament of Santa Cruz in Bolivia. Ball and Shpeley (2002a: 96) noted some marked similarities between this genus and members of Cyclosomini but still postulated a rather isolated position in the rank of the more derived Harpalinae lineages.

Tribe Enoicini. This tribe includes two South African genera: *Enoicus* Péringuey with one species and *Abacetodes* Straneo (= *Phimus* Péringuey, a preoccupied name) with four species. Basilewsky (1985: 15-16) associated enoicines with platynines, geobaenines, and sphodrines while earlier (Basilewsky 1953a: 61) he included them within the platynines (as Anchomenini).

Tribe Atranini. This tribe contains only two species, both included in the genus *Atranus* LeConte: one lives in Europe and the Caucasus, the other one in eastern North America. The systematic position of the genus has been debated. Dejean (1828: 122)

described the North American species in the genus *Anchomenus* Bonelli, currently placed within the Platynini. LeConte (1847: 438; 1861a: 28), Seidlitz (1887: 10), and Sloane (1923: 250) associated the genus with chlaeniines, LeConte and Horn (1883: 37), Fauvel (1888: 15), and Jeannel (1942: 582) with anchonoderines, and Ball (1960b: 136), Lindroth (1966: 648), Liebherr (1986: 20), Kryzhanovskij et al. (1995: 118), and several others with platynines. Adults and larvae of *Atranus* possess several structural features not exhibited in other Platynini. In my opinion the morphological evidence relating *Atranus* to platynines is weak and for that reason the genus is retained here in its own tribe. Analysis of the pygidial secretions could be useful to indicate if the genus is more closely related to chlaeniines or to the platynine-anchonoderine lineage. Basilewsky (1962b: 155) believed the genus was more closely related to platynines than to any other group suggested to date, but because the adhesive setae on the male protarsi are of the "spongy" type rather than the "seriate" type, he advocated placing it in a distinct subfamily. Phylogenetic relationships as inferred from 28S ribosomal DNA and the wingless gene conducted by Ober and Maddison (2008) placed *Atranus* as the sister-group to the Platynini.

Tribe Catapieseini. This small Neotropical tribe includes two genera, *Catapiesis* Brullé with eight species and *Homalomorpha* Brullé with one species, ranging collectively from southern Mexico to northeastern Argentina. Catapieseines have been placed by some authors (e.g., Reichardt 1977) in the vicinity of the Morionini and Pterostichini. Lorenz (2005: 248) included them within the tribe Cratocerini, in his subfamily Pterostichinae, along with drimostomatines. Ober and Maddison (2008: 16), following Erwin (1984b: 375), placed them in their lebiomorph assemblage pointing out that catapieseines have truncate elytra and specialized eighth abdominal tergite turrets like the remaining lebiomorph taxa. Horn (1881: 163) believed that *Catapiesis* (as *Basoleia*) has a close relationship with the Helluonini. Erwin (1985: 468) listed the group within his supertribe Orthogoniitae along with idiomorphines, amorphomerines, and orthogoniines.

Tribe Lachnophorini (including anchonoderines). This small tribe includes about 120 species in ten genera. There is no solid structural or molecular evidence that would suggest this group is monophyletic. Its relationships have been discussed by several authors. Jeannel (1942: 578), followed by Kryzhanovskij (1976a: 89), associated lachnophorines with perigonines, anchonoderines (including *Atranus*), and omphreines. Liebherr (1988) suggested that lachnophorines derived from a platynine-like ancestor. He also included calophaenines within lachnophorines but Ball and Bousquet (2000: 107), following Erwin (1991b: 44), placed them with ctenodactylines.

The Lachnophorini are represented in the New World, and by one Indo-African species, *Selina westermanni* Motschulsky. Jeannel (1948a: 744) also considered the genus *Amoebea* Péringuey (one Afrotropical species) as lachnophorine. However, the name is a junior synonym of *Smeringocera* Chaudoir (six species) which belongs to the tribe Odacanthini (see Lorenz 2005: 444).

In Liebherr's (1988) parsimony-based cladistic analysis of the West Indies lachnophorines, the taxa with setose body and setose maxillary palpomeres, represented by the genera *Euphorticus*, *Calybe*, and *Lachnophorus*, constituted a clade.

Tribe Pentagonicini. Few characteristics hold the pentagonicines together and this tribe is possibly polyphyletic. Jeannel (1949a: 767) included pentagonicines in his superfamily Callistomorphi, along with licinines, orthogoniines, panagaeines, chlaeniines, and glyptines, and indicated that pentagonicines are best placed near licinines. Moore (1966a: 162) wrote that larval characters of the pentagonicine *Scopodes* "suggest a rather close affinity with the Odacanthinae." Liebherr (1988) included pentagonicines within the Odacanthini based mainly on the structure of the spermatheca, and Ober and Maddison (2008: 17) found support from their molecular data for such a relationship. Erwin (1984b: 375) placed this tribe in his supertribe Lebiitae along with amorphomerines, perigonines, catapieseines, graphipterines, tetragonoderines, masoreines, odacanthines, and lebiines. The author later adopted a similar arrangement (Erwin 1985: 468), with the exclusion of amorphomerines and catapieseines and the inclusion of lachnophorines. It is of interest to note that the sole species of pentagonicines studied (*Scopodes boops* Erichson) produces a saturated acid as major component (Moore 1979) of the pygidial glands, while members of the so-called *Truncatipennes*, with which this tribe is usually associated, produce formic acid (see Schildknecht et al. 1968; Moore and Wallbank 1968; Kanehisa and Murase 1977; Moore 1979).

This tribe includes close to 170 species in the world. Only six, all in the genus *Pentagonica* Schmidt-Göbel (86 species worldwide), are found in North America.

Tribe Odacanthini. The Odacanthini, with about 300 species in 30 genera, constitutes a moderately diverse group represented in all zoogeographical regions. They are more diverse in the tropics than in temperate regions. Several authors believed the group to be closely related to ctenodactylines, and both groups have been combined in a single tribe by some (Csiki 1932b, Liebke 1938, van Emden 1942). Jeannel (1948a: 376) associated odacanthines with perigonines, lachnophorines, ctenodactylines, hexagoniines, and peleciines, and Basilewsky (1962b: 154) with lachnophorines. Liebherr (1988) concluded that odacanthines (including pentagonicines) have a sister-group relationship with lachnophorines (including calophaenines) based on the presence of a bipartite spermatheca. However, phylogenetic analyses based on molecular data sequences presented by Ober and Maddison (2008: 5) did not support odacanthines and lachnophorines as a clade but did support a close relationship between pentagonicines and odacanthines and between calophaenines and lachnophorines. Erwin (1985: 468) placed the tribe Odacanthini within his Lebiitae along with perigonines, lachnophorines, graphipterines, tetragonoderines, cyclosomines (as Masoreini), pentagonicines, and lebiines.

The tribe is represented in North America by six species belonging to the New World genus *Colliuris* DeGeer, which currently includes about 80 species.

Tribe Calophaenini. This tribe includes two Neotropical genera: *Calophaena* Klug (48 species) and *Calophaenoidea* Liebke (one species). Calophaenines have been placed in the tribe Odacanthini (Horn 1881: 147; Bates 1883a: 163; Reichardt 1977: 435; Lorenz 2005: 439), Lachnophorini (Liebherr 1988: 18), or Ctenodactylini (Erwin 1991b: 44; Ball and Bousquet 2000: 107). Liebherr's (1988) assumption of a relationship with lachnophorines received support from most molecular analyses conducted by Ober and Maddison (2008: 17). The association of calophaenines with ctenodactylines is based on similarity of the adhesive setae under the tarsomeres (Stork in Ball and Bousquet 2000: 107). Until the relationship of calophaenines is better established I prefer to place them in a distinct tribe.

Tribe Ctenodactylini. This tribe is represented only in the New World and includes about 115 species in 18 genera. Most recent authors agree that this group is closely related to the tribe Hexagoniini of the Eastern Hemisphere. Only three species are found north of Mexico and they belong to the genus *Leptotrachelus* Latreille along with about 30 more species in the tropics.

The main characteristic of the Ctenodactylini and Hexagoniini is the inverted median lobe of the aedeagus as in the drimostomatines.

Tribe Hexagoniini. This tribe contains 65 species in three genera: *Hexagonia* Kirby (47 species in Asia, Africa, New Guinea [one species], and Australia [one undescribed species, *cf*. Darlington 1968: 202]), *Dinopelma* Bates (13 species in the Oriental Region), and *Omphreoides* Fairmaire (five Madagascan species). Vigna Taglianti and Rossi (1998: 515) indicated that hexagoniines could be related to odacanthines based on similar parasitic laboulbeniales.

Tribe Cyclosomini. This tribe is used here in a restricted sense (see Ball and Bousquet 2000: 109). It includes about 120 species, predominantly tropical, placed in four genera: *Mnuphorus* Chaudoir with 11 species in the Palaearctic Region; *Cyclosomus* Latreille with 13 species in the Afrotropical and Oriental Regions; *Cyclicus* Jeannel with 22 species in the Afrotropical and Oriental Regions; and *Tetragonoderus* Dejean represented by about 80 species in the Afrotropical, Oriental, Neotropical, and Nearctic Regions, and on the southern fringe of the Palaearctic Region. Several authors, including Jeannel (1949a: 860) and Basilewsky (1984: 527), have considered the New World genus *Nemotarsus* LeConte as related to cyclosomines, but following Ball (1960b: 157) and Lindroth (1969a: 1014) the genus is listed here in the tribe Lebiini.

Cyclosomines are associated with somoplatines, graphipterines, corsyrines, masoreines, and sarothrocrepidines by most authors based on the presence of long tibial spurs in adults. However, Ball and Bousquet (2000: 109) remarked that the complex as a whole is probably not monophyletic. Molecular analyses published by Ober and Maddison (2008: 17) did not support a close relationships between cyclosomines (*sensu lato*, i.e., including somoplatines, corsyrines, masoreines, and sarothrocrepidines)

and graphipterines but suggested they may be associated with members of dromiine and / or cymindidine lebiines.

Tribe Somoplatini. Ball and Bousquet (2000: 109) restricted this tribe to the genera *Somoplatus* Dejean (14 Indo-African species), *Somoplatodes* Basilewsky (two Afrotropical species), and *Lophidius* Dejean (one Afrotropical species), with *Paralophidius* Basilewsky recently placed in synonymy with *Somoplatus* (Schüle 2009: 461). Basilewsky (1986) listed these genera as part of his tribe Masoreini.

Tribe Masoreini. This tribe, as restricted by Ball and Bousquet (2000: 109), comprises the genera *Masoreus* Dejean (seven Palaearctic species), *Atlantomasoreus* Mateu (two Moroccan species), *Anaulacus* Macleay (38 species), and *Leuropus* Andrewes (one Oriental species). *Odontomasoreus* Darlington (one species from New Guinea), listed as a distinct genus by Lorenz (2005: 451), has been considered a subgenus of *Anaulacus* by Ball and Shpeley (2002b: 279). Jeannel (1949a: 860) associated masoreines with cyclosomines and nemotarsines.

Tribe Corsyrini. This tribe comprises the Palaearctic Asian genera *Corsyra* Dejean (one species) and *Discoptera* Semenov (five species). Jeannel (1949a: 860) included them with masoreines and Ball and Bousquet (2000: 109) with graphipterines. These authors did not offer evidence to support their groupings.

Tribe Sarothrocrepidini. This tribe is represented by a single genus, *Sarothrocrepis* Chaudoir, with 26 Indo-Australian species. Jeannel (1949a: 860) associated the genus with graphipterines, masoreines, cyclosomines, and nemotarsines.

Tribe Graphipterini. This tribe, represented in Africa and the Middle East, includes the genera *Graphipterus* Latreille (about 145 species), *Piezia* Brullé (18 species), and *Trichopiezia* Nègre (one species). Jeannel (1949a: 860) associated graphipterines with sarothrocrepidines, masoreines, cyclosomines, and nemotarsines and Kryzhanovskij (1976a: 90) with the same groups with the exception of the nemotarsines. Ober and Maddison (2008: 17) found no support from their molecular analyses for a close relationship between graphipterines and cyclosomines (*sensu lato*). Instead they found graphipterines to be closely related to pseudomorphines and orthogoniines.

Tribe Lebiini. A markedly complex, worldwide tribe undoubtedly more diverse both in terms of species and lineages in the tropics than in temperate regions. No synapomorphy is known to suggest that this tribe constitutes a monophyletic lineage and Ober and Maddison (2008: 18) did not recover a monophyletic Lebiini in their analyses based on molecular data sequences. The supraspecific classification is not established clearly since most modern studies on lebiines have focussed on regional faunas. The systematic position of some groups within the Lebiini is still debated. For example, the genus *Celaenephes* Schmidt-Göbel has been considered the most ancestral group

of extant lebiines by Shpeley et al. (1985) but as a platynine by Basilewsky (1984). In phylogenetic analyses derived from molecular sequence data by Ober and Maddison (2008: 18), *Celaenephes* was not clearly associated with members of Lebiini.

Relationships of the tribe are not clearly understood. Jeannel (1948a: 378) included lebiines with anthiines, helluonines, dryptines, galeritines, physocrotaphines, zuphiines, and calophaenines in his superfamily Lebiomorphi. Kryzhanovskij (1976a: 90) used a similar grouping with the exception that he also included orthogoniines, a group that Jeannel (1948a: 377) and Basilewsky (1984: 528) included within the Callistomorphi (i.e., pentagonicines, licinines, panagaeines, chlaeniines, and glyptines). Erwin and Sims (1984: 357) and Erwin (1985: 468) associated lebiines with perigonines, lachnophorines, graphipterines, cyclosomines, masoreines, pentagonicines, and odacanthines.

The 220 genera currently recognized within this tribe are arrayed in the following 16 subtribes (see Ball and Bousquet 2000: 110): Celaenephina, Pericalina (including coptoderines and eucheilines), Sugimotoina, Actenonycina, Apenina, Cymindidina, Dromiusina, Lebiina, Physoderina, Metallicina, Agrina, Calleidina, Gallerucidiina, Peliocypadina, Demetriadina, and Nemotarsina. In the phylogenetic analyses from molecular data published by Ober and Maddison (2008), a small number of clades within the Lebiini were supported but none of these corresponded to the current subtribes, and the subtribes were not recovered as monophyletic.

Tribe Dryptini. Dryptines have been included within the galeritines by several authors (including Darlington 1971: 198). The two lineages are now placed in different tribes but most authors agree that they are closely related. Dryptines and galeritines share some character states with zuphiines and these three groups, referred to as supertribe Zuphiitae by Erwin and Sims (1984: 356) and Erwin (1985: 468), probably constitute a clade. Basilewsky (1960) recognized six dryptine genera in the world, only one of them, the monobasic Amazonian *Neodrypta* Basilewsky, is found in the New World. Most species are tropically-adapted in the Afrotropical, Australian, and Oriental Regions, with a few species in the southern parts of the Palaearctic Region.

Tribe Galeritini. This tribe is represented in all zoogeographical regions but is more diverse in the tropics than in the temperate zones. Basilewsky (1963b: 7) and Ball (1985) have recognized two lineages within galeritines, treated as subtribes by Ball (1985): Planetina for the genus *Planetes* Macleay (27 species in the Eastern Hemisphere) and Galeritina for the remaining genera. Lorenz (2005: 507), however, included planetines in zuphiines and Ober and Maddison (2008: Fig.5) found support for such a grouping in some of their analyses and reported that the tribe Galeritini was not monophyletic, based on their molecular data analyses. As indicated previously, this tribe is probably closely related to the Dryptini and Zuphiini.

Tribe Zuphiini. This group is represented in all zoogeographical regions of the world but is more diverse in the tropics than in temperate regions. Zuphiines are grouped by some authors (e.g., Basilewsky 1962a: 100-101) into three subtribes: Leleupidiina,

Patriziina, and Zuphiina. Baehr (1985) briefly discussed the status of each of these subtribes. On the other hand, Lorenz (2005: 505-507) included patriziines within the subtribe Zuphiina. Most authors agree that Zuphiini are closely related to Galeritini. For example, LeConte and Horn (1883: 41) and Erwin (1991a: 10) combined zuphiines with galeritines and dryptines. Habu (1967) included zuphiines and galeritines in a single tribe and recognized three subtribes: Zuphiina, Galeritina, and Planetina. Moore (1998: 369) suggested a close relationship between zuphiines and physocrotaphines based on characters of adults and Jeannel (1949a: 1047) enlisted zuphiines, galeritines, dryptines, and physocrotaphines in his family Dryptidae. Ober and Maddison (2008: 18) found a well-supported "Zuphiitae" clade including zuphiines, anthiines, dryptines, galeritines, helluonines, and physocrotaphines in their phylogenetic analyses. However, the tribe Zuphiini was not found to be monophyletic.

The hypogean and monospecific genus *Ildobates* Español from the Iberian Mountain range was originally described in the Dryptini and was subsequently transferred to the Galeritini by Jeanne (1972) and finally to the Zuphiini by Ortuño et al. (2005).

Tribe Physocrotaphini. The Physocrotaphini includes the following genera: *Helluodes* Westwood (three species in southwestern India and Sri Lanka), *Physocrotaphus* Parry (one species from Sri Lanka), *Pogonoglossus* Chaudoir (35 species), and *Schuelea* Baehr (three species in New Guinea). The monobasic genus *Holoponerus* Fairmaire from New Britain was originally described as a lebiine but Darlington (1968) and Moore (1998: 370) agreed that the genus probably belongs to the physocrotaphines. Unfortunately the sole known specimen of *Holoponerus godeffroyi* Fairmaire was destroyed in 1943 during the bombing of Hamburg in World War II (Moore 1998: 370). All but two species of physocrotaphines are very rarely collected and little is known about their way of life (Sabu et al. 2008: 30). Members of *Helluodes* are probably termitophilous and those of *Pogonoglossus* are predominantly subcorticolous though some species could be litter-dwelling forms (Sabu et al. 2008: 41-42).

Jeannel (1949a: 1047) associated physocrotaphines with zuphiines, galeritines, and dryptines and most authors currently agree that these lineages are probably closely related. Jeannel (1949a: 1047) claimed that the genus *Pogonoglossus* belongs to the Zuphiini near the genus *Eunostus* Laporte but both Darlington (1968) and Moore (1998: 375) retained the genus within the Physocrotaphini. In his work on the French fauna, Jeannel (1942: 1017) associated physocrotaphines with anthiines and helluonines.

Tribe Anthiini. Anthiines are large, apterous beetles which live in the steppes and subdesert areas of Africa and southwestern Asia. The species are classified into eight or nine genera. The group is clearly defined and probably closely related to the tribe Helluonini (van Emden 1937; Jeannel 1949a: 1040; Bousquet 1987c: 928; Arndt 1993: 44). Basilewsky (1962a: 93) even suggested that anthiines could be derived from a helluonine genus close to *Triaenogenius* Chaudoir of the Afrotropical Region. Based on larval character states, Bousquet (1987c: 928) suggested that pseudomorphines and/or galeritines could be closely related to the anthiine-helluonine lineage. Erwin and Sims

(1984: 356) and Erwin (1985: 468) combined the anthiines with the helluonines and physocrotaphines in their supertribe Anthiitae.

Tribe Helluonini. This is a moderately diverse group with representatives in all continents except Europe and Antarctica. Despite the fact that the group appears homogeneous from the morphology of the adults, Ober and Maddison (2008: 18) did not recover it as monophyletic in their analyses derived from molecular data sequences. Several larval features suggest that helluonines are closely related to anthiines (Bousquet 1987c; Arndt 1998: 186). However, Reichardt (1974, 1977) suggested, based on the structures of the adult mouthparts, that helluonines could be closely related to eucheilines (currently placed within the Lebiini). Liebherr and Will (1998: 145) concluded that Helluonini and Galeritini might be sister-groups based on their possession of a secondary spermathecal gland.

Sloane (1914) and Reichardt (1974) recognized two subtribes among helluonines: Helluonina with representatives in Australia and New Guinea and Helluomorphina (= Omphrina) with representatives in Asia, Africa (including Madagascar), Australia, and the Western Hemisphere. About 165 species, placed in 25 genera, are known worldwide but only eight, all belonging to the New World genus *Helluomorphoides* Ball, are found in North America.

Tribe Xenaroswellianini. Erwin (2007b: 567) suggested that this recently described tribe, which includes a single species known only from the holotype collected in the Brazilian state of Goiás, could have "a possible relationship with the enigmatic Pseudomorphini."

Tribe Pseudomorphini. Members of Pseudomorphini are structurally aberrant possibly in response to the group's evolution into myrmecophily. Nevertheless placement of the group within the subfamily Harpalinae has been confirmed in almost all recent analyses (Arndt et al. 2005: 141). Relationships of pseudomorphines to other harpaline tribes are unsettled as stated by Deuve (1993: 98). Erwin (1981a: 66) remarked that the male genitalia, tarsi, and adult chemical defences suggest that pseudomorphines could be "related somehow to a basal Pterostichitae stock" and that the "paramere vestiture also suggests a connection with Psydritae." Liebherr and Will (1998: 144) indicated that pseudomorphines, geobaenines, lachnophorines, and odacanthines (including pentagonicines) may be closely related based on the presence of an elongate sclerite joining the spermathecal duct to the common oviduct. Erwin and Stork (1985: 445) concluded that {pseudomorphines + cnemacanthines (= cnemalobines) + scaritines} form a clade that could be the sister-group to Hiletini. Jeannel (1942: 1102; 1949a: 1079) associated pseudomorphines with brachinines under the name *Balteifera* but almost all authors now agree that the two lineages are not closely related. Ober and Maddison (2008: 18-19) reported strong molecular support for a clade including pseudomorphines, orthogoniines, and graphipterines. They indicated that while morphology does not support such a close relationship, all or some of the members of each tribe have obligate relationships with social insects.

Brief faunistic assessment

The North American fauna currently consists of 2,676 valid species-group taxa (2,439 species) of Geadephaga. Of this number, 64 are adventive on this continent, leaving 2,612 (97.6%) native species-group taxa (2,375 species).

Adventive species. Table 4 lists the adventive species found on this continent. All but two are accidental introductions (i.e., immigrants). Several carabids were intentionally introduced in New England during the first half of the xx Century for gypsy moth (*Lymantria dispar* Linnaeus) control, including *Calosoma chinense* Kirby, *Calosoma inquisitor* Linnaeus, *Calosoma reticulatum* Fabricius, *Carabus arvensis* Herbst, *Carabus violaceus* Linnaeus, *Carabus glabratus* Paykull, and *Carabus coriaceus* Linnaeus (see Smith 1959), but only *Calosoma sycophanta* and *Carabus auratus auratus* have become established.

Table 4. List of species-group taxa adventive and established in North America.

Species	Introduced in			YFC
	East	West	South	
Nebriini				
Leistus ferrugineus (Linnaeus)	•			1977
Nebria brevicollis (Fabricius)		•		2007
Notiophilini				
Notiophilus biguttatus (Fabricius)	•	•		1923
Notiophilus palustris (Duftschmid)	•			1968
Carabini				
Calosoma sycophanta (Linnaeus)*	•			N/A
Carabus granulatus granulatus Linnaeus	•	•		1890
Carabus nemoralis nemoralis O.F. Müller	•	•		1890
Carabus auratus auratus Linnaeus*	•			N/A
Clivinini				
Clivina vespertina Putzeys			•	1948
Clivina collaris (Herbst)	•	•		<1838
Clivina fossor fossor (Linnaeus)	•	•		1915
Dyschiriini				
Dyschirius globosus Herbst		•		1978
Broscini				
Broscus cephalotes (Linnaeus)	•			1987
Trechini				
Blemus discus discus (Fabricius)	•			1933
Trechus obtusus Erichson		•		1927
Trechus quadristriatus (Schrank)	•			1965
Trechus rubens (Fabricius)	•			<1863
Bembidiini				
Asaphidion curtum curtum (Heyden)	•			1930
Bembidion lampros (Herbst)	•	•		1947

Species	Introduced in			YFC
	East	West	South	
Bembidion properans (Stephens)	•			1942
Bembidion obtusum Audinet-Serville	•			1956
Bembidion nigropiceum (Marsham)	•			<1897
Bembidion stephensii Crotch	•			1891
Bembidion bruxellense Wesmael	•			1907
Bembidion femoratum femoratum Sturm	•			1967
Bembidion tetracolum tetracolum Say	•	•		<1823
Elaphropus parvulus (Dejean)		•		1940
Porotachys bisulcatus (Nicolai)	•	•		<1900
Pterostichini				
Stomis pumicatus (Panzer)	•			1984
Pterostichus vernalis (Panzer)	•			1997
Pterostichus strenuus (Panzer)	•	•		1937
Pterostichus melanarius melanarius (Illiger)	•	•		1926
Abax parallelepipedus (Piller & Mitterpacher)	•			1965
Zabrini				
Amara aulica (Panzer)	•			1929
Amara apricaria (Paykull)	•	?		<1865
Amara fulva (O.F. Müller)	•			1905
Amara bifrons (Gyllenhal)	•			1929
Amara ovata (Fabricius)	•	•		1925
Amara aenea (DeGeer)	•	•		1904
Amara anthobia Villa & Villa	•	•		1929
Amara communis (Panzer)	•			1988
Amara eurynota (Panzer)	•			1971
Amara familiaris (Duftschmid)	•	•		1901
Harpalini				
Anisodactylus binotatus (Fabricius)		•		1911
Bradycellus harpalinus (Audinet-Serville)		•		1951
Acupalpus meridianus (Linnaeus)	•	•		1931
Ophonus puncticeps Stephens	•			1954
Ophonus rufibarbis (Fabricius)	•			1953
Harpalus rufipes (DeGeer)	•			1937
Harpalus affinis (Schrank)	•	•		<1798
Harpalus rubripes (Duftschmid)	•			1981
Platynini				
Calathus fuscipes (Goeze)		•		1928
Laemostenus complanatus (Dejean)		•		<1874
Laemostenus terricola terricola (Herbst)	•	?		<1894
Paranchus albipes (Fabricius)	•			<1835
Agonum muelleri (Herbst)	•	•		1840
Metacolpodes buchanani (Hope)		•		1931
Perigonini				
Perigona nigriceps (Dejean)	•	•		<1853

Species	Introduced in			YFC
	East	West	South	
Cyclosomini				
Tetragonoderus laevigatus Chaudoir			•	2007
Lebiini				
Mochtherus tetraspilotus (Macleay)			•	1992
Somotrichus unifasciatus (Dejean)			•	?
Dromius fenestratus (Fabricius)	•			1952
Philorhizus melanocephalus (Dejean)		•		1996
Plochionus pallens (Fabricius)	•	?	•	<1833

YFC: Year of first collection

Among the 62 species accidentally introduced, *Laemostenus complanatus*, *Laemostenus terricola terricola*, *Somotrichus unifasciatus*, *Plochionus pallens*, and *Perigona nigriceps* are commonly found in cellars or associated with stored products and are now considered subcosmopolitan (Hinton 1945: 21, 27-34). These species have probably been introduced in food and household goods in North America and many other places in the world.

Most of the remaining 57 adventive species found on this continent prior to the xx Century have probably been introduced with bulk rock, bricks, mortar and no doubt soil taken aboard sailing vessels as ballast and dump ashore on this continent (Brown 1940a; Lindroth 1957c). In the xx Century, species have been introduced into North America likely through shipments of nursery stock, within the soil bagged around the roots, as suggested by Kavanaugh and Erwin (1985), Spence and Spence (1988: 166), and Bousquet (1992a). Despite that quarantine regulations were established in the 1960s for the importation of nursery stock, additional species still continue to land and become established on this continent (Fig. 1). The most recent one is *Nebria brevicollis* in the Willamette Valley in northwestern Oregon (Kavanaugh and LaBonte 2008).

All but four of the adventive species, other than those introduced with stored food products, occur naturally in Europe and their North American populations likely originated from that continent and particularly from southwestern England (Lindroth 1957c: 172). *Clivina vespertina* and *Tetragonoderus laevigatus* are native to South America (Nichols 1985b: 380; Shpeley and Ball 2008) while *Metacolpodes buchanani* (see Habu 1978: 125) and *Mochtherus tetraspilotus* (see Habu 1982: 87) are native to Asia.

As far as known, none of the adventive species of carabids found in North America are invasive in that they threaten ecosystems, habitats, or even native species.

Figure 1 illustrates the arrival of adventive species in North America through time based on the collecting date of the first inventoried specimen. The rate of arrival has been steady in the xx Century.

Native species. The known North American fauna contains 2,612 native species-group taxa (2,375 species), of which 2,071 are endemic (79.3%). Among the 541 non-

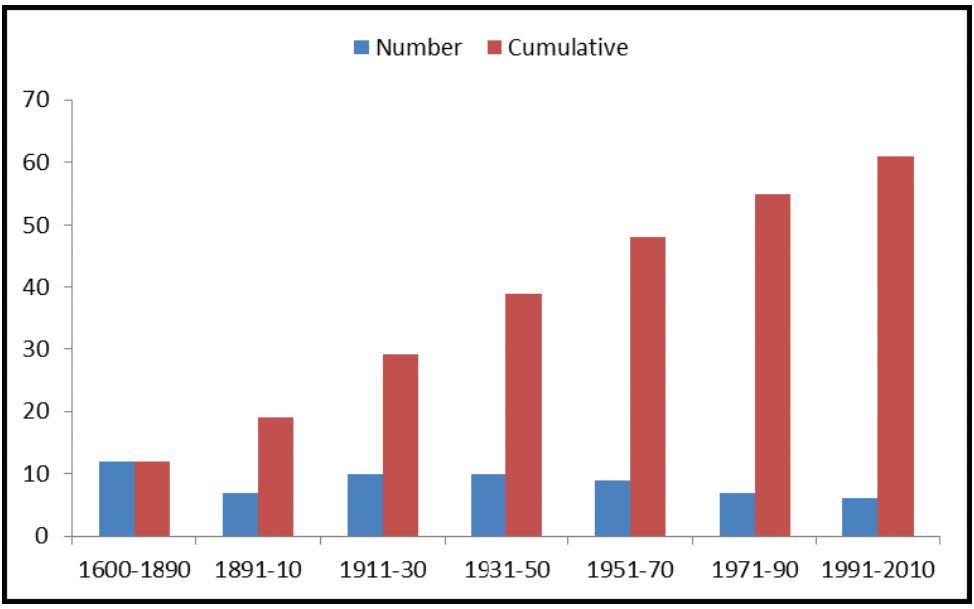

Figure 1. Number of adventive species of Geadephaga established in North America through time.

endemic species-group taxa, 98 (3.7% of the entire native fauna) are Holarctic and 446 (17.1%) extend south of North America as defined in this catalogue.

The number of 2,612 native species-group taxa obviously does not give an accurate account of the size of the North American carabid fauna. Several factors are involved. First, 65 species-group taxa described by Casey have not been treated subsequently. Considering that only 13.1% of Casey's North American species-group taxa subsequently treated are currently valid, I estimate that about 50 of the remaining Casey taxa will eventually be synonymized. This would bring the number of valid Nearctic species-group taxa to about 2,560 (2,325 species). Second, several genus-group taxa have not been revised in "modern times" and obviously the number of valid species-group taxa will change. The following generic taxa are those that need revisions: *Clivina* Latreille (except *Antroforceps*), *Paraclivina* Kult, *Elaphropus* Motschulsky, *Tachys* Dejean, *Poecilus* Bonelli, *Hypherpes* Chaudoir, *Stenocellus* Casey, *Selenophorus* Dejean, *Discoderus* LeConte, *Olisthopus* Dejean, *Pinacodera* Schaum, *Apristus* Chaudoir, *Axinopalpus* LeConte, *Zuphium* Latreille, *Pseudaptinus* Laporte, and *Pseudomorpha* Kirby. Third, many species-group taxa are known but still undescribed. For example, Barr (2004: 1) reported that he was aware of 80 undescribed species of *Pseudanophthalmus*. Fourth, through modern techniques, such as DNA sequences, several "species" will probably be found to be a complex of two or more species. For example, Maddison (2008) found out that Lindroth's (1963b) concept of *Bembidion chalceum* and *B. honestum* was a complex of seven species. Finally, there is no doubt that many species remain to be discovered in North America, especially in peculiar habitats, such as caves, burrows, and deep litter.

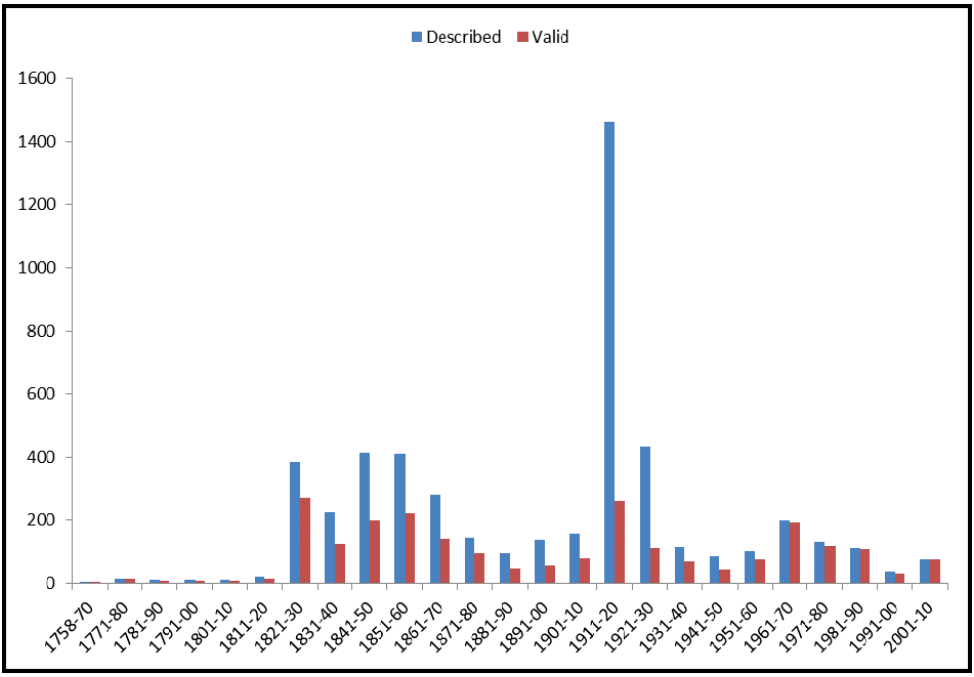

Figure 2. Number of North American species-group taxa of Geadephaga described and currently valid, by decade.

Figure 2 illustrates through decades the number of North American species-group taxa described and the number of those regarded as valid today based on the present catalogue. It shows that the periods between 1821-1880, 1911-1930, and 1961-1990 have been the most prolific. The first one, 1821-1880, can be associated with the works of John L. LeConte (724 geadephagan species-group taxa described), Count Dejean (289 taxa), Thomas Say (164 taxa), Baron de Chaudoir (126 taxa), and Victor Motschulsky (121 taxa). The second period, 1911-1930, relates of course to the work of Colonel Casey. By the time of his last publication in 1924, Casey had described 1,864 species-group taxa of carabids based on North American specimens while the number of taxa proposed by all authors combined since Linnaeus amounted to 2,288. The third one, 1961-1990, is connected to the magnificent work of Carl H. Lindroth (76 taxa) on the Carabidae of Canada and Alaska, the work of Thomas Barr (147 taxa) on the cave fauna, and the leadership of George Ball who, besides his own research, directed many students.

Figure 3 shows the growth, through time, of the number of species-group taxa described from North American specimens and those still considered valid. Taking into consideration the trend of description of species-group taxa still valid, the number of native species-group taxa should be slightly over 3,000 by the year 2060.

Political regions. Table 5 gives statistics regarding the number of geadephagan species-group taxa for each political region covered in this catalogue.

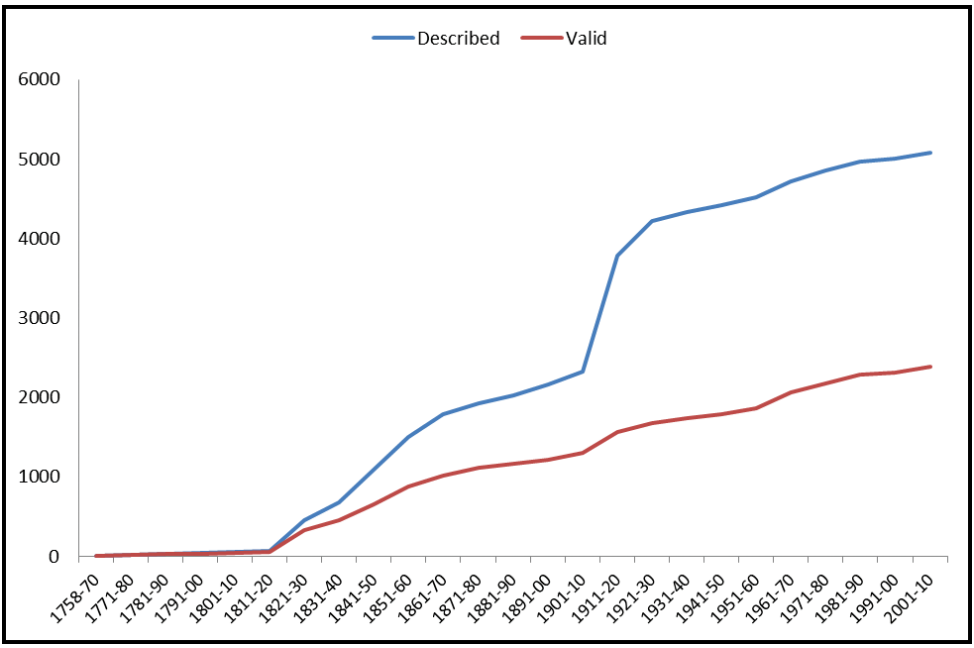

Figure 3. Cumulative number of species-group taxa of Geadephaga described and currently valid, by decade.

Table 5. Species-group taxon statistics for political regions.

Political regions	NbNT	NbAd	%NF	Rank
Alabama	439	4	16.8	22
Alaska	248	2	09.5	56
Alberta	405	11	15.5	32
Arizona	502	3	19.2	9
Arkansas	403	4	15.5	33
British Columbia	479	28	18.3	12
California	646	12	24.7	2
Colorado	450	3	17.2	20
Connecticut	383	23	14.7	39
Delaware	201	5	07.7	59
District of Columbia	337	6	12.9	48
Florida	383	8	14.7	39
Georgia	478	3	18.3	14
Greenland	4	0	0.2	66
Idaho	338	10	12.9	47
Illinois	504	9	19.3	8
Indiana	479	9	18.3	12
Iowa	431	9	16.5	25
Kansas	408	4	15.6	30
Kentucky	371	2	14.2	42
Labrador	91	4	03.5	63
Louisiana	399	4	15.3	34

Political regions	**NbNT**	**NbAd**	**%NF**	**Rank**
Maine	383	27	14.7	39
Manitoba	370	6	14.1	43
Maryland	408	9	15.5	30
Massachusetts	426	27	16.3	27
Michigan	474	15	18.2	16
Minnesota	419	10	16.0	28
Mississippi	439	5	16.8	22
Missouri	396	5	15.1	36
Montana	358	6	13.6	45
Nebraska	358	4	13.7	45
Nevada	239	3	09.2	57
New Brunswick	302	30	11.6	52
Newfoundland	151	27	05.8	61
New Hampshire	429	25	16.4	26
New Jersey	456	10	17.5	18
New Mexico	454	0	17.3	19
New York	528	21	20.2	4
North Carolina	536	4	20.4	3
North Dakota	275	4	10.5	54
Northwest Territories	218	1	08.3	58
Nova Scotia	258	35	09.8	55
Nunavut	34	0	01.3	65
Ohio	499	16	19.1	11
Oklahoma	387	2	14.8	37
Ontario	510	21	19.5	6
Oregon	478	22	18.2	14
Pennsylvania	500	19	19.1	10
Prince Edward Island	144	29	05.5	62
Quebec	446	32	17.1	21
Rhode Island	300	17	11.5	53
Saint Pierre and Miquelon	50	15	01.9	64
Saskatchewan	336	6	12.9	49
South Carolina	414	4	15.8	29
South Dakota	384	4	14.7	38
Tennessee	506	2	19.3	7
Texas	693	1	26.5	1
Utah	323	5	12.4	50
Vermont	397	21	15.2	35
Virginia	520	11	19.9	5
Washington	440	24	16.8	22
West Virginia	367	7	14.1	44
Wisconsin	463	16	17.7	17
Wyoming	309	4	11.8	51
Yukon Territory	201	0	07.7	59

NbNT = Number of native species-group taxa

NbAd = Number of adventive species-group taxa

%NF = % of the native North American fauna

Texas (693 native species-group taxa), California (646 taxa), North Carolina (536 taxa), New York (528 taxa), and Virginia (520 taxa) have the highest number of native taxa recorded and Greenland (4 native taxa), Nunavut (34 taxa), Saint Pierre and Miquelon (50 taxa), Labrador (91 taxa), and Prince Edward Island (144 taxa) the lowest. Are these numbers representative of the relative sizes of the regions? Only to some extent. Some regions, for example Nunavut and Labrador, have been much less surveyed than others like Newfoundland proper. The geadephagan fauna of most states are still inadequately known. In the past 50 years, only Maine (Majka et al. 2011; Bousquet 2010a), New Hampshire and Vermont (Bousquet 2010a), Wisconsin (Messer 2010), Rhode Island (Sikes 2004), Connecticut (Krinsky and Oliver 2001), South Carolina (Ciegler 2000), Florida (Peck and Thomas 1998), South Dakota (Kirk and Balsbaugh 1975), and Alaska (Lindroth 1961-1969) have been the subject of faunistic assessments (see Table 3). Several states never had a checklist of their geadephagan fauna published.

Table 6. Checklists and taxonomic treatments on Geadephaga for North American political regions.

Political regions	References
Alabama	Löding (1945)
Alaska	Hamilton (1894*a*); Lindroth (1961-1969); Bousquet (1991*b*)
Alberta	Lindroth (1961-1969); Bousquet (1991*b*)
British Columbia	Hatch (1953); Lindroth (1961-1969); Bousquet (1991*b*)
Colorado	Wickham (1902)
Connecticut	Britton (1920); Krinsky and Oliver (2001)
District of Columbia	Ulke (1902)
Florida	Schwarz (1878); Leng (1915); Choate (1990); Peck and Thomas (1998)
Georgia	Fattig (1949)
Greenland	Henriksen (1939); Böcher (1988)
Idaho	Hatch (1953)
Indiana	Blatchley (1910)
Iowa	Wickham (1911*b*); Jaques and Redlinger (1946)
Kansas	Popenoe (1877)
Labrador	Sherman (1910); Lindroth (1961-1969); Bousquet (1991*b*); Bousquet (2010*a*)
Maine	Bousquet (2010*a*); Majka *et al*. (2011)
Manitoba	Lindroth (1961-1969); Bousquet (1991*b*)
Massachusetts	Harris (1833); Harris (1835)
New Brunswick	Lindroth (1961-1969); Bousquet (1991*b*); Majka *et al.* (2007); Bousquet (2010*a*)
Newfoundland	Lindroth (1955*a*); Lindroth (1961-1969); Bousquet (1991*b*); Bousquet (2010*a*)
New Hampshire	Bousquet (2010*a*)
New Jersey	Smith (1890); Smith (1900); Smith (1910)
New Mexico	Fall and Cockerell (1907)
New York	Notman (1928)
North Carolina	Brimley (1938)
Northwest Territories	Lindroth (1961-1969); Bousquet (1991*b*)
Nova Scotia	Lindroth (1961-1969); Lindroth (1954*c*); Bousquet (1991*b*); Majka *et al.* (2007); Bousquet (2010*a*)

Political regions	**References**
Ontario	Lindroth (1961-1969); Bousquet (1991*b*)
Oregon	Hatch (1953)
Prince Edward Island	Lindroth (1961-1969); Bousquet (1991*b*); Majka *et al.* (2007); Majka *et al.* (2008); Bousquet (2010*a*)
Quebec	Chagnon (1917); Lindroth (1961-1969); Larochelle (1975); Larochelle (1976); Larochelle (1979); Bousquet (1991*b*); Laplante *et al.* (1991); Bousquet (2010*a*)
Rhode Island	Davis (1904); Sikes (2004)
Saint Pierre and Miquelon	Lindroth (1955*a*); Roux (1984); Bousquet (2010*a*)
Saskatchewan	Lindroth (1961-1969); Bousquet (1991*b*)
South Carolina	Kirk (1969 and 1970); Ciegler (2000)
South Dakota	Kirk and Balsbaugh (1975)
Vermont	Bousquet (2010*a*)
Washington	Hatch (1939*b*); Hatch (1953)
Wisconsin	Messer (2010)
Yukon Territory	Lindroth (1961-1969); Bousquet (1991*b*); Ball and Currie (1997)

List of North American valid species-group taxa[6]

Trachypachini

Trachypachus gibbsii LeConte, 1861
Trachypachus inermis Motschulsky, 1850
Trachypachus slevini Van Dyke, 1925

Clinidiini

Clinidium (*Arctoclinidium*) *apertum allegheniense* Bell & Bell, 1975
Clinidium (*Arctoclinidium*) *apertum apertum* Reitter, 1880
Clinidium (*Arctoclinidium*) *balduf*i Bell, 1970
Clinidium (*Arctoclinidium*) *calcaratum* LeConte, 1875
Clinidium (*Arctoclinidium*) *rosenbergi* Bell, 1970
Clinidium (*Arctoclinidium*) *sculptile* (Newman, 1838)
Clinidium (*Arctoclinidium*) *valentinei* Bell, 1970

Omoglymmiini

Omoglymmius (*Boreoglymmius*) *americanus* (Laporte, 1836)
Omoglymmius (*Boreoglymmius*) *hamatus* (LeConte, 1875)

Pelophilini

Pelophila borealis (Paykull, 1790)‡
Pelophila rudis (LeConte, 1863)

Opisthiini

Opisthius richardsoni Kirby, 1837

Nebriini

Leistus (*Leistus*) *ferrugineus* (Linnaeus, 1758)†
Leistus (*Neoleistus*) *ferruginosus* Mannerheim, 1843
Leistus (*Neoleistus*) *longipennis* Casey, 1920
Leistus (*Neoleistus*) *madmeridianus* Erwin, 1970
Nippononebria (*Vancouveria*) *altisierrae* (Kavanaugh, 1984)
Nippononebria (*Vancouveria*) *campbelli* (Kavanaugh, 1984)
Nippononebria (*Vancouveria*) *virescens* (Horn, 1870)
Nebria (*Boreonebria*) *bellorum* Kavanaugh, 1979
Nebria (*Boreonebria*) *crassicornis crassicornis* Van Dyke, 1925
Nebria (*Boreonebria*) *crassicornis intermedia* Van Dyke, 1949
Nebria (*Boreonebria*) *frigida* Sahlberg, 1844‡
Nebria (*Boreonebria*) *gouleti* Kavanaugh, 1979

[6] † = adventive species in North America; ‡ = Holarctic species. The species list is alphabetic within the subgenera and does not necessary follow the catalogue listing.

Nebria (*Boreonebria*) *gyllenhali castanipes* (Kirby, 1837)
Nebria (*Boreonebria*) *gyllenhali lassenensis* Kavanaugh, 1979
Nebria (*Boreonebria*) *gyllenhali lindrothi* Kavanaugh, 1979
Nebria (*Boreonebria*) *hudsonica* LeConte, 1863
Nebria (*Boreonebria*) *lacustris* Casey, 1913
Nebria (*Boreonebria*) *nivalis gaspesiana* Kavanaugh, 1979
Nebria (*Boreonebria*) *nivalis nivalis* (Paykull, 1790)‡
Nebria (*Nakanebria*) *paradisi* Darlington, 1931
Nebria (*Nakanebria*) *turmaduodecima* Kavanaugh, 1981
Nebria (*Reductonebria*) *acuta acuta* Lindroth, 1961
Nebria (*Reductonebria*) *acuta quileute* Kavanaugh, 1979
Nebria (*Reductonebria*) *acuta sonorae* Kavanaugh, 1981
Nebria (*Reductonebria*) *appalachia* Darlington, 1932
Nebria (*Reductonebria*) *arkansana arkansana* Casey, 1913
Nebria (*Reductonebria*) *arkansana edwardsi* Kavanaugh, 1979
Nebria (*Reductonebria*) *arkansana fragilis* Casey, 1924
Nebria (*Reductonebria*) *arkansana oowah* Kavanaugh, 1979
Nebria (*Reductonebria*) *charlottae* Lindroth, 1961
Nebria (*Reductonebria*) *danmanni* Kavanaugh, 1981
Nebria (*Reductonebria*) *darlingtoni* Kavanaugh, 1979
Nebria (*Reductonebria*) *desolata* Kavanaugh, 1971
Nebria (*Reductonebria*) *diversa* LeConte, 1863
Nebria (*Reductonebria*) *eschscholtzii* Ménétriés, 1843
Nebria (*Reductonebria*) *georgei* Kavanaugh, 2008
Nebria (*Reductonebria*) *gregaria* Fischer von Waldheim, 1820
Nebria (*Reductonebria*) *haida* Kavanaugh, 1984
Nebria (*Reductonebria*) *jeffreyi* Kavanaugh, 1984
Nebria (*Reductonebria*) *lituyae* Kavanaugh, 1979
Nebria (*Reductonebria*) *louiseae* Kavanaugh, 1984
Nebria (*Reductonebria*) *lyelli* Van Dyke, 1925
Nebria (*Reductonebria*) *mannerheimii* Fischer von Waldheim, 1828
Nebria (*Reductonebria*) *navajo* Kavanaugh, 1979
Nebria (*Reductonebria*) *obliqua chuskae* Kavanaugh, 1979
Nebria (*Reductonebria*) *obliqua obliqua* LeConte, 1867
Nebria (*Reductonebria*) *pallipes* Say, 1823
Nebria (*Reductonebria*) *sahlbergii modoc* Kavanaugh, 1979
Nebria (*Reductonebria*) *sahlbergii sahlbergii* Fischer von Waldheim, 1828
Nebria (*Reductonebria*) *sahlbergii triad* Kavanaugh, 1979
Nebria (*Reductonebria*) *suturalis* LeConte, 1850
Nebria (*Reductonebria*) *wallowae* Kavanaugh, 1984
Nebria (*Reductonebria*) *zioni oasis* Kavanaugh, 1979
Nebria (*Reductonebria*) *zioni zioni* Van Dyke, 1943
Nebria (*Catonebria*) *calva* Kavanaugh, 1984

Nebria (*Catonebria*) *carri* Kavanaugh, 1979
Nebria (*Catonebria*) *catenata* Casey, 1913
Nebria (*Catonebria*) *coloradensis* Van Dyke, 1943
Nebria (*Catonebria*) *gebleri albimontis* Kavanaugh, 1984
Nebria (*Catonebria*) *gebleri cascadensis* Kavanaugh, 1979
Nebria (*Catonebria*) *gebleri fragariae* Kavanaugh, 1979
Nebria (*Catonebria*) *gebleri gebleri* Dejean, 1831
Nebria (*Catonebria*) *gebleri rathvoni* LeConte, 1853
Nebria (*Catonebria*) *gebleri siskiyouensis* Kavanaugh, 1979
Nebria (*Catonebria*) *ingens ingens* Horn, 1870
Nebria (*Catonebria*) *ingens riversi* Van Dyke, 1925
Nebria (*Catonebria*) *kincaidi balli* Kavanaugh, 1979
Nebria (*Catonebria*) *kincaidi kincaidi* Schwarz, 1900
Nebria (*Catonebria*) *labontei* Kavanaugh, 1984
Nebria (*Catonebria*) *meanyi giulianii* Kavanaugh, 1981
Nebria (*Catonebria*) *meanyi lamarckensis* Kavanaugh, 1979
Nebria (*Catonebria*) *meanyi meanyi* Van Dyke, 1925
Nebria (*Catonebria*) *meanyi sylvatica* Kavanaugh, 1979
Nebria (*Catonebria*) *metallica* Fischer von Waldheim, 1820
Nebria (*Catonebria*) *ovipennis* LeConte, 1878
Nebria (*Catonebria*) *piperi* Van Dyke, 1925
Nebria (*Catonebria*) *piute piute* Erwin & Ball, 1972
Nebria (*Catonebria*) *piute sevieri* Kavanaugh, 1984
Nebria (*Catonebria*) *piute utahensis* Kavanaugh, 1979
Nebria (*Catonebria*) *praedicta* Kavanaugh & Schoville, 2009
Nebria (*Catonebria*) *purpurata* LeConte, 1878
Nebria (*Catonebria*) *schwarzi beverlianna* Kavanaugh, 1979
Nebria (*Catonebria*) *schwarzi schwarzi* Van Dyke, 1925
Nebria (*Catonebria*) *sierrablancae* Kavanaugh, 1984
Nebria (*Catonebria*) *spatulata sierrae* Kavanaugh, 1979
Nebria (*Catonebria*) *spatulata spatulata* Van Dyke, 1925
Nebria (*Catonebria*) *steensensis* Kavanaugh, 1984
Nebria (*Catonebria*) *trifaria pasquineli* Kavanaugh, 1984
Nebria (*Catonebria*) *trifaria trifaria* LeConte, 1878
Nebria (*Catonebria*) *vandykei vandykei* Bänninger, 1928
Nebria (*Catonebria*) *vandykei wyeast* Kavanaugh, 1979
Nebria (*Nebria*) *brevicollis* (Fabricius, 1792)†

Notiophilini

Notiophilus aeneus (Herbst, 1806)
Notiophilus aquaticus (Linnaeus, 1758)‡
Notiophilus biguttatus (Fabricius, 1779)†
Notiophilus borealis Harris, 1869‡

Notiophilus directus Casey, 1920
Notiophilus intermedius Lindroth, 1955
Notiophilus nemoralis Fall, 1906
Notiophilus nitens LeConte, 1857
Notiophilus novemstriatus LeConte, 1847
Notiophilus palustris (Duftschmid, 1812)†
Notiophilus semiopacus Eschscholtz, 1833
Notiophilus semistriatus Say, 1823‡
Notiophilus sierranus Casey, 1920
Notiophilus simulator Fall, 1906
Notiophilus sylvaticus Dejean, 1831

Cychrini

Sphaeroderus bicarinatus (LeConte, 1853)
Sphaeroderus canadensis canadensis Chaudoir, 1861
Sphaeroderus canadensis lengi Darlington, 1933
Sphaeroderus indianae (Blatchley, 1910)
Sphaeroderus nitidicollis Guérin-Méneville, 1829
Sphaeroderus schaumii Chaudoir, 1861
Sphaeroderus stenostomus lecontei Dejean, 1826
Sphaeroderus stenostomus stenostomus (Weber, 1801)
Cychrus hemphillii hemphillii Horn, 1879
Cychrus hemphillii rickseckeri LeConte, 1884
Cychrus tuberculatus Harris, 1839
Scaphinotus (*Scaphinotus*) *elevatus coloradensis* Van Dyke, 1907
Scaphinotus (*Scaphinotus*) *elevatus elevatus* (Fabricius, 1787)
Scaphinotus (*Scaphinotus*) *elevatus flammeus* Haldeman, 1844
Scaphinotus (*Scaphinotus*) *elevatus lengi* Van Dyke, 1938
Scaphinotus (*Scaphinotus*) *elevatus neomexicanus* Van Dyke, 1924
Scaphinotus (*Scaphinotus*) *elevatus tenebricosus* Roeschke, 1907
Scaphinotus (*Scaphinotus*) *kelloggi* (Dury, 1912)
Scaphinotus (*Scaphinotus*) *parisiana* Allen & Carlton, 1988
Scaphinotus (*Scaphinotus*) *petersi biedermani* Roeschke, 1907
Scaphinotus (*Scaphinotus*) *petersi catalinae* Van Dyke, 1924
Scaphinotus (*Scaphinotus*) *petersi corvus* (Fall, 1910)
Scaphinotus (*Scaphinotus*) *petersi grahami* Van Dyke, 1938
Scaphinotus (*Scaphinotus*) *petersi kathleenae* Ball, 1966
Scaphinotus (*Scaphinotus*) *petersi petersi* Roeschke, 1907
Scaphinotus (*Scaphinotus*) *snowi roeschkei* Van Dyke, 1907
Scaphinotus (*Scaphinotus*) *snowi snowi* (LeConte, 1881)
Scaphinotus (*Scaphinotus*) *unicolor* (Fabricius, 1787)
Scaphinotus (*Scaphinotus*) *vandykei* Roeschke, 1907
Scaphinotus (*Irichroa*) *irregularis* (Beutenmüller, 1903)

Scaphinotus (*Irichroa*) *viduus* (Dejean, 1826)
Scaphinotus (*Irichroa*) *webbi* Bell, 1959
Scaphinotus (*Nomaretus*) *bilobus* (Say, 1823)
Scaphinotus (*Nomaretus*) *cavicollis* (LeConte, 1859)
Scaphinotus (*Nomaretus*) *fissicollis* (LeConte, 1853)
Scaphinotus (*Nomaretus*) *infletus* Allen & Carlton, 1988
Scaphinotus (*Nomaretus*) *liebecki* Van Dyke, 1936
Scaphinotus (*Maronetus*) *debilis alpinus* (Beutenmüller, 1903)
Scaphinotus (*Maronetus*) *debilis debilis* (LeConte, 1853)
Scaphinotus (*Maronetus*) *hoffmani* (Barr, 2009)
Scaphinotus (*Maronetus*) *hubbardi* (Schwarz, 1895)
Scaphinotus (*Maronetus*) *imperfectus* (Horn, 1861)
Scaphinotus (*Maronetus*) *incompletus* (Schwarz, 1895)
Scaphinotus (*Maronetus*) *reichlei* (Barr, 2009)
Scaphinotus (*Maronetus*) *schwarzi* (Beutenmüller, 1913)
Scaphinotus (*Maronetus*) *tenuis* (Casey, 1914)
Scaphinotus (*Maronetus*) *unistriatus* (Darlington, 1932)
Scaphinotus (*Steniridia*) *aeneicollis* (Beutenmüller, 1903)
Scaphinotus (*Steniridia*) *andrewsii amplicollis* (Casey, 1920)
Scaphinotus (*Steniridia*) *andrewsii andrewsii* (Harris, 1839)
Scaphinotus (*Steniridia*) *andrewsii darlingtoni* (Valentine, 1935)
Scaphinotus (*Steniridia*) *andrewsii germari* (Chaudoir, 1861)
Scaphinotus (*Steniridia*) *andrewsii mutabilis* (Casey, 1920)
Scaphinotus (*Steniridia*) *andrewsii parvitarsalis* (Valentine, 1935)
Scaphinotus (*Steniridia*) *andrewsii waldensius* (Valentine, 1935)
Scaphinotus (*Steniridia*) *guyotii* (LeConte, 1863)
Scaphinotus (*Steniridia*) *lodingi lodingi* (Valentine, 1935)
Scaphinotus (*Steniridia*) *lodingi obscurus* (Valentine, 1935)
Scaphinotus (*Steniridia*) *ridingsii monongahelae* Leng, 1917
Scaphinotus (*Steniridia*) *ridingsii ridingsii* (Bland, 1863)
Scaphinotus (*Steniridia*) *tricarinatus* (Casey, 1914)
Scaphinotus (*Steniridia*) *violaceus* (LeConte, 1863)
Scaphinotus (*Pseudonomaretus*) *mannii* Wickham, 1919
Scaphinotus (*Pseudonomaretus*) *merkelii* (Horn, 1890)
Scaphinotus (*Pseudonomaretus*) *regularis* (LeConte, 1884)
Scaphinotus (*Pseudonomaretus*) *relictus* (Horn, 1881)
Scaphinotus (*Stenocantharus*) *angusticollis* (Mannerheim, 1823)
Scaphinotus (*Stenocantharus*) *hatchi* Beer, 1971
Scaphinotus (*Stenocantharus*) *johnsoni* Van Dyke, 1924
Scaphinotus (*Stenocantharus*) *velutinus* (Ménétriés, 1843)
Scaphinotus (*Brennus*) *bullatus* Van Dyke, 1924
Scaphinotus (*Brennus*) *cordatus* (LeConte, 1853)
Scaphinotus (*Brennus*) *crenatus* (Motschulsky, 1859)

Scaphinotus (*Brennus*) *cristatus* (Harris, 1839)
Scaphinotus (*Brennus*) *interruptus* (Ménétriés, 1843)
Scaphinotus (*Brennus*) *marginatus* (Fischer von Waldheim, 1820)
Scaphinotus (*Brennus*) *obliquus* (LeConte, 1868)
Scaphinotus (*Brennus*) *oreophilus* (Rivers, 1890)
Scaphinotus (*Brennus*) *punctatus* (LeConte, 1859)
Scaphinotus (*Brennus*) *riversi* (Roeschke, 1907)
Scaphinotus (*Brennus*) *rugiceps incipiens* (Casey, 1897)
Scaphinotus (*Brennus*) *rugiceps rugiceps* (Horn, 1872)
Scaphinotus (*Brennus*) *striatopunctatus* (Chaudoir, 1844)
Scaphinotus (*Brennus*) *subtilis* (Schaum, 1863)
Scaphinotus (*Brennus*) *ventricosus* (Dejean, 1831)
Scaphinotus (*Neocychrus*) *angulatus* (Harris, 1839)
Scaphinotus (*Neocychrus*) *behrensi* (Roeschke, 1907)
Scaphinotus (*Neocychrus*) *longiceps* Van Dyke, 1924

Carabini

Calosoma (*Castrida*) *sayi* Dejean, 1826
Calosoma (*Calosoma*) *frigidum* Kirby, 1837
Calosoma (*Calosoma*) *sycophanta* (Linnaeus, 1758)†
Calosoma (*Calodrepa*) *aurocinctum* Chaudoir, 1850
Calosoma (*Calodrepa*) *scrutator* (Fabricius, 1775)
Calosoma (*Calodrepa*) *splendidum* Dejean, 1831
Calosoma (*Calodrepa*) *wilcoxi* LeConte, 1847
Calosoma (*Camegonia*) *marginale* Casey, 1897
Calosoma (*Camegonia*) *parvicolle* Fall, 1910
Calosoma (*Camegonia*) *prominens* LeConte, 1853
Calosoma (*Carabosoma*) *angulatum* Chevrolat, 1834
Calosoma (*Carabosoma*) *eremicola* Fall, 1910
Calosoma (*Carabosoma*) *peregrinator* Guérin-Méneville, 1844
Calosoma (*Carabosoma*) *sponsa* Casey, 1897
Calosoma (*Callitropa*) *externum* (Say, 1823)
Calosoma (*Callitropa*) *macrum* LeConte, 1853
Calosoma (*Callitropa*) *protractum* LeConte, 1862
Calosoma (*Blaptosoma*) *haydeni haydeni* Horn, 1870
Calosoma (*Blaptosoma*) *haydeni punctulicolle* Bates, 1891
Calosoma (*Chrysostigma*) *affine* Chaudoir, 1843
Calosoma (*Chrysostigma*) *calidum* (Fabricius, 1775)
Calosoma (*Chrysostigma*) *cancellatum* Eschscholtz, 1833
Calosoma (*Chrysostigma*) *lepidum* LeConte, 1845
Calosoma (*Chrysostigma*) *morrisonii* Horn, 1885
Calosoma (*Chrysostigma*) *obsoletum* Say, 1823
Calosoma (*Chrysostigma*) *semilaeve* LeConte, 1852

Calosoma (*Chrysostigma*) *simplex* LeConte, 1878
Calosoma (*Chrysostigma*) *tepidum* LeConte, 1852
Calosoma (*Callistenia*) *dawsoni* (Dajoz, 1997)
Calosoma (*Callistenia*) *dietzii* Schaeffer, 1904
Calosoma (*Callistenia*) *discors* LeConte, 1857
Calosoma (*Callistenia*) *lariversi* Van Dyke, 1943
Calosoma (*Callistenia*) *latipenne* Horn, 1870
Calosoma (*Callistenia*) *luxatum* Say, 1823
Calosoma (*Callistenia*) *moniliatum* (LeConte, 1852)
Calosoma (*Callistenia*) *monticola* Casey, 1897
Calosoma (*Callistenia*) *oregonum* (Gidaspow, 1959)
Calosoma (*Callistenia*) *placerum* (Gidaspow, 1959)
Calosoma (*Callistenia*) *schaefferi* Breuning, 1928
Calosoma (*Callistenia*) *subaeneum* Chaudoir, 1869
Calosoma (*Callistenia*) *subasperatum* Schaeffer, 1915
Calosoma (*Callistenia*) *wilkesii* (LeConte, 1852)
Carabus (*Carabus*) *goryi* Dejean, 1831
Carabus (*Carabus*) *granulatus granulatus* Linnaeus, 1758†
Carabus (*Carabus*) *vinctus* (Weber, 1801)
Carabus (*Diocarabus*) *chamissonis* Fischer von Waldheim, 1820
Carabus (*Aulonocarabus*) *truncaticollis truncaticollis* Eschscholtz, 1833‡
Carabus (*Homoeocarabus*) *maeander maeander* Fischer von Waldheim, 1820‡
Carabus (*Hemicarabus*) *serratus* Say, 1823
Carabus (*Archicarabus*) *nemoralis nemoralis* Müller, 1764†
Carabus (*Tachypus*) *auratus auratus* Linnaeus, 1760†
Carabus (*Tanaocarabus*) *finitimus* Haldeman, 1852
Carabus (*Tanaocarabus*) *forreri forreri* Bates, 1882
Carabus (*Tanaocarabus*) *sylvosus* Say, 1823
Carabus (*Tanaocarabus*) *taedatus agassii* LeConte, 1850
Carabus (*Tanaocarabus*) *taedatus bicanaliceps* Casey, 1920
Carabus (*Tanaocarabus*) *taedatus rainieri* Van Dyke, 1945
Carabus (*Tanaocarabus*) *taedatus taedatus* Fabricius, 1787
Carabus (*Megodontus*) *vietinghoffii vietinghoffii* Adams, 1812‡

Amblycheilini

Amblycheila baroni Rivers, 1890
Amblycheila cylindriformis (Say, 1823)
Amblycheila hoversoni Gage, 1991
Amblycheila picolominii Reiche, 1840
Amblycheila schwarzi Horn, 1904
Omus audouini Reiche, 1838
Omus californicus angustocylindricus Horn, 1913
Omus californicus californicus Eschscholtz, 1829

Omus californicus intermedius Leng, 1902
Omus californicus subcylindricus Nunenmacher, 1940
Omus cazieri van den Berghe, 1994
Omus dejeanii Reiche, 1838
Omus submetallicus Horn, 1869

Megacephalini

Tetracha (*Tetracha*) *carolina carolina* (Linnaeus, 1763)
Tetracha (*Tetracha*) *floridana* Leng & Mutchler, 1916
Tetracha (*Tetracha*) *virginica* (Linnaeus, 1767)
Tetracha (*Neotetracha*) *impressa* (Chevrolat, 1841)

Cicindelini

Cylindera (*Cylindera*) *celeripes* (LeConte, 1846)
Cylindera (*Cylindera*) *cursitans* (LeConte, 1856)
Cylindera (*Cylindera*) *debilis* (Bates, 1890)
Cylindera (*Cylindera*) *lemniscata lemniscata* (LeConte, 1854)
Cylindera (*Cylindera*) *lemniscata rebaptisata* (Vaurie, 1951)
Cylindera (*Cylindera*) *lunalonga* (Schaupp, 1884)
Cylindera (*Cylindera*) *terricola cinctipennis* (LeConte, 1846)
Cylindera (*Cylindera*) *terricola continua* (Knaus, 1923)
Cylindera (*Cylindera*) *terricola imperfecta* (LeConte, 1851)
Cylindera (*Cylindera*) *terricola kaibabensis* (Johnson, 1990)
Cylindera (*Cylindera*) *terricola susanagreae* (Kippenhan, 2007)
Cylindera (*Cylindera*) *terricola terricola* (Say, 1824)
Cylindera (*Cylindera*) *unipunctata* (Fabricius, 1775)
Cylindera (*Cylindera*) *viridisticta arizonensis* (Bates, 1884)
Ellipsoptera blanda (Dejean, 1831)
Ellipsoptera cuprascens (LeConte, 1852)
Ellipsoptera gratiosa (Guérin-Méneville, 1840)
Ellipsoptera hamata lacerata (Chaudoir, 1854)
Ellipsoptera hamata monti (Vaurie, 1951)
Ellipsoptera hirtilabris (LeConte, 1875)
Ellipsoptera lepida (Dejean, 1831)
Ellipsoptera macra ampliata (Vaurie, 1951)
Ellipsoptera macra fluviatilis (Vaurie, 1951)
Ellipsoptera macra macra (LeConte, 1856)
Ellipsoptera marginata (Fabricius, 1775)
Ellipsoptera nevadica citata (Rumpp, 1977)
Ellipsoptera nevadica knausii (Leng, 1902)
Ellipsoptera nevadica lincolniana (Casey, 1916)
Ellipsoptera nevadica makosika (Spomer, 2004)
Ellipsoptera nevadica nevadica (LeConte, 1875)

Ellipsoptera nevadica olmosa (Vaurie, 1951)
Ellipsoptera nevadica tubensis (Cazier, 1939)
Ellipsoptera puritana (Horn, 1871)
Ellipsoptera rubicunda (Harris, 1911)
Ellipsoptera sperata inquisitor (Casey, 1897)
Ellipsoptera sperata sperata (LeConte, 1856)
Ellipsoptera wapleri (LeConte, 1875)
Microthylax olivaceus (Chaudoir, 1854)
Opilidia chlorocephala smythi (Harris, 1913)
Brasiella wickhami (Horn, 1903)
Dromochorus belfragei Sallé, 1877
Dromochorus pilatei Guérin-Méneville, 1849
Dromochorus pruininus Casey, 1897
Dromochorus velutinigrens Johnson, 1992
Habroscelimorpha californica mojavi (Cazier, 1937)
Habroscelimorpha californica pseudoerronea (Rumpp, 1958)
Habroscelimorpha circumpicta circumpicta (LaFerté-Sénectère, 1841)
Habroscelimorpha circumpicta johnsonii (Fitch, 1857)
Habroscelimorpha circumpicta pembina (Johnson, 1993)
Habroscelimorpha dorsalis dorsalis (Say, 1817)
Habroscelimorpha dorsalis media (LeConte, 1856)
Habroscelimorpha dorsalis saulcyi (Guérin-Méneville, 1840)
Habroscelimorpha dorsalis venusta (LaFerté-Sénectère, 1841)
Habroscelimorpha fulgoris albilata (Acciavatti, 1981)
Habroscelimorpha fulgoris erronea (Vaurie, 1951)
Habroscelimorpha fulgoris fulgoris (Casey, 1913)
Habroscelimorpha gabbii (Horn, 1867)
Habroscelimorpha pamphila (LeConte, 1873)
Habroscelimorpha praetextata pallidofemora (Acciavatti, 1981)
Habroscelimorpha praetextata praetextata (LeConte, 1854)
Habroscelimorpha severa (LaFerté-Sénectère, 1841)
Habroscelimorpha striga (LeConte, 1875)
Eunota togata fascinans (Casey, 1914)
Eunota togata globicollis (Casey, 1913)
Eunota togata togata (LaFerté-Sénectère, 1841)
Cicindela (*Cicindelidia*) *abdominalis* Fabricius, 1801
Cicindela (*Cicindelidia*) *amargosae amargosae* Dahl, 1939
Cicindela (*Cicindelidia*) *amargosae nyensis* Rumpp, 1956
Cicindela (*Cicindelidia*) *cazieri* Vogt, 1949
Cicindela (*Cicindelidia*) *floridana* Cartwright, 1939
Cicindela (*Cicindelidia*) *hemorrhagica arizonae* Wickham, 1899
Cicindela (*Cicindelidia*) *hemorrhagica hemorrhagica* LeConte, 1851
Cicindela (*Cicindelidia*) *highlandensis* Choate, 1984

Cicindela (*Cicindelidia*) *hornii hornii* Schaupp, 1883
Cicindela (*Cicindelidia*) *marginipennis* Dejean, 1831
Cicindela (*Cicindelidia*) *nigrocoerulea bowditchi* Leng, 1902
Cicindela (*Cicindelidia*) *nigrocoerulea nigrocoerulea* LeConte, 1846
Cicindela (*Cicindelidia*) *nigrocoerulea subtropica* Vogt, 1949
Cicindela (*Cicindelidia*) *obsoleta neojuvenilis* Vogt, 1949
Cicindela (*Cicindelidia*) *obsoleta obsoleta* Say, 1823
Cicindela (*Cicindelidia*) *obsoleta santaclarae* Bates, 1890
Cicindela (*Cicindelidia*) *obsoleta vulturina* LeConte, 1853
Cicindela (*Cicindelidia*) *ocellata ocellata* Klug, 1834
Cicindela (*Cicindelidia*) *ocellata rectilatera* Chaudoir, 1843
Cicindela (*Cicindelidia*) *politula barbaraannae* Sumlin, 1976
Cicindela (*Cicindelidia*) *politula petrophila* Sumlin, 1985
Cicindela (*Cicindelidia*) *politula politula* LeConte, 1875
Cicindela (*Cicindelidia*) *politula viridimonticola* Gage, 1988
Cicindela (*Cicindelidia*) *punctulata chihuahuae* Bates, 1890
Cicindela (*Cicindelidia*) *punctulata punctulata* Olivier, 1790
Cicindela (*Cicindelidia*) *roseiventris tascosaensis* Davis, 1918
Cicindela (*Cicindelidia*) *rufiventris cumatilis* LeConte, 1851
Cicindela (*Cicindelidia*) *rufiventris hentzii* Dejean, 1831
Cicindela (*Cicindelidia*) *rufiventris rufiventris* Dejean, 1825
Cicindela (*Cicindelidia*) *scabrosa* Schaupp, 1884
Cicindela (*Cicindelidia*) *schauppii* Horn, 1876
Cicindela (*Cicindelidia*) *sedecimpunctata sedecimpunctata* Klug, 1834
Cicindela (*Cicindelidia*) *senilis* Horn, 1867
Cicindela (*Cicindelidia*) *tenuisignata* LeConte, 1851
Cicindela (*Cicindelidia*) *trifasciata ascendens* LeConte, 1851
Cicindela (*Cicindelidia*) *trifasciata sigmoidea* LeConte, 1851
Cicindela (*Cicindelidia*) *willistoni echo* Casey, 1897
Cicindela (*Cicindelidia*) *willistoni estancia* Rumpp, 1962
Cicindela (*Cicindelidia*) *willistoni funaroi* Rotger, 1972
Cicindela (*Cicindelidia*) *willistoni hirtifrons* Willis, 1967
Cicindela (*Cicindelidia*) *willistoni praedicta* Rumpp, 1956
Cicindela (*Cicindelidia*) *willistoni pseudosenilis* Horn, 1900
Cicindela (*Cicindelidia*) *willistoni sulfontis* Rumpp, 1977
Cicindela (*Cicindelidia*) *willistoni willistoni* LeConte, 1879
Cicindela (*Cicindela*) *albissima* Rumpp, 1962
Cicindela (*Cicindela*) *ancocisconensis* Harris, 1852
Cicindela (*Cicindela*) *arenicola* Rumpp, 1967
Cicindela (*Cicindela*) *arida* Davis, 1928
Cicindela (*Cicindela*) *bellissima bellissima* Leng, 1902
Cicindela (*Cicindela*) *bellissima frechini* Leffler, 1979
Cicindela (*Cicindela*) *columbica* Hatch, 1938

Cicindela (*Cicindela*) *decemnotata bonnevillensis* Knisley & Kippenhan, 2012
Cicindela (*Cicindela*) *decemnotata decemnotata* Say, 1817
Cicindela (*Cicindela*) *decemnotata meriwetheri* Knisley & Kippenhan, 2012
Cicindela (*Cicindela*) *decemnotata montevolans* Knisley & Kippenhan, 2012
Cicindela (*Cicindela*) *denikei* Brown, 1934
Cicindela (*Cicindela*) *denverensis* Casey, 1897
Cicindela (*Cicindela*) *depressula depressula* Casey, 1897
Cicindela (*Cicindela*) *depressula eureka* Fall, 1901
Cicindela (*Cicindela*) *duodecimguttata* Dejean, 1825
Cicindela (*Cicindela*) *formosa formosa* Say, 1817
Cicindela (*Cicindela*) *formosa generosa* Dejean, 1831
Cicindela (*Cicindela*) *formosa gibsoni* Brown, 1940
Cicindela (*Cicindela*) *formosa pigmentosignata* Horn, 1930
Cicindela (*Cicindela*) *formosa rutilovirescens* Rumpp, 1986
Cicindela (*Cicindela*) *fulgida fulgida* Say, 1823
Cicindela (*Cicindela*) *fulgida pseudowillistoni* Horn, 1938
Cicindela (*Cicindela*) *fulgida westbournei* Calder, 1922
Cicindela (*Cicindela*) *hirticollis abrupta* Casey, 1913
Cicindela (*Cicindela*) *hirticollis athabascensis* Graves, 1988
Cicindela (*Cicindela*) *hirticollis coloradula* Graves, 1988
Cicindela (*Cicindela*) *hirticollis corpuscula* Rumpp, 1962
Cicindela (*Cicindela*) *hirticollis couleensis* Graves, 1988
Cicindela (*Cicindela*) *hirticollis gravida* LeConte, 1851
Cicindela (*Cicindela*) *hirticollis hirticollis* Say, 1817
Cicindela (*Cicindela*) *hirticollis rhodensis* Calder, 1916
Cicindela (*Cicindela*) *hirticollis shelfordi* Graves, 1988
Cicindela (*Cicindela*) *hirticollis siuslawensis* Graves, 1988
Cicindela (*Cicindela*) *latesignata latesignata* LeConte, 1851
Cicindela (*Cicindela*) *lengi jordai* Rotger, 1974
Cicindela (*Cicindela*) *lengi lengi* Horn, 1908
Cicindela (*Cicindela*) *lengi versuta* Casey, 1913
Cicindela (*Cicindela*) *limbalis* Klug, 1834
Cicindela (*Cicindela*) *limbata hyperborea* LeConte, 1863
Cicindela (*Cicindela*) *limbata labradorensis* Johnson, 1991
Cicindela (*Cicindela*) *limbata limbata* Say, 1823
Cicindela (*Cicindela*) *limbata nogahabarensis* Knisley, 2008
Cicindela (*Cicindela*) *limbata nympha* Casey, 1913
Cicindela (*Cicindela*) *longilabris laurentii* Schaupp, 1884
Cicindela (*Cicindela*) *longilabris longilabris* Say, 1824
Cicindela (*Cicindela*) *longilabris perviridis* Schaupp, 1884
Cicindela (*Cicindela*) *nebraskana* Casey, 1909
Cicindela (*Cicindela*) *nigrior* Schaupp, 1884
Cicindela (*Cicindela*) *ohlone* Freitag & Kavanaugh, 1993

Cicindela (*Cicindela*) *oregona guttifera* LeConte, 1856
Cicindela (*Cicindela*) *oregona maricopa* Leng, 1902
Cicindela (*Cicindela*) *oregona navajoensis* Van Dyke, 1947
Cicindela (*Cicindela*) *oregona oregona* LeConte, 1856
Cicindela (*Cicindela*) *parowana parowana* Wickham, 1905
Cicindela (*Cicindela*) *parowana platti* Cazier, 1937
Cicindela (*Cicindela*) *parowana wallisi* Calder, 1922
Cicindela (*Cicindela*) *patruela consentanea* Dejean, 1825
Cicindela (*Cicindela*) *patruela patruela* Dejean, 1825
Cicindela (*Cicindela*) *pimeriana* LeConte, 1867
Cicindela (*Cicindela*) *plutonica* Casey, 1897
Cicindela (*Cicindela*) *pugetana* Casey, 1914
Cicindela (*Cicindela*) *pulchra dorothea* Rumpp, 1977
Cicindela (*Cicindela*) *pulchra pulchra* Say, 1823
Cicindela (*Cicindela*) *purpurea audubonii* LeConte, 1845
Cicindela (*Cicindela*) *purpurea cimarrona* LeConte, 1868
Cicindela (*Cicindela*) *purpurea hatchi* Leffler, 1980
Cicindela (*Cicindela*) *purpurea lauta* Casey, 1897
Cicindela (*Cicindela*) *purpurea purpurea* Olivier, 1790
Cicindela (*Cicindela*) *repanda novascotiae* Vaurie, 1951
Cicindela (*Cicindela*) *repanda repanda* Dejean, 1825
Cicindela (*Cicindela*) *repanda tanneri* Knaus, 1929
Cicindela (*Cicindela*) *scutellaris flavoviridis* Vaurie, 1950
Cicindela (*Cicindela*) *scutellaris lecontei* Haldeman, 1853
Cicindela (*Cicindela*) *scutellaris rugata* Vaurie, 1950
Cicindela (*Cicindela*) *scutellaris rugifrons* Dejean, 1825
Cicindela (*Cicindela*) *scutellaris scutellaris* Say, 1823
Cicindela (*Cicindela*) *scutellaris unicolor* Dejean, 1825
Cicindela (*Cicindela*) *scutellaris yampae* Rumpp, 1986
Cicindela (*Cicindela*) *sexguttata* Fabricius, 1775
Cicindela (*Cicindela*) *splendida* Hentz, 1830
Cicindela (*Cicindela*) *tenuicincta* Schaupp, 1884
Cicindela (*Cicindela*) *theatina* Rotger, 1944
Cicindela (*Cicindela*) *tranquebarica cibecuei* Duncan, 1958
Cicindela (*Cicindela*) *tranquebarica diffracta* Casey, 1909
Cicindela (*Cicindela*) *tranquebarica joaquinensis* Knisley & Haines, 2007
Cicindela (*Cicindela*) *tranquebarica kirbyi* LeConte, 1867
Cicindela (*Cicindela*) *tranquebarica parallelonota* Casey, 1914
Cicindela (*Cicindela*) *tranquebarica sierra* Leng, 1902
Cicindela (*Cicindela*) *tranquebarica tranquebarica* Herbst, 1806
Cicindela (*Cicindela*) *tranquebarica vibex* Horn, 1867
Cicindela (*Cicindela*) *tranquebarica viridissima* Fall, 1910
Cicindela (*Cicindela*) *waynei* Leffler, 2001

Loricerini

Loricera (*Loricera*) *decempunctata* Eschscholtz, 1833
Loricera (*Loricera*) *foveata* LeConte, 1851
Loricera (*Loricera*) *pilicornis congesta* Mannerheim, 1853 ‡
Loricera (*Loricera*) *pilicornis pilicornis* (Fabricius, 1775)‡

Elaphrini

Diacheila arctica amoena (Faldermann, 1835)‡
Diacheila polita (Faldermann, 1835)‡
Blethisa catenaria Brown, 1944‡
Blethisa hudsonica Casey, 1924
Blethisa julii LeConte, 1863
Blethisa multipunctata aurata Fischer von Waldheim, 1828‡
Blethisa oregonensis LeConte, 1853
Blethisa quadricollis Haldeman, 1847
Elaphrus (*Arctelaphrus*) *lapponicus lapponicus* Gyllenhal, 1810‡
Elaphrus (*Arctelaphrus*) *lapponicus obliteratus* Mannerheim, 1853
Elaphrus (*Neoelaphrus*) *cicatricosus* LeConte, 1847
Elaphrus (*Neoelaphrus*) *clairvillei* Kirby, 1837
Elaphrus (*Neoelaphrus*) *fuliginosus* Say, 1830
Elaphrus (*Neoelaphrus*) *laevigatus* LeConte, 1852
Elaphrus (*Neoelaphrus*) *lindrothi* Goulet, 1983
Elaphrus (*Neoelaphrus*) *olivaceus* LeConte, 1863
Elaphrus (*Elaphrus*) *americanus americanus* Dejean, 1831
Elaphrus (*Elaphrus*) *americanus sylvanus* Goulet, 1982
Elaphrus (*Elaphrus*) *californicus* Mannerheim, 1843
Elaphrus (*Elaphrus*) *finitimus* Casey, 1920
Elaphrus (*Elaphrus*) *lecontei* Crotch, 1876
Elaphrus (*Elaphrus*) *marginicollis* Goulet, 1983
Elaphrus (*Elaphrus*) *mimus* Goulet, 1983
Elaphrus (*Elaphrus*) *ruscarius* Say, 1830
Elaphrus (*Elaphrus*) *trossulus* Semenov, 1904‡
Elaphrus (*Elaphrus*) *tuberculatus* Mäklin, 1878‡
Elaphrus (*Elaphrus*) *viridis* Horn, 1878
Elaphrus (*Elaphroterus*) *angusticollis angusticollis* Sahlberg, 1844‡
Elaphrus (*Elaphroterus*) *purpurans* Hausen, 1891

Omophronini

Omophron (*Omophron*) *americanum* Dejean, 1831
Omophron (*Omophron*) *dentatum* LeConte, 1852
Omophron (*Omophron*) *gilae* LeConte, 1852
Omophron (*Omophron*) *grossum* Casey, 1909
Omophron (*Omophron*) *labiatum* (Fabricius, 1801)

Omophron (*Omophron*) *nitidum* LeConte, 1847
Omophron (*Omophron*) *obliteratum* Horn, 1870
Omophron (*Omophron*) *ovale* Horn, 1870
Omophron (*Omophron*) *robustum* Horn, 1870
Omophron (*Omophron*) *solidum* Casey, 1897
Omophron (*Omophron*) *tessellatum* Say, 1823

Pasimachini

Pasimachus (*Pasimachus*) *californicus* Chaudoir, 1850
Pasimachus (*Pasimachus*) *depressus* (Fabricius, 1787)
Pasimachus (*Pasimachus*) *duplicatus* LeConte, 1853
Pasimachus (*Pasimachus*) *elongatus* LeConte, 1846
Pasimachus (*Pasimachus*) *marginatus* (Fabricius, 1787)
Pasimachus (*Pasimachus*) *obsoletus* LeConte, 1846
Pasimachus (*Pasimachus*) *punctulatus* Haldeman, 1843
Pasimachus (*Pasimachus*) *strenuus* LeConte, 1874
Pasimachus (*Pasimachus*) *sublaevis* (Palisot de Beauvois, 1811)
Pasimachus (*Pasimachus*) *subsulcatus* Say, 1823
Pasimachus (*Pasimachus*) *viridans* LeConte, 1858

Scaritini

Scarites (*Scarites*) *lissopterus* Chaudoir, 1881
Scarites (*Scarites*) *marinus* Nichols, 1986
Scarites (*Scarites*) *ocalensis* Nichols, 1986
Scarites (*Scarites*) *quadriceps* Chaudoir, 1843
Scarites (*Scarites*) *stenops* Bousquet & Skelley, 2010
Scarites (*Scarites*) *subterraneus* Fabricius, 1775
Scarites (*Scarites*) *vicinus* Chaudoir, 1843

Clivinini

Clivina (*Semiclivina*) *dentipes* Dejean, 1825
Clivina (*Semiclivina*) *vespertina* Putzeys, 1867†
Clivina (*Clivina*) *choatei* Bousquet & Skelley, 2012
Clivina (*Clivina*) *collaris* (Herbst, 1784)†
Clivina (*Clivina*) *fossor fossor* (Linnaeus, 1758)†
Clivina (*Clivina*) *impressefrons* LeConte, 1844
Clivina (*Clivina*) *myops* Bousquet, 1997
Clivina (*Clivina*) *oregona* Fall, 1922
Clivina (*Clivina*) *pallida* Say, 1823
Clivina (*Clivina*) *planicollis* LeConte, 1857
Clivina (*Clivina*) *punctigera* LeConte, 1857
Clivina (*Clivina*) *punctulata* LeConte, 1852
Clivina (*Antroforceps*) *alabama* Bousquet, 2012

Clivina (*Antroforceps*) *rubicunda* LeConte, 1857
Clivina (*Antroforceps*) *sasajii* Ball, 2001
Clivina (*Leucocara*) *acuducta* Haldeman, 1843
Clivina (*Leucocara*) *americana* Dejean, 1831
Clivina (*Leucocara*) *californica* Van Dyke, 1925
Clivina (*Leucocara*) *morio* Dejean, 1831
Clivina (*Leucocara*) *rufa* LeConte, 1857
Paraclivina bipustulata (Fabricius, 1798)
Paraclivina convexa (LeConte, 1844)
Paraclivina fasciata (Putzeys, 1846)
Paraclivina ferrea (LeConte, 1857)
Paraclivina marginipennis (Putzeys, 1846)
Paraclivina postica (LeConte, 1846)
Paraclivina stigmula (Putzeys, 1846)
Paraclivina striatopunctata (Dejean, 1831)
Paraclivina sulcipennis (Putzeys, 1867)
Schizogenius (*Genioschizus*) *crenulatus crenulatus* LeConte, 1852
Schizogenius (*Schizogenius*) *amphibius* (Haldeman, 1843)
Schizogenius (*Schizogenius*) *auripennis* Bates, 1881
Schizogenius (*Schizogenius*) *brevisetosus* Whitehead, 1972
Schizogenius (*Schizogenius*) *chiricahuanus* Whitehead, 1972
Schizogenius (*Schizogenius*) *depressus* LeConte, 1852
Schizogenius (*Schizogenius*) *falli* Whitehead, 1972
Schizogenius (*Schizogenius*) *ferrugineus* Putzeys, 1846
Schizogenius (*Schizogenius*) *lindrothi* Whitehead, 1972
Schizogenius (*Schizogenius*) *lineolatus* (Say, 1823)
Schizogenius (*Schizogenius*) *litigiosus* Fall, 1901
Schizogenius (*Schizogenius*) *longipennis* Putzeys, 1867
Schizogenius (*Schizogenius*) *neovalidus* Whitehead, 1972
Schizogenius (*Schizogenius*) *ochthocephalus* Whitehead, 1972
Schizogenius (*Schizogenius*) *ozarkensis* Whitehead, 1972
Schizogenius (*Schizogenius*) *planulatus* LeConte, 1863
Schizogenius (*Schizogenius*) *planuloides* Whitehead, 1972
Schizogenius (*Schizogenius*) *pluripunctatus* LeConte, 1852
Schizogenius (*Schizogenius*) *pygmaeus* Van Dyke, 1925
Schizogenius (*Schizogenius*) *sallei* Putzeys, 1867
Schizogenius (*Schizogenius*) *scopaeus* Whitehead, 1972
Schizogenius (*Schizogenius*) *seticollis seticollis* Fall, 1901
Schizogenius (*Schizogenius*) *sulcifrons* Putzeys, 1846
Schizogenius (*Schizogenius*) *tibialis* Whitehead, 1972
Halocoryza arenaria (Darlington, 1939)
Oxydrepanus rufus (Putzeys, 1846)
Ardistomis obliquata Putzeys, 1846

Ardistomis schaumii LeConte, 1857
Semiardistomis puncticollis (Dejean, 1831)
Semiardistomis viridis (Say, 1823)
Aspidoglossa subangulata (Chaudoir, 1843)

Dyschiriini

Akephorus marinus LeConte, 1852
Akephorus obesus (LeConte, 1863)
Dyschirius abbreviatus Putzeys, 1846
Dyschirius aeneolus LeConte, 1850
Dyschirius affinis Fall, 1901
Dyschirius alticola Lindroth, 1961
Dyschirius analis LeConte, 1852
Dyschirius aratus LeConte, 1852
Dyschirius brevispinus LeConte, 1878
Dyschirius campicola Lindroth, 1961
Dyschirius carrorum Bousquet, 1997
Dyschirius cerberus Larson, 1968
Dyschirius chiricahuae (Dajoz, 2004)
Dyschirius comatus Bousquet, 1988
Dyschirius compactus Lindroth, 1961
Dyschirius consobrinus LeConte, 1852
Dyschirius criddlei Fall, 1925
Dyschirius curvispinus Putzeys, 1846
Dyschirius dejeanii Putzeys, 1846
Dyschirius edentulus Putzeys, 1846
Dyschirius erythrocerus LeConte, 1857
Dyschirius exochus Whitehead, 1970
Dyschirius ferrugineus Bousquet, 1988
Dyschirius gibbipennis LeConte, 1857
Dyschirius globosus (Herbst, 1784)†
Dyschirius globulosus (Say, 1823)
Dyschirius haemorrhoidalis (Dejean, 1831)
Dyschirius hiemalis Bousquet, 1987
Dyschirius interior Fall, 1922
Dyschirius laevifasciatus Horn, 1878
Dyschirius larochellei Bousquet, 1988
Dyschirius longulus LeConte, 1850
Dyschirius melancholicus Putzeys, 1867‡
Dyschirius montanus LeConte, 1879
Dyschirius owen (Dajoz, 2004)
Dyschirius pacificus Lindroth, 1961
Dyschirius pallipennis (Say, 1823)

Dyschirius patruelis LeConte, 1852
Dyschirius perversus Fall, 1922
Dyschirius pilosus LeConte, 1857
Dyschirius planatus Lindroth, 1961
Dyschirius politus politus (Dejean, 1825)‡
Dyschirius pumilus (Dejean, 1825)
Dyschirius quadrimaculatus Lindroth, 1961
Dyschirius salivagans LeConte, 1875
Dyschirius sculptus Bousquet, 1988
Dyschirius sellatus LeConte, 1857
Dyschirius setosus LeConte, 1857
Dyschirius sextoni Bousquet, 1987
Dyschirius soda (Dajoz, 2004)
Dyschirius sphaericollis (Say, 1823)
Dyschirius subarcticus subarcticus Lindroth, 1961
Dyschirius sublaevis Putzeys, 1846
Dyschirius tenuispinus Lindroth, 1961
Dyschirius terminatus LeConte, 1846
Dyschirius timidus Lindroth, 1961
Dyschirius tridentatus LeConte, 1852
Dyschirius truncatus LeConte, 1857
Dyschirius unipunctatus Fall, 1901
Dyschirius varidens Fall, 1910
Dyschirius wayah (Dajoz, 2005)

Promecognathini

Promecognathus crassus LeConte, 1868
Promecognathus laevissimus (Dejean, 1829)

Broscini

Miscodera arctica (Paykull, 1798)‡
Broscodera (*Broscodera*) *insignis* (Mannerheim, 1852)
Zacotus matthewsii LeConte, 1869
Broscus cephalotes (Linnaeus, 1758)†

Gehringiini

Gehringia olympica Darlington, 1933

Trechini

Trechoblemus westcotti Barr, 1972
Pseudanophthalmus abditus Krekeler, 1973
Pseudanophthalmus acherontis Barr, 1959
Pseudanophthalmus alabamae Valentine, 1932

Pseudanophthalmus aladdini Valentine, 1945
Pseudanophthalmus assimilis Barr, 1981
Pseudanophthalmus audax (Horn, 1883)
Pseudanophthalmus avernus Valentine, 1945
Pseudanophthalmus barberi Jeannel, 1928
Pseudanophthalmus barri Krekeler, 1973
Pseudanophthalmus beakleyi Valentine, 1937
Pseudanophthalmus bendermani Barr, 1959
Pseudanophthalmus caecus Krekeler, 1973
Pseudanophthalmus calcareus Barr, 1981
Pseudanophthalmus catherinae Barr, 1959
Pseudanophthalmus catoryctos Krekeler, 1973
Pseudanophthalmus cerberus cerberus Barr, 1985
Pseudanophthalmus cerberus completus Barr, 1985
Pseudanophthalmus chthonius Krekeler, 1973
Pseudanophthalmus ciliaris ciliaris Valentine, 1937
Pseudanophthalmus ciliaris orlindae Barr, 1959
Pseudanophthalmus cnephosus Krekeler, 1973
Pseudanophthalmus colemanensis Barr, 1959
Pseudanophthalmus conditus Krekeler, 1973
Pseudanophthalmus cordicollis Barr, 1981
Pseudanophthalmus cumberlandus Valentine, 1937
Pseudanophthalmus darlingtoni darlingtoni Barr, 1985
Pseudanophthalmus darlingtoni persimilis Barr, 1985
Pseudanophthalmus deceptivus Barr, 1981
Pseudanophthalmus delicatus Valentine, 1932
Pseudanophthalmus desertus Krekeler, 1973
Pseudanophthalmus digitus Valentine, 1932
Pseudanophthalmus distinguens Valentine, 1948
Pseudanophthalmus egberti Barr, 1965
Pseudanophthalmus elongatus Krekeler, 1973
Pseudanophthalmus emersoni Krekeler, 1958
Pseudanophthalmus engelhardti (Barber, 1928)
Pseudanophthalmus eremita (Horn, 1871)
Pseudanophthalmus exiguus Krekeler, 1973
Pseudanophthalmus exoticus Krekeler, 1973
Pseudanophthalmus farrelli Barr, 1959
Pseudanophthalmus fastigatus Barr, 1981
Pseudanophthalmus fluviatilis Valentine, 1948
Pseudanophthalmus fowlerae Barr, 1980
Pseudanophthalmus frigidus Barr, 1981
Pseudanophthalmus fulleri Valentine, 1932
Pseudanophthalmus fuscus constrictus Valentine, 1932

Pseudanophthalmus fuscus fuscus Valentine, 1931
Pseudanophthalmus georgiae Barr, 1981
Pseudanophthalmus globiceps Barr, 1985
Pseudanophthalmus gracilis Valentine, 1931
Pseudanophthalmus grandis elevatus Valentine, 1932
Pseudanophthalmus grandis grandis Valentine, 1931
Pseudanophthalmus hadenoecus Barr, 1965
Pseudanophthalmus henroti Jeannel, 1949
Pseudanophthalmus hesperus Barr, 1959
Pseudanophthalmus higginbothami Valentine, 1931
Pseudanophthalmus hirsutus Valentine, 1931
Pseudanophthalmus hoffmani Barr, 1965
Pseudanophthalmus holsingeri Barr, 1965
Pseudanophthalmus horni (Garman, 1892)
Pseudanophthalmus hortulanus Barr, 1965
Pseudanophthalmus hubbardi (Barber, 1928)
Pseudanophthalmus hubrichti Valentine, 1948
Pseudanophthalmus humeralis Valentine, 1931
Pseudanophthalmus hypertrichosis Valentine, 1932
Pseudanophthalmus hypolithos Barr, 1981
Pseudanophthalmus illinoisensis Barr & Peck, 1966
Pseudanophthalmus inexpectatus Barr, 1959
Pseudanophthalmus inquisitor Barr, 1980
Pseudanophthalmus insularis Barr, 1959
Pseudanophthalmus intermedius (Valentine, 1931)
Pseudanophthalmus intersectus Barr, 1965
Pseudanophthalmus jonesi Valentine, 1945
Pseudanophthalmus krameri Krekeler, 1973
Pseudanophthalmus krekeleri Barr, 1965
Pseudanophthalmus lallemanti Jeannel, 1949
Pseudanophthalmus leonae Barr, 1960
Pseudanophthalmus limicola Jeannel, 1931
Pseudanophthalmus lodingi Valentine, 1931
Pseudanophthalmus loganensis Barr, 1959
Pseudanophthalmus longiceps Barr, 1981
Pseudanophthalmus macradyi Valentine, 1948
Pseudanophthalmus major Krekeler, 1973
Pseudanophthalmus menetriesii campestris Barr, 1985
Pseudanophthalmus menetriesii menetriesii (Motschulsky, 1862)
Pseudanophthalmus meridionalis Valentine, 1945
Pseudanophthalmus montanus Barr, 1965
Pseudanophthalmus nelsoni Barr, 1965
Pseudanophthalmus nickajackensis Barr, 1981

Pseudanophthalmus nortoni Barr, 1981
Pseudanophthalmus occidentalis Barr, 1959
Pseudanophthalmus ohioensis Krekeler, 1973
Pseudanophthalmus orientalis Krekeler, 1973
Pseudanophthalmus orthosulcatus Valentine, 1932
Pseudanophthalmus packardi Barr, 1959
Pseudanophthalmus pallidus Barr, 1981
Pseudanophthalmus paradoxus Barr, 1981
Pseudanophthalmus parvicollis Jeannel, 1931
Pseudanophthalmus parvus Krekeler, 1973
Pseudanophthalmus paulus Barr, 1981
Pseudanophthalmus paynei Barr, 1981
Pseudanophthalmus petrunkevitchi Valentine, 1945
Pseudanophthalmus pholeter Krekeler, 1973
Pseudanophthalmus pilosus Barr, 1985
Pseudanophthalmus pontis Barr, 1965
Pseudanophthalmus potomaca Valentine, 1932
Pseudanophthalmus praetermissus Barr, 1981
Pseudanophthalmus princeps Barr, 1979
Pseudanophthalmus productus Barr, 1980
Pseudanophthalmus profundus Valentine, 1945
Pseudanophthalmus pubescens intrepidus Barr, 1985
Pseudanophthalmus pubescens pubescens (Horn, 1869)
Pseudanophthalmus punctatus Valentine, 1931
Pseudanophthalmus pusillus Barr, 1981
Pseudanophthalmus pusio (Horn, 1869)
Pseudanophthalmus puteanus Krekeler, 1973
Pseudanophthalmus quadratus Barr, 1965
Pseudanophthalmus rittmani Krekeler, 1973
Pseudanophthalmus robustus Valentine, 1931
Pseudanophthalmus rogersae Barr, 1981
Pseudanophthalmus rotundatus Valentine, 1932
Pseudanophthalmus sanctipauli Barr, 1981
Pseudanophthalmus scholasticus Barr, 1981
Pseudanophthalmus scutilus Barr, 1981
Pseudanophthalmus seclusus Barr, 1981
Pseudanophthalmus senecae Valentine, 1932
Pseudanophthalmus sequoyah Barr, 1981
Pseudanophthalmus sericus Barr, 1981
Pseudanophthalmus shilohensis mayfieldensis Krekeler, 1958
Pseudanophthalmus shilohensis shilohensis Krekeler, 1958
Pseudanophthalmus sidus Barr, 1965
Pseudanophthalmus simplex Barr, 1980

Pseudanophthalmus simulans Barr, 1985
Pseudanophthalmus solivagus Krekeler, 1973
Pseudanophthalmus steevesi Barr, 1981
Pseudanophthalmus striatus (Motschulsky, 1862)
Pseudanophthalmus stricticollis Jeannel, 1931
Pseudanophthalmus sylvaticus Barr, 1967
Pseudanophthalmus templetoni Valentine, 1948
Pseudanophthalmus tenebrosus Krekeler, 1973
Pseudanophthalmus tennesseensis Valentine, 1937
Pseudanophthalmus tenuis (Horn, 1871)
Pseudanophthalmus thomasi Barr, 1981
Pseudanophthalmus tiresias Barr, 1959
Pseudanophthalmus transfluvialis Barr, 1985
Pseudanophthalmus troglodytes Krekeler, 1973
Pseudanophthalmus tullahoma Barr, 1959
Pseudanophthalmus umbratilis Krekeler, 1973
Pseudanophthalmus unionis Barr, 1981
Pseudanophthalmus valentinei Jeannel, 1949
Pseudanophthalmus vanburenensis Barr, 1959
Pseudanophthalmus ventus Barr, 1981
Pseudanophthalmus vicarius Barr, 1965
Pseudanophthalmus virginicus (Barr, 1960)
Pseudanophthalmus wallacei Barr, 1981
Pseudanophthalmus youngi Krekeler, 1958
Nelsonites jonesei Valentine, 1952
Nelsonites walteri Valentine, 1952
Neaphaenops tellkampfii henroti Jeannel, 1949
Neaphaenops tellkampfii meridionalis Barr, 1959
Neaphaenops tellkampfii tellkampfii (Erichson, 1844)
Neaphaenops tellkampfii viator Barr, 1979
Blemus discus discus (Fabricius, 1792)†
Xenotrechus condei Barr & Krekeler, 1967
Xenotrechus denticollis Barr & Krekeler, 1967
Darlingtonea kentuckensis Valentine, 1952
Ameroduvalius jeanneli jeanneli Valentine, 1952
Ameroduvalius jeanneli rockcastlei Valentine, 1952
Trechus (*Trechus*) *alinae* Dajoz, 1990
Trechus (*Trechus*) *apache* Dajoz, 1990
Trechus (*Trechus*) *apicalis* Motschulsky, 1845‡
Trechus (*Trechus*) *arizonae* Casey, 1918
Trechus (*Trechus*) *caliginis* Barr, 1985
Trechus (*Trechus*) *carolinae* Schaeffer, 1901
Trechus (*Trechus*) *chalybeus* Dejean, 1831

Trechus (*Trechus*) *coloradensis* Schaeffer, 1915
Trechus (*Trechus*) *conformis* Jeannel, 1927
Trechus (*Trechus*) *crassiscapus* Lindroth, 1955
Trechus (*Trechus*) *cumberlandus* Barr, 1962
Trechus (*Trechus*) *humboldti* Van Dyke, 1945
Trechus (*Trechus*) *hydropicus avus* Barr, 1962
Trechus (*Trechus*) *hydropicus beutenmuelleri* Jeannel, 1931
Trechus (*Trechus*) *hydropicus canus* Barr, 1962
Trechus (*Trechus*) *hydropicus hydropicus* Horn, 1883
Trechus (*Trechus*) *mitchellensis* Barr, 1962
Trechus (*Trechus*) *obtusus* Erichson, 1837†
Trechus (*Trechus*) *oregonensis* Hatch, 1951
Trechus (*Trechus*) *ovipennis* Motschulsky, 1845
Trechus (*Trechus*) *pomonae* Fall, 1901
Trechus (*Trechus*) *quadristriatus* (Schrank, 1781)†
Trechus (*Trechus*) *roanicus* Barr, 1962
Trechus (*Trechus*) *rubens* (Fabricius, 1792)†
Trechus (*Trechus*) *schwarzi saludae* Barr, 1979
Trechus (*Trechus*) *schwarzi schwarzi* Jeannel, 1931
Trechus (*Trechus*) *schwarzi scopulosus* Barr, 1979
Trechus (*Trechus*) *tenuiscapus* Lindroth, 1961
Trechus (*Trechus*) *yvesbousqueti* Donabauer, 2010
Trechus (*Microtrechus*) *aduncus* Barr, 1962
Trechus (*Microtrechus*) *balsamensis* Barr, 1962
Trechus (*Microtrechus*) *barberi* (Jeannel, 1931)
Trechus (*Microtrechus*) *bowlingi* Barr, 1962
Trechus (*Microtrechus*) *cheoahensis* Donabauer, 2005
Trechus (*Microtrechus*) *clingmanensis* Donabauer, 2005
Trechus (*Microtrechus*) *coweensis* Barr, 1979
Trechus (*Microtrechus*) *haoe* Barr, 1979
Trechus (*Microtrechus*) *haoeleadensis* Donabauer, 2005
Trechus (*Microtrechus*) *howellae* Barr, 1979
Trechus (*Microtrechus*) *inexpectatus* Barr, 1985
Trechus (*Microtrechus*) *luculentus cheoahbaldensis* Donabauer, 2005
Trechus (*Microtrechus*) *luculentus joannabaldensis* Donabauer, 2005
Trechus (*Microtrechus*) *luculentus luculentus* Barr, 1962
Trechus (*Microtrechus*) *luculentus wayahensis* Barr, 1979
Trechus (*Microtrechus*) *nantahalae* Barr, 1979
Trechus (*Microtrechus*) *nebulosus* Barr, 1962
Trechus (*Microtrechus*) *novaculosus* Barr, 1962
Trechus (*Microtrechus*) *plottbalsamensis* Donabauer, 2005
Trechus (*Microtrechus*) *pseudobarberi* Donabauer, 2009
Trechus (*Microtrechus*) *pseudonovaculosus* Donabauer, 2005

Trechus (*Microtrechus*) *pseudosubtilis* Donabauer, 2009
Trechus (*Microtrechus*) *ramseyensis* Donabauer, 2005
Trechus (*Microtrechus*) *rivulis* Dajoz, 2005
Trechus (*Microtrechus*) *rosenbergi* Barr, 1962
Trechus (*Microtrechus*) *satanicus* Barr, 1962
Trechus (*Microtrechus*) *snowbirdensis* Donabauer, 2005
Trechus (*Microtrechus*) *stefanschoedli* Donabauer, 2005
Trechus (*Microtrechus*) *stupkai* Barr, 1979
Trechus (*Microtrechus*) *subtilis* Barr, 1962
Trechus (*Microtrechus*) *talequah* Barr, 1962
Trechus (*Microtrechus*) *tennesseensis tauricus* Barr, 1962
Trechus (*Microtrechus*) *tennesseensis tennesseensis* Barr, 1962
Trechus (*Microtrechus*) *thomasbarri* Donabauer, 2005
Trechus (*Microtrechus*) *thunderheadensis* Donabauer, 2005
Trechus (*Microtrechus*) *tobiasi* Donabauer, 2005
Trechus (*Microtrechus*) *tonitru* Barr, 1962
Trechus (*Microtrechus*) *toxawayi* Barr, 1979
Trechus (*Microtrechus*) *tuckaleechee* Barr, 1962
Trechus (*Microtrechus*) *tusquitee* Barr, 1979
Trechus (*Microtrechus*) *tusquitensis* Donabauer, 2005
Trechus (*Microtrechus*) *uncifer* Barr, 1962
Trechus (*Microtrechus*) *unicoi* Barr, 1979
Trechus (*Microtrechus*) *valentinei* Barr, 1979
Trechus (*Microtrechus*) *vandykei pisgahensis* Barr, 1979
Trechus (*Microtrechus*) *vandykei vandykei* (Jeannel, 1927)
Trechus (*Microtrechus*) *verus* Barr, 1962
Trechus (*Microtrechus*) *wayahbaldensis* Donabauer, 2005

Bembidiini

Amerizus (*Amerizus*) *oblonguloides* (Lindroth, 1963)
Amerizus (*Amerizus*) *oblongulus* (Mannerheim, 1852)
Amerizus (*Amerizus*) *spectabilis* (Mannerheim, 1852)
Amerizus (*Amerizus*) *utahensis* (Van Dyke, 1926)
Amerizus (*Amerizus*) *wingatei* (Bland, 1864)
Lionepha casta (Casey, 1918)
Lionepha chintimini (Erwin & Kavanaugh, 1981)
Lionepha disjuncta (Lindroth, 1963)
Lionepha erasa (LeConte, 1859)
Lionepha lindrothellus (Erwin & Kavanaugh, 1981)
Lionepha lummi (Erwin & Kavanaugh, 1981)
Lionepha osculans (Casey, 1918)
Lionepha pseudoerasa (Lindroth, 1963)
Lionepha sequoiae (Lindroth, 1963)

Asaphidion alaskanum Wickham, 1919
Asaphidion curtum curtum (Heyden, 1870)†
Asaphidion yukonense Wickham, 1919
Bembidion (*Hirmoplataphus*) *alpineanum* Casey, 1924
Bembidion (*Hirmoplataphus*) *avidum* Casey, 1918
Bembidion (*Hirmoplataphus*) *concolor* (Kirby, 1837)
Bembidion (*Hirmoplataphus*) *humboldtense* Blaisdell, 1902
Bembidion (*Hirmoplataphus*) *nigrum* Say, 1823
Bembidion (*Hirmoplataphus*) *quadrulum* LeConte, 1861
Bembidion (*Hirmoplataphus*) *recticolle* LeConte, 1863
Bembidion (*Hirmoplataphus*) *salebratum* (LeConte, 1847)
Bembidion (*Hirmoplataphus*) *subaerarium* Casey, 1924
Bembidion (*Hydriomicrus*) *brevistriatum* Hayward, 1897
Bembidion (*Hydriomicrus*) *californicum* Hayward, 1897
Bembidion (*Hydriomicrus*) *innocuum* Casey, 1918
Bembidion (*Hydriomicrus*) *quadratulum* Notman, 1920
Bembidion (*Hydriomicrus*) *semistriatum* (Haldeman, 1843)
Bembidion (*Odontium*) *aenulum* Hayward, 1901
Bembidion (*Odontium*) *bowditchii* LeConte, 1878
Bembidion (*Odontium*) *carinatum* (LeConte, 1852)
Bembidion (*Odontium*) *confusum* Hayward, 1897
Bembidion (*Odontium*) *coxendix* Say, 1823
Bembidion (*Odontium*) *durangoense* Bates, 1891
Bembidion (*Odontium*) *gilae* Lindroth, 1963
Bembidion (*Odontium*) *paraenulum* Maddison, 2009
Bembidion (*Odontium*) *robusticolle* Hayward, 1897
Bembidion (*Odontium*) *sculpturatum* (Motschulsky, 1859)
Bembidion (*Bracteon*) *alaskense* Lindroth, 1962‡
Bembidion (*Bracteon*) *balli* Lindroth, 1962
Bembidion (*Bracteon*) *carinula* Chaudoir, 1868
Bembidion (*Bracteon*) *foveum* Motschulsky, 1844‡
Bembidion (*Bracteon*) *hesperium* Fall, 1910
Bembidion (*Bracteon*) *inaequale* Say, 1823
Bembidion (*Bracteon*) *lapponicum* Zetterstedt, 1828‡
Bembidion (*Bracteon*) *levettei carrianum* Casey, 1924
Bembidion (*Bracteon*) *levettei levettei* Casey, 1918
Bembidion (*Bracteon*) *lorquinii* Chaudoir, 1868
Bembidion (*Bracteon*) *punctatostriatum* Say, 1823
Bembidion (*Bracteon*) *zephyrum* Fall, 1910
Bembidion (*Ochthedromus*) *americanum* Dejean, 1831
Bembidion (*Ochthedromus*) *bifossulatum* (LeConte, 1852)
Bembidion (*Ochthedromus*) *cheyennense* Casey, 1918
Bembidion (*Pseudoperyphus*) *antiquum* Dejean, 1831

Bembidion (*Pseudoperyphus*) *arenobile* Maddison, 2008
Bembidion (*Pseudoperyphus*) *bellorum* Maddison, 2008
Bembidion (*Pseudoperyphus*) *chalceum* Dejean, 1831
Bembidion (*Pseudoperyphus*) *honestum* Say, 1823
Bembidion (*Pseudoperyphus*) *integrum* Casey, 1918
Bembidion (*Pseudoperyphus*) *louisella* Maddison, 2008
Bembidion (*Pseudoperyphus*) *rothfelsi* Maddison, 2008
Bembidion (*Pseudoperyphus*) *rufotinctum* Chaudoir, 1868
Bembidion (*Cillenus*) *palosverdes* Kavanaugh & Erwin, 1992
Bembidion (*Actedium*) *lachnophoroides* Darlington, 1926
Bembidion (*Ocydromus*) *scopulinum* (Kirby, 1837)‡
Bembidion (*Peryphus*) *actuosum* Casey, 1918
Bembidion (*Peryphus*) *bruxellense* Wesmael, 1835†
Bembidion (*Peryphus*) *consanguineum* Hayward, 1897
Bembidion (*Peryphus*) *dauricum* (Motschulsky, 1844)‡
Bembidion (*Peryphus*) *femoratum femoratum* Sturm, 1825†
Bembidion (*Peryphus*) *lugubre* LeConte, 1857
Bembidion (*Peryphus*) *mexicanum* Dejean, 1831
Bembidion (*Peryphus*) *nevadense* Ulke, 1875
Bembidion (*Peryphus*) *obscurellum obscurellum* (Motschulsky, 1845)‡
Bembidion (*Peryphus*) *pernotum* Casey, 1918
Bembidion (*Peryphus*) *perspicuum* (LeConte, 1848)
Bembidion (*Peryphus*) *petrosum attuense* Lindroth, 1963
Bembidion (*Peryphus*) *petrosum petrosum* Gebler, 1833‡
Bembidion (*Peryphus*) *plagiatum* (Zimmermann, 1869)
Bembidion (*Peryphus*) *poppii schalleri* Lindroth, 1963
Bembidion (*Peryphus*) *rupicola* (Kirby, 1837)
Bembidion (*Peryphus*) *sarpedon* Casey, 1918
Bembidion (*Peryphus*) *satelles* Casey, 1918
Bembidion (*Peryphus*) *sejunctum sejunctum* Casey, 1918
Bembidion (*Peryphus*) *sejunctum semiaureum* Fall, 1922
Bembidion (*Peryphus*) *striola* (LeConte, 1852)
Bembidion (*Peryphus*) *tetracolum tetracolum* Say, 1823†
Bembidion (*Peryphus*) *transversale* Dejean, 1831
Bembidion (*Terminophanes*) *mckinleyi carneum* Lindroth, 1963
Bembidion (*Terminophanes*) *mckinleyi mckinleyi* Fall, 1926
Bembidion (*Asioperyphus*) *bimaculatum* (Kirby, 1837)
Bembidion (*Asioperyphus*) *lenae* Csiki, 1928‡
Bembidion (*Asioperyphus*) *postremum* Say, 1830
Bembidion (*Asioperyphus*) *renoanum* Casey, 1918
Bembidion (*Asioperyphus*) *sordidum* (Kirby, 1837)
Bembidion (*Asioperyphus*) *umiatense* Lindroth, 1963‡
Bembidion (*Peryphanes*) *grapii* Gyllenhal, 1827‡

Bembidion (*Peryphanes*) *lacunarium* (Zimmermann, 1869)
Bembidion (*Peryphanes*) *platynoides* Hayward, 1897
Bembidion (*Peryphanes*) *stephensii* Crotch, 1866†
Bembidion (*Peryphanes*) *subangustatum* Hayward, 1897
Bembidion (*Peryphanes*) *texanum* Chaudoir, 1868
Bembidion (*Peryphanes*) *yukonum* Fall, 1926‡
Bembidion (*Testediolum*) *commotum* Casey, 1918
Bembidion (*Testediolum*) *modocianum* Casey, 1924
Bembidion (*Testediolum*) *nebraskense* LeConte, 1863
Bembidion (*Testediolum*) *obscuripenne* Blaisdell, 1902
Bembidion (*Testediolum*) *perbrevicolle* Casey, 1924
Bembidion (*Testediolum*) *ulkei* Lindroth, 1963
Bembidion (*Leuchydrium*) *tigrinum* LeConte, 1879
Bembidion (*Bembidion*) *adductum* Casey, 1918
Bembidion (*Bembidion*) *mutatum* Gemminger & Harold, 1868
Bembidion (*Bembidion*) *oregonense* Hatch, 1953
Bembidion (*Bembidion*) *pedicellatum* LeConte, 1857
Bembidion (*Bembidion*) *praecinctum* LeConte, 1879
Bembidion (*Bembidion*) *quadrimaculatum dubitans* (LeConte, 1852)
Bembidion (*Bembidion*) *quadrimaculatum oppositum* Say, 1823
Bembidion (*Cyclolopha*) *jucundum* Horn, 1895
Bembidion (*Cyclolopha*) *poculare* Bates, 1884
Bembidion (*Cyclolopha*) *sphaeroderum* Bates, 1882
Bembidion (*Furcacampa*) *affine* Say, 1823
Bembidion (*Furcacampa*) *egens* Casey, 1918
Bembidion (*Furcacampa*) *fuchsii* Blaisdell, 1902
Bembidion (*Furcacampa*) *impotens* Casey, 1918
Bembidion (*Furcacampa*) *mimus* Hayward, 1897
Bembidion (*Furcacampa*) *nogalesium* Casey, 1924
Bembidion (*Furcacampa*) *timidum* (LeConte, 1847)
Bembidion (*Furcacampa*) *triviale* Casey, 1918
Bembidion (*Furcacampa*) *versicolor* (LeConte, 1847)
Bembidion (*Neobembidion*) *constricticolle* Hayward, 1897
Bembidion (*Neobembidion*) *nitidicolle* Bousquet, 2006
Bembidion (*Neobembidion*) *nudipenne* Lindroth, 1963
Bembidion (*Neobembidion*) *tencenti* Hatch, 1951
Bembidion (*Diplocampa*) *transparens transparens* (Gebler, 1830)‡
Bembidion (*Semicampa*) *convexulum* Hayward, 1897
Bembidion (*Semicampa*) *morulum* LeConte, 1863
Bembidion (*Semicampa*) *muscicola* Hayward, 1897
Bembidion (*Semicampa*) *nigrivestis* Bousquet, 2006
Bembidion (*Semicampa*) *praticola* Lindroth, 1963
Bembidion (*Semicampa*) *roosevelti* Pic, 1902

Bembidion (*Semicampa*) *rubiginosum* LeConte, 1879
Bembidion (*Semicampa*) *semicinctum* Notman, 1919
Bembidion (*Notaphus*) *acticola* Casey, 1884
Bembidion (*Notaphus*) *aeneicolle* (LeConte, 1847)
Bembidion (*Notaphus*) *approximatum* (LeConte, 1852)
Bembidion (*Notaphus*) *aratum* (LeConte, 1852)
Bembidion (*Notaphus*) *auxiliator* Casey, 1924
Bembidion (*Notaphus*) *callens* Casey, 1918
Bembidion (*Notaphus*) *castor* Lindroth, 1963
Bembidion (*Notaphus*) *coloradense* Hayward, 1897
Bembidion (*Notaphus*) *consimile* Hayward, 1897
Bembidion (*Notaphus*) *conspersum* Chaudoir, 1868
Bembidion (*Notaphus*) *constrictum* (Leconte, 1847)
Bembidion (*Notaphus*) *consuetum* Casey, 1918
Bembidion (*Notaphus*) *contractum* Say, 1823
Bembidion (*Notaphus*) *cordatum* (LeConte, 1847)
Bembidion (*Notaphus*) *debiliceps* Casey, 1918
Bembidion (*Notaphus*) *dejectum* Casey, 1884
Bembidion (*Notaphus*) *dorsale* Say, 1823
Bembidion (*Notaphus*) *evidens* Casey, 1918
Bembidion (*Notaphus*) *flohri* Bates, 1878
Bembidion (*Notaphus*) *graphicum* Casey, 1918
Bembidion (*Notaphus*) *hageni* Hayward, 1897
Bembidion (*Notaphus*) *idoneum* Casey, 1918
Bembidion (*Notaphus*) *indistinctum* Dejean, 1831
Bembidion (*Notaphus*) *insulatum* (LeConte, 1852)
Bembidion (*Notaphus*) *intermedium* (Kirby, 1837)
Bembidion (*Notaphus*) *jacobianum* Casey, 1918
Bembidion (*Notaphus*) *latebricola* Casey, 1918
Bembidion (*Notaphus*) *lecontei* Csiki, 1928
Bembidion (*Notaphus*) *luculentum* Casey, 1918
Bembidion (*Notaphus*) *mormon* Hayward, 1897
Bembidion (*Notaphus*) *nigripes* (Kirby, 1837)‡
Bembidion (*Notaphus*) *nubiculosum* Chaudoir, 1868
Bembidion (*Notaphus*) *oberthueri* Hayward, 1901
Bembidion (*Notaphus*) *obscuromaculatum* (Motschulsky, 1859)
Bembidion (*Notaphus*) *obtusangulum* LeConte, 1863
Bembidion (*Notaphus*) *obtusidens* Fall, 1922
Bembidion (*Notaphus*) *operosum* Casey, 1918
Bembidion (*Notaphus*) *patruele* Dejean, 1831
Bembidion (*Notaphus*) *pilatei* Chaudoir, 1868
Bembidion (*Notaphus*) *pimanum* Casey, 1918
Bembidion (*Notaphus*) *rapidum* (LeConte, 1847)

Bembidion (*Notaphus*) *scintillans* Bates, 1882
Bembidion (*Notaphus*) *scudderi* LeConte, 1878
Bembidion (*Notaphus*) *semiopacum* Casey, 1924
Bembidion (*Notaphus*) *semipunctatum* (Donovan, 1806)‡
Bembidion (*Notaphus*) *umbratum* (LeConte, 1847)
Bembidion (*Notaphus*) *versutum* LeConte, 1878
Bembidion (*Notaphus*) *viridicolle* (LaFerté-Sénectère, 1841)
Bembidion (*Notaphus*) *vividum* Casey, 1884
Bembidion (*Notaphus*) *vulpecula* Casey, 1918
Bembidion (*Trepanedoris*) *acutifrons* LeConte, 1879
Bembidion (*Trepanedoris*) *ampliceps* Casey, 1918
Bembidion (*Trepanedoris*) *anguliferum* (LeConte, 1852)
Bembidion (*Trepanedoris*) *canadianum* Casey, 1924
Bembidion (*Trepanedoris*) *clemens* Casey, 1918
Bembidion (*Trepanedoris*) *concretum* Casey, 1918
Bembidion (*Trepanedoris*) *connivens* (LeConte, 1852)
Bembidion (*Trepanedoris*) *elizabethae* Hatch, 1950
Bembidion (*Trepanedoris*) *fortestriatum* (Motschulsky, 1845)
Bembidion (*Trepanedoris*) *frontale* (LeConte, 1847)
Bembidion (*Trepanedoris*) *pseudocautum* Lindroth, 1963
Bembidion (*Trepanedoris*) *scenicum* Casey, 1918
Bembidion (*Trepanedoris*) *siticum* Casey, 1918
Bembidion (*Peryphodes*) *ephippigerum* (LeConte, 1852)
Bembidion (*Peryphodes*) *salinarium* Casey, 1918
Bembidion (*Emphanes*) *diligens* Casey, 1918
Bembidion (*Emphanes*) *vile* (LeConte, 1852)
Bembidion (*Blepharoplataphus*) *hastii* Sahlberg, 1827‡
Bembidion (*Plataphus*) *arcticum* Lindroth, 1963‡
Bembidion (*Plataphus*) *basicorne* Notman, 1920
Bembidion (*Plataphus*) *brachythorax* Lindroth, 1963‡
Bembidion (*Plataphus*) *breve* (Motschulsky, 1845)
Bembidion (*Plataphus*) *carolinense* Casey, 1924
Bembidion (*Plataphus*) *complanulum* (Mannerheim, 1853)
Bembidion (*Plataphus*) *compressum* Lindroth, 1963‡
Bembidion (*Plataphus*) *curtulatum* Casey, 1918
Bembidion (*Plataphus*) *falsum* Blaisdell, 1902
Bembidion (*Plataphus*) *farrarae* Hatch, 1950
Bembidion (*Plataphus*) *gebleri turbatum* Casey, 1918
Bembidion (*Plataphus*) *gordoni* Lindroth, 1963
Bembidion (*Plataphus*) *gratiosum* Casey, 1918
Bembidion (*Plataphus*) *haruspex* Casey, 1918
Bembidion (*Plataphus*) *hyperboraeorum* Munster, 1923‡
Bembidion (*Plataphus*) *improvidens* Casey, 1924

Bembidion (*Plataphus*) *kalumae* Lindroth, 1963
Bembidion (*Plataphus*) *kuprianovii* Mannerheim, 1843
Bembidion (*Plataphus*) *laxatum* Casey, 1918
Bembidion (*Plataphus*) *manningense* Lindroth, 1969
Bembidion (*Plataphus*) *neocoerulescens* Bousquet, 1993
Bembidion (*Plataphus*) *nigrocoeruleum* Hayward, 1897
Bembidion (*Plataphus*) *occultator* Notman, 1920
Bembidion (*Plataphus*) *oppressum* Casey, 1918
Bembidion (*Plataphus*) *placeranum* Casey, 1924
Bembidion (*Plataphus*) *planiusculum* Mannerheim, 1843
Bembidion (*Plataphus*) *quadrifoveolatum* Mannerheim, 1843
Bembidion (*Plataphus*) *rosslandicum* Lindroth, 1963
Bembidion (*Plataphus*) *rufinum* Lindroth, 1963
Bembidion (*Plataphus*) *rusticum lenensoides* Lindroth, 1963
Bembidion (*Plataphus*) *rusticum rusticum* Casey, 1918
Bembidion (*Plataphus*) *sierricola* Casey, 1924
Bembidion (*Plataphus*) *simplex* Hayward, 1897
Bembidion (*Plataphus*) *stillaguamish* Hatch, 1950
Bembidion (*Plataphus*) *sulcipenne hyperboroides* Lindroth, 1963
Bembidion (*Plataphus*) *sulcipenne prasinoides* Lindroth, 1963
Bembidion (*Plataphus*) *vandykei* Blaisdell, 1902
Bembidion (*Plataphus*) *viator* Casey, 1918
Bembidion (*Hydrium*) *interventor* Lindroth, 1963
Bembidion (*Hydrium*) *levigatum* Say, 1823
Bembidion (*Hydrium*) *nitidum* (Kirby, 1837)
Bembidion (*Hydrium*) *obliquulum* LeConte, 1859
Bembidion (*Metallina*) *dyschirinum* LeConte, 1861
Bembidion (*Metallina*) *lampros* (Herbst, 1784)†
Bembidion (*Metallina*) *properans* (Stephens, 1828)†
Bembidion (*Lindrochthus*) *wickhami* Hayward, 1897
Bembidion (*Eupetedromus*) *graciliforme* Hayward, 1897
Bembidion (*Eupetedromus*) *immaturum* Lindroth, 1954
Bembidion (*Eupetedromus*) *incrematum* LeConte, 1860‡
Bembidion (*Eupetedromus*) *iridipenne* Bousquet & Webster, 2006
Bembidion (*Eupetedromus*) *variegatum* Say, 1823
Bembidion (*Trechonepha*) *iridescens* (LeConte, 1852)
Bembidion (*Trechonepha*) *trechiforme* (LeConte, 1852)
Bembidion (*Liocosmius*) *festivum* Casey, 1918
Bembidion (*Liocosmius*) *horni* Hayward, 1897
Bembidion (*Liocosmius*) *mundum* (LeConte, 1852)
Bembidion (*Melomalus*) *planatum* (LeConte, 1847)
Bembidion (*Trichoplataphus*) *fugax* (LeConte, 1848)
Bembidion (*Trichoplataphus*) *grandiceps* Hayward, 1897

Bembidion (*Trichoplataphus*) *ozarkense* Maddison & Hildebrandt, 2011
Bembidion (*Trichoplataphus*) *planum* (Haldeman, 1843)
Bembidion (*Trichoplataphus*) *rolandi* Fall, 1922
Bembidion (*Phyla*) *obtusum* Audinet-Serville, 1821†
Bembidion (*Lymnaeum*) *laticeps* (LeConte, 1858)
Bembidion (*Lymnaeum*) *nigropiceum* (Marsham, 1802)†
Phrypeus rickseckeri (Hayward, 1897)
Mioptachys flavicauda (Say, 1823)
Tachyta (*Tachyta*) *angulata* Casey, 1918
Tachyta (*Tachyta*) *falli* (Hayward, 1900)
Tachyta (*Tachyta*) *inornata* (Say, 1823)
Tachyta (*Tachyta*) *kirbyi* Casey, 1918
Tachyta (*Tachyta*) *parvicornis* Notman, 1922
Elaphropus (*Barytachys*) *anceps* (LeConte, 1848)
Elaphropus (*Barytachys*) *anthrax* (LeConte, 1852)
Elaphropus (*Barytachys*) *brevis* (Casey, 1918)
Elaphropus (*Barytachys*) *brunnicollis* (Motschulsky, 1862)
Elaphropus (*Barytachys*) *capax* (LeConte, 1863)
Elaphropus (*Barytachys*) *cockerelli* (Fall, 1907)
Elaphropus (*Barytachys*) *congener* (Casey, 1918)
Elaphropus (*Barytachys*) *conjugens* (Notman, 1919)
Elaphropus (*Barytachys*) *dolosus* (LeConte, 1848)
Elaphropus (*Barytachys*) *fatuus* (Casey, 1918)
Elaphropus (*Barytachys*) *ferrugineus* (Dejean, 1831)
Elaphropus (*Barytachys*) *fuscicornis* (Chaudoir, 1868)
Elaphropus (*Barytachys*) *granarius* (Dejean, 1831)
Elaphropus (*Barytachys*) *incurvus* (Say, 1830)
Elaphropus (*Barytachys*) *liebecki* (Hayward, 1900)
Elaphropus (*Barytachys*) *monticola* (Casey, 1918)
Elaphropus (*Barytachys*) *nebulosus* (Chaudoir, 1868)
Elaphropus (*Barytachys*) *obesulus* (LeConte, 1852)
Elaphropus (*Barytachys*) *rapax* (LeConte, 1852)
Elaphropus (*Barytachys*) *renoicus* (Casey, 1918)
Elaphropus (*Barytachys*) *rubricauda* (Casey, 1918)
Elaphropus (*Barytachys*) *saturatus* (Casey, 1918)
Elaphropus (*Barytachys*) *sectator* (Casey, 1918)
Elaphropus (*Barytachys*) *sedulus* (Casey, 1918)
Elaphropus (*Barytachys*) *tahoensis* (Casey, 1918)
Elaphropus (*Barytachys*) *tripunctatus* (Say, 1830)
Elaphropus (*Barytachys*) *vernicatus* (Casey, 1918)
Elaphropus (*Barytachys*) *vivax* (LeConte, 1848)
Elaphropus (*Barytachys*) *xanthopus* (Dejean, 1831)
Elaphropus (*Tachyura*) *parvulus* (Dejean, 1831)†

Micratopus aenescens (LeConte, 1848)
Pericompsus (*Pericompsus*) *ephippiatus* (Say, 1830)
Pericompsus (*Pericompsus*) *laetulus* LeConte, 1852
Pericompsus (*Pericompsus*) *sellatus* LeConte, 1852
Porotachys bisulcatus (Nicolai, 1822)†
Polyderis diaphana (Casey, 1918)
Polyderis laeva (Say, 1823)
Polyderis rufotestacea (Hayward, 1900)
Tachys (*Tachys*) *bradycellinus* Hayward, 1900
Tachys (*Tachys*) *bryanti* Lindroth, 1966
Tachys (*Tachys*) *corax* LeConte, 1852
Tachys (*Tachys*) *halophilus* Lindroth, 1966
Tachys (*Tachys*) *litoralis* Casey, 1884
Tachys (*Tachys*) *misellus* LaFerté-Sénectère, 1841
Tachys (*Tachys*) *mordax* LeConte, 1852
Tachys (*Tachys*) *pallidus* Chaudoir, 1868
Tachys (*Tachys*) *pulchellus* LaFerté-Sénectère, 1841
Tachys (*Tachys*) *translucens* Darlington, 1937
Tachys (*Tachys*) *virgo* LeConte, 1852
Tachys (*Tachys*) *vittiger* LeConte, 1852
Tachys (*Paratachys*) *aeneipennis* Motschulsky, 1862
Tachys (*Paratachys*) *albipes* LeConte, 1863
Tachys (*Paratachys*) *austinicus* (Casey, 1918)
Tachys (*Paratachys*) *columbiensis* Hayward, 1900
Tachys (*Paratachys*) *edax* LeConte, 1852
Tachys (*Paratachys*) *hyalinus* Casey, 1918
Tachys (*Paratachys*) *oblitus* Casey, 1918
Tachys (*Paratachys*) *potomaca* (Erwin, 1981)
Tachys (*Paratachys*) *proximus* (Say, 1823)
Tachys (*Paratachys*) *pumilus* (Dejean, 1831)
Tachys (*Paratachys*) *rectangulus* Notman, 1919
Tachys (*Paratachys*) *rhodeanus* Casey, 1918
Tachys (*Paratachys*) *sagax* Casey, 1918
Tachys (*Paratachys*) *scitulus* LeConte, 1848
Tachys (*Paratachys*) *sequax* LeConte, 1848
Tachys (*Paratachys*) *spadix* Casey, 1918
Tachys (*Paratachys*) *umbripennis* Chaudoir, 1868
Tachys (*Paratachys*) *ventricosus* LeConte, 1863
Tachys (*Paratachys*) *vernilis* Casey, 1918
Tachys (*Paratachys*) *vorax* LeConte, 1852
Anillodes debilis (LeConte, 1853)
Anillodes minutus Jeannel, 1963
Anillodes walkeri Jeannel, 1963

Anillinus affabilis (Brues, 1902)
Anillinus aleyae Sokolov & Watrous, 2008
Anillinus balli Sokolov & Carlton, 2004
Anillinus barberi Jeannel, 1963
Anillinus barri Sokolov & Carlton, 2004
Anillinus campbelli Giachino, 2011
Anillinus carltoni Sokolov, 2011
Anillinus chandleri Sokolov, 2011
Anillinus cherokee Sokolov & Carlton, 2008
Anillinus chilhowee Sokolov, 2011
Anillinus cieglerae Sokolov & Carlton, 2007
Anillinus cornelli Sokolov & Carlton, 2004
Anillinus daggyi Sokolov & Carlton, 2004
Anillinus depressus (Jeannel, 1963)
Anillinus docwatsoni Sokolov & Carlton, 2004
Anillinus dohrni (Ehlers, 1884)
Anillinus elongatus Jeannel, 1963
Anillinus erwini Sokolov & Carlton, 2004
Anillinus folkertsi Sokolov & Carlton, 2004
Anillinus fortis (Horn, 1869)
Anillinus gimmeli Sokolov & Carlton, 2010
Anillinus indianae Jeannel, 1963
Anillinus juliae Sokolov & Carlton, 2010
Anillinus kovariki Sokolov & Carlton, 2004
Anillinus langdoni Sokolov & Carlton, 2004
Anillinus lescheni Sokolov & Carlton, 2004
Anillinus longiceps Jeannel, 1963
Anillinus loweae Sokolov & Carlton, 2004
Anillinus magazinensis Sokolov & Carlton, 2004
Anillinus merritti Sokolov & Carlton, 2010
Anillinus moseleyae Sokolov & Carlton, 2004
Anillinus murrayae Sokolov & Carlton, 2004
Anillinus nantahala Dajoz, 2005
Anillinus pecki Giachino, 2011
Anillinus pusillus Sokolov & Carlton, 2007
Anillinus robisoni Sokolov & Carlton, 2004
Anillinus sinuaticollis Jeannel, 1963
Anillinus sinuatus Jeannel, 1963
Anillinus smokiensis Sokolov, 2011
Anillinus steevesi Barr, 1995
Anillinus stephani Sokolov & Carlton, 2004
Anillinus tishechkini Sokolov & Carlton, 2004
Anillinus turneri Jeannel, 1963

Anillinus unicoi Sokolov, 2011
Anillinus valentinei (Jeannel, 1963)
Anillinus virginiae Jeannel, 1963
Serranillus dunavani (Jeannel, 1963)
Serranillus jeanneli Barr, 1995
Serranillus septentrionis Sokolov & Carlton, 2008
Anillaspis caseyi Jeannel, 1963
Anillaspis explanata (Horn, 1888)
Horologion speokoites Valentine, 1932

Pogonini

Thalassotrechus barbarae (Horn, 1892)
Diplochaetus emaciatus (Bates, 1891)
Diplochaetus megacephalus Bousquet & Laplante, 1997
Diplochaetus planatus (Horn, 1876)
Diplochaetus rutilus (Chevrolat, 1863)
Pogonus texanus Chaudoir, 1868

Patrobini

Diplous (*Platidius*) *aterrimus* (Dejean, 1828)
Diplous (*Platidius*) *californicus* (Motschulsky, 1844)
Diplous (*Platidius*) *filicornis* (Casey, 1918)
Diplous (*Platidius*) *rugicollis* (Randall, 1838)
Patrobus cinctus Motschulsky, 1860‡
Patrobus fossifrons (Eschscholtz, 1823)
Patrobus foveocollis (Eschscholtz, 1823)‡
Patrobus lecontei Chaudoir, 1872
Patrobus longicornis (Say, 1823)
Patrobus septentrionis septentrionis Dejean, 1828‡
Patrobus stygicus Chaudoir, 1872‡
Platypatrobus lacustris Darlington, 1938
Platidiolus vandykei Kurnakov, 1960

Psydrini

Nomius pygmaeus (Dejean, 1831)
Psydrus piceus LeConte, 1846

Metriini

Metrius contractus contractus Eschscholtz, 1829
Metrius contractus planatus Van Dyke, 1925
Metrius contractus sericeus Rivers, 1900
Metrius explodens Bousquet & Goulet, 1990

Paussini

Pachyteles gyllenhalii (Dejean, 1825)
Goniotropis kuntzeni kuntzeni Bänninger, 1927
Goniotropis parca (LeConte, 1884)
Physea hirta LeConte, 1853
Ozaena lemoulti Bänninger, 1932

Brachinini

Brachinus (*Neobrachinus*) *aabaaba* Erwin, 1970
Brachinus (*Neobrachinus*) *adustipennis* Erwin, 1969
Brachinus (*Neobrachinus*) *aeger* Chaudoir, 1876
Brachinus (*Neobrachinus*) *alexiguus* Erwin, 1970
Brachinus (*Neobrachinus*) *alternans* Dejean, 1825
Brachinus (*Neobrachinus*) *americanus* (LeConte, 1844)
Brachinus (*Neobrachinus*) *azureipennis* Chaudoir, 1876
Brachinus (*Neobrachinus*) *capnicus* Erwin, 1970
Brachinus (*Neobrachinus*) *cibolensis* Erwin, 1970
Brachinus (*Neobrachinus*) *conformis* Dejean, 1831
Brachinus (*Neobrachinus*) *cordicollis* Dejean, 1826
Brachinus (*Neobrachinus*) *costipennis* Motschulsky, 1859
Brachinus (*Neobrachinus*) *cyanipennis* Say, 1823
Brachinus (*Neobrachinus*) *cyanochroaticus* Erwin, 1969
Brachinus (*Neobrachinus*) *elongatulus* Chaudoir, 1876
Brachinus (*Neobrachinus*) *explosus* Erwin, 1970
Brachinus (*Neobrachinus*) *favicollis* Erwin, 1965
Brachinus (*Neobrachinus*) *fulminatus* Erwin, 1969
Brachinus (*Neobrachinus*) *fumans* (Fabricius, 1781)
Brachinus (*Neobrachinus*) *gebhardis* Erwin, 1965
Brachinus (*Neobrachinus*) *geniculatus* Dejean, 1831
Brachinus (*Neobrachinus*) *hirsutus* Bates, 1884
Brachinus (*Neobrachinus*) *ichabodopsis* Erwin, 1970
Brachinus (*Neobrachinus*) *imperialensis* Erwin, 1965
Brachinus (*Neobrachinus*) *imporcitis* Erwin, 1970
Brachinus (*Neobrachinus*) *janthinipennis* (Dejean, 1831)
Brachinus (*Neobrachinus*) *javalinopsis* Erwin, 1970
Brachinus (*Neobrachinus*) *kansanus* LeConte, 1863
Brachinus (*Neobrachinus*) *kavanaughi* Erwin, 1969
Brachinus (*Neobrachinus*) *lateralis* Dejean, 1831
Brachinus (*Neobrachinus*) *medius* Harris, 1828
Brachinus (*Neobrachinus*) *mexicanus* Dejean, 1831
Brachinus (*Neobrachinus*) *microamericanus* Erwin, 1969
Brachinus (*Neobrachinus*) *mobilis* Erwin, 1970

Brachinus (*Neobrachinus*) *neglectus* LeConte, 1844
Brachinus (*Neobrachinus*) *ovipennis* LeConte, 1863
Brachinus (*Neobrachinus*) *oxygonus* Chaudoir, 1843
Brachinus (*Neobrachinus*) *pallidus* Erwin, 1965
Brachinus (*Neobrachinus*) *patruelis* LeConte, 1844
Brachinus (*Neobrachinus*) *perplexus* Dejean, 1831
Brachinus (*Neobrachinus*) *phaeocerus* Chaudoir, 1868
Brachinus (*Neobrachinus*) *puberulus* Chaudoir, 1868
Brachinus (*Neobrachinus*) *quadripennis* Dejean, 1825
Brachinus (*Neobrachinus*) *rugipennis* Chaudoir, 1868
Brachinus (*Neobrachinus*) *sublaevis* Chaudoir, 1868
Brachinus (*Neobrachinus*) *tenuicollis* LeConte, 1844
Brachinus (*Neobrachinus*) *texanus* Chaudoir, 1868
Brachinus (*Neobrachinus*) *velutinus* Erwin, 1965
Brachinus (*Neobrachinus*) *viridipennis* Dejean, 1831
Brachinus (*Neobrachinus*) *vulcanoides* Erwin, 1969

Morionini

Morion aridus Allen, 1969
Morion monilicornis (Latreille, 1805)

Abacetini

Loxandrus accelerans Casey, 1918
Loxandrus agilis (Dejean, 1828)
Loxandrus algidus Allen, 1972
Loxandrus brevicollis (LeConte, 1846)
Loxandrus celer (Dejean, 1828)
Loxandrus cervicalis Casey, 1918
Loxandrus cincinnati Casey, 1924
Loxandrus circulus Allen, 1972
Loxandrus collucens Casey, 1918
Loxandrus crenatus LeConte, 1853
Loxandrus duryi Wright, 1939
Loxandrus erraticus (Dejean, 1828)
Loxandrus extendus Allen, 1972
Loxandrus floridanus LeConte, 1878
Loxandrus gibbus Allen, 1972
Loxandrus icarus Will & Liebherr, 1998
Loxandrus infimus Bates, 1882
Loxandrus lucens Chaudoir, 1868
Loxandrus micans Chaudoir, 1868
Loxandrus minor (Chaudoir, 1843)
Loxandrus nitidulus (LeConte, 1846)

Loxandrus pactinullus Allen, 1972
Loxandrus parallelus Casey, 1918
Loxandrus parvulus Chaudoir, 1868
Loxandrus piceolus Chaudoir, 1868
Loxandrus piciventris (LeConte, 1846)
Loxandrus pravitubus Allen, 1972
Loxandrus proximus Chaudoir, 1868
Loxandrus pusillus LeConte, 1853
Loxandrus rectangulus LeConte, 1878
Loxandrus rectus (Say, 1823)
Loxandrus robustus Allen, 1972
Loxandrus rossi Allen, 1972
Loxandrus saccisecundaris Allen, 1972
Loxandrus saphyrinus (Chaudoir, 1843)
Loxandrus sculptilis Bates, 1884
Loxandrus spinilunatus Allen, 1972
Loxandrus straneoi Will & Liebherr, 1998
Loxandrus taeniatus LeConte, 1853
Loxandrus uniformis Allen, 1972
Loxandrus unilobus Allen, 1972
Loxandrus velocipes Casey, 1918
Loxandrus velox (Dejean, 1828)
Loxandrus vulneratus Casey, 1918
Stolonis intercepta Chaudoir, 1874

Pterostichini

Abaris (*Abaridius*) *splendidula* (LeConte, 1863)
Hybothecus flohri (Bates, 1882)
Poecilus (*Poecilus*) *chalcites* (Say, 1823)
Poecilus (*Poecilus*) *coloradensis* (Csiki, 1930)
Poecilus (*Poecilus*) *corvus* (LeConte, 1873)
Poecilus (*Poecilus*) *cursitor* LeConte, 1853
Poecilus (*Poecilus*) *cyanicolor* Chaudoir, 1876
Poecilus (*Poecilus*) *diplophryus* Chaudoir, 1876
Poecilus (*Poecilus*) *laetulus* (LeConte, 1863)
Poecilus (*Poecilus*) *lucublandus* (Say, 1823)
Poecilus (*Poecilus*) *mexicanus* Chaudoir, 1876
Poecilus (*Poecilus*) *occidentalis* (Dejean, 1828)
Poecilus (*Poecilus*) *scitulus* LeConte, 1846
Poecilus (*Poecilus*) *texanus* (LeConte, 1863)
Poecilus (*Derus*) *nearcticus* (Lindroth, 1966)‡
Lophoglossus gravis LeConte, 1873
Lophoglossus haldemanni (LeConte, 1846)

Lophoglossus scrutator (LeConte, 1846)
Lophoglossus substrenuus (Csiki, 1930)
Lophoglossus tartaricus (Say, 1823)
Lophoglossus vernix Casey, 1913
Piesmus submarginatus (Say, 1823)
Gastrellarius blanchardi (Horn, 1891)
Gastrellarius honestus (Say, 1823)
Gastrellarius unicarum (Darlington, 1932)
Stomis (*Neostomis*) *termitiformis* (Van Dyke, 1926)
Stomis (*Stomis*) *pumicatus* (Panzer, 1795)†
Stereocerus haematopus (Dejean, 1831)‡
Stereocerus rubripes (Motschulsky, 1860)‡
Myas (*Trigonognatha*) *coracinus* (Say, 1823)
Myas (*Trigonognatha*) *cyanescens* Dejean, 1828
Pterostichus (*Argutor*) *commutabilis* (Motschulsky, 1866)
Pterostichus (*Argutor*) *praetermissus* (Chaudoir, 1868)
Pterostichus (*Argutor*) *vernalis* (Panzer, 1795)†
Pterostichus (*Phonias*) *corrusculus* LeConte, 1873
Pterostichus (*Phonias*) *femoralis* (Kirby, 1837)
Pterostichus (*Phonias*) *patruelis* (Dejean, 1831)
Pterostichus (*Phonias*) *strenuus* (Panzer, 1796)†
Pterostichus (*Bothriopterus*) *adstrictus* Eschscholtz, 1823‡
Pterostichus (*Bothriopterus*) *lustrans* LeConte, 1851
Pterostichus (*Bothriopterus*) *mutus* (Say, 1823)
Pterostichus (*Bothriopterus*) *oregonus* LeConte, 1861
Pterostichus (*Bothriopterus*) *pensylvanicus* LeConte, 1873
Pterostichus (*Bothriopterus*) *trinarius* (Casey, 1918)
Pterostichus (*Melanius*) *castor* Goulet & Bousquet, 1983
Pterostichus (*Melanius*) *corvinus* (Dejean, 1828)
Pterostichus (*Melanius*) *ebeninus* (Dejean, 1828)
Pterostichus (*Pseudomaseus*) *luctuosus* (Dejean, 1828)
Pterostichus (*Pseudomaseus*) *tenuis* (Casey, 1924)
Pterostichus (*Feronina*) *barri* Bousquet, 2006
Pterostichus (*Feronina*) *palmi* Schaeffer, 1910
Pterostichus (*Paraferonia*) *lubricus* LeConte, 1853
Pterostichus (*Pseudoferonina*) *amadeus* Bousquet, nomen novum
Pterostichus (*Pseudoferonina*) *bousqueti* Bergdahl, 2011
Pterostichus (*Pseudoferonina*) *campbelli* Bousquet, 1985
Pterostichus (*Pseudoferonina*) *humidulus* (Van Dyke, 1943)
Pterostichus (*Pseudoferonina*) *lanei* Van Dyke, 1926
Pterostichus (*Pseudoferonina*) *lolo* Bergdahl, 2011
Pterostichus (*Pseudoferonina*) *shulli* (Hatch, 1949)
Pterostichus (*Pseudoferonina*) *smetanai* Bousquet, 1985

Pterostichus (*Pseudoferonina*) *spathifer* Bousquet, 1992
Pterostichus (*Gastrosticta*) *enodis* Bousquet, 1992
Pterostichus (*Gastrosticta*) *mutoides* Bousquet, 1992
Pterostichus (*Gastrosticta*) *obesulus* LeConte, 1873
Pterostichus (*Gastrosticta*) *ophryoderus* (Chaudoir, 1878)
Pterostichus (*Gastrosticta*) *punctiventris* (Chaudoir, 1878)
Pterostichus (*Gastrosticta*) *putus* Casey, 1913
Pterostichus (*Gastrosticta*) *sayanus* Csiki, 1930
Pterostichus (*Gastrosticta*) *subacutus* (Casey, 1918)
Pterostichus (*Gastrosticta*) *tumescens* LeConte, 1863
Pterostichus (*Gastrosticta*) *ventralis* (Say, 1823)
Pterostichus (*Morphnosoma*) *melanarius melanarius* (Illiger, 1798)†
Pterostichus (*Euferonia*) *coracinus* (Newman, 1838)
Pterostichus (*Euferonia*) *ingens* (Casey, 1918)
Pterostichus (*Euferonia*) *lachrymosus* (Newman, 1838)
Pterostichus (*Euferonia*) *novus* Straneo, 1944
Pterostichus (*Euferonia*) *relictus* (Newman, 1838)
Pterostichus (*Euferonia*) *stygicus* (Say, 1823)
Pterostichus (*Lenapterus*) *agonus* Horn, 1880‡
Pterostichus (*Lenapterus*) *costatus* (Ménétriés, 1851)‡
Pterostichus (*Lenapterus*) *punctatissimus* (Randall, 1838)
Pterostichus (*Lenapterus*) *vermiculosus* (Ménétriés, 1851)‡
Pterostichus (*Metallophilus*) *sublaevis* (Sahlberg, 1880)‡
Pterostichus (*Abacidus*) *atratus* (Newman, 1838)
Pterostichus (*Abacidus*) *fallax* (Dejean, 1828)
Pterostichus (*Abacidus*) *hamiltoni* Horn, 1880
Pterostichus (*Abacidus*) *permundus* (Say, 1830)
Pterostichus (*Abacidus*) *sculptus* LeConte, 1853
Pterostichus (*Orsonjohnsonus*) *johnsoni* Ulke, 1889
Pterostichus (*Lamenius*) *caudicalis* (Say, 1823)
Pterostichus (*Eosteropus*) *circulosus* Lindroth, 1966
Pterostichus (*Eosteropus*) *moestus* (Say, 1823)
Pterostichus (*Eosteropus*) *superciliosus* (Say, 1823)
Pterostichus (*Monoferonia*) *carolinus carolinus* Darlington, 1932
Pterostichus (*Monoferonia*) *carolinus fumorum* Darlington, 1932
Pterostichus (*Monoferonia*) *diligendus* (Chaudoir, 1868)
Pterostichus (*Monoferonia*) *mancus* (LeConte, 1853)
Pterostichus (*Monoferonia*) *primus* Darlington, 1932
Pterostichus (*Cylindrocharis*) *acutipes acutipes* Barr, 1971
Pterostichus (*Cylindrocharis*) *acutipes kentuckensis* Barr, 1971
Pterostichus (*Cylindrocharis*) *hypogeus* Barr, 1971
Pterostichus (*Cylindrocharis*) *rostratus* (Newman, 1838)
Pterostichus (*Leptoferonia*) *angustus* (Dejean, 1828)

Pterostichus (*Leptoferonia*) *beyeri* Van Dyke, 1926
Pterostichus (*Leptoferonia*) *blodgettensis* Will, 2007
Pterostichus (*Leptoferonia*) *caligans* Horn, 1891
Pterostichus (*Leptoferonia*) *cochlearis* Hacker, 1968
Pterostichus (*Leptoferonia*) *deino* Will, 2007
Pterostichus (*Leptoferonia*) *enyo* Will, 2007
Pterostichus (*Leptoferonia*) *falli* Van Dyke, 1926
Pterostichus (*Leptoferonia*) *fenyesi fenderi* Hacker, 1968
Pterostichus (*Leptoferonia*) *fenyesi fenyesi* Csiki, 1930
Pterostichus (*Leptoferonia*) *fuchsi* Schaeffer, 1910
Pterostichus (*Leptoferonia*) *hatchi* Hacker, 1968
Pterostichus (*Leptoferonia*) *humilis* Casey, 1913
Pterostichus (*Leptoferonia*) *idahoae* Csiki, 1930
Pterostichus (*Leptoferonia*) *inanis* Horn, 1891
Pterostichus (*Leptoferonia*) *infernalis* Hatch, 1936
Pterostichus (*Leptoferonia*) *inopinus* (Casey, 1918)
Pterostichus (*Leptoferonia*) *lobatus* Hacker, 1968
Pterostichus (*Leptoferonia*) *marinensis* Hacker, 1968
Pterostichus (*Leptoferonia*) *mattolensis* Hacker, 1968
Pterostichus (*Leptoferonia*) *pemphredo* Will, 2007
Pterostichus (*Leptoferonia*) *pumilus pumilus* Casey, 1913
Pterostichus (*Leptoferonia*) *pumilus willamettensis* Hacker, 1968
Pterostichus (*Leptoferonia*) *rothi* (Hatch, 1951)
Pterostichus (*Leptoferonia*) *sphodrinus* LeConte, 1863
Pterostichus (*Leptoferonia*) *stapedius* Hacker, 1968
Pterostichus (*Leptoferonia*) *trinitensis* Hacker, 1968
Pterostichus (*Leptoferonia*) *yosemitensis* Hacker, 1968
Pterostichus (*Anilloferonia*) *lanei* (Hatch, 1935)
Pterostichus (*Anilloferonia*) *malkini* (Hatch, 1953)
Pterostichus (*Anilloferonia*) *testaceus* (Van Dyke, 1926)
Pterostichus (*Hypherpes*) *adoxus* (Say, 1823)
Pterostichus (*Hypherpes*) *algidus* LeConte, 1853
Pterostichus (*Hypherpes*) *amethystinus* Mannerheim, 1843
Pterostichus (*Hypherpes*) *annosus* Casey, 1913
Pterostichus (*Hypherpes*) *arcanus* Casey, 1913
Pterostichus (*Hypherpes*) *baldwini* (Casey, 1924)
Pterostichus (*Hypherpes*) *barbarinus* Casey, 1913
Pterostichus (*Hypherpes*) *brachylobus* Kavanaugh & LaBonte, 2006
Pterostichus (*Hypherpes*) *californicus* (Dejean, 1828)
Pterostichus (*Hypherpes*) *canallatus* Casey, 1913
Pterostichus (*Hypherpes*) *castaneus* (Dejean, 1828)
Pterostichus (*Hypherpes*) *castanipes* (Ménétriés, 1843)
Pterostichus (*Hypherpes*) *congestus* (Ménétriés, 1843)

Pterostichus (*Hypherpes*) *craterensis* (Hatch, 1949)
Pterostichus (*Hypherpes*) *crenicollis* LeConte, 1873
Pterostichus (*Hypherpes*) *ecarinatus* Hatch, 1936
Pterostichus (*Hypherpes*) *esuriens* Casey, 1913
Pterostichus (*Hypherpes*) *gliscans* Casey, 1913
Pterostichus (*Hypherpes*) *gracilior* LeConte, 1873
Pterostichus (*Hypherpes*) *herculaneus* Mannerheim, 1843
Pterostichus (*Hypherpes*) *hornii* LeConte, 1873
Pterostichus (*Hypherpes*) *illustris* LeConte, 1851
Pterostichus (*Hypherpes*) *inermis* Fall, 1901
Pterostichus (*Hypherpes*) *isabellae* LeConte, 1851
Pterostichus (*Hypherpes*) *jacobinus* Casey, 1913
Pterostichus (*Hypherpes*) *laborans* Casey, 1913
Pterostichus (*Hypherpes*) *lacertus* Casey, 1913
Pterostichus (*Hypherpes*) *lama* (Ménétriés, 1843)
Pterostichus (*Hypherpes*) *lassulus* (Casey, 1920)
Pterostichus (*Hypherpes*) *lattini* LaBonte, 2006
Pterostichus (*Hypherpes*) *luscus* (Casey, 1918)
Pterostichus (*Hypherpes*) *menetriesii* LeConte, 1873
Pterostichus (*Hypherpes*) *mercedianus* (Casey, 1918)
Pterostichus (*Hypherpes*) *miscellus* Casey, 1913
Pterostichus (*Hypherpes*) *morionides* (Chaudoir, 1868)
Pterostichus (*Hypherpes*) *neobrunneus* Lindroth, 1966
Pterostichus (*Hypherpes*) *nigrocaeruleus* Van Dyke, 1926
Pterostichus (*Hypherpes*) *obsidianus* Casey, 1913
Pterostichus (*Hypherpes*) *occultus* Casey, 1913
Pterostichus (*Hypherpes*) *ordinarius* Casey, 1913
Pterostichus (*Hypherpes*) *ovalipennis* Casey, 1913
Pterostichus (*Hypherpes*) *panticulatus* Casey, 1913
Pterostichus (*Hypherpes*) *pergracilis* (Casey, 1920)
Pterostichus (*Hypherpes*) *planctus* LeConte, 1853
Pterostichus (*Hypherpes*) *protensiformis* (Casey, 1924)
Pterostichus (*Hypherpes*) *protractus* LeConte, 1860
Pterostichus (*Hypherpes*) *restrictus* (Casey, 1918)
Pterostichus (*Hypherpes*) *scutellaris* LeConte, 1873
Pterostichus (*Hypherpes*) *serripes* (LeConte, 1875)
Pterostichus (*Hypherpes*) *setosus* Hatch, 1951
Pterostichus (*Hypherpes*) *sierranus* Casey, 1913
Pterostichus (*Hypherpes*) *sponsor* Casey, 1913
Pterostichus (*Hypherpes*) *spraguei* LeConte, 1873
Pterostichus (*Hypherpes*) *suffusus* Casey, 1913
Pterostichus (*Hypherpes*) *tarsalis* LeConte, 1873
Pterostichus (*Hypherpes*) *tristis* (Dejean, 1828)

Pterostichus (*Hypherpes*) *tuberculofemoratus* Hatch, 1936
Pterostichus (*Hypherpes*) *vandykei* Schaeffer, 1910
Pterostichus (*Hypherpes*) *vicinus* Mannerheim, 1843
Pterostichus (*Hypherpes*) *ybousqueti* Berlov, 1999
Pterostichus (*Cryobius*) *arcticola* (Chaudoir, 1868)
Pterostichus (*Cryobius*) *auriga* Ball, 1962
Pterostichus (*Cryobius*) *barryorum* Ball, 1962
Pterostichus (*Cryobius*) *brevicornis brevicornis* (Kirby, 1837)‡
Pterostichus (*Cryobius*) *bryanti biocryus* Ball, 1962
Pterostichus (*Cryobius*) *bryanti bryanti* (Van Dyke, 1951)
Pterostichus (*Cryobius*) *bryanti bryantoides* Ball, 1962
Pterostichus (*Cryobius*) *bryanti cacumenis* Ball, 1966
Pterostichus (*Cryobius*) *bryanti stantonensis* Ball, 1966
Pterostichus (*Cryobius*) *bryanti tiliaceoradix* Ball, 1962
Pterostichus (*Cryobius*) *caribou* Ball, 1962
Pterostichus (*Cryobius*) *chipewyan* Ball, 1962
Pterostichus (*Cryobius*) *empetricola* (Dejean, 1828)‡
Pterostichus (*Cryobius*) *gerstlensis* Ball, 1962
Pterostichus (*Cryobius*) *hudsonicus* LeConte, 1863
Pterostichus (*Cryobius*) *kotzebuei* Ball, 1962
Pterostichus (*Cryobius*) *mandibularoides* Ball, 1966
Pterostichus (*Cryobius*) *nivalis* (Sahlberg, 1844)‡
Pterostichus (*Cryobius*) *parasimilis* Ball, 1962‡
Pterostichus (*Cryobius*) *pinguedineus* (Eschscholtz, 1823)‡
Pterostichus (*Cryobius*) *planus* (Sahlberg, 1885)
Pterostichus (*Cryobius*) *riparius* (Dejean, 1828)
Pterostichus (*Cryobius*) *similis* Mannerheim, 1852‡
Pterostichus (*Cryobius*) *soperi* Ball, 1966
Pterostichus (*Cryobius*) *surgens* LeConte, 1878
Pterostichus (*Cryobius*) *tareumiut* Ball, 1962‡
Pterostichus (*Cryobius*) *ventricosus ventricosus* (Eschscholtz, 1823)‡
Pterostichus (*Cryobius*) *woodi* Ball & Currie, 1997
Cyclotrachelus (*Cyclotrachelus*) *alabamensis* (Casey, 1920)
Cyclotrachelus (*Cyclotrachelus*) *approximatus* (LeConte, 1846)
Cyclotrachelus (*Cyclotrachelus*) *brevoorti* (LeConte, 1846)
Cyclotrachelus (*Cyclotrachelus*) *dejeanellus* (Csiki, 1930)
Cyclotrachelus (*Cyclotrachelus*) *faber* (Germar, 1824)
Cyclotrachelus (*Cyclotrachelus*) *freitagi* Bousquet, 1993
Cyclotrachelus (*Cyclotrachelus*) *fucatus* (Freitag, 1969)
Cyclotrachelus (*Cyclotrachelus*) *hernandensis* (Van Dyke, 1943)
Cyclotrachelus (*Cyclotrachelus*) *iuvenis* (Freitag, 1969)
Cyclotrachelus (*Cyclotrachelus*) *laevipennis* (LeConte, 1846)
Cyclotrachelus (*Cyclotrachelus*) *levifaber* (Freitag, 1969)

Cyclotrachelus (*Cyclotrachelus*) *macrovulum* (Freitag, 1969)
Cyclotrachelus (*Cyclotrachelus*) *ovulum* (Chaudoir, 1868)
Cyclotrachelus (*Cyclotrachelus*) *parafaber* (Freitag, 1969)
Cyclotrachelus (*Cyclotrachelus*) *spoliatus* (Newman, 1838)
Cyclotrachelus (*Cyclotrachelus*) *texensis* (Freitag, 1969)
Cyclotrachelus (*Cyclotrachelus*) *unicolor* (Say, 1823)
Cyclotrachelus (*Cyclotrachelus*) *vinctus* (LeConte, 1853)
Cyclotrachelus (*Evarthrus*) *alabamae* (Van Dyke, 1926)
Cyclotrachelus (*Evarthrus*) *alternans* (Casey, 1920)
Cyclotrachelus (*Evarthrus*) *blatchleyi* (Casey, 1918)
Cyclotrachelus (*Evarthrus*) *constrictus* (Say, 1823)
Cyclotrachelus (*Evarthrus*) *convivus* (LeConte, 1853)
Cyclotrachelus (*Evarthrus*) *deceptus* (Casey, 1918)
Cyclotrachelus (*Evarthrus*) *engelmani* (LeConte, 1853)
Cyclotrachelus (*Evarthrus*) *floridensis* (Freitag, 1969)
Cyclotrachelus (*Evarthrus*) *furtivus* (LeConte, 1853)
Cyclotrachelus (*Evarthrus*) *gigas* (Casey, 1918)
Cyclotrachelus (*Evarthrus*) *gravesi* (Freitag, 1969)
Cyclotrachelus (*Evarthrus*) *gravidus* (Haldeman, 1853)
Cyclotrachelus (*Evarthrus*) *heros* (Say, 1823)
Cyclotrachelus (*Evarthrus*) *hypherpiformis* (Freitag, 1969)
Cyclotrachelus (*Evarthrus*) *incisus* (LeConte, 1846)
Cyclotrachelus (*Evarthrus*) *iowensis* (Freitag, 1969)
Cyclotrachelus (*Evarthrus*) *lodingi* (Van Dyke, 1926)
Cyclotrachelus (*Evarthrus*) *nonnitens* (LeConte, 1873)
Cyclotrachelus (*Evarthrus*) *parasodalis* (Freitag, 1969)
Cyclotrachelus (*Evarthrus*) *sallei* (LeConte, 1873)
Cyclotrachelus (*Evarthrus*) *seximpressus* (LeConte, 1846)
Cyclotrachelus (*Evarthrus*) *sigillatus* (Say, 1823)
Cyclotrachelus (*Evarthrus*) *sinus* (Freitag, 1969)
Cyclotrachelus (*Evarthrus*) *sodalis colossus* (LeConte, 1846)
Cyclotrachelus (*Evarthrus*) *sodalis sodalis* (LeConte, 1846)
Cyclotrachelus (*Evarthrus*) *substriatus* (LeConte, 1846)
Cyclotrachelus (*Evarthrus*) *torvus* (LeConte, 1863)
Cyclotrachelus (*Evarthrus*) *whitcombi* (Freitag, 1969)
Abax (*Abax*) *parallelepipedus* (Piller & Mitterpacher, 1783)†

Zabrini

Amara (*Curtonotus*) *alpina* (Paykull, l790)‡
Amara (*Curtonotus*) *aulica* (Panzer, 1796)†
Amara (*Curtonotus*) *blanchardi* Hayward, 1908
Amara (*Curtonotus*) *bokori* Csiki, 1929‡
Amara (*Curtonotus*) *carinata* (LeConte, 1847)

Amara (*Curtonotus*) *daurica* (Motschulsky, 1844)‡
Amara (*Curtonotus*) *deparca* (Say, 1830)
Amara (*Curtonotus*) *hyperborea* Dejean, 1831‡
Amara (*Curtonotus*) *jacobina* LeConte, 1855
Amara (*Curtonotus*) *kurnakowi* Hieke, 1994‡
Amara (*Curtonotus*) *lacustris* LeConte, 1855
Amara (*Curtonotus*) *pennsylvanica* Hayward, 1908
Amara (*Curtonotus*) *pterostichina* Hayward, 1908
Amara (*Curtonotus*) *thoracica* Hayward, 1908
Amara (*Curtonotus*) *torrida* (Panzer, 1796)‡
Amara (*Bradytus*) *apricaria* (Paykull, 1790)†
Amara (*Bradytus*) *avida* (Say, 1823)
Amara (*Bradytus*) *browni* Lindroth, 1968
Amara (*Bradytus*) *exarata* Dejean, 1828
Amara (*Bradytus*) *fulva* (Müller, 1776)†
Amara (*Bradytus*) *glacialis* (Mannerheim, 1853)‡
Amara (*Bradytus*) *insignis* Dejean, 1831
Amara (*Bradytus*) *insularis* Horn, 1875
Amara (*Bradytus*) *latior* (Kirby, 1837)
Amara (*Bradytus*) *lindrothi* Hieke, 1990
Amara (*Bradytus*) *neomexicana* (Casey, 1924)
Amara (*Bradytus*) *schwarzi* Hayward, 1908
Amara (*Neopercosia*) *fortis* LeConte, 1880
Amara (*Percosia*) *obesa* (Say, 1823)
Amara (*Xenocelia*) *apachensis* Casey, 1884
Amara (*Xenocelia*) *bradytonota* Hieke, 2001
Amara (*Xenocelia*) *chalcea* Dejean, 1828
Amara (*Xenocelia*) *discors* Kirby, 1837
Amara (*Xenocelia*) *gibba* (LeConte, 1847)
Amara (*Xenocelia*) *harpalonota* Hieke, 2001
Amara (*Xenocelia*) *hicksi* Lindroth, 1968‡
Amara (*Xenocelia*) *lugubris* (Casey, 1918)
Amara (*Xenocelia*) *merula* (Casey, 1918)
Amara (*Xenocelia*) *rectangula ciudadensis* (Bates, 1891)
Amara (*Xenocelia*) *rectangula rectangula* LeConte, 1855
Amara (*Xenocelia*) *spuria* Lindroth, 1968
Amara (*Reductocelia*) *colvillensis* Lindroth, 1968‡
Amara (*Celia*) *bifrons* (Gyllenhal, 1810)†
Amara (*Celia*) *brunnea* (Gyllenhal, 1810)‡
Amara (*Celia*) *californica californica* Dejean, 1828
Amara (*Celia*) *exlineae* Minsk & Hatch, 1939
Amara (*Celia*) *harpalina* LeConte, 1855
Amara (*Celia*) *idahoana* (Casey, 1924)

Amara (*Celia*) *musculis* (Say, 1823)
Amara (*Celia*) *pseudobrunnea* Lindroth, 1968
Amara (*Celia*) *rubrica* Haldeman, 1843
Amara (*Celia*) *sinuosa* (Casey, 1918)
Amara (*Celia*) *texana* (Putzeys, 1866)
Amara (*Celia*) *volatilis* (Casey, 1918)
Amara (*Amarocelia*) *ellipsis* (Casey, 1918)
Amara (*Amarocelia*) *erratica* (Duftschmid, 1812)‡
Amara (*Amarocelia*) *farcta* LeConte, 1855
Amara (*Amarocelia*) *interstitialis* Dejean, 1828‡
Amara (*Amarocelia*) *laevipennis* Kirby, 1837
Amara (*Amarocelia*) *lugens* Zimmermann, 1832
Amara (*Amarocelia*) *nexa* (Casey, 1918)
Amara (*Amarocelia*) *patruelis* Dejean, 1831
Amara (*Amarocelia*) *rugulifera* Hieke, 2002
Amara (*Amarocelia*) *sodalicia* Casey, 1924
Amara (*Amarocelia*) *tenebrionella* (Bates, 1882)
Amara (*Amarocelia*) *transberingiensis* Hieke, 2002‡
Amara (*Amara*) *aenea* (DeGeer, 1774)†
Amara (*Amara*) *aeneopolita* Casey, 1918
Amara (*Amara*) *anthobia* Villa & Villa, 1833†
Amara (*Amara*) *aurata* Dejean, 1828
Amara (*Amara*) *basillaris* (Say, 1823)
Amara (*Amara*) *coelebs* Hayward, 1908
Amara (*Amara*) *communis* (Panzer, 1797)†
Amara (*Amara*) *conflata* LeConte, 1855
Amara (*Amara*) *confusa* LeConte, 1847
Amara (*Amara*) *convexa* LeConte, 1847
Amara (*Amara*) *crassispina* LeConte, 1855
Amara (*Amara*) *cupreolata* Putzeys, 1866
Amara (*Amara*) *emancipata* Lindroth, 1968
Amara (*Amara*) *eurynota* (Panzer, 1796)†
Amara (*Amara*) *externefoveata* Hieke, 2002
Amara (*Amara*) *familiaris* (Duftschmid, 1812)†
Amara (*Amara*) *haywardi* Csiki, 1929
Amara (*Amara*) *impuncticollis* (Say, 1823)
Amara (*Amara*) *littoralis* Dejean, 1828‡
Amara (*Amara*) *lunicollis* Schiødte, 1837‡
Amara (*Amara*) *neoscotica* Casey, 1924
Amara (*Amara*) *occidentalis* Hieke, 2002
Amara (*Amara*) *otiosa* Casey, 1918
Amara (*Amara*) *ovata* (Fabricius, 1792)†
Amara (*Amara*) *pomona* Casey, 1918

Amara (*Amara*) *sanjuanensis* Hatch, 1949
Amara (*Amara*) *sera* Say, 1830
Amara (*Amara*) *tenax* Casey, 1918
Amara (*Amara*) *turbata* Casey, 1918
Amara (*Paracelia*) *quenseli quenseli* (Schönherr, 1806)‡
Amara (*Zezea*) *angustata* (Say, 1823)
Amara (*Zezea*) *angustatoides* Hieke, 2000
Amara (*Zezea*) *belfragei* Horn, 1892
Amara (*Zezea*) *flebilis* (Casey, 1918)
Amara (*Zezea*) *inexspectata* Hieke, 1990
Amara (*Zezea*) *kavanaughi* Hieke, 1990
Amara (*Zezea*) *longula* LeConte, 1855
Amara (*Zezea*) *pallipes* Kirby, 1837
Amara (*Zezea*) *scitula* Zimmermann, 1832

Oodini

Dercylinus impressus (LeConte, 1853)
Evolenes exarata (Dejean, 1831)
Anatrichis minuta (Dejean, 1831)
Anatrichis oblonga Horn, 1891
Oodinus alutaceus (Bates, 1882)
Oodinus pseudopiceus Bousquet, 1996
Lachnocrepis parallela (Say, 1830)
Oodes amaroides Dejean, 1831
Oodes americanus Dejean, 1826
Oodes brevis Lindroth, 1957
Oodes fluvialis LeConte, 1863
Stenocrepis (*Stenocrepis*) *insulana* (Jacquelin du Val, 1857)
Stenocrepis (*Stenous*) *cuprea* (Chaudoir, 1843)
Stenocrepis (*Stenous*) *duodecimstriata* (Chevrolat, 1836)
Stenocrepis (*Stenous*) *elegans* (LeConte, 1851)
Stenocrepis (*Stenous*) *mexicana* (Chevrolat, 1835)
Stenocrepis (*Stenous*) *tibialis* (Chevrolat, 1834)

Panagaeini

Panagaeus (*Hologaeus*) *cruciger* Say, 1823
Panagaeus (*Hologaeus*) *fasciatus* Say, 1823
Panagaeus (*Hologaeus*) *sallei* Chaudoir, 1862
Micrixys distincta (Haldeman, 1852)

Chlaeniini

Chlaenius (*Pseudanomoglossus*) *maxillosus* Horn, 1876
Chlaenius (*Eurydactylus*) *pimalicus* Casey, 1914

Chlaenius (*Eurydactylus*) *tomentosus* (Say, 1823)
Chlaenius (*Anomoglossus*) *amoenus* Dejean, 1831
Chlaenius (*Anomoglossus*) *emarginatus* Say, 1823
Chlaenius (*Anomoglossus*) *pusillus* Say, 1823
Chlaenius (*Chlaenius*) *aestivus* Say, 1823
Chlaenius (*Chlaenius*) *augustus* Newman, 1838
Chlaenius (*Chlaenius*) *azurescens* Chaudoir, 1876
Chlaenius (*Chlaenius*) *chaudoiri* Horn, 1876
Chlaenius (*Chlaenius*) *cumatilis* LeConte, 1851
Chlaenius (*Chlaenius*) *erythropus* Germar, 1824
Chlaenius (*Chlaenius*) *fuscicornis* Dejean, 1831
Chlaenius (*Chlaenius*) *laticollis* Say, 1823
Chlaenius (*Chlaenius*) *orbus* Horn, 1871
Chlaenius (*Chlaenius*) *patruelis* LeConte, 1844
Chlaenius (*Chlaenius*) *platyderus* Chaudoir, 1856
Chlaenius (*Chlaenius*) *sericeus* (Forster, 1771)
Chlaenius (*Chlaenius*) *sparsus* LeConte, 1863
Chlaenius (*Chlaenius*) *viduus* Horn, 1871
Chlaenius (*Lithochlaenius*) *cordicollis* Kirby, 1837
Chlaenius (*Lithochlaenius*) *leucoscelis monachus* LeConte, 1851
Chlaenius (*Lithochlaenius*) *leucoscelis sanantonialis* Casey, 1914
Chlaenius (*Lithochlaenius*) *leucoscelis sonomae* Casey, 1920
Chlaenius (*Lithochlaenius*) *prasinus* Dejean, 1826
Chlaenius (*Lithochlaenius*) *purpureus* Chaudoir, 1876
Chlaenius (*Lithochlaenius*) *solitarius* Say, 1823
Chlaenius (*Chlaeniellus*) *brevilabris* LeConte, 1847
Chlaenius (*Chlaeniellus*) *circumcinctus* Say, 1830
Chlaenius (*Chlaeniellus*) *flaccidus* Horn, 1876
Chlaenius (*Chlaeniellus*) *floridanus* Horn, 1876
Chlaenius (*Chlaeniellus*) *glaucus* LeConte, 1856
Chlaenius (*Chlaeniellus*) *impunctifrons* Say, 1823
Chlaenius (*Chlaeniellus*) *nebraskensis* LeConte, 1856
Chlaenius (*Chlaeniellus*) *nemoralis* Say, 1823
Chlaenius (*Chlaeniellus*) *obsoletus* LeConte, 1851
Chlaenius (*Chlaeniellus*) *oxygonus* Chaudoir, 1843
Chlaenius (*Chlaeniellus*) *pennsylvanicus blanditus* Casey, 1920
Chlaenius (*Chlaeniellus*) *pennsylvanicus pennsylvanicus* Say, 1823
Chlaenius (*Chlaeniellus*) *pertinax* Casey, 1920
Chlaenius (*Chlaeniellus*) *simillimus* Chaudoir, 1856
Chlaenius (*Chlaeniellus*) *texanus* Horn, 1876
Chlaenius (*Chlaeniellus*) *tricolor tricolor* Dejean, 1826
Chlaenius (*Chlaeniellus*) *tricolor vigilans* Say, 1830
Chlaenius (*Chlaeniellus*) *vafer* LeConte, 1852

Chlaenius (*Chlaeniellus*) *variabilipes* Eschscholtz, 1833
Chlaenius (*Callistometus*) *ruficauda* Chaudoir, 1856
Chlaenius (*Brachylobus*) *caurinus* (Horn, 1885)
Chlaenius (*Brachylobus*) *lithophilus* Say, 1823
Chlaenius (*Agostenus*) *alternatus* Horn, 1871
Chlaenius (*Agostenus*) *caeruleicollis* Chaudoir, 1876
Chlaenius (*Agostenus*) *harpalinus* Eschscholtz, 1833
Chlaenius (*Agostenus*) *interruptus* Horn, 1876
Chlaenius (*Agostenus*) *niger* Randall, 1838
Chlaenius (*Randallius*) *purpuricollis* Randall, 1838

Licinini

Diplocheila (*Isorembus*) *assimilis* (LeConte, 1844)
Diplocheila (*Isorembus*) *crossi* Will, 1998
Diplocheila (*Isorembus*) *impressicollis* (Dejean, 1831)
Diplocheila (*Isorembus*) *major major* (LeConte, 1847)
Diplocheila (*Isorembus*) *major melissisa* Ball, 1959
Diplocheila (*Isorembus*) *nupera* Casey, 1897
Diplocheila (*Isorembus*) *obtusa* (LeConte, 1847)
Diplocheila (*Isorembus*) *oregona* (Hatch, 1951)
Diplocheila (*Isorembus*) *striatopunctata* (LeConte, 1844)
Diplocheila (*Isorembus*) *undulata* Carr, 1920
Dicaelus (*Paradicaelus*) *ambiguus* LaFerté-Sénectère, 1841
Dicaelus (*Paradicaelus*) *dilatatus dilatatus* Say, 1823
Dicaelus (*Paradicaelus*) *dilatatus sinuatus* Ball, 1959
Dicaelus (*Paradicaelus*) *elongatus* Bonelli, 1813
Dicaelus (*Paradicaelus*) *furvus carinatus* Dejean, 1831
Dicaelus (*Paradicaelus*) *furvus furvus* Dejean, 1826
Dicaelus (*Paradicaelus*) *politus* Dejean, 1826
Dicaelus (*Paradicaelus*) *sculptilis intricatus* LeConte, 1873
Dicaelus (*Paradicaelus*) *sculptilis sculptilis* Say, 1823
Dicaelus (*Paradicaelus*) *sculptilis upioides* Ball, 1959
Dicaelus (*Paradicaelus*) *teter* Bonelli, 1813
Dicaelus (*Dicaelus*) *alternans* Dejean, 1826
Dicaelus (*Dicaelus*) *costatus* LeConte, 1853
Dicaelus (*Dicaelus*) *crenatus* LeConte, 1853
Dicaelus (*Dicaelus*) *purpuratus purpuratus* Bonelli, 1813
Dicaelus (*Dicaelus*) *purpuratus splendidus* Say, 1823
Dicaelus (*Dicaelus*) *quadratus* LeConte, 1847
Dicaelus (*Dicaelus*) *subtropicus* Casey, 1913
Dicaelus (*Liodicaelus*) *chermocki* Ball, 1959
Dicaelus (*Liodicaelus*) *laevipennis laevipennis* LeConte, 1847
Dicaelus (*Liodicaelus*) *suffusus* (Casey, 1913)

Badister (*Badister*) *elegans* LeConte, 1880
Badister (*Badister*) *ferrugineus* Dejean, 1831
Badister (*Badister*) *flavipes flavipes* LeConte, 1853
Badister (*Badister*) *maculatus* LeConte, 1853
Badister (*Badister*) *neopulchellus* Lindroth, 1954
Badister (*Badister*) *notatus* Haldeman, 1843
Badister (*Badister*) *obtusus* LeConte, 1878
Badister (*Badister*) *pulchellus* LeConte, 1847
Badister (*Baudia*) *grandiceps* Casey, 1920
Badister (*Baudia*) *micans* LeConte, 1844
Badister (*Baudia*) *parviceps* Ball, 1959
Badister (*Baudia*) *reflexus* LeConte, 1880
Badister (*Baudia*) *submarinus* Motschulsky, 1859
Badister (*Baudia*) *transversus* Casey, 1920

Harpalini

Notiobia (*Anisotarsus*) *brevicollis* (Chaudoir, 1837)
Notiobia (*Anisotarsus*) *cephala* (Casey, 1914)
Notiobia (*Anisotarsus*) *maculicornis* (Chaudoir, 1843)
Notiobia (*Anisotarsus*) *mexicana* (Dejean, 1829)
Notiobia (*Anisotarsus*) *nitidipennis* (LeConte, 1847)
Notiobia (*Anisotarsus*) *purpurascens* (Bates, 1882)
Notiobia (*Anisotarsus*) *sayi* (Blatchley, 1910)
Notiobia (*Anisotarsus*) *terminata* (Say, 1823)
Xestonotus lugubris (Dejean, 1829)
Anisodactylus (*Anisodactylus*) *agricola* (Say, 1823)
Anisodactylus (*Anisodactylus*) *binotatus* (Fabricius, 1787)†
Anisodactylus (*Anisodactylus*) *californicus* Dejean, 1829
Anisodactylus (*Anisodactylus*) *carbonarius* (Say, 1823)
Anisodactylus (*Anisodactylus*) *consobrinus* LeConte, 1851
Anisodactylus (*Anisodactylus*) *furvus* LeConte, 1863
Anisodactylus (*Anisodactylus*) *harrisii* LeConte, 1863
Anisodactylus (*Anisodactylus*) *kirbyi* Lindroth, 1953
Anisodactylus (*Anisodactylus*) *lodingi* Schaeffer, 1911
Anisodactylus (*Anisodactylus*) *melanopus* (Haldeman, 1843)
Anisodactylus (*Anisodactylus*) *nigerrimus* (Dejean, 1831)
Anisodactylus (*Anisodactylus*) *nigrita* Dejean, 1829
Anisodactylus (*Anisodactylus*) *pseudagricola* Noonan, 1996
Anisodactylus (*Anisodactylus*) *similis* LeConte, 1851
Anisodactylus (*Gynandrotarsus*) *anthracinus* (Dejean, 1829)
Anisodactylus (*Gynandrotarsus*) *dulcicollis* (LaFerté-Sénectère, 1841)
Anisodactylus (*Gynandrotarsus*) *haplomus* Chaudoir, 1868
Anisodactylus (*Gynandrotarsus*) *harpaloides* (LaFerté-Sénectère, 1841)

Anisodactylus (*Gynandrotarsus*) *merula* (Germar, 1824)
Anisodactylus (*Gynandrotarsus*) *opaculus* (LeConte, 1863)
Anisodactylus (*Gynandrotarsus*) *ovularis* (Casey, 1914)
Anisodactylus (*Gynandrotarsus*) *rusticus* (Say, 1823)
Anisodactylus (*Gynandrotarsus*) *texanus* Schaeffer, 1910
Anisodactylus (*Anadaptus*) *alternans* (Motschulsky, 1845)
Anisodactylus (*Anadaptus*) *discoideus* Dejean, 1831
Anisodactylus (*Anadaptus*) *pitychrous* LeConte, 1861
Anisodactylus (*Anadaptus*) *porosus* (Motschulsky, 1845)
Anisodactylus (*Anadaptus*) *rudis* LeConte, 1863
Anisodactylus (*Anadaptus*) *sanctaecrucis* (Fabricius, 1798)
Anisodactylus (*Spongopus*) *verticalis* (LeConte, 1847)
Anisodactylus (*Aplocentrus*) *amaroides* LeConte, 1851
Anisodactylus (*Aplocentrus*) *caenus* (Say, 1823)
Anisodactylus (*Pseudaplocentrus*) *laetus* Dejean, 1829
Geopinus incrassatus (Dejean, 1829)
Amphasia (*Pseudamphasia*) *sericea* (Harris, 1828)
Amphasia (*Amphasia*) *interstitialis* (Say, 1823)
Dicheirus brunneus (Dejean, 1829)
Dicheirus dilatatus angulatus Casey, 1914
Dicheirus dilatatus dilatatus (Dejean, 1829)
Dicheirus obtusus LeConte, 1852
Dicheirus piceus (Ménétriés, 1843)
Dicheirus strenuus (Horn, 1869)
Pelmatellus (*Pelmatellus*) *obtusus* Bates, 1882
Pelmatellus (*Pelmatellus*) *stenolophoides parallelus* Goulet, 1974
Stenolophus (*Stenolophus*) *anceps* LeConte, 1857
Stenolophus (*Stenolophus*) *carbo* Bousquet, 1993
Stenolophus (*Stenolophus*) *cincticollis* LeConte, 1858
Stenolophus (*Stenolophus*) *dissimilis* Dejean, 1829
Stenolophus (*Stenolophus*) *flavipes* LeConte, 1858
Stenolophus (*Stenolophus*) *fuliginosus* Dejean, 1829
Stenolophus (*Stenolophus*) *fuscatus* Dejean, 1829
Stenolophus (*Stenolophus*) *humidus* Hamilton, 1893
Stenolophus (*Stenolophus*) *incultus* Casey, 1914
Stenolophus (*Stenolophus*) *limbalis* LeConte, 1857
Stenolophus (*Stenolophus*) *megacephalus* Lindroth, 1968
Stenolophus (*Stenolophus*) *ochropezus* (Say, 1823)
Stenolophus (*Stenolophus*) *plebejus* Dejean, 1829
Stenolophus (*Stenolophus*) *splendidulus* Motschulsky, 1864
Stenolophus (*Stenolophus*) *spretus* Dejean, 1831
Stenolophus (*Agonoderus*) *binotatus* (Casey, 1914)
Stenolophus (*Agonoderus*) *comma* (Fabricius, 1775)

Stenolophus (*Agonoderus*) *infuscatus* (Dejean, 1829)
Stenolophus (*Agonoderus*) *lecontei* (Chaudoir, 1868)
Stenolophus (*Agonoderus*) *lineola* (Fabricius, 1775)
Stenolophus (*Agonoderus*) *maculatus* (LeConte, 1869)
Stenolophus (*Agonoderus*) *rugicollis* (LeConte, 1859)
Agonoleptus conjunctus (Say, 1823)
Agonoleptus dolosus (Casey, 1914)
Agonoleptus parviceps Casey, 1914
Agonoleptus rotundatus (LeConte, 1863)
Agonoleptus rotundicollis (Haldeman, 1843)
Agonoleptus thoracicus (Casey, 1914)
Agonoleptus unicolor (Dejean, 1829)
Bradycellus (*Liocellus*) *curticollis* (Casey, 1924)
Bradycellus (*Liocellus*) *intermedius* (Fall, 1905)
Bradycellus (*Liocellus*) *laticollis* (Casey, 1924)
Bradycellus (*Liocellus*) *nitidus* (Dejean, 1829)
Bradycellus (*Liocellus*) *obtusus* (Fall, 1905)
Bradycellus (*Liocellus*) *politus* (Fall, 1905)
Bradycellus (*Liocellus*) *tahoensis* (Casey, 1924)
Bradycellus (*Bradycellus*) *fenderi* Hatch, 1951
Bradycellus (*Bradycellus*) *harpalinus* (Audinet-Serville, 1821)†
Bradycellus (*Catharellus*) *lecontei* Csiki, 1932
Bradycellus (*Stenocellus*) *ardelio* (Casey, 1914)
Bradycellus (*Stenocellus*) *aridus* (Casey, 1914)
Bradycellus (*Stenocellus*) *californicus* (LeConte, 1857)
Bradycellus (*Stenocellus*) *carolinensis* (Casey, 1924)
Bradycellus (*Stenocellus*) *congener* (LeConte, 1847)
Bradycellus (*Stenocellus*) *decorus* (Casey, 1914)
Bradycellus (*Stenocellus*) *discipulus* (Casey, 1914)
Bradycellus (*Stenocellus*) *exstans* (Casey, 1914)
Bradycellus (*Stenocellus*) *festinans* (Casey, 1914)
Bradycellus (*Stenocellus*) *humboldtianus* (Casey, 1924)
Bradycellus (*Stenocellus*) *insulsus* (Casey, 1914)
Bradycellus (*Stenocellus*) *larvatus* (Casey, 1914)
Bradycellus (*Stenocellus*) *lineatus* (Casey, 1914)
Bradycellus (*Stenocellus*) *lustrellus* (Casey, 1914)
Bradycellus (*Stenocellus*) *montanus* (Casey, 1914)
Bradycellus (*Stenocellus*) *nebulosus* LeConte, 1853
Bradycellus (*Stenocellus*) *neglectus* (LeConte, 1847)
Bradycellus (*Stenocellus*) *nigerrimus* Lindroth, 1968
Bradycellus (*Stenocellus*) *nigriceps* LeConte, 1869
Bradycellus (*Stenocellus*) *nubifer* LeConte, 1858
Bradycellus (*Stenocellus*) *picipes* (Casey, 1914)

Bradycellus (*Stenocellus*) *provoensis* (Casey, 1914)
Bradycellus (*Stenocellus*) *puncticollis* (Casey, 1914)
Bradycellus (*Stenocellus*) *purgatus* (Casey, 1914)
Bradycellus (*Stenocellus*) *rivalis* LeConte, 1858
Bradycellus (*Stenocellus*) *rupestris* (Say, 1823)
Bradycellus (*Stenocellus*) *sejunctus* (Casey, 1914)
Bradycellus (*Stenocellus*) *suavis* (Casey, 1914)
Bradycellus (*Stenocellus*) *subcordatus* Chaudoir, 1868
Bradycellus (*Stenocellus*) *supplex* (Casey, 1914)
Bradycellus (*Stenocellus*) *symetricus* (Motschulsky, 1850)
Bradycellus (*Stenocellus*) *tantillus* (Dejean, 1829)
Bradycellus (*Stenocellus*) *veronianus* (Casey, 1924)
Bradycellus (*Lipalocellus*) *nigrinus* (Dejean, 1829)
Bradycellus (*Lipalocellus*) *semipubescens* Lindroth, 1968
Bradycellus (*Triliarthrus*) *atrimedeus* (Say, 1823)
Bradycellus (*Triliarthrus*) *badipennis* (Haldeman, 1843)
Bradycellus (*Triliarthrus*) *conformis* (Fall, 1905)
Bradycellus (*Triliarthrus*) *georgei* Lindroth, 1968
Bradycellus (*Triliarthrus*) *kirbyi* (Horn, 1883)
Bradycellus (*Triliarthrus*) *lugubris* (LeConte, 1847)
Amerinus linearis (LeConte, 1863)
Dicheirotrichus (*Oreoxenus*) *mannerheimii mannerheimii* (Sahlberg, 1844)‡
Dicheirotrichus (*Trichocellus*) *cognatus* (Gyllenhal, 1827)‡
Acupalpus (*Acupalpus*) *canadensis* Casey, 1924
Acupalpus (*Acupalpus*) *carus* (LeConte, 1863)
Acupalpus (*Acupalpus*) *hydropicus* (LeConte, 1863)
Acupalpus (*Acupalpus*) *meridianus* (Linnaeus, 1760)†
Acupalpus (*Acupalpus*) *nanellus* Casey, 1914
Acupalpus (*Acupalpus*) *pumilus* Lindroth, 1968
Acupalpus (*Tachistodes*) *indistinctus* Dejean, 1831
Acupalpus (*Tachistodes*) *partiarius* (Say, 1823)
Acupalpus (*Tachistodes*) *pauperculus* Dejean, 1829
Acupalpus (*Tachistodes*) *testaceus* Dejean, 1829
Acupalpus (*Anthracus*) *punctulatus* Hatch, 1953
Acupalpus (*Anthracus*) *tener* (LeConte, 1857)
Philodes (*Philodes*) *alternans* (LeConte, 1853)
Philodes (*Goniolophus*) *flavilimbus* (LeConte, 1869)
Philodes (*Goniolophus*) *longulus* (Dejean, 1829)
Philodes (*Goniolophus*) *rectangulus* (Chaudoir, 1868)
Pogonodaptus mexicanus (Bates, 1878)
Polpochila (*Phymatocephalus*) *capitata* (Chaudoir, 1852)
Polpochila (*Phymatocephalus*) *erro* (LeConte, 1854)
Polpochila (*Polpochila*) *rotundicollis* Bates, 1882

Piosoma setosum LeConte, 1847
Euryderus grossus (Say, 1830)
Ophonus (*Metophonus*) *puncticeps* Stephens, 1828 †
Ophonus (*Metophonus*) *rufibarbis* (Fabricius, 1792)†
Harpalus (*Pseudoophonus*) *actiosus* Casey, 1914
Harpalus (*Pseudoophonus*) *compar* LeConte, 1847
Harpalus (*Pseudoophonus*) *erythropus* Dejean, 1829
Harpalus (*Pseudoophonus*) *faunus* Say, 1823
Harpalus (*Pseudoophonus*) *hatchi* Ball & Anderson, 1962
Harpalus (*Pseudoophonus*) *liobasis* Chaudoir, 1868
Harpalus (*Pseudoophonus*) *paratus* Casey, 1924
Harpalus (*Pseudoophonus*) *pensylvanicus* (DeGeer, 1774)
Harpalus (*Pseudoophonus*) *poncei* Will, 2002
Harpalus (*Pseudoophonus*) *protractus* Casey, 1914
Harpalus (*Pseudoophonus*) *rufipes* (DeGeer, 1774)†
Harpalus (*Pseudoophonus*) *texanus* Casey, 1914
Harpalus (*Pseudoophonus*) *vagans* LeConte, 1865
Harpalus (*Megapangus*) *caliginosus* (Fabricius, 1775)
Harpalus (*Megapangus*) *katiae* Battoni, 1985
Harpalus (*Plectralidus*) *erraticus* Say, 1823
Harpalus (*Plectralidus*) *retractus* LeConte, 1863
Harpalus (*Opadius*) *animosus* Casey, 1924
Harpalus (*Opadius*) *apache* Kataev, 2010
Harpalus (*Opadius*) *cordatus* (LeConte, 1853)
Harpalus (*Opadius*) *cordifer* Notman, 1919
Harpalus (*Opadius*) *desertus* LeConte, 1859
Harpalus (*Opadius*) *fraternus* LeConte, 1852
Harpalus (*Opadius*) *fulvilabris* Mannerheim, 1853
Harpalus (*Opadius*) *gravis* LeConte, 1858
Harpalus (*Opadius*) *indianus* Csiki, 1932
Harpalus (*Opadius*) *indigens* Casey, 1924
Harpalus (*Opadius*) *laevipes* Zetterstedt, 1828‡
Harpalus (*Opadius*) *laticeps* LeConte, 1850
Harpalus (*Opadius*) *lewisii* LeConte, 1865
Harpalus (*Opadius*) *megacephalus* LeConte, 1847
Harpalus (*Opadius*) *nigritarsis* Sahlberg, 1827‡
Harpalus (*Opadius*) *providens* Casey, 1914
Harpalus (*Opadius*) *reversus* Casey, 1924
Harpalus (*Opadius*) *spadiceus* Dejean, 1829
Harpalus (*Opadius*) *ventralis* LeConte, 1847
Harpalus (*Harpalus*) *affinis* (Schrank, 1781)†
Harpalus (*Harpalus*) *amputatus amputatus* Say, 1830
Harpalus (*Harpalus*) *atrichatus* Hatch, 1949

Harpalus (*Harpalus*) *balli* Noonan, 1991
Harpalus (*Harpalus*) *cautus* Dejean, 1829
Harpalus (*Harpalus*) *ellipsis* LeConte, 1847
Harpalus (*Harpalus*) *herbivagus* Say, 1823
Harpalus (*Harpalus*) *innocuus* LeConte, 1863
Harpalus (*Harpalus*) *martini* Van Dyke, 1926
Harpalus (*Harpalus*) *obnixus* Casey, 1924
Harpalus (*Harpalus*) *ochropus* Kirby, 1837
Harpalus (*Harpalus*) *opacipennis* (Haldeman, 1843)
Harpalus (*Harpalus*) *plenalis* Casey, 1914
Harpalus (*Harpalus*) *rubripes* (Duftschmid, 1812)†
Harpalus (*Harpalus*) *solitaris* Dejean, 1829‡
Harpalus (*Harpalus*) *somnulentus* Dejean, 1829
Harpalus (*Harpalus*) *vittatus alaskensis* Lindroth, 1968‡
Harpalus (*Glanodes*) *cohni* Ball, 1972
Harpalus (*Glanodes*) *corpulentus* (Casey, 1914)
Harpalus (*Glanodes*) *huachuca* Ball, 1972
Harpalus (*Glanodes*) *obliquus* Horn, 1880
Harpalus (*Glanodes*) *puncticeps* (Casey, 1914)
Harpalus (*Glanodes*) *stephani* Ball, 1972
Harpalus (*Harpalobius*) *fuscipalpis* Sturm, 1818‡
Harpalobrachys leiroides (Motschulsky, 1844)‡
Hartonymus alternatus (LeConte, 1863)
Hartonymus hoodi Casey, 1914
Amblygnathus evansi Ball & Maddison, 1987
Amblygnathus iripennis (Say, 1823)
Amblygnathus mexicanus Bates, 1882
Amblygnathus subtinctus (LeConte, 1867)
Athrostictus punctatulus (Putzeys, 1878)
Selenophorus (*Celiamorphus*) *adjunctus* (Casey, 1914)
Selenophorus (*Celiamorphus*) *contractus* (Casey, 1914)
Selenophorus (*Celiamorphus*) *discopunctatus* Dejean, 1829
Selenophorus (*Celiamorphus*) *ellipticus* Dejean, 1829
Selenophorus (*Celiamorphus*) *fossulatus* Dejean, 1829
Selenophorus (*Celiamorphus*) *granarius* Dejean, 1829
Selenophorus (*Celiamorphus*) *municeps* (Casey, 1924)
Selenophorus (*Celiamorphus*) *nanulus* (Casey, 1924)
Selenophorus (*Celiamorphus*) *subtropicus* (Casey, 1924)
Selenophorus (*Selenophorus*) *aeneopiceus* Casey, 1884
Selenophorus (*Selenophorus*) *blanchardi* Manee, 1915
Selenophorus (*Selenophorus*) *chaparralus* Purrington, 2000
Selenophorus (*Selenophorus*) *concinnus* Schaeffer, 1910
Selenophorus (*Selenophorus*) *cupreolus* Casey, 1914

Selenophorus (*Selenophorus*) *discoderoides* Schaeffer, 1910
Selenophorus (*Selenophorus*) *elongatus* (LeConte, 1847)
Selenophorus (*Selenophorus*) *famulus* Casey, 1914
Selenophorus (*Selenophorus*) *fatuus* LeConte, 1863
Selenophorus (*Selenophorus*) *gagatinus* Dejean, 1829
Selenophorus (*Selenophorus*) *houstoni* Casey, 1914
Selenophorus (*Selenophorus*) *hylacis* (Say, 1823)
Selenophorus (*Selenophorus*) *implicans* Casey, 1914
Selenophorus (*Selenophorus*) *integer* (Fabricius, 1798)
Selenophorus (*Selenophorus*) *laesus* (LeConte, 1858)
Selenophorus (*Selenophorus*) *maritimus* Casey, 1914
Selenophorus (*Selenophorus*) *opalinus* (LeConte, 1863)
Selenophorus (*Selenophorus*) *otiosus* Casey, 1914
Selenophorus (*Selenophorus*) *palliatus* (Fabricius, 1798)
Selenophorus (*Selenophorus*) *parumpunctatus* Dejean, 1829
Selenophorus (*Selenophorus*) *pedicularius* Dejean, 1829
Selenophorus (*Selenophorus*) *planipennis* LeConte, 1847
Selenophorus (*Selenophorus*) *riparius* Casey, 1914
Selenophorus (*Selenophorus*) *schaefferi* Csiki, 1932
Selenophorus (*Selenophorus*) *scolopaceus* Casey, 1914
Selenophorus (*Selenophorus*) *sinuaticollis* Notman, 1922
Selenophorus (*Selenophorus*) *striatopunctatus* Putzeys, 1878
Selenophorus (*Selenophorus*) *trepidus* (Casey, 1924)
Selenophorus breviusculus Horn, 1880
Discoderus aequalis Casey, 1914
Discoderus amoenus LeConte, 1863
Discoderus congruens Casey, 1914
Discoderus cordicollis Horn, 1891
Discoderus crassicollis Horn, 1891
Discoderus dallasensis Casey, 1924
Discoderus impotens (LeConte, 1858)
Discoderus longicollis Casey, 1914
Discoderus obsidianus Casey, 1914
Discoderus papagonis Casey, 1924
Discoderus parallelus (Haldeman, 1843)
Discoderus parilis (Casey, 1914)
Discoderus peregrinus Casey, 1924
Discoderus pinguis Casey, 1884
Discoderus robustus piceus Casey, 1914
Discoderus robustus robustus Horn, 1883
Discoderus subviolaceus Casey, 1914
Discoderus symbolicus Casey, 1914
Discoderus tenebrosus (LeConte, 1847)

Discoderus texanus Casey, 1924
Stenomorphus californicus californicus (Ménétriés, 1843)
Stenomorphus californicus rufipes LeConte, 1858
Stenomorphus convexior Notman, 1922
Stenomorphus sinaloae Darlington, 1936
Trichotichnus (*Trichotichnus*) *dichrous* (Dejean, 1829)
Trichotichnus (*Trichotichnus*) *vulpeculus* (Say, 1823)
Trichotichnus (*Iridessus*) *autumnalis* (Say, 1823)
Trichotichnus (*Iridessus*) *fulgens* (Csiki, 1932)
Aztecarpalus schaefferi Ball, 1970
Cratacanthus dubius (Palisot de Beauvois, 1811)

Sphodrini

Pseudamara arenaria (LeConte, 1847)
Calathus (*Calathus*) *fuscipes* (Goeze, 1777)†
Calathus (*Neocalathus*) *calceus* Ball & Nègre, 1972
Calathus (*Neocalathus*) *gregarius* (Say, 1823)
Calathus (*Neocalathus*) *ingratus* Dejean, 1828
Calathus (*Neocalathus*) *opaculus* LeConte, 1854
Calathus (*Neocalathus*) *peropacus* Casey, 1920
Calathus (*Neocalathus*) *ruficollis grandicollis* Casey, 1920
Calathus (*Neocalathus*) *ruficollis ignicollis* Casey, 1920
Calathus (*Neocalathus*) *ruficollis ruficollis* Dejean, 1828
Calathus (*Acalathus*) *advena* (LeConte, 1846)
Synuchus dubius (LeConte, 1854)
Synuchus impunctatus (Say, 1823)
Laemostenus (*Laemostenus*) *complanatus* (Dejean, 1828)†
Laemostenus (*Pristonychus*) *terricola terricola* (Herbst, 1784)†

Platynini

Olisthopus brevicornis Casey, 1913
Olisthopus filicornis Casey, 1913
Olisthopus innuens Casey, 1913
Olisthopus iterans Casey, 1913
Olisthopus micans LeConte, 1846
Olisthopus parmatus (Say, 1823)
Olisthopus pusio Casey, 1913
Elliptoleus acutesculptus Bates, 1882
Sericoda bembidioides Kirby, 1837
Sericoda bogemannii (Gyllenhal, 1813)‡
Sericoda obsoleta (Say, 1823)
Sericoda quadripunctata (DeGeer, 1774)‡
Tetraleucus picticornis (Newman, 1844)

Anchomenus (*Anchomenus*) *aeneolus* (LeConte, 1854)
Anchomenus (*Anchomenus*) *funebris* (LeConte, 1854)
Anchomenus (*Anchomenus*) *quadratus* (LeConte, 1854)
Rhadine albamontana Dajoz, 1998
Rhadine anthicoides Casey, 1913
Rhadine austinica Barr, 1974
Rhadine babcocki (Barr, 1960)
Rhadine balesi (Gray, 1937)
Rhadine bullis Reddell & Cokendolpher, 2004
Rhadine caudata (LeConte, 1863)
Rhadine constricta Casey, 1913
Rhadine dissecta (LeConte, 1863)
Rhadine exilis (Barr & Lawrence, 1960)
Rhadine grubbsi Reddell & Dupérré, 2009
Rhadine howdeni (Barr & Lawrence, 1960)
Rhadine infernalis ewersi (Barr, 1960)
Rhadine infernalis infernalis (Barr & Lawrence, 1960)
Rhadine insolita Barr, 1974
Rhadine ivyi Reddell & Cokendolpher, 2004
Rhadine jejuna (LeConte, 1878)
Rhadine koepkei koepkei (Barr, 1960)
Rhadine koepkei privata Barr, 1974
Rhadine lanei (Gray, 1937)
Rhadine larvalis LeConte, 1846
Rhadine lindrothi Barr, 1965
Rhadine longiceps Van Dyke, 1949
Rhadine longicollis Benedict, 1927
Rhadine longipes Casey, 1913
Rhadine myrmecodes (Horn, 1892)
Rhadine nivalis (Horn, 1881)
Rhadine noctivaga Barr, 1974
Rhadine ozarkensis Sanderson & Miller, 1941
Rhadine perlevis Casey, 1913
Rhadine persephone Barr, 1974
Rhadine pertenuis Casey, 1920
Rhadine reyesi Reddell & Cokendolpher, 2001
Rhadine rossi Van Dyke, 1949
Rhadine rubra (Barr, 1960)
Rhadine russelli Barr, 1974
Rhadine specum crinicollis Barr, 1974
Rhadine specum gentilis Barr, 1974
Rhadine specum specum (Barr, 1960)
Rhadine sprousei Reddell & Cokendolpher, 2004

Rhadine sublustris Casey, 1913
Rhadine subterranea mitchelli Barr, 1974
Rhadine subterranea subterranea (Van Dyke, 1919)
Rhadine tenebrosa mckenziei Barr, 1974
Rhadine tenebrosa tenebrosa (Barr, 1960)
Rhadine testacea Casey, 1920
Rhadine umbra Casey, 1913
Mexisphodrus valverdensis Barr, 1982
Tanystoma cuyama Liebherr, 1985
Tanystoma maculicolle (Dejean, 1828)
Tanystoma striatum (Dejean, 1828)
Tanystoma sulcatum (Dejean, 1828)
Paranchus albipes (Fabricius, 1794)†
Oxypselaphus pusillus (LeConte, 1854)
Agonum (*Platynomicrus*) *ferruginosum* (Dejean, 1828)
Agonum (*Platynomicrus*) *nigriceps* LeConte, 1846‡
Agonum (*Europhilus*) *anchomenoides* Randall, 1838
Agonum (*Europhilus*) *canadense* Goulet, 1969
Agonum (*Europhilus*) *consimile* (Gyllenhal, 1810)‡
Agonum (*Europhilus*) *darlingtoni* Lindroth, 1954
Agonum (*Europhilus*) *exaratum* (Mannerheim, 1853)‡
Agonum (*Europhilus*) *galvestonicum* (Casey, 1920)
Agonum (*Europhilus*) *gratiosum* (Mannerheim, 1853)‡
Agonum (*Europhilus*) *limbatum* Motschulsky, 1845
Agonum (*Europhilus*) *lutulentum* (LeConte, 1854)
Agonum (*Europhilus*) *palustre* Goulet, 1969
Agonum (*Europhilus*) *picicornoides* Lindroth, 1966
Agonum (*Europhilus*) *retractum* LeConte, 1846
Agonum (*Europhilus*) *simile* Kirby, 1837
Agonum (*Europhilus*) *sordens* Kirby, 1837
Agonum (*Europhilus*) *superioris* Lindroth, 1966
Agonum (*Europhilus*) *thoreyi* Dejean, 1828‡
Agonum (*Agonum*) *bicolor* (Dejean, 1828)‡
Agonum (*Agonum*) *muelleri* (Herbst, 1784)†
Agonum (*Agonum*) *piceolum* (LeConte, 1879)
Agonum (*Agonum*) *placidum* (Say, 1823)
Agonum (*Olisares*) *aeruginosum* Dejean, 1828
Agonum (*Olisares*) *affine* Kirby, 1837
Agonum (*Olisares*) *albicrus* Dejean, 1828
Agonum (*Olisares*) *anthracinum* Dejean, 1831
Agonum (*Olisares*) *basale* LeConte, 1846
Agonum (*Olisares*) *belleri* (Hatch, 1933)

Agonum (*Olisares*) *brevicolle* Dejean, 1828
Agonum (*Olisares*) *collare* (Say, 1830)
Agonum (*Olisares*) *corvus* (LeConte, 1860)
Agonum (*Olisares*) *crenistriatum* (LeConte, 1863)
Agonum (*Olisares*) *crenulatum* (LeConte, 1854)
Agonum (*Olisares*) *cupreum* Dejean, 1831
Agonum (*Olisares*) *cupripenne* (Say, 1823)
Agonum (*Olisares*) *cyanopis* (Bates, 1882)
Agonum (*Olisares*) *cyclifer* (Bates, 1884)
Agonum (*Olisares*) *deceptivum* (LeConte, 1879)
Agonum (*Olisares*) *decorum* (Say, 1823)
Agonum (*Olisares*) *deplanatum* Ménétriés, 1843
Agonum (*Olisares*) *elongatulum* (Dejean, 1828)
Agonum (*Olisares*) *errans* (Say, 1823)
Agonum (*Olisares*) *excavatum* Dejean, 1828
Agonum (*Olisares*) *extensicolle* (Say, 1823)
Agonum (*Olisares*) *extimum* Liebherr, 1986
Agonum (*Olisares*) *ferreum* Haldeman, 1843
Agonum (*Olisares*) *fidele* Casey, 1920
Agonum (*Olisares*) *fossiger* Dejean, 1828
Agonum (*Olisares*) *harrisii* LeConte, 1846
Agonum (*Olisares*) *imitans* (Notman, 1919)
Agonum (*Olisares*) *melanarium* Dejean, 1828
Agonum (*Olisares*) *metallescens* (LeConte, 1854)
Agonum (*Olisares*) *moerens* Dejean, 1828
Agonum (*Olisares*) *muiri* Liebherr, 1984
Agonum (*Olisares*) *mutatum* (Gemminger & Harold, 1868)
Agonum (*Olisares*) *nutans* (Say, 1823)
Agonum (*Olisares*) *octopunctatum* (Fabricius, 1798)
Agonum (*Olisares*) *pacificum* Casey, 1920
Agonum (*Olisares*) *pallipes* (Fabricius, 1787)
Agonum (*Olisares*) *parextimum* Liebherr, 1986
Agonum (*Olisares*) *propinquum* (Gemminger & Harold, 1868)
Agonum (*Olisares*) *punctiforme* (Say, 1823)
Agonum (*Olisares*) *quadrimaculatum* (Horn, 1885)
Agonum (*Olisares*) *quinquepunctatum* Motschulsky, 1844‡
Agonum (*Olisares*) *rigidulum* (Casey, 1920)
Agonum (*Olisares*) *rufipes* Dejean, 1828
Agonum (*Olisares*) *striatopunctatum* Dejean, 1828
Agonum (*Olisares*) *sulcipenne* (Horn, 1881)
Agonum (*Olisares*) *suturale* Say, 1830
Agonum (*Olisares*) *tenue* (LeConte, 1854)

Agonum (*Olisares*) *texanum* (LeConte, 1878)
Agonum (*Olisares*) *trigeminum* Lindroth, 1954
Platynus (*Microplatynus*) *agilis* LeConte, 1863
Platynus (*Microplatynus*) *pecki* Barr, 1982
Platynus (*Platynus*) *brunneomarginatus* (Mannerheim, 1843)
Platynus (*Platynus*) *daviesi* Bousquet, 2012
Platynus (*Platynus*) *decentis* (Say, 1823)
Platynus (*Platynus*) *indecentis* Liebherr & Will, 1996
Platynus (*Platynus*) *opaculus* LeConte, 1863
Platynus (*Platynus*) *ovipennis* (Mannerheim, 1843)
Platynus (*Platynus*) *parmarginatus* Hamilton, 1893
Platynus (*Platynus*) *tenuicollis* (LeConte, 1846)
Platynus (*Platynus*) *trifoveolatus* Beutenmüller, 1903
Platynus (*Batenus*) *angustatus* Dejean, 1828
Platynus (*Batenus*) *cincticollis* (Say, 1823)
Platynus (*Batenus*) *hypolithos* (Say, 1823)
Platynus (*Batenus*) *mannerheimii* (Dejean, 1828)‡
Platynus (*Batenus*) *prognathus* Van Dyke, 1926
Platynus (*Glyptolenopsis*) *ovatulus* (Bates, 1884)
Platynus (*Trapezodera*) *cohni* Liebherr & Will, 1996
Platynus (*Dyscolus*) *cazieri* Liebherr & Will, 1996
Platynus (*Dyscolus*) *falli* (Darlington, 1936)
Platynus (*Dyscolus*) *lyratus* (Chaudoir, 1879)
Platynus (*Dyscolus*) *megalops* (Bates, 1882)
Platynus (*Dyscolus*) *rufiventris* (Van Dyke, 1926)
Metacolpodes buchanani (Hope, 1831)†

Perigonini

Perigona (*Trechicus*) *nigriceps* (Dejean, 1831)†
Perigona (*Trechicus*) *pallipennis* (LeConte, 1853)

Atranini

Atranus pubescens (Dejean, 1828)

Lachnophorini

Anchonoderus quadrinotatus Horn, 1878
Anchonoderus schaefferi Liebke, 1928
Lachnophorus elegantulus Mannerheim, 1843
Euphorticus occidentalis Horn, 1891
Euphorticus pubescens (Dejean, 1831)
Calybe (*Ega*) *laetula* (LeConte, 1851)
Calybe (*Ega*) *sallei* (Chevrolat, 1839)
Eucaerus (*Eucaerus*) *varicornis* LeConte, 1853

Pentagonicini

Pentagonica bicolor (LeConte, 1863)
Pentagonica felix Bell, 1987
Pentagonica flavipes flavipes (LeConte, 1853)
Pentagonica marshalli Mateu, 1995
Pentagonica nigricornis Darlington, 1934
Pentagonica picticornis Bates, 1883

Odacanthini

Colliuris (*Mimocasnonia*) *pilatei* (Chaudoir, 1848)
Colliuris (*Cosnania*) *lengi* (Schaeffer, 1910)
Colliuris (*Cosnania*) *pensylvanica* (Linnaeus, 1758)
Colliuris (*Calocolliuris*) *caymanensis* Darlington, 1947
Colliuris (*Calocolliuris*) *lioptera* (Bates, 1891)
Colliuris (*Calocolliuris*) *ludoviciana* (Sallé, 1849)

Ctenodactylini

Leptotrachelus depressus Blatchley, 1923
Leptotrachelus dorsalis (Fabricius, 1801)
Leptotrachelus pallidulus Motschulsky, 1864

Cyclosomini

Tetragonoderus (*Crossonychus*) *fasciatus* (Haldeman, 1843)
Tetragonoderus (*Crossonychus*) *intersectus* (Germar, 1824)
Tetragonoderus (*Crossonychus*) *laevigatus* Chaudoir, 1876†
Tetragonoderus (*Crossonychus*) *latipennis* LeConte, 1874
Tetragonoderus (*Crossonychus*) *pallidus* Horn, 1869

Lebiini

Mochtherus tetraspilotus (Macleay, 1825)†
Phloeoxena (*Oenaphelox*) *signata* (Dejean, 1825)
Eucheila (*Inna*) *boyeri* (Solier, 1835)
Somotrichus unifasciatus (Dejean, 1831)†
Coptodera (*Coptodera*) *aerata* Dejean, 1825
Coptodera (*Coptodera*) *brunnea* Shpeley & Ball, 1994
Coptodera (*Coptodera*) *festiva* Dejean, 1825
Coptodera (*Coptodera*) *nitidula* (Buquet, 1835)
Coptodera (*Coptodera*) *picea* Dejean, 1826
Cymindis (*Tarulus*) *americana* Dejean, 1826
Cymindis (*Tarulus*) *arizonensis* Schaeffer, 1910
Cymindis (*Tarulus*) *borealis* LeConte, 1863
Cymindis (*Tarulus*) *californica* Horn, 1895
Cymindis (*Tarulus*) *cribricollis* Dejean, 1831

Cymindis (*Tarulus*) *elegans* LeConte, 1846
Cymindis (*Tarulus*) *evanescens* Casey, 1913
Cymindis (*Tarulus*) *interior* Lindroth, 1969
Cymindis (*Tarulus*) *laticollis* Say, 1830
Cymindis (*Tarulus*) *neglecta* Haldeman, 1843
Cymindis (*Tarulus*) *pilosa* Say, 1823
Cymindis (*Tarulus*) *planipennis* LeConte, 1863
Cymindis (*Tarulus*) *seriata* Hatch, 1953
Cymindis (*Tarulus*) *unicolor* Kirby, 1837
Cymindis (*Tarulus*) *uniseriata* Bates, 1884
Cymindis (*Tarulus*) *vaporariorum* (Linnaeus, 1758)‡
Cymindis (*Pinacodera*) *abbreviata* (Casey, 1920)
Cymindis (*Pinacodera*) *ampliata* (Casey, 1920)
Cymindis (*Pinacodera*) *atripennis* (Casey, 1920)
Cymindis (*Pinacodera*) *blanda* Casey, 1913
Cymindis (*Pinacodera*) *complanata* Dejean, 1826
Cymindis (*Pinacodera*) *limbata* Dejean, 1831
Cymindis (*Pinacodera*) *obscura* (Casey, 1920)
Cymindis (*Pinacodera*) *platicollis* (Say, 1823)
Cymindis (*Pinacodera*) *punctifera* (LeConte, 1884)
Cymindis (*Pinacodera*) *punctigera* LeConte, 1851
Cymindis (*Pinacodera*) *subcarinata* (Casey, 1920)
Apenes (*Apenes*) *angustata* Schwarz, 1878
Apenes (*Apenes*) *coriacea* (Chevrolat, 1863)
Apenes (*Apenes*) *hilariola* Bates, 1891
Apenes (*Apenes*) *lucidula lucidula* (Dejean, 1831)
Apenes (*Apenes*) *nebulosa* LeConte, 1867
Apenes (*Apenes*) *opaca* LeConte, 1851
Apenes (*Apenes*) *pallidipes* (Chevrolat, 1836)
Apenes (*Apenes*) *parallela parallela* (Dejean, 1825)
Apenes (*Apenes*) *sinuata* (Say, 1823)
Dromius (*Dromius*) *fenestratus* (Fabricius, 1794)†
Dromius (*Dromius*) *piceus* Dejean, 1831
Philorhizus atriceps (LeConte, 1880)
Philorhizus melanocephalus (Dejean, 1825)†
Microlestes brevilobus brevilobus Lindroth, 1969
Microlestes curtipennis (Casey, 1920)
Microlestes lindrothi Mateu, 1995
Microlestes linearis (LeConte, 1851)
Microlestes lucidus lucidus (LeConte, 1851)
Microlestes major Lindroth, 1969
Microlestes nigrinus (Mannerheim, 1843)
Microlestes pusio (LeConte, 1863)

Apristus actuosus Casey, 1920
Apristus agitatus Casey, 1920
Apristus cephalus Casey, 1920
Apristus constrictus Casey, 1920
Apristus latens (LeConte, 1846)
Apristus laticollis LeConte, 1851
Apristus liratus Casey, 1920
Apristus nevadensis Casey, 1920
Apristus pugetanus Casey, 1920
Apristus subdeletus Casey, 1920
Apristus subsulcatus (Dejean, 1826)
Apristus thoracicus Casey, 1920
Apristus tuckeri Casey, 1920
Syntomus americanus (Dejean, 1831)
Axinopalpus biplagiatus (Dejean, 1825)
Axinopalpus denticulatus Hatch, 1949
Axinopalpus fusciceps LeConte, 1851
Axinopalpus illectus Casey, 1920
Axinopalpus pratti Hatch, 1949
Axinopalpus utahensis Tanner, 1928
Axinopalpus vittatus Hatch, 1949
Lebia (*Loxopeza*) *atriceps* LeConte, 1863
Lebia (*Loxopeza*) *atriventris* Say, 1823
Lebia (*Loxopeza*) *deceptrix* Madge, 1967
Lebia (*Loxopeza*) *grandis* Hentz, 1830
Lebia (*Loxopeza*) *pimalis* (Casey, 1920)
Lebia (*Loxopeza*) *subdola* Madge, 1967
Lebia (*Loxopeza*) *subgrandis* Madge, 1967
Lebia (*Loxopeza*) *tricolor* Say, 1823
Lebia (*Polycheloma*) *lecontei* Madge, 1967
Lebia (*Lamprias*) *divisa* LeConte, 1850
Lebia (*Lebia*) *abdita* Madge, 1967
Lebia (*Lebia*) *abdominalis* Chaudoir, 1843
Lebia (*Lebia*) *analis* Dejean, 1825
Lebia (*Lebia*) *arizonica* Schaeffer, 1910
Lebia (*Lebia*) *bilineata* Motschulsky, 1859
Lebia (*Lebia*) *bitaeniata* Chevrolat, 1834
Lebia (*Lebia*) *bivittata* (Fabricius, 1798)
Lebia (*Lebia*) *bumeliae* Schaeffer, 1910
Lebia (*Lebia*) *calliope* Bates, 1883
Lebia (*Lebia*) *collaris* Dejean, 1826
Lebia (*Lebia*) *cyanipennis* Dejean, 1831
Lebia (*Lebia*) *esurialis* Casey, 1920

Lebia (*Lebia*) *fuscata* Dejean, 1825
Lebia (*Lebia*) *guttula* LeConte, 1851
Lebia (*Lebia*) *histrionica* Bates, 1883
Lebia (*Lebia*) *insulata* Madge, 1967
Lebia (*Lebia*) *lecta* Horn, 1885
Lebia (*Lebia*) *lobulata* LeConte, 1863
Lebia (*Lebia*) *marginicollis* Dejean, 1825
Lebia (*Lebia*) *miranda* (Horn, 1872)
Lebia (*Lebia*) *moesta* LeConte, 1850
Lebia (*Lebia*) *nigricapitata* Madge, 1967
Lebia (*Lebia*) *ornata* Say, 1823
Lebia (*Lebia*) *pectita* Horn, 1885
Lebia (*Lebia*) *perita* Casey, 1920
Lebia (*Lebia*) *perpallida* Madge, 1967
Lebia (*Lebia*) *pleuritica* LeConte, 1846
Lebia (*Lebia*) *pulchella* Dejean, 1826
Lebia (*Lebia*) *pumila* Dejean, 1831
Lebia (*Lebia*) *rufopleura* Schaeffer, 1910
Lebia (*Lebia*) *scalpta* Bates, 1883
Lebia (*Lebia*) *scapula* Horn, 1885
Lebia (*Lebia*) *solea* Hentz, 1830
Lebia (*Lebia*) *subrugosa* Chaudoir, 1871
Lebia (*Lebia*) *tuckeri* (Casey, 1920)
Lebia (*Lebia*) *viridipennis* Dejean, 1826
Lebia (*Lebia*) *viridis* Say, 1823
Lebia (*Lebia*) *vittata* (Fabricius, 1777)
Hyboptera auxiliadora Erwin, 2004
Plochionus (*Menidius*) *amandus* Newman, 1840
Plochionus (*Menidius*) *bicolor* Notman, 1919
Plochionus (*Menidius*) *discoideus* LeConte, 1880
Plochionus (*Menidius*) *timidus* Haldeman, 1843
Plochionus (*Plochionus*) *pallens* (Fabricius, 1775)†
Tecnophilus croceicollis croceicollis (Ménétriés, 1843)
Tecnophilus croceicollis peigani Larson, 1969
Tecnophilus pilatei Chaudoir, 1877
Calleida (*Calleida*) *circumcincta* Bates, 1883
Calleida (*Calleida*) *decora* (Fabricius, 1801)
Calleida (*Calleida*) *fimbriata* Bates, 1883
Calleida (*Calleida*) *fulgida* Dejean, 1831
Calleida (*Calleida*) *obrieni* Mateu, 1995
Calleida (*Calleida*) *planulata* LeConte, 1858
Calleida (*Calleida*) *platynoides* Horn, 1882
Calleida (*Calleida*) *punctata* LeConte, 1846

Calleida (*Calleida*) *punctulata* Chaudoir, 1848
Calleida (*Calleida*) *purpurea* (Say, 1823)
Calleida (*Calleida*) *viridipennis* (Say, 1823)
Philophuga caerulea Casey, 1913
Philophuga viridicollis (LeConte, 1846)
Philophuga viridis amoena (LeConte, 1846)
Philophuga viridis horni Chaudoir, 1877
Philophuga viridis klamathea Larson, 1969
Philophuga viridis viridis (Dejean, 1831)
Infernophilus castaneus (Horn, 1882)
Onota angulicollis (Reiche, 1842)
Onota floridana Horn, 1881
Cylindronotum aeneum Putzeys, 1845
Agra oblongopunctata oblongopunctata Chevrolat, 1836
Euproctinus (*Neoeuproctus*) *abjectus* (Bates, 1883)
Euproctinus (*Neoeuproctus*) *balli* Shpeley, 1986
Euproctinus (*Neoeuproctus*) *trivittatus* (LeConte, 1878)
Nemotarsus elegans LeConte, 1853
Nemotarsus rhombifer Bates, 1883

Zuphiini

Zuphium americanum Dejean, 1831
Zuphium delectum Liebke, 1933
Zuphium longicolle LeConte, 1879
Zuphium magnum Schaeffer, 1910
Zuphium mexicanum Chaudoir, 1863
Zuphium pseudamericanum Mateu, 1981
Pseudaptinus (*Pseudaptinus*) *lecontei* (Dejean, 1831)
Pseudaptinus (*Pseudaptinus*) *oviceps* Van Dyke, 1926
Pseudaptinus (*Pseudaptinus*) *tenuicollis* (LeConte, 1851)
Pseudaptinus (*Thalpius*) *cubanus* (Chaudoir, 1877)
Pseudaptinus (*Thalpius*) *deceptor* Darlington, 1934
Pseudaptinus (*Thalpius*) *dorsalis* (Brullé, 1834)
Pseudaptinus (*Thalpius*) *hoegei* (Bates, 1883)
Pseudaptinus (*Thalpius*) *horni* (Chaudoir, 1872)
Pseudaptinus (*Thalpius*) *microcephalus* (Van Dyke, 1926)
Pseudaptinus (*Thalpius*) *nobilis* Liebke, 1934
Pseudaptinus (*Thalpius*) *pygmaeus* (Dejean, 1826)
Pseudaptinus (*Thalpius*) *rufulus* (LeConte, 1851)

Galeritini

Galerita (*Progaleritina*) *atripes* LeConte, 1858
Galerita (*Progaleritina*) *bicolor* (Drury, 1773)

Galerita (*Progaleritina*) *forreri* Bates, 1883
Galerita (*Progaleritina*) *janus* (Fabricius, 1792)
Galerita (*Progaleritina*) *lecontei lecontei* Dejean, 1831
Galerita (*Progaleritina*) *mexicana* Chaudoir, 1872
Galerita (*Progaleritina*) *reichardti* Ball & Nimmo, 1983
Galerita (*Galerita*) *aequinoctialis* Chaudoir, 1852

Helluonini

Helluomorphoides clairvillei (Dejean, 1831)
Helluomorphoides ferrugineus (LeConte, 1853)
Helluomorphoides latitarsis (Casey, 1913)
Helluomorphoides nigripennis (Dejean, 1831)
Helluomorphoides papago (Casey, 1913)
Helluomorphoides praeustus bicolor (Harris, 1828)
Helluomorphoides praeustus floridanus Ball, 1956
Helluomorphoides praeustus praeustus (Dejean, 1825)
Helluomorphoides texanus (LeConte, 1853)

Pseudomorphini

Pseudomorpha (*Pseudomorpha*) *alleni* Van Dyke, 1953
Pseudomorpha (*Pseudomorpha*) *alutacea* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *augustata* Horn, 1883
Pseudomorpha (*Pseudomorpha*) *behrensi* Horn, 1870
Pseudomorpha (*Pseudomorpha*) *castanea* Casey, 1909
Pseudomorpha (*Pseudomorpha*) *champlaini* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *consanguinea* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *cronkhitei* Horn, 1867
Pseudomorpha (*Pseudomorpha*) *cylindrica* Casey, 1889
Pseudomorpha (*Pseudomorpha*) *excrucians* Kirby, 1823
Pseudomorpha (*Pseudomorpha*) *falli* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *hubbardi* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *parallela* Van Dyke, 1943
Pseudomorpha (*Pseudomorpha*) *schwarzi* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *tenebroides* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *vandykei* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *vicina* Notman, 1925
Pseudomorpha (*Pseudomorpha*) *vindicata* Notman, 1925

Catalogue of North American Geadephaga taxa

Family TRACHYPACHIDAE Thomson, 1857

Trachypachini C.G. Thomson, 1857: 5. Type genus: *Trachypachus* Motschulsky, 1844.

Diversity. Six species in western North America (three species), South America (two species), and northern Eurasia (one species). The species are arrayed in two genera: *Systolosoma* Solier (two South American species) and *Trachypachus* (four species).

Genus *Trachypachus* Motschulsky, 1844

Trachypachus Motschulsky, 1844: 86. Type species: *Blethisa zetterstedtii* Gyllenhal, 1827 designated by Thomson (1859: 3). Etymology. Uncertain, possibly from the Greek *trachelos* (neck, by extension pronotum) contracted and *pachys* (thick), alluding to the convex pronotum ("*corselet convexe, large*") or from the Greek *trachys* (uneven, rough) and *pachys* [masculine].

Trachypachys Gemminger and Harold, 1868a: 46. Unjustified emendation of *Trachypachus* Motschulsky, 1844.

Diversity. Northern Hemisphere, with four species in the Nearctic (three species) and Palaearctic (one species) Regions.

Identification. Lindroth (1961a: 1-4) reviewed the North American species and discussed the structural differences between the three taxa.

Trachypachus gibbsii LeConte, 1861

Trachypachys gibbsii LeConte, 1861b: 339. Type locality: «east of Fort Colville [Washington]» (original citation). Syntype(s) in MCZ [# 85]. Etymology. The specific name honors the American geologist and ethnologist George Gibbs [1815-1873] who gathered zoological specimens for the Smithsonian while working for the Northwest Boundary Commission.

Trachypachus californicus Motschulsky, 1864: 194. Type locality: «Calif[ornie]» (original citation). Two syntypes, one listed as "corruptum," in ZMMU (Keleinikova 1976: 190). Synonymy established by Horn (1870a: 71).

Trachypachus alticola Casey, 1920: 144. Type locality: «Lake Tahoe [Placer County], California» (original citation). Lectotype (♂), designated by Lindroth (1975: 111), in USNM [# 46830]. Synonymy established by Van Dyke (1925: 112), confirmed by Lindroth (1961a: 3).

Distribution. This species ranges from southern British Columbia (Lindroth 1961a: 4) to northwestern Montana (Russell 1968: 42; Edwards 1975: 48), south to the southern part of the Sierra Nevada (Lindroth 1961a: 4) and to the Coast Ranges (Fall 1901a: 39) in California.

Records. CAN: BC **USA**: CA, ID, MT, OR, WA

Trachypachus inermis Motschulsky, 1850

Trachypachus inermis Motschulsky, 1850a: 16. Type locality: «California?» (original citation), herein restricted to Lake Tahoe, Placer County (see Casey 1920: 146, as *T. specularis*). Four syntypes in ZMMU (Keleinikova 1976: 201).

Trachypachus holmbergi Mannerheim, 1853: 119. Type locality: «ad ostia fl[umen] Kaktnu [= Kenai River] peninsulae Kenai [Alaska]» (original citation). Holotype [by monotypy] location unknown (possibly in ZMH). Synonymy established by LeConte (1857c: 31). Etymology. The specific name was proposed for the Finnish naturalist, geologist, and ethnographer Heinrich [Henrik] Johan Holmberg [1818-1864], who visited Russian America in 1850 and 1851 and collected insects.

Trachypachus oregonus Casey, 1920: 145. Type locality: «Oregon» (original citation). Lectotype (♀), designated by Lindroth (1975: 111), in USNM [# 46831]. Synonymy established by Van Dyke (1925: 112), confirmed by Lindroth (1961a: 1).

Trachypachus specularis Casey, 1920: 146. Type locality: «Lake Tahoe [Placer County], California» (original citation for the lectotype). Lectotype (♂), designated by Lindroth (1975: 111), in USNM [# 46832]. Synonymy established by Van Dyke (1925: 112), confirmed by Lindroth (1961a: 1).

Distribution. The range of this species extends from the Kenai Peninsula in Alaska (Lindroth 1961a: 2) to northwestern Saskatchewan (Hooper 1980: 65), south to southern Colorado (Wickham 1902: 230; LeConte 1878a: 464; Bell 1971: 58), southern Utah (Garfield County, Foster F. Purrington pers. comm. 2011), and the Sierra Nevada and Coast Ranges in California (Fall 1901a: 39). One old specimen, simply labeled "Ks" is known (MCZ, collection LeConte).

Records. CAN: AB, BC (VCI), NT, SK, YT **USA**: AK, CA, CO, ID, MT, NV, OR, UT, WA, WY [KS]

Trachypachus slevini Van Dyke, 1925

Trachypachus slevini Van Dyke, 1925: 111. Type locality: «Olney [Clatsop County], near Astoria, Oregon» (original citation). Holotype (♀) in CAS [# 1616]. Etymology. The specific name honors Joseph Richard Slevin [1881-1957], curator of herpetology at the California Academy of Sciences from 1928 to 1957.

Distribution. This species is known only from the western regions of Washington and Oregon (Lindroth 1961a: 4).

Records. USA: OR, WA

Family RHYSODIDAE Laporte, 1840

Rhysodites Laporte, 1840: 291. Type genus: *Rhysodes* Germar, 1822.

Diversity. Worldwide, with about 355 species arrayed in six tribes: Clinidiini (about 135 species), Dhysorini (ten species), Leoglymmiini (one species), Medisorini (one

species), Omoglymmiini (about 180 species), and Rhysodini (about 25 species). Over 90% of the species are found in the Southern Hemisphere.
Identification. Bell (1970) revised the North American, Middle American, and West Indies species and provided keys for their identification.

Tribe Clinidiini Bell and Bell, 1978

Clinidiina R.T. Bell and J.R. Bell, 1978: 59. Type genus: *Clinidium* Kirby, 1830.

Diversity. Worldwide, with about 135 species arrayed in three genera: *Clinidium* (about 75 species), *Grouvellina* Bell and Bell (17 Madagascan species), and *Rhyzodiastes* Fairmaire (about 45 species). The vast majority of species are found in the Southern Hemisphere, with only 11 species (about 8% of the world fauna) occurring in the Northern Hemisphere.

Genus *Clinidium* Kirby, 1830

Clinidium Kirby, 1830: 6. Type species: *Clinidium guildingii* Kirby, 1830 by monotypy. Etymology (original). From the Greek *clinidion* (small couch), alluding to the body shape of the adult [neuter].

Diversity. About 75 species in the Nearctic (six species), Neotropical (about 65 species), and Palaearctic (three species) Regions arrayed in four subgenera: *Arctoclinidium* (nine species), *Clinidium s.str.* (about 50 Neotropical species), *Mexiclinidium* Bell and Bell (11 Middle American species), and *Tainoa* Bell and Bell (four West Indian species).
Identification. Bell and Bell (1985) revised the species of the world and provided keys for their identification.

Subgenus *Arctoclinidium* Bell, 1970

Arctoclinidium R.T. Bell, 1970: 308. Type species: *Rhysodes sculptilis* Newman, 1838 by original designation. Etymology. From the Greek *arctos* (north) and the generic name *Clinidium* [*q.v.*] [neuter].

Diversity. Northern Hemisphere, with nine species in North America (six species), Japan (one species), Caucasian region (one species), and southern Europe (one species).

Clinidium apertum allegheniense Bell and Bell, 1975

Clinidium allegheniense R.T. Bell and J.R. Bell, 1975: 65. Type locality: «Pittsburgh [Allegheny County], Pennsylvania» (original citation). Holotype (♂) in SMEK.

Distribution. This subspecies is known only from southwestern Pennsylvania and the Black Mountains in western North Carolina (Bell and Bell 1985: 91). The record from "Ohio" (Bousquet and Larochelle 1993: 42) needs confirmation.
Records. USA: NC, PA [OH]

Clinidium apertum apertum Reitter, 1880

Clinidium apertum Reitter, 1880: 29. Type locality: «Himalaya» (original citation), which is incorrect (Bell and Bell 1985: 90); Cartersville, Bartow County, Georgia (see Bell and Bell 1975: 66, as *C. allegheniense georgicum*), herein selected. Syntype(s) in NHMW (Bell and Bell 1985: 90).

Clinidium allegheniense georgicum R.T. Bell and J.R. Bell, 1975: 66. Type locality: «Cartersville [Bartow County], Georgia» (original citation). Holotype (♂) in USNM [# 73195]. Synonymy established by Bell and Bell (1978: 65).

Distribution. This subspecies is known only from the type locality in northern Georgia (Bell and Bell 1985: 90).
Records. USA: GA

Clinidium baldufi Bell, 1970

Clinidium baldufi R.T. Bell, 1970: 313. Type locality: «Dayton [La Salle County], Ill[inois]» (original citation). Holotype (♂) in MCZ [# 31748]. Etymology. The specific name was proposed for Walter Valentine Balduf [1889-1969], professor of entomology at the University of Illinois.

Distribution. This species ranges from New Jersey to central Iowa, including southwestern Wisconsin (Messer 2010: 33), south to southern Mississippi (Bell and Bell 1985: 89) and northern Florida (Bell 1970: 313). Old specimens simply labeled from Nebraska, Kansas, Missouri, and Texas are known (Bell 1970: 313). The records from "Arkansas" and "Louisiana" (Bousquet and Larochelle 1993: 43) need confirmation.
Records. USA: AL, FL, GA, IA, IL, IN, KY, MD, MS, NC, NJ, OH, PA, SC, TN, VA, WI, WV [AR, KS, LA, MO, NE, TX]

Clinidium calcaratum LeConte, 1875

Clinidium calcaratum LeConte, 1875b: 164. Type locality: «Vancouver Island; Oregon» (original citation). Syntype(s) [3 originally cited] in MCZ [# 6831].

Distribution. This species ranges from southern British Columbia, including Vancouver Island, south to Mendocino County in the Coast Ranges of California and Tuolumne County in the Sierra Nevada (Bell and Bell 1985: 84).
Records. CAN: BC (VCI) **USA**: CA, OR, WA

Clinidium rosenbergi Bell, 1970

Clinidium rosenbergi R.T. Bell, 1970: 315. Type locality: «Turkey Run State Park, Parke County, Indiana» (original citation). Holotype (♂) in MCZ [# 31749].

Distribution. This species ranges from northwestern Pennsylvania to eastern Missouri, south to east-central Louisiana (West Feliciana Parish, Igor M. Sokolov pers. comm. 2009) and northern Alabama (Madison County, CMNH).
Records. USA: AL, IL, IN, KY, LA, MO, NC, OH, PA, TN, VA

Clinidium sculptile (Newman, 1838)

Rhysodes sculptilis Newman, 1838b: 666. Type locality: «Wheeling [Ohio County], [West] Virginia» (lectotype label). Lectotype (♂), designated by Bell and Bell (1985: 92), in BMNH.

Rhysodes conjungens Germar, 1840a: 351 [*nomen dubium*]. Type locality: «Staaten Nordamerika's» (original citation). Holotype [by monotypy] location unknown (possibly in ZMHB). Synonymy established by LeConte (1875b: 164).

Distribution. The range of this species extends from the Catskills in southern New York to west-central Indiana (Bell and Bell 1985: 92), south to east-central Louisiana (West Feliciana Parish, Igor M. Sokolov pers. comm. 2009), northern Alabama (Bell and Bell 1985: 92), and the Florida Panhandle (Peck and Thomas 1998: 15). Specimens simply labeled from Texas are known (Bell and Bell 1985: 92). The record from central Illinois (Wolcott 1896: 235) needs confirmation.
Records. USA: AL, DC, DE, FL, GA, IN, KY, LA, MD, MO, NC, NJ, NY, OH, PA, SC, TN, VA, WV [IL, TX]

Clinidium valentinei Bell, 1970

Clinidium valentinei R.T. Bell, 1970: 313. Type locality: «Gorgas, Walker County, Ala[bama]» (original citation). Holotype (♂) in OSUO.

Distribution. This species seems to be confined to the Appalachian Mountains from southwestern Pennsylvania to north-central Alabama and northeastern Georgia (Bell and Bell 1985: 85).
Records. USA: AL, GA, NC, PA, SC, TN

Tribe Omoglymmiini Bell and Bell, 1978

Omoglymmiina R.T. Bell and J.R. Bell, 1978: 66. Type genus: *Omoglymmius* Ganglbauer, 1891.

Diversity. Worldwide, with about 180 species arrayed in eight genera. The tribe is much more diverse, both in term of species and lineages, in Asia than anywhere else.

Genus *Omoglymmius* Ganglbauer, 1891

Omoglymmius Ganglbauer, 1891a: 533. Type species: *Rhysodes germari* Ganglbauer, 1891 by monotypy. Etymology. From the Greek *omos* (rough) and *glymma* (an engraved figure) [masculine].

Diversity. About 150 species (Lorenz 2005: 158-159) in the Nearctic (two species), Australian, Oriental, Palaearctic (ten species, only one of them present in Europe), and Afrotropical (one species) Regions arrayed in 11 subgenera. More than 90% of the species are found in Asia.

Identification. Bell and Bell (1983) revised the species of the world and provided keys for their identification.

Subgenus *Boreoglymmius* Bell and Bell, 1983

Boreoglymmius R.T. Bell and J.R. Bell, 1983: 140. Type species: *Rhysodes americanus* Laporte, 1836 by original designation. Etymology. From the Greek *bore* (north) and the last two syllables of the generic name *Omoglymmius* [masculine].

Diversity. Three species in North American (two species) and Japan (one species).

Omoglymmius americanus (Laporte, 1836)

Rhysodes exaratus Lepeletier and Audinet-Serville [in Latreille et al.], 1825: 308 [primary homonym of *Rhysodes exaratus* Dalman, 1823]. Type locality: «Amérique septentrionale» (original citation), herein restricted to Florence, Florence County, South Carolina (see Bell and Bell 1983: 145). Syntype(s) location unknown (possibly in MHNP).

Rhysodes americanus Laporte, 1836: 58. Replacement name for *Rhysodes exaratus* Lepeletier and Audinet-Serville, 1825.

Rhysodes aratus Newman, 1838b: 664. Type locality. «Alabama» (original citation). Syntype(s) location unknown (possibly in BMNH). Synonymy established by LeConte (1875b: 162).

Distribution. This species ranges from central New York to eastern Minnesota, south to east-central Texas (Bell and Bell 1983: 145) and northern Florida (Peck and Thomas 1998: 15).

Records. CAN: ON **USA**: AL, AR, DE, FL, IA, IL, IN, KS, KY, LA, MD, MI, MN, MO, MS, NC, NE, NJ, NY, OH, OK, PA, SC, TN, TX, VA, WI

Omoglymmius hamatus (LeConte, 1875)

Rhysodes hamatus LeConte, 1875b: 163. Type locality: «California» (original citation), herein restricted to Big Trees, Calaveras County (see Bell and Bell 1983: 144). Syntype(s) in MCZ [# 6830].

Distribution. This species ranges from northern Idaho and southeastern Washington south to southern California, including the Sierra Nevada, and southeastern Arizona (Bell and Bell 1983: 143-144). Old specimens without specific localities from British Columbia and Texas (Bell and Bell 1983: 144) are known.

Records. USA: AZ, CA, ID, NV, OR, WA [BC, TX]

Family CARABIDAE Latreille, 1802

Carabici Latreille, 1802: 80. Type genus: *Carabus* Linnaeus, 1758.

Subfamily NEBRIINAE Laporte, 1834

Nebriidae Laporte, 1834: 90. Type genus: *Nebria* Latreille, 1802.

Diversity. About 665 species in the Nearctic (about 75 species), Neotropical (one South American species), and Palaearctic and northern parts of the Oriental (about 595 species) Regions. The species are arrayed in five tribes: Nebriini (about 600 species), Notiokasiini (one South American species), Notiophilini (about 55 species), Opisthiini (five species), and Pelophilini (two species).

Tribe Pelophilini Kavanaugh, 1996

Pelophilini Kavanaugh, 1996: 35. Type genus: *Pelophila* Dejean, 1821.

Diversity. This tribe contains a single genus.

Genus *Pelophila* Dejean, 1821

Pelophila Dejean, 1821: 7. Type species: *Carabus borealis* Paykull, 1790 by monotypy. Etymology (see Dejean 1826: 263). From the Greek *pelos* (mud) and *philos* (beloved), alluding to the habitat of *P. borealis* [feminine].

Diversity. Northern Hemisphere, with one Holarctic species and one species endemic to northern North America.
Identification. Lindroth (1961a: 57-60) covered both species and discussed the structural differences between them.

Pelophila borealis (Paykull, 1790)

Carabus borealis Paykull, 1790: 51. Type locality: «Karungi Botniae occidentalis [Norrbotten County, Sweden]» (original citation). Syntype(s) probably in NRSS.

Pelophila gebleri Mannerheim, 1823: 38. Type locality: «Sibiria ad Barnaul [Altai Kray, Russia]» (original citation). One syntype in ZMH (Silfverberg 1987: 17). Synonymy established by Dejean (1833: 22).

Pelophila marginata Mannerheim, 1823: 39. Type locality: «peninsula Kamschatka ad portum St. Petri et Pauli [apparently the town of Petropawlowsk, see Lindroth (1961a: 74)]» (original citation). One syntype in ZMH (Silfverberg 1987: 20). Synonymy established by Dejean (1833: 22).

Pelophila eschscholtzii Mannerheim, 1823: 40. Type locality: «insula Unalaschka [Aleutian Islands, Alaska]» (original citation). Lectotype (♂), designated by Lindroth (1961a: 57), in ZMH. Synonymy established by Dejean (1833: 22), confirmed by Lindroth (1961a: 57).

Pelophila elongata Mannerheim, 1823: 41. Type locality: «peninsula Kamschatka ad portum St. Petri et Pauli [apparently the town of Petropawlowsk, see Lindroth (1961a: 74)]» (original citation). One syntype in ZMH (Silfverberg 1987: 15). Synonymy established by Dejean (1833: 22).

Pelophila borealis var. *arctica* Dejean, 1826: 265. Type locality not stated. Syntype(s) location unknown (possibly in MHNP). Synonymy established by Dejean (1833: 22).

Pelophila borealis var. *dejeanii* Dejean, 1826: 265. Type locality: «environs de Barnaoul, Sibérie [Altai Kray, Russia]» (original citation). Syntype(s) probably in MHNP. Synonymy established by Dejean (1833: 22).

Pelophila laevigata Motschulsky, 1844: 92. Type locality: «près de la redoute Yamyschevo non loin du fleuve Irtych [Siberia, Russia]» (original citation). Holotype [by monotypy] in ZMMU (Keleinikova 1976: 202). Synonymy established by Bänninger (1930: 101).

Pelophila californica Motschulsky, 1844: 93. Type locality: «Californie» (original citation), which is incorrect (Lindroth 1961a: 57). Syntype(s) location unknown (possibly in ZMMU though not listed in Keleinikova 1976). Synonymy established by Bänninger (1930: 101).

Pelophila ochotica R.F. Sahlberg, 1844: 17. Type locality: «in monte Morikan [Okhotsk, Khabarovsk Kray, Siberia, Russia]» (original citation). Holotype [by monotypy] location unknown (possibly in ZMUT). Synonymy established by Bänninger (1930: 101).

Pelophila angusticollis Motschulsky, 1860: 98. Type locality: «Kamtschatka» (original citation). Five syntypes in ZMMU (Keleinikova 1976: 186). Synonymy established by Shilenkov (1994: 9).

Pelophila ulkei G.H. Horn, 1870b: 105. Type locality: «Hudson's Bay Territory» (original citation), restricted to «Gillam, Manit[oba]» by Lindroth (1961a: 58). Holotype [by monotypy] (♂) in MCZ (collection LeConte). Synonymy established by Lindroth (1961a: 57).

Pelophila shermani Casey, 1913: 45. Type locality: «West S[ain]t Modest[e], Labrador» (original citation). Five syntypes [5 originally cited] in USNM [# 46844]. Synonymy established, under the name *P. borealis ulkei* Horn, by Bänninger (1930: 102), confirmed by Lindroth (1961a: 57). Etymology. The specific name was proposed for John Dempster Sherman [1872-1960], dealer of entomological and related books and periodicals.

Distribution. This species is found from northern Europe to the Bering Sea coast (Farkač 2003: 98) and from Alaska, including the Aleutian and Kodiak Islands, to Newfoundland, south to the Abitibi region in western Quebec (Larochelle 1975: 98) [see Lindroth 1963a: Fig. 59]. Fossil remnants of this species, dated between about 14,000 and 18,100 years B.P., have been unearthed in southeastern Iowa (Baker et al. 1986: 96; Schwert 1992: 76) and southern Ontario (Morgan and Morgan 1981: 1107).

Records. CAN: AB, BC, LB, MB, NF, NT, NU, ON, QC, SK, YT **USA**: AK – **Holarctic**

Pelophila rudis (LeConte, 1863)

Nebria rudis LeConte, 1863c: 3. Type locality: «Methy [Portage] [= Portage La Loche, northern Saskatchewan]» (original citation). Holotype [by monotypy] (♂) in MCZ

[# 653]. Note. In the original description, LeConte indicated that he received "one specimen" from "Mr. Kennicott" collected at "Methy." Lindroth (1961a: 59) placed the type locality in eastern Alberta. However, I was unable to find any such locality in Alberta, although there is a locality named "Metis" in northwestern Alberta. In the same paper, LeConte (1863c: 1) described his *Cicindela hyperborea* from specimen(s) received from "Mr. R. Kennicott" collected at "Methy Portage, Hudson's Bay Territory." I believe LeConte meant "Methy Portage" as the collection site for *Pelophila rudis*. Located in northern Saskatchewan, Methy(e) Portage is currently called Portage La Loche.

Distribution. This species is known from scattered localities from western Newfoundland (Lindroth 1955a: 39) to the Fairbanks area in Alaska (David H. Kavanaugh pers. comm. 2009), south to central British Columbia (Lindroth 1961a: 59) [see Lindroth 1963a: Fig. 65]. Fossil remnants, dated between 14,000 and 15,500 years B.P., have been unearthed in central Iowa (Schwert 1992: 76).
Records. CAN: AB, BC, MB, NF, NT, ON, SK, YT **USA**: AK

Tribe Opisthiini Dupuis, 1912

Opisthiinae Dupuis, 1912: 1. Type genus: *Opisthius* Kirby, 1837.

Diversity. Northern Hemisphere, with five species in North America (one species) and the Himalayas and China, including Taiwan (four species). The species are arrayed in two genera: *Opisthius* (one species) and *Paropisthius* Casey (four species).
Identification. Bousquet and Smetana (1996) reviewed the species and provided a key for their identification.

Genus *Opisthius* Kirby, 1837

Opisthius Kirby, 1837: 60. Type species: *Opisthius richardsoni* Kirby, 1837 by monotypy. Etymology. Uncertain, possibly from the Greek *opisthen* (behind) or *opisthios* (hinder) [masculine]. Bousquet and Smetana (1996: 218) suggested that the name possibly reflect Kirby's assignment of *Opisthius* to follow *Elaphrus* in his paper.

Diversity. One North American species.
Identification. The species was treated in Lindroth's (1961a: 88-90) monograph on the Carabidae of Canada and Alaska.

Opisthius richardsoni Kirby, 1837

Opisthius richardsoni Kirby, 1837: 61. Type locality: «[probably] on an island of Lake Winnipeg» (original citation), which is incorrect (Lindroth 1961a: 89); «Medicine Hat, Al[ber]ta» selected by Lindroth (1961a: 89). Lectotype (♂), designated by Bousquet and Smetana (1996: 220), in BMNH. Etymology. The specific name was proposed for John Richardson [1787-1865], surgeon and naturalist to Sir John Franklin on two Arctic expeditions, 1819-1822 and 1825-1827.

Distribution. The range of this species extends from central Saskatchewan to the Arctic Circle in central Alaska (Lindroth 1961a: 89-90), south to Tuolumne County in the Sierra Nevada of California (Dajoz 2007: 17) and north-central New Mexico (Taos County, CNC). The record from "Iowa" (Jaques and Redlinger 1946: 295) is probably based on a mislabeled specimen or a stray. Fossil remnants of this species from the late Wisconsinan age have been found in northeastern Illinois, north-central Iowa, south-central Minnesota, and northwestern Ontario (see Ashworth and Schwert 1991: 511); others from a Plio-Pleistocene sequence have been found in northwestern Greenland and Meighen Island (Böcher 1995: 18).
Records. CAN: AB, BC (VCI), NT, SK, YT **USA**: AK, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY

Tribe Nebriini Laporte, 1834

Nebriidae Laporte, 1834: 90. Type genus: *Nebria* Latreille, 1802.

Diversity. About 600 species (Lorenz 2005: 116-124) in the Nearctic (about 60 species), Palaearctic, and northern parts of the Oriental Regions. The species are arrayed in four genera: *Archastes* Jedlička (27 Chinese species), *Leistus* (about 180 species), *Nebria* (including *Oreonebria* Daniel) (about 380 species), and *Nippononebria* (seven species).

Genus *Leistus* Frölich, 1799

Leistus Frölich, 1799: 9. Type species: *Leistus testaceus* Frölich, 1799 (= *Carabus ferrugineus* Linnaeus, 1758) designated by Daniel (1903: 171). Etymology. From the Greek *leistos* (to be carried off as booty, to be won by force) [masculine]. Note. Daniel (1903: 171) designated *Carabus ferrugineus* Linnaeus, 1758 as type species of *Leistus* Frölich, 1799, a species not originally included; however, since he listed the name in synonymy with *Leistus testaceus* Frölich, 1799, a species originally included, he is deemed to have designated the latter taxon as type species (ICZN 1999: Article 69.2.2).

Diversity. Northern Hemisphere, with about 180 species (Lorenz 2005: 116-118) in the Nearctic (four species, one of them adventive) and Palaearctic (about 180 species) Regions. The species are arrayed in six subgenera: *Evanoleistus* Jedlička (about 95 Asian species), *Leistus s.str.* (about 40 species), *Nebrileistus* Bänninger (two species on Madeira and Canary Islands), *Neoleistus* (three species), *Sardoleistus* Perrault (one Mediterranean species), and *Pogonophorus* Latreille (about 35 Palaearctic species).

Subgenus *Leistus* Frölich, 1799

Leistus Frölich, 1799: 9. Type species: *Leistus testaceus* Frölich, 1799 (= *Carabus ferrugineus* Linnaeus, 1758) designated by Daniel (1903: 171).

Diversity. About 40 Palaearctic species of which one is adventive in North America.

Identification. Larson (1978: 307-308) discussed the structural differences between the adventive species in North America and the three native species of the subgenus *Neoleistus*.

Leistus ferrugineus (Linnaeus, 1758)

Carabus ferrugineus Linnaeus, 1758: 415. Type locality: «Europa» (original citation). One possible syntype in LSL (Lindroth 1957b: 331).

Distribution. This European species is adventive in North America where it is known only from near Saint John's, Newfoundland (Larson 1978: 307). The first inventoried specimen collected on this continent was caught in 1977.
Records. CAN: NF – **Adventive**

Subgenus *Neoleistus* Erwin, 1970

Neoleistus Erwin, 1970b: 112. Type species: *Leistus ferruginosus* Mannerheim, 1843 by original designation. Etymology. From the Greek prefix *neo-* (new) and the generic name *Leistus* [*q.v.*], probably alluding to the fact that these *Leistus* species inhabit the New World [masculine].

Diversity. Three western North American species.
Identification. Erwin (1970b) revised the species and provided a key for their identification.
Taxonomic Note. Perrault (1991a) added three species from the Far East (*L. angulicollis* Fairmaire, *L. niger* Gebler, and *L. shenseensis* Perrault) to this subgenus but Shilenkov (1999: 76) rejected this association and the Asian species are listed in the nominotypical subgenus by Farkač and Janata (2003: 81-82).

Leistus ferruginosus Mannerheim, 1843

Leistus ferrugineus Dejean, 1831: 569 [secondary homonym of *Leistus ferrugineus* (Linnaeus, 1758)]. Type locality: «détroit de Norfolk [= Sitka Sound, Baranof Island, Alaska], sur la côte nord-ouest de l'Amérique septentrionale» (original citation). Holotype [by monotypy] (♀) location unknown (possibly lost).

Leistus ferruginosus Mannerheim, 1843: 187. Type locality: «insula Sitkha [= Baranof Island, Alaska]» (original citation). Lectotype, designated by Lindroth (1961a: 56), in ZMH. Synonymy established by Mannerheim (1843: 188).

Leistus nigropiceus Casey, 1913: 45. Type locality: «Metlakatla, British Columbia» (original citation). Lectotype (♀), designated by Lindroth (1975: 111), in USNM [# 46843]. Synonymy established by Hatch (1949b: 115), confirmed by Lindroth (1954b: 121).

Distribution. This species ranges from the Gulf of Alaska coast south to west-central Oregon, east to western Montana (Russell 1968: 44) [see Erwin 1970b: Fig. 7]. At least one specimen simply labeled from California is known (Erwin 1970b: 115).

Records. CAN: AB, BC (QCI, VCI) **USA**: AK, MT, OR, WA [CA]

Leistus longipennis Casey, 1920

Leistus longipennis Casey, 1920: 148. Type locality: «Humboldt Co[unty], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 46842].

Distribution. The range of this species is restricted to the extreme northwestern tip of Humboldt County in northern California (Erwin 1970b: 117) and southwestern Oregon (Curry County, James R. LaBonte pers. comm. 1992).
Records. USA: CA, OR

Leistus madmeridianus Erwin, 1970

Leistus madmeridianus Erwin, 1970b: 117. Type locality: «Jacoby Creek, 5.0 miles southeast of Arcata, Humboldt County, California» (original citation). Holotype (♂) in CAS [# 11312].

Distribution. This species is known only from a few localities along the Pacific Coast in northern California [see Erwin 1970b: Fig. 7].
Records. USA: CA

Genus *Nippononebria* Uéno, 1955

Nippononebria Uéno, 1955: 49. Type species: *Nebria pusilla* Uéno, 1955 by original designation. Etymology. From the English *nippon* (a Japanese name for Japan) and the generic name *Nebria* [*q.v.*], alluding to the country where these *Nebria*-like species known to Uéno lived [feminine].

Diversity. Seven species in western North America (three species), Japan (three species), and Jilin Province in China (one species) arrayed in two subgenera: *Nippononebria s.str.* for the Japanese and Chinese species and *Vancouveria* for the Nearctic ones.
Taxonomic Note. Kavanaugh (1995, 1996) regarded *Nippononebria* as the sister-group to *Leistus* while Ledoux and Roux (2005) listed *Nippononebria* and *Vancouveria* as subgenera of *Nebria* and suggested they form the sister-group to {*Eonebria* Semenov and Znojko + *Sadonebria* Ledoux and Roux}, a complex of 60 Palaearctic species. Because the North American students are used to Kavanaugh's approach, the taxon is retained here as a distinct genus.

Subgenus *Vancouveria* Kavanaugh, 1995

Vancouveria Kavanaugh, 1995: 159. Type species: *Nebria virescens* Horn, 1870 by original designation. Etymology. From the geographic name Vancouver [feminine].

Diversity. Three species in western North America.
Identification. Ledoux and Roux (2005: 712) reviewed the species and provided a key for their identification.

***Nippononebria altisierrae* (Kavanaugh, 1984)**

Nebria altisierrae Kavanaugh, 1984: 160. Type locality: «Olmsted Point (2560 m), Yosemite National Park [Mariposa County], Sierra Nevada, California» (original citation). Holotype (♂) in CAS [# 14338].

Distribution. This species occurs at high elevations in the Sierra Nevada of California, from El Dorado County south to Sequoia National Park [see Kavanaugh 1984: Fig. 31].
Records. USA: CA

***Nippononebria campbelli* (Kavanaugh, 1984)**

Nebria campbelli Kavanaugh, 1984: 161. Type locality: «Mount Baker (1460-1520 m), Cascade Range, Whatcom County, Washington» (original citation). Holotype (♂) in CAS [# 14339].

Distribution. This species ranges from the Three Brothers Mountain in southern British Columbia south to Mount Baker in Washington [see Kavanaugh 1984: Fig. 31].
Records. CAN: BC **USA**: WA

***Nippononebria virescens* (Horn, 1870)**

Nebria virescens G.H. Horn, 1870b: 100. Type locality: «Vancouver [British Columbia]» (original citation). Holotype [by monotypy] in MCZ [# 652].
Nebria brevis Casey, 1913: 55. Type locality: «Corvallis [Benton County], Oregon» (original citation for the lectotype). Lectotype (♂), designated by Lindroth (1975: 112), in USNM [# 46862]. Synonymy established with doubt by Bänninger (1925: 261), confirmed by Lindroth (1961a: 76).

Distribution. This species ranges from southwestern British Columbia, including Vancouver Island, south to the northern Sierra Nevada of California in Plumas County, east to the western edge of the Rockies in west-central Idaho (Kavanaugh 1978: 349).
Records. CAN: BC (VCI) **USA**: CA, ID, OR, WA

Genus *Nebria* Latreille, 1802

Nebria Latreille, 1802: 89. Type species: *Carabus brevicollis* Fabricius, 1792 designated by Latreille (1810: 426). Etymology. According to Ledoux and Roux (2005: 29), the name came from the Greek *nebrios* (fawn), possibly alluding to the coloration of *Nebria complanata*, the first species cited by Latreille in the genus. However Latreille (1804: 275) stated that the name derived from *nebrias* which is part of the list of unknown fishes mentioned by the elders. According to Dalby (2003: 121), *nebrias*, cited in Aristotle and others, is perhaps the dogfish *Scyliorhinus canicula* [feminine].

Distribution. About 380 species (535 species-group taxa) in the arctic, subarctic, boreal, and temperate areas of the Nearctic and Palaearctic (including northern Africa

and the Canary Islands) Regions arrayed in 25 subgenera (Ledoux and Roux 2005: 76 excluding *Nippononebria* and *Vancouveria*). The North American fauna has 52 species (82 species-group taxa) placed in four subgenera.

Identification. Ledoux and Roux (2005) reviewed the species of the world and provided keys for the identification of the species. Lindroth's (1961a) key included all North American species then known but many species-group taxa have been described subsequently by Kavanaugh (1979a, 1981b, 1984, 2008).

Taxonomic Note. The species of *Nebria* (including *Nippononebria*) have been segregated in two main lineages by Ledoux and Roux (2005: 71-75), one (named *Vetanebri*) represented in the Palaearctic Region by 90 species and in the Nearctic Region by the three species of *Vancouveria*, the other one (*Notanebri*) containing about 290 species, 52 in the Nearctic and almost 240 in the Palaearctic.

Subgenus *Boreonebria* Jeannel, 1937

Boreonebria Jeannel, 1937b: 2. Type species: *Carabus rufescens* Strøm, 1768 (= *Carabus gyllenhali* Schönherr, 1806) by original designation. Etymology. From the Greek *bore* (north) and the generic name *Nebria* [*q.v.*], probably alluding to the northern ranges of the species of this taxon [feminine].

Diversity. Thirty-one species (Ledoux and Roux 2005: 82) in North America (seven species) and Eurasia (26 species). Two species are Holarctic (*N. frigida* and *N. nivalis*).

[gyllenhali group]

Nebria crassicornis crassicornis Van Dyke, 1925

Nebria crassicornis Van Dyke, 1925: 121. Type locality: «Paradise Park, [Mount] Rainier National Park [Pierce County], Washington» (original citation). Holotype (♂) in CAS [# 1627].

Distribution. This subspecies is confined to a small area of the Coast Ranges and Cascade Range in southwestern British Columbia and western Washington [see Kavanaugh 1988: Fig. 15].

Records. CAN: BC **USA**: WA

Nebria crassicornis intermedia Van Dyke, 1949

Nebria intermedia Van Dyke, 1949a: 49. Type locality: «Logan Pass, Glacier National Park [Flathead County], Montana» (original citation). Holotype (♂) in CAS [# 6008].

Distribution. This subspecies ranges from northern British Columbia south to northeastern Oregon and southern Utah, east to northwestern Wyoming and central Utah [see Kavanaugh 1988: Fig. 15].

Records. CAN: AB, BC **USA**: ID, MT, OR, UT, WA, WY

Nebria frigida Sahlberg, 1844

Nebria frigida R.F. Sahlberg, 1844: 11. Type locality: «monte Morikan cepi [Okhotsk, Khabarovsk Kray, Siberia, Russia]» (original citation). Lectotype (♀), designated by Lindroth (1961a: 81), in ZMUT.

Nebria viridis G.H. Horn, 1870b: 101. Type locality: «St. Michaels [= Saint Michael on south coast of Norton Sound], Alaska» (original citation). Lectotype (♂), designated by Kavanaugh (1979a: 116), in MCZ [# 34044]. Synonymy established by Lindroth (1961a: 81).

Nebria parvula J.R. Sahlberg, 1885b: 47. Type locality: Port Clarence, Alaska (inferred from title of the paper). Holotype [by monotypy; designated lectotype by Lindroth (1961a: 81)] (♂) in NRSS. Synonymy established, under the name *N. viridis* Horn, by Van Dyke (1924a: 5), confirmed by Lindroth (1961a: 81).

Nebria reducta Casey, 1920: 150. Type locality: «S[ain]t Paul Island, Alaska» (original citation), which is incorrect according to Lindroth (1961a: 24, 81). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46866]. Synonymy established, under the name *N. viridis* Horn, by Van Dyke (1924a: 5), confirmed by Lindroth (1961a: 81).

Distribution. This Holarctic species is found in eastern Siberia (Farkač and Janata 2003: 88) and from the Alaskan Coast Range to the Anderson River Delta in northern Northwest Territories, south to northern British Columbia (Kavanaugh 1978: 714-715).
Records. CAN: BC, NT, YT **USA**: AK – **Holarctic**
Note. This species is placed in its own group by Ledoux and Roux (2005: 82).

Nebria gyllenhali castanipes (Kirby, 1837)

Helobia castanipes Kirby, 1837: 20. Type locality: «Lat. 65° [= apparently region of Great Bear Lake, Northwest Territories]» (original citation), restricted to «Nipigon, Ont[ario]» by Lindroth (1961a: 78). Lectotype (♀), designated by Kavanaugh (1979a: 111), in BMNH.

Nebria moesta LeConte, 1850: 209. Type locality: Lake Superior (inferred from title of the paper). Lectotype (♂), designated by Kavanaugh (1979a: 114), in MCZ [# 645]. Synonymy established by LeConte (1873b: 322), confirmed by Lindroth (1954b: 121).

Nebria elias Motschulsky, 1866: 276 [*nomen dubium*]. Type locality: «Amer[ique] rus[se]» (original citation). Syntype(s) lost (Keleinikova 1976: 196; Kavanaugh 1979a: 112). Synonymy established with doubt by Lindroth (1961a: 78).

Nebria labradorica Casey, 1920: 151. Type locality: «West S[ain]t Modest[e], Labrador» (original citation). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46855]. Synonymy established by Lindroth (1954b: 122).

Nebria prominens Casey, 1920: 151. Type locality: «M[oun]t Washington [Coos County], New Hampshire» (original citation). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46867]. Synonymy established by Lindroth (1954b: 122).

Nebria curtulata Casey, 1924: 20. Type locality: «W[est] S[ain]t Modest[e], Labrador» (original citation). Lectotype (♂), designated by Lindroth (1975: 112), in USNM [# 46856]. Synonymy established by Lindroth (1954b: 122).

Distribution. This subspecies ranges from Greenland (Böcher 1988: 5) to Alaska (Lindroth 1961a: 79), south to northeastern Oregon, northeastern Nevada, western South Dakota, and northeastern New York (Kavanaugh 1978: 731-741).
Records. DEN: GL **CAN**: AB, BC (VCI), LB, MB, NF, NT, ON, QC, SK, YT **USA**: AK, ID, ME, MI, MN, MT, NH, NV, NY, OR, SD, WA, WI, WY
Note. The name *Nebria rufescens* (Strøm, 1768) is used by several authors instead of *N. gyllenhali* (Schönherr, 1806). I concur with Kavanaugh (1979a: 111) and Ledoux and Roux (2005: 107) that *Carabus rufescens* Strøm should be considered a *nomen dubium*.

Nebria gyllenhali lassenensis Kavanaugh, 1979

Nebria gyllenhali lassenensis Kavanaugh, 1979a: 96. Type locality: «Emerald Lake, Mount Lassen (south slope), Lassen Volcanic National Park [Shasta County], California» (original citation). Holotype (♂) in CAS [# 12511].

Distribution. This subspecies is restricted to mountains in the southern part of the Cascade Range, south of the lower Columbia River valley, and the northern part of the Sierra Nevada, south to Sonora Pass [see Kavanaugh 1979a: Fig. 54].
Records. USA: CA, OR

Nebria gyllenhali lindrothi Kavanaugh, 1979

Nebria gyllenhali lindrothi Kavanaugh, 1979a: 97. Type locality: «Brooklyn Lake (3,200 m), Albany County, Wyoming» (original citation). Holotype (♂) in CAS [# 12512].

Distribution. This subspecies is found in the southern Rocky Mountains from the Medicine Bow Mountains and Sierra Madre of southern Wyoming south to northern New Mexico, west to the Uinta Mountains in eastern Utah and the Chuska Mountains in northeastern Arizona (David H. Kavanaugh pers. comm. 2008) [see Kavanaugh 1979a: Fig. 54].
Records. USA: AZ, CO, NM, UT, WY

Nebria nivalis gaspesiana Kavanaugh, 1979

Nebria nivalis gaspesiana Kavanaugh, 1979a: 96. Type locality: «Ruisseau du Diable (980-1,070 m), Mont Albert, Gaspé-Ouest, Québec» (original citation). Holotype (♂) in CAS [# 12510].

Distribution. This subspecies is known from western Newfoundland, coastal Labrador (Lindroth 1961a: 82), and the east edge of the Ungava Bay in northern Quebec; isolated on high mountains in the Gaspé Peninsula in Quebec and on Mount Katahdin in Maine [see Kavanaugh 1979a: Fig. 53].

Records. CAN: LB, NF, QC **USA**: ME

***Nebria nivalis nivalis* (Paykull, 1790)**

Carabus nivalis Paykull, 1790: 52. Type locality: «Lapponiae Lulensis [= Luleå, Norrbotten County, Sweden]» (original citation). Lectotype (♂), designated by Kavanaugh (1979a: 111), in NRSS.

Nebria bifaria Mannerheim, 1853: 120. Type locality: «insula St. Pauli [Alaska]» (original citation). Lectotype (♂), designated by Kavanaugh (1979a: 112), in ZILR. Synonymy established by Lindroth (1961a: 81).

Nebria femoralis Motschulsky, 1859b: 541 [primary homonym of *Nebria femoralis* Chaudoir, 1843]. Type locality: region of Yakutsk, east-central Siberia, Russia (inferred from title of the paper). Lectotype, designated by Shilenkov (1975: 839), in ZILR. Synonymy established by Jeannel (1937b: 4).

Nebria molbis Motschulsky, 1866: 274. Type locality: «Amérique russe» (original citation). Lectotype, designated by Kavanaugh (1979a: 114), in ZMMU. Synonymy established by Lindroth (1961a: 82).

Nebria femorata Motschulsky, 1866: 275. Type locality: «Sib[eria] bor[eali] Jakutzk [= Yakutsk, Yakutia, Siberia, Russia]» (original citation). Syntype(s) location unknown (possibly in ZILR). Synonymy established by Bänninger (1949: 144). Note. The name *N. femorata* Motschulsky has been interpreted as a replacement name for *N. femoralis* Motschulsky, 1859 by some authors (e.g., Ledoux and Roux 2005: 112). However, there is no indication in Motschulsky (1866) that he proposed the name as a replacement name. The footnote on the same page as the description of *femorata* indicates that Motschulsky (1866: 275) considered *N. femoralis* Chaudoir as belonging to a different genus, *Alpaeus*. Moreover in the catalogue of his new genera and species described, Motschulsky (1869: 26) listed his *Nebria femoralis* and *N. femorata* as different taxa.

Distribution. This Holarctic subspecies is known from northern Europe to the Bering Sea Coast (Farkač and Janata 2003: 88), and from the Arctic Plains in Alaska to Baffin Island and the western edge of the Ungava Bay in northern Quebec (Kavanaugh 1978: 779-782).
Records. CAN: BC, NT, QC, YT **USA**: AK – **Holarctic**
Note. Ledoux and Roux (2005: 112) retained *Nebria bifaria* Mannerheim, 1853 as a valid subspecies of *N. nivalis*.

[**hudsonica group**]
***Nebria bellorum* Kavanaugh, 1979**

Nebria lacustris bellorum Kavanaugh, 1979a: 95. Type locality: «West Prong Little Pigeon River (at Chimneys Picnic Area; 3000') [Sevier County], Great Smoky Mountains National Park, Tennessee» (original citation). Holotype (♂) in CAS [# 12506].

Distribution. This species is restricted to the Great Smoky Mountains National Park and adjacent mountain ranges in the southern Appalachians [see Kavanaugh 1979a:

Fig. 52]. Two specimens labeled from Jefferson County in Colorado and Saint Tammany Parish in Louisiana seen by Kavanaugh (1979a: 96) are likely mislabeled.
Records. USA: NC, TN
Note. This taxon, originally described as a subspecies of *N. lacustris* Casey, has been raised to species status by Kavanaugh et al. (2011).

Nebria gouleti Kavanaugh, 1979

Nebria gouleti Kavanaugh, 1979a: 94. Type locality: «Rattlesnake Creek (3000'), 10 miles s[outh]w[est] of Antone, Asotin County, Washington» (original citation). Holotype (♂) in CAS [# 12504].

Distribution. This species is restricted to Washington, northern Oregon, and Idaho [see Kavanaugh 1979a: Fig. 51]. Seven specimens labeled from Longview (Highwood River) in southwestern Alberta seen by Kavanaugh (1979a: 95) are listed as doubtful by him; two specimens simply labeled from California are likely mislabeled.
Records. USA: ID, OR, WA [AB]

Nebria hudsonica LeConte, 1863

Nebria hudsonica LeConte, 1863c: 3. Type locality: «Saskatchewan, Hudson's Bay Territory» (original citation), restricted to «North Saskatchewan River at Rocky Mountain House, Alberta» by Kavanaugh (1979a: 113). Lectotype (♂), designated by Kavanaugh (1979a: 112), in MCZ [# 643].

Distribution. This species ranges from the north shore of Lake Superior in western Ontario to southern Yukon Territory and southeastern Alaska (Skagway, David H. Kavanaugh pers. comm. 2008), south to the Columbia River drainage in northern Oregon and to north-central Utah and central Colorado along the Rocky Mountains (Kavanaugh 1978: 745-753). The records from New Mexico (Snow 1885: 66; Fall and Cockerell 1907: 156) are probably in error.
Records. CAN: AB, BC, MB, NT, ON, SK, YT **USA**: AK, CO, ID, MT, OR, UT, WA, WY

Nebria lacustris Casey, 1913

Nebria lacustris Casey, 1913: 56. Type locality: «Bayf[ie]ld [Bayfield County], Wis[consin]» (lectotype label). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46865].

Nebria expansa Casey, 1913: 56. Type locality: «Indiana» (original citation for the lectotype), restricted to «Turkey Run State Park, Parke County» by Kavanaugh (1979a: 112). Lectotype (♀), designated by Lindroth (1975: 147), in USNM [# 46864]. Synonymy established by Lindroth (1961a: 77).

Distribution. This species is found from northern New Brunswick (Restigouche County, CNC) to northern Minnesota, north to southeastern Manitoba, south to east-

central Iowa, southern Indiana, and western North Carolina along the Appalachians [see Kavanaugh 1979a: Fig. 52]. The record from "Texas" (Casey 1913: 56) is in error (Kavanaugh 1979a: 112).
Records. CAN: MB, NB, ON, QC **USA**: CT, DC, IA, IL, IN, KY, MA, MD, ME, MI, MN, NC, NH, NJ, NY, OH, PA, TN, VA, VT, WI, WV

Subgenus *Nakanebria* Ledoux and Roux, 2005

Nakanebria Ledoux and Roux, 2005: 183. Type species: *Nebria kurosawai* Nakane, 1960 by original designation. Etymology. From the surname of the Japanese coleopterist Takehiko Nakane [1920-1999] and the generic name *Nebria* [*q.v.*] [feminine].

Diversity. Six species in western North America (two species) and the Far East (four species).
Taxonomic Note. According to Ledoux and Roux (2005: 75), *Nakanebria* is the sister-group to *Reductonebria* and the two form the sister-group to *Catonebria*.

Nebria paradisi Darlington, 1931

Nebria vandykei Darlington, 1930: 104 [primary homonym of *Nebria vandykei* Bänninger, 1928]. Type locality: «near Paradise Valley (about 6000 feet), Mount Rainier [Pierce County], Washington» (original citation). Holotype (♂) in MCZ [# 35405].
Nebria paradisi Darlington, 1931: 24. Replacement name for *Nebria vandykei* Darlington, 1930.

Distribution. This species ranges in the Cascade Range from northwestern Washington to northwestern Oregon [see Kavanaugh 1988: Fig. 19].
Records. USA: OR, WA

Nebria turmaduodecima Kavanaugh, 1981

Nebria turmaduodecima Kavanaugh, 1981b: 436. Type locality: «Caribou Basin (2290 m), Trinity Alps, Siskiyou County, California» (original citation). Holotype (♂) in CAS [# 13729].

Distribution. This species is endemic to the Trinity Alps in northwestern California [see Kavanaugh 1981b: Fig. 21].
Records. USA: CA

Subgenus *Reductonebria* Shilenkov, 1975

Reductonebria Shilenkov, 1975: 834. Type species: *Nebria ochotica* Sahlberg, 1844 by original designation. Etymology. From the Latin *reducto* (bring back, reduce) and the generic name *Nebria* [*q.v.*], possibly alluding to the absence of mid-lateral setae on the pronotum of the species [feminine].

Diversity. Twenty-eight species in North America (24 species) and Siberia and the Far East (four species).
Faunistic Note. *Nebria carbonaria* Eschscholtz was reported from Alaska by Horn (1870b: 104) and LeConte (1878a: 479) and there is a specimen of this species in the LeConte collection labeled "Ins. S. Pauli," one of the Pribilof Islands in Alaska. Lindroth (1961a: 74) believes the specimen is probably mislabeled since no other specimens of the species have been found on the island despite extensive search. The species was described from specimens collected "in Kamtschatka, bei St. Peter und Paul" which, according to Lindroth (1961a: 74), refers to the town of Petropavlovsk in Kamtschatka. Until recent specimens are collected on this continent, the species is not listed as a North American resident.

[**gregaria group**]

***Nebria arkansana arkansana* Casey, 1913**

Nebria arkansana Casey, 1913: 52. Type locality: «Indiana» (original citation for the lectotype), which according to Lindroth (1961a: 70) and Kavanaugh (1979a: 112) is incorrect; «Valley [of the] Upper San Juan [River], [Archuleta County], Color[ado]» selected by Lindroth (1961a: 70). Lectotype (♂), designated by Lindroth (1975: 111), in USNM [# 46858].

Distribution. This subspecies is found in southern Wyoming, Colorado, northern New Mexico, and southeastern Utah (Kavanaugh 1978: 675-678). One specimen labeled from Nez Perce County in western Idaho is considered doubtful by Kavanaugh (1978: 678).
Records. USA: CO, NM, UT, WY [ID]
Note. This species is placed with the species of the *lyelli* group by Ledoux and Roux (2005: 195).

***Nebria arkansana edwardsi* Kavanaugh, 1979**

Nebria arkansana edwardsi Kavanaugh, 1979a: 100. Type locality: «Logan Pass (7100'), Glacier National Park [Flathead County], Montana» (original citation). Holotype (♂) in CAS [# 12495]. Etymology. The subspecific name was proposed for J. Gordon Edwards [1919-2004], teacher, coleopterist, and mountaineer.

Distribution. This subspecies is widely distributed in the Rocky Mountain region from southern Yukon Territory south to northeastern Nevada, southern Idaho, and northern Wyoming [see Kavanaugh 1979a: Fig. 58].
Records. CAN: AB, BC, YT **USA**: ID, MT, NV, OR, WA, WY

***Nebria arkansana fragilis* Casey, 1924**

Nebria fragilis Casey, 1924: 21. Type locality: «North Fork, Provo Cañon [Utah County], Utah» (original citation). Lectotype (♂), designated by Lindroth (1975: 112), in USNM [# 46857].

Nebria arkansana uinta Kavanaugh, 1979a: 102. Type locality: «Lost Lake (9800'), Summit County, Utah» (original citation). Holotype (♂) in CAS [# 12497]. Synonymy established by Kavanaugh (1984: 167).

Nebria fragilis teewinot Kavanaugh, 1979a: 103. Type locality: «Mount Teewinot (southeast slope; 7100-9000'), Grand Teton National Park [Teton County], Wyoming» (original citation). Holotype (♂) in CAS [# 12500]. Synonymy established by Kavanaugh (1984: 167).

Distribution. This subspecies is restricted to mountains in western Wyoming and northern and central Utah (Kavanaugh 1979a: Figs 58–59).
Records. USA: UT, WY

Nebria arkansana oowah Kavanaugh, 1979

Nebria arkansana oowah Kavanaugh, 1979a: 102. Type locality: «Mill Creek (at Oowah Lake; 8800'), Grand County, Utah» (original citation). Holotype (♂) in CAS [# 12496].

Distribution. This subspecies is endemic to the La Sal Mountains in eastern Utah [see Kavanaugh 1979a: Fig. 58].
Records. USA: UT

Nebria charlottae Lindroth, 1961

Nebria charlottae Lindroth, 1961a: 67. Type locality: «Queen Charlotte Islands [British Columbia]» (original citation), restricted to «Masset, Graham Island» by Kavanaugh (1992: 55). Holotype (♂) in CNC [# 7611].

Distribution. This species is restricted to the Queen Charlotte Archipelago (Kavanaugh 1992: 55).
Records. CAN: BC (QCI)

Nebria gregaria Fischer von Waldheim, 1820

Nebria gregaria Fischer von Waldheim, 1820: plate 6. Type locality: «insula Unalaschka [Alaska]» (Fischer von Waldheim 1822: 73). Lectotype (♂), designated by Kavanaugh (1979a: 113), in ZMMU.

Nebria cuneata Casey, 1913: 50. Type locality: «Alaska» (original citation). Lectotype (♂), designated by Lindroth (1975: 111), in USNM [# 46851]. Synonymy established by Lindroth (1961a: 66).

Distribution. This species is endemic to the Aleutian Islands [see Kavanaugh 1981a: Fig. 8].
Records. USA: AK
Note. *Nebria macrocephala* Motschulsky was described from specimens originating «probablement de Sitka ou d'Ounalachka [Alaska]» (Motschulsky 1844: 128). The

name is listed as a junior synonym of *N. gregaria* Fischer von Waldheim, 1820 in Ledoux and Roux (2005: 222) but according to Bänninger (1923: 131) only the specimens reported subsequently by Motschulsky (1860: 97; 1866: 273) as *N. macrocephala* belong to *N. gregaria*. The syntypes are conspecific with specimens of *N. stigmula* Dejean, 1826 (= *N. hellwigii* Panzer, 1803) as noted by Mannerheim (1853: 111). The provenance given by Motschulsky is probably incorrect.

Nebria haida Kavanaugh, 1984

Nebria haida Kavanaugh, 1984: 162. Type locality: «1.8 km N[orth] of Mount Needham (700-780 m), Graham Island, Queen Charlotte Islands, British Columbia» (original citation). Holotype (♂) in CAS [# 14341]. Note. Kavanaugh (1992: 56) pointed out that the peak located 1.8 km south of the collecting site is not Mount Needham as originally reported but is unnamed. The collecting site is located at the summit and surrounding slopes of another unnamed peak which Kavanaugh called «Nebria Peak».

Distribution. This species is endemic to high elevations in the Queen Charlotte Islands [see Kavanaugh 1984: Fig. 31] and adjacent mainland on Mount McNeil (Kavanaugh 1992: 56) in British Columbia.
Records. CAN: BC (QCI)
Note. Clarke et al. (2001: 1416) concluded that this taxon may be more appropriately treated as a subspecies of *N. charlottae* given the minor differences in morphology and biology.

Nebria jeffreyi Kavanaugh, 1984

Nebria jeffreyi Kavanaugh, 1984: 162. Type locality: «South Fork McCoy Creek (2390-2560 m), Steens Mountains, Harney County, Oregon» (original citation). Holotype (♂) in CAS [# 14342].

Distribution. This species is known only from the Steens Mountains in south-central Oregon [see Kavanaugh 1984: Fig. 31].
Records. USA: OR
Note. This species is placed with the species of the *lyelli* group by Ledoux and Roux (2005: 195).

Nebria lituyae Kavanaugh, 1979

Nebria lituyae Kavanaugh, 1979a: 100. Type locality: «M[oun]t Blunt (3356'), 2 miles s[outh] of Lituya Bay, Alaska» (original citation). Holotype (♂) in CAS [# 13460].

Distribution. This species is known only from a small area in the Alexander Archipelago and northwestern British Columbia [see Kavanaugh 1988: Fig. 24].
Records. CAN: BC **USA**: AK

Nebria louiseae Kavanaugh, 1984

Nebria louiseae Kavanaugh, 1984: 162. Type locality: «Skedans, Louise Island, Queen Charlotte Islands, British Columbia» (original citation). Holotype (♂) in CAS [# 15005].

Distribution. This species is known from several islands in the Queen Charlotte Archipelago, British Columbia (Kavanaugh 1992: 55).
Records. CAN: BC (QCI)
Note. Based on DNA sequence analyses, Clarke et al. (2001: 1416) concluded that this taxon may not represent a distinct taxonomic unit but rather a variant of *N. charlottae*.

Nebria sahlbergii modoc Kavanaugh, 1979

Nebria sahlbergii modoc Kavanaugh, 1979a: 99. Type locality: «Pine Creek (4 miles e[ast] of New Pine Creek; 5700'), Modoc County, California» (original citation). Holotype (♂) in CAS [# 12513].

Distribution. This subspecies is known only from the Warner Mountains in northeastern California [see Kavanaugh 1979a: Fig. 56].
Records. USA: CA

Nebria sahlbergii sahlbergii Fischer von Waldheim, 1828

Nebria sahlbergii Fischer von Waldheim, 1828: 254. Type locality: «Sitcha [= Sitka, Baranof Island, Alaska]» (original citation). Lectotype (♂), designated by Kavanaugh (1979a: 115), in ZMH. Etymology. The specific name honors the Finnish naturalist Carl Reinhold Sahlberg [1779-1860] who worked mainly on beetles. Sahlberg was professor of economic and natural history at the Academy of Åbo and, after the destruction of the city and university by fire, at the University of Helsinki.

Nebria violacea Motschulsky, 1850a: 73. Type locality: «Sitka [Baranof Island, Alaska]» (original citation for *N. sahlbergii* var. in Mannerheim, 1843). Lectotype (♂), designated by Kavanaugh (1979a: 115), in ZMH. Synonymy established by Lindroth (1961a: 68). Note. *Nebria violacea* was proposed for Mannerheim's (1843: 189) var. b of *Nebria sahlbergii* Fischer von Waldheim; therefore the description is by indication. The lectotype designated by Kavanaugh (1979a: 115) is the same specimen he designated as lectotype of *N. sahlbergii* Fischer von Waldheim, 1828.

Nebria aleuta Van Dyke, 1924a: 5. Type locality: «Mount Makushin, Unalaska Island, Alaska» (original citation). Holotype (♂) in CAS [# 3342]. Synonymy established by Lindroth (1961a: 68).

Distribution. This subspecies ranges from the Aleutian Islands in Alaska (Lindroth 1961a: 70) to southwestern Northwest Territories (Tungsten, David H. Kavanaugh pers. comm. 2008), south to northwestern Montana (Edwards 1975: 50) and southern

Figure 4. *Trachypachus gibbsii* LeConte. This species is a typical western element as are the other two North American trachypachids. Although superficially similar to some large *Bembidion* or small *Amara* and having the same ecological preferences, we now believe that these beetles, along with members of the related genus *Systolosoma* of South America, are not closely related to any groups of carabids.

Oregon [see Kavanaugh 1988: Fig. 20]. The records from New Mexico (Snow 1885: 66; Fall and Cockerell 1907: 156), Colorado (Wickham 1902: 232; Armin 1963: 94), and Wyoming (Lavigne 1977: 46) are probably in error.
Records. CAN: AB, BC (QCI, VCI), NT, YT **USA**: AK, MT, OR, WA
Note. This species is placed in the *lyelli* group by Ledoux and Roux (2005: 195).

Nebria sahlbergii triad Kavanaugh, 1979

Nebria sahlbergii triad Kavanaugh, 1979a: 99. Type locality: «South Fork Salmon River (at Big Flat Campground; 1490 m), Trinity County, California» (original citation). Holotype (♂) in CAS [# 12514].

Distribution. This subspecies is yet recorded only from the Klamath Mountains system in northwestern California [see Kavanaugh 1979a: Fig. 56].
Records. USA: CA

Nebria zioni oasis Kavanaugh, 1979

Nebria zioni oasis Kavanaugh, 1979a: 103. Type locality: «Leeds Creek at Oak Grove Campground (6300-6500'), Washington County, Utah» (original citation). Holotype (♂) in CAS [# 12518].

Distribution. This subspecies is restricted to the Pine Valley Mountains in southwestern Utah [see Kavanaugh 1979a: Fig. 60].
Records. USA: UT

Nebria zioni zioni Van Dyke, 1943

Nebria zioni Van Dyke, 1943: 20. Type locality: «canyon of Zion National Park, Utah» (original citation). Holotype (♂) in CAS [# 5299].

Distribution. This subspecies is known only from mountains in southwestern Utah [see Kavanaugh 1979a: Fig. 60].
Records. USA: UT
Note. This species is placed in the *lyelli* group by Ledoux and Roux (2005: 195).

[**lyelli group**]

Nebria acuta acuta Lindroth, 1961

Nebria acuta Lindroth, 1961a: 71. Type locality: «Snowslide Gulch, 16 mi[les] E[ast] Valdez, Alaska» (original citation). Holotype (♂) in MCZ [# 30428].

Distribution. This subspecies ranges from the Kenai Peninsula in Alaska (Kavanaugh 1978: 671) and southwestern Yukon Territory (Kluane Lake, Sydney G. Cannings pers. comm. 2009) south to the southern part of the Cascade Range and the Sierra Nevada in central California (Kavanaugh 1978: 671).
Records. CAN: BC, YT **USA**: AK, CA, OR, WA

Nebria acuta quileute Kavanaugh, 1979

Nebria acuta quileute Kavanaugh, 1979a: 98. Type locality: «Boulder Creek (at Olympic Hot Springs; 2000'), Olympic National Park [Clallam County], Washington» (original citation). Holotype (♂) in CAS [# 12494].

Distribution. This subspecies is endemic to the Olympic Peninsula in Washington [see Kavanaugh 1979a: Fig. 55].
Records. USA: WA

Nebria acuta sonorae Kavanaugh, 1981

Nebria sonorae Kavanaugh, 1981b: 438. Type locality: «Chipmunk Flat, Tuolumne County, California» (original citation). Holotype (♂) in CAS [# 13731].

Distribution. As far as known, this subspecies is restricted to the Sierra Nevada, between Sonora Pass and Buckeye Pass, in California [see Kavanaugh 1981b: Fig. 21].
Records. USA: CA

Nebria danmanni Kavanaugh, 1981

Nebria danmanni Kavanaugh, 1981b: 437. Type locality: «Deception Basin (1830 m), Olympic National Park [Clallam County], Washington» (original citation). Holotype (♂) in CAS [# 13730].

Distribution. This species is endemic to high elevations in the Olympic Mountains in northwestern Washington [see Kavanaugh 1984: Fig. 21].
Records. USA: WA

Nebria lyelli Van Dyke, 1925

Nebria lyelli Van Dyke, 1925: 120. Type locality: «M[oun]t Lyell (about 11,000 feet), Yosemite National Park, California» (original citation). Holotype (♂) in CAS [# 1626].

Distribution. This species is known only from Mount Lyell at the edge of the Yosemite National Park in the Sierra Nevada, California (Kavanaugh 1978: 766).
Records. USA: CA

Nebria wallowae Kavanaugh, 1984

Nebria wallowae Kavanaugh, 1984: 161. Type locality: «West Fork Wallowa River (2070-2130 m), Wallowa Mountains, Wallowa County, Oregon» (original citation). Holotype (♂) in CAS [# 14347].

Distribution. This species is known only from the Wallowa Mountains in northeastern Oregon [see Kavanaugh 1984: Fig. 31].
Records. USA: OR

[**mannerheimii group**]

***Nebria darlingtoni* Kavanaugh, 1979**

Nebria darlingtoni Kavanaugh, 1979a: 104. Type locality: «South Fork American River, (3 miles w[est] of Riverton; 910 m), El Dorado County, California» (original citation). Holotype (♂) in CAS [# 12499].

Distribution. This species is known only from the canyon of the South Fork of the American River in the Sierra Nevada, California [see Kavanaugh 1979a: Fig. 62].
Records. USA: CA

***Nebria desolata* Kavanaugh, 1971**

Nebria desolata Kavanaugh, 1971: 41. Type locality: «The Gulch (5600'), 11 mi[les] S[outh] W[est] Boulder, Garfield Co[unty], Utah» (original citation). Holotype (♂) in CAS [# 11388].

Distribution. This species is known only from the type locality in south-central Utah.
Records. USA: UT

***Nebria diversa* LeConte, 1863**

Nebria livida LeConte, 1859a: 84 [secondary homonym of *Nebria livida* (Linnaeus, 1758)]. Type locality: «Cape Flattery [Clallam County, Washington]» (original citation). Lectotype (♂), designated by Kavanaugh (1979a: 113), in MCZ [# 642].

Nebria diversa LeConte, 1863b: 2. Replacement name for *Nebria livida* LeConte, 1859.

Nebria townsendi Casey, 1924: 19. Type locality: «Port Townsend [Jefferson County], Washington» (original citation). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46846]. Synonymy established by Hatch (1953: 59), confirmed by Lindroth (1961a: 75).

Distribution. This species ranges along the Pacific Coast from the Queen Charlotte Islands to northern California (Kavanaugh 1992: 57).
Records. CAN: BC (QCI, VCI) **USA**: CA, OR, WA
Note. This species is placed in a separate group (*pallipes* group) along with *N. appalachia* and *N. pallipes* by Ledoux and Roux (2005: 195).

***Nebria eschscholtzii* Ménétriés, 1843**

Nebria eschscholtzii Ménétriés, 1843: 55. Type locality: «Californie» (original citation), restricted to «South Fork of American River, 3 miles w[est] of Riverton, El Dorado County» by Kavanaugh (1979a: 112). Lectotype (♀), designated by Kavanaugh (1979a: 112), in ZILR. Etymology. The specific name honors the Estonian natu-

ralist and explorer Johann Friedrich Gustav von Eschscholtz [1793-1831], physician and naturalist on the two Russian circumnavigational expeditions under the command of Otto Evstaf'evich von Kotzebue in 1815-1818 on the *Rurik* and in 1823-1826 on the *Predpriiatie*. Eschscholtz made substantial collections of insects in Alaska and California during these trips. He was professor of medicine and zoology and director of the Zoological Museum of the University of Dorpat in the last years of his life. Eschscholtz Bay on Kotzebue Sound, a large inlet in northwestern Alaska near Bering Strait, was named in his honor.

Nebria tenuipes Casey, 1913: 51. Type locality: «Alameda [Alameda County], California» (original citation for the lectotype). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46852]. Synonymy established by Hatch (1939a: 121), confirmed by Lindroth (1961a: 75).

Nebria transversa Casey, 1920: 152. Type locality: «Corvallis [Benton County], Oregon» (original citation). Holotype [by monotypy] (♀) in USNM [# 46869]. Synonymy established by Hatch (1953: 58), confirmed by Lindroth (1961a: 75).

Nebria formalis Casey, 1920: 153. Type locality: «Wawawai [Whitman County], Washington» (original citation). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46870]. Synonymy established by Hatch (1953: 58), confirmed by Lindroth (1961a: 75).

Nebria pallidissima Casey, 1924: 19. Type locality: «Wawawai [Whitman County], Washington» (original citation). Lectotype (♂), designated by Lindroth (1975: 112), in USNM [# 46845]. Synonymy established (as aberration) by Hatch (1953: 58), confirmed by Lindroth (1961a: 75).

Nebria pugetana Casey, 1924: 19. Type locality: «Wawawai [Whitman County], Washington» (original citation). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46847]. Synonymy established by Hatch (1953: 58), confirmed by Lindroth (1961a: 75).

Distribution. The range of this species extends from northwestern Washington to northeastern Idaho, south to southern California [see Kavanaugh 1979b: Fig. 2]. The records from Colorado (Wickham 1902: 232; Armin 1963: 89) and Montana (Hatch 1933a: 7) must be in error.

Records. USA: CA, ID, NV, OR, WA

Nebria georgei Kavanaugh, 2008

Nebria georgei Kavanaugh, 2008: 2. Type locality: «Colorado River, Grand Canyon National Park, Coconino County, Arizona» (original citation). Holotype (♂) in MSB.

Distribution. This species is known only from the original two specimens collected 141 kilometers apart in the Grand Canyon National Park (Kavanaugh 2008: 5).

Records. USA: AZ

Nebria mannerheimii Fischer von Waldheim, 1828

Nebria mannerheimii Fischer von Waldheim, 1828: 253. Type locality: «Sitcha sur l'île de Norfolk [= Sitka, Baranof Island, Alaska]» (original citation). Lectotype (♂), designated by Kavanaugh (1979a: 114), in ZMMU. Etymology. The specific name honors Gustav Graf von Mannerheim [1797-1854], a Finnish politician who rose from clerk to Governor of Läne Vaasa and Viipuri regions of Finland and president of the Imperial *Hofgericht* in Wiborg (currently Wyborg in Russia). Early in his life Mannerheim became interested in natural history and particularly entomology.

Nebria oregona Casey, 1913: 52. Type locality: «Clackamas Co[unty], Oregon» (original citation), restricted to «Zigzag River at Rhododendron» by Kavanaugh (1979a: 115). Lectotype (♂), designated by Lindroth (1975: 112), in USNM [# 46853]. Synonymy established by Hatch (1953: 58), confirmed by Lindroth (1961a: 74).

Nebria corvallis Casey, 1924: 20. Type locality: «Corvallis [Benton County], Oregon» (original citation). Lectotype (♂), designated by Lindroth (1975: 112), in USNM [# 46854]. Synonymy established by Hatch (1953: 58), confirmed by Lindroth (1961a: 74).

Nebria hippisleyi Casey, 1924: 21. Type locality: «Terrace, British Columbia» (original citation). Holotype [by monotypy] (♂) in USNM [# 46868]. Synonymy established by Hatch (1953: 58), confirmed by Lindroth (1961a: 74). Etymology. The specific name was proposed for Mrs. W.W. Hippisley [1880-1962] who collected beetles at or near Terrace in British Columbia. Born Marianne E. Parker, she was interested also in shells, minerals, and mosses but after a gun accident in 1911 where she lost her right arm completely she confined herself into collecting beetles. She eventually became Mrs. M.E. Clark and left her collection to the University of British Columbia.

Distribution. This species ranges from the Kenai Peninsula in southern Alaska (Lindroth 1961a: 75) south to western Idaho and central Oregon (Kavanaugh 1978: 766-772). According to Kavanaugh (1978: 772), a number of specimens labeled from "California," Nevada, and Yukon Territory are doubtful. The records from the Absaroka Range in south-central Montana (Hatch 1933a: 7) and western San Juan Mountains in Colorado (Wickham 1902: 232) are also doubtful.
Records. CAN: BC (QCI, VCI) **USA**: AK, ID, OR, WA [CA, CO, MT, NV, YT]

Nebria navajo Kavanaugh, 1979

Nebria navajo Kavanaugh, 1979a: 104. Type locality: «19 miles s[outh]w[est] Kayenta (6500'), Navajo County, Arizona» (original citation). Holotype (♂) in CAS [# 12509].

Distribution. This species is known only from the vicinity of the type locality in northeastern Arizona [see Kavanaugh 1979a: Fig. 63].
Records. USA: AZ

[**obliqua group**]

***Nebria appalachia* Darlington, 1932**

Nebria appalachia Darlington, 1932: 153. Type locality: «below Newfound Gap (near 5,000 feet), Smoky Mountains, Tennessee» (original citation). Holotype (♂) in MCZ [# 16433].

Distribution. This species is known from the southern Appalachian Mountains in western North Carolina and eastern Tennessee (Kavanaugh 1978: 674).
Records. USA: NC, TN
Note. This species is placed in a distinct group (*pallipes* group) along with *N. diversa* and *N. pallipes* by Ledoux and Roux (2005: 195).

***Nebria obliqua chuskae* Kavanaugh, 1979**

Nebria obliqua chuskae Kavanaugh, 1979a: 104. Type locality: «Lukachukai Creek (at Wagon Wheel Campground; 2260 m), Apache County, Arizona» (original citation). Holotype (♂) in CAS [# 13461].

Distribution. This subspecies, as far as known, is endemic to the Chuska Mountains in northeastern Arizona [see Kavanaugh 1979a: Fig. 61].
Records. USA: AZ

***Nebria obliqua obliqua* LeConte, 1867**

Nebria obliqua LeConte, 1867b: 363. Type locality: «Colorado» (original citation), restricted to «North Fork of South Platte Canyon at Santa Maria, Park County» by Kavanaugh (1979a: 114). Lectotype (♂), designated by Kavanaugh (1979a: 114), in MCZ [# 646].

Nebria obtusa LeConte, 1878a: 478. Type locality: «Green River City (6,000-7,000 feet) [Sweetwater County], Wyo[ming]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 647]. Synonymy established by Kavanaugh (1979a: 114). Note. I concur with Kavanaugh (1979a: 114) that LeConte's statement "Last ventral segment rufo-piceous (from the immaturity of the specimen)" in the description is a clear indication that LeConte had but a single specimen.

Nebria incerta Casey, 1913: 53. Type locality: «Colorado» (original citation), restricted to «North Fork of South Platte Canyon at Santa Maria, Park County» by Kavanaugh (1979a: 113). Lectotype, designated by Lindroth (1975: 112), in USNM [# 46859]. Synonymy established by Lindroth (1961a: 73).

Nebria testaceipes Casey, 1913: 54. Type locality: «Glenora, British Columbia» (original citation). Holotype [by monotypy] (♂) in USNM [# 46861]. Synonymy established, under the name *N. obtusa* LeConte, by Hatch (1953: 59), confirmed by Lindroth (1961a: 73).

Nebria texana Casey, 1913: 54. Type locality: «Texas» (original citation), which according to Kavanaugh (1979a: 116) is highly improbable. Holotype [by monotypy] (♂) in USNM [# 46863]. Synonymy established by Lindroth (1961a: 73).

Distribution. This subspecies ranges from the west edge of the Wrangell-St. Elias National Park in southeastern Alaska to the Great Slake Lake in Northwest Territories, south to northern New Mexico, northern Arizona, central Nevada, and the lower eastern slope of the Sierra Nevada in California, east to western South Dakota and western Nebraska [see Kavanaugh 1979b: Fig. 4].
Records. CAN: AB, BC, NT, SK, YT **USA**: AK, AZ, CA, CO, ID, MT, NE, NM, NV, OR, SD, UT, WA, WY

Nebria pallipes Say, 1823

Nebria pallipes Say, 1823a: 78. Type locality: «Monterey [Berkshire County], Mass[achusetts]» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 333), in MCZ [# 33082].

Distribution. This species is found east of the Mississippi River from Nova Scotia (Lindroth 1961a: 77) to north-central Illinois (Kavanaugh 1978: 800), south to northern Alabama (Löding 1945: 12), northeastern Georgia (Leng 1910: 73; Fattig 1949: 12), and east-central South Carolina (Ciegler 2000: 20) along the Appalachian Mountains. The record from east-central Missouri (Summers 1873: 133) needs confirmation; that from Colorado (Elias 1987: 632) is likely based on a mislabeled specimen; that from northern Wisconsin along Lake Superior (Wickham 1896c: 131) probably refers to *N. lacustris*.
Records. CAN: NB, NS, ON, PE, QC **USA**: AL, CT, DC, DE, GA, IL, IN, KY, MA, MD, ME, MI, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VA, VT, WV [MO]
Note. This species is placed in a special group (*pallipes* group) along with *N. appalachia* and *N. diversa* by Ledoux and Roux (2005: 195).

Nebria suturalis LeConte, 1850

Nebria suturalis LeConte, 1850: 209. Type locality: «islands at the mouth of Black Bay [Minnesota]» (original citation). Lectotype (♂), designated by Kavanaugh (1979a: 115), in MCZ [# 650]. Note. Lindroth (1961a: 73) placed the type locality in Ontario but it seems more likely that it is located in northern Minnesota near the International Border.

Nebria longula LeConte, 1878a: 478. Type locality: «Colorado» (original citation), restricted to «Longs Peak, Rocky Mountain National Park» by Kavanaugh (1979a: 113). Holotype [by monotypy] (♂) in MCZ [# 644]. Synonymy established by Kavanaugh (1979a: 113).

Nebria nimbosa Casey, 1920: 150. Type locality: «Lake of the Clouds, M[oun]t Washington [Coos County], New Hampshire» (original citation). Holotype [by monotypy] (♀) in USNM [# 46860]. Synonymy established by Bänninger (1925: 259), confirmed by Lindroth (1954b: 122).

Distribution. This species ranges from the coast of Labrador and the Ungava Bay region in northern Quebec to the Rocky Mountains in western Alberta, south to central Colorado, the Adirondack Mountains in northeastern New York, and New England [see Kavanaugh 1979b: Fig. 3].
Records. CAN: AB, LB, ON, QC **USA**: CO, ME, NH, NY, VT, WY

Subgenus *Catonebria* Shilenkov, 1975

Catonebria Shilenkov, 1975: 836. Type species: *Carabus nitidulus* Fabricius, 1787 (= *Nebria banksii* Crotch, 1871) by original designation. Etymology. From the Latin *catena* (chain), shortened to *cato*, and the generic name *Nebria* [*q.v.*], alluding to the chain-like row of tubercles on certain elytral striae in most species (David H. Kavanaugh pers. comm. 2012) [feminine].

Diversity. Thirty-one species (Ledoux and Roux 2005: 240) in North America (20 species) and Siberia and the Far East (11 species).

[**metallica group**]

Nebria labontei Kavanaugh, 1984

Nebria labontei Kavanaugh, 1984: 163. Type locality: «West Fork Wallowa River (2040-2190 m), Wallowa Mountains, Wallowa County, Oregon» (original citation). Holotype (♂) in CAS [# 14343].

Distribution. As far as known, this species is endemic to the Wallowa Mountains in northeastern Oregon [see Kavanaugh 1984: Fig. 31].
Records. USA: OR

Nebria meanyi giulianii Kavanaugh, 1981

Nebria meanyi giulianii Kavanaugh, 1981b: 441. Type locality: «Montgomery Creek (2380 m), Mono County, California» (original citation). Holotype (♂) in CAS [# 13732].

Distribution. This subspecies is known only from the western slope of the White Mountains in eastern California [see Kavanaugh 1984: Fig. 21].
Records. USA: CA

Nebria meanyi lamarckensis Kavanaugh, 1979

Nebria meanyi lamarckensis Kavanaugh, 1979a: 109. Type locality: «Lamarck Creek (above Upper Lamarck Lake; 10700-11000'), Inyo County, California» (original citation). Holotype (♂) in CAS [# 12507].

Distribution. This subspecies has been found only on the eastern slope of the southern Sierra Nevada in California [see Kavanaugh 1979a: Fig. 67].

Records. USA: CA

Nebria meanyi meanyi Van Dyke, 1925

Nebria meanyi Van Dyke, 1925: 118. Type locality: «close to the Nesqually River, M[oun]t Rainier National Park [Pierce County], Washington» (original citation). Holotype (♂) in CAS [# 1623]. Etymology. The specific name was proposed for Professor Edmond S. Meany [1862-1935], mountaineer, state legislator, and teacher of botany and history at the University of Washington. Mount Meany in the Olympic Mountains is named after him.

Distribution. This subspecies is known from the Skagway area in southeastern Alaska and northwestern British Columbia south along the Cascade Range to Mount Shasta in north-central California [see Kavanaugh 1979a: Fig. 67]. The record from "Whitehorse Pass," Yukon Territory (Kavanaugh 1978: 773), refers to the Skagway area in Alaska (Sydney G. Cannings pers. comm. 2009).
Records. CAN: BC **USA**: AK, CA, OR, WA

Nebria meanyi sylvatica Kavanaugh, 1979

Nebria meanyi sylvatica Kavanaugh, 1979a: 109. Type locality: «Boulder Creek (at Olympic Hot Springs; 610 m), Olympic National Park [Clallam County], Washington» (original citation). Holotype (♂) in CAS [# 12508].

Distribution. This subspecies in known from Vancouver Island and the Olympic Peninsula in northwestern Washington [see Kavanaugh 1979a: Fig. 67].
Records. CAN: BC (VCI) **USA**: WA

Nebria metallica Fischer von Waldheim, 1820

Nebria metallica Fischer von Waldheim, 1820: plate 6. Type locality: «insula Unalaschka [Alaska]» (Fischer von Waldheim 1822: 72). Lectotype (♂), designated by Kavanaugh (1979a: 112), in ZMMU.
Nebria pacifica Chaudoir, 1850a: 424. Type locality: «Otahiti [= Tahiti]» (original citation), which is incorrect. Lectotype [as holotype], designated by Perrault (1980: 29), in MHNP. Synonymy established by Bänninger (1932: 178).

Distribution. This species ranges from the Aleutian Islands south to western Montana (Hatch 1939a: 118) and southern Washington (Kavanaugh 1978: 775-778). A few specimens labeled from Arizona, California, and Oregon are known (Kavanaugh 1978: 778) but considered doubtful. The record from Colorado (Elias 1987: 632) is in error (David H. Kavanaugh pers. comm. 2012).
Records. CAN: AB, BC (VCI) **USA**: AK, ID, MT, WA [AZ, CA, OR]

[**ovipennis group**]

***Nebria carri* Kavanaugh, 1979**

Nebria carri Kavanaugh, 1979a: 107. Type locality: «Dollarhide Summit (7700-7900'), Blaine County, Idaho» (original citation). Holotype (♂) in CAS [# 22918].

Distribution. This species is found in the mountains of south-central and western Idaho [see Kavanaugh 1979a: Fig. 65] from the Seven Devils Mountains in the north to the Sawtooth Range in the south.
Records. USA: ID

***Nebria gebleri albimontis* Kavanaugh, 1984**

Nebria gebleri albimontis Kavanaugh, 1984: 163. Type locality: «Birch Creek (3290-3410 m), White Mountains, Mono County, California» (original citation). Holotype (♂) in CAS [# 14340].

Distribution. This subspecies is known only from the type locality in the White Mountains of eastern California.
Records. USA: CA

***Nebria gebleri cascadensis* Kavanaugh, 1979**

Nebria gebleri cascadensis Kavanaugh, 1979a: 105. Type locality: «Paradise Rive (above Narada Falls; 4580-4800'), Mount Rainier National Park [Pierce County], Washington» (original citation). Holotype (♂) in CAS [# 12502].

Distribution. This subspecies is found from southern British Columbia, including southern Vancouver Island, south along the Cascade Range to central Oregon [see Kavanaugh 1979a: Fig. 64]. One specimen labeled from Leavenworth Valley in Colorado seen by Kavanaugh (1979a: 106) is likely mislabeled.
Records. CAN: BC (VCI) **USA**: OR, WA

***Nebria gebleri fragariae* Kavanaugh, 1979**

Nebria gebleri fragariae Kavanaugh, 1979a: 106. Type locality: «Strawberry Creek (1,770 m), Grant County, Oregon» (original citation). Holotype (♂) in CAS [# 12501].

Distribution. This subspecies is yet recorded only from the type locality in the Strawberry Mountains of eastern Oregon [see Kavanaugh 1979a: Fig. 64].
Records. USA: OR

***Nebria gebleri gebleri* Dejean, 1831**

Nebria gebleri Dejean, 1831: 573. Type locality: «détroit de Norfolk [= Sitka Sound, Baranof Island, Alaska], sur la côte nord-ouest de l'Amérique septentrionale»

(original citation). Holotype [by monotypy] (♀) in MHNP (Ledoux and Roux 1992: 37). Etymology. The specific name honors Frédéric Auguste Gebler [1782-1850], physician and amateur coleopterist. Born in Germany, Gebler settled in Barnaul in Siberia at the age of 27. As physician of the vast district of Kolywano-Woskresensk, he had the opportunity to collect in several places in Siberia. After his death, Gebler's collection was sold to Count Georges de Mniszech [1824-1881] for 1,057 silver roubles. Mniszech's collection was bought by René Oberthür in 1885.

Nebria melanaria Hatch, 1949b: 115. Type locality: «Going-to-the-Sun Chalet, Glacier National Park [Flathead County], Montana» (original citation). Holotype (♂) in USNM. Synonymy established by Lindroth (1961a: 83).

Distribution. This subspecies occurs along the Cordilleras from the Alexander Archipelago to southernmost Yukon Territory (Lindroth 1961a: 84), south to southwestern Montana, south-central Idaho, and northeastern Oregon [see Kavanaugh 1979a: Fig. 64]. The record from northern Colorado (Armin 1963: 89) is probably in error.
Records. CAN: AB, BC, YT **USA**: AK, ID, MT, OR, WA
Note. This species is placed in its own group by Ledoux and Roux (2005: 240).

Nebria gebleri rathvoni LeConte, 1853

Nebria rathvoni LeConte, 1853c: 400. Type locality: «Sacramento [Sacramento County], California» (original citation). Holotype [by monotypy] location unknown. Etymology. The specific name honors Simon Snyder Rathvon [1812-1891], an entomologist interested chiefly in the economic aspect of insects who resided most of his life in Lancaster County, Pennsylvania. Rathvon bought Haldeman's collection which included that of Hentz. Note. The specimen in MCZ labeled as holotype [# 7403] is not the specimen upon which LeConte (1853c: 400) based his description since it is also labeled "6465 ft. Lake Tahoe, Cal. May 24, 1879."

Distribution. This subspecies is endemic to the Sierra Nevada and adjacent mountains in western Nevada [see Kavanaugh 1979a: Fig. 64].
Records. USA: CA, NV

Nebria gebleri siskiyouensis Kavanaugh, 1979

Nebria gebleri siskiyouensis Kavanaugh, 1979a: 107. Type locality: «South Fork Salmon River (at Big Flat Campground; 1490 m), Trinity County, California» (original citation). Holotype (♂) in CAS [# 12503].

Distribution. This subspecies is restricted to the Klamath Mountains system of the Coast Ranges in southwestern Oregon and northwestern California [see Kavanaugh 1979a: Fig. 64].
Records. USA: CA, OR

Nebria kincaidi balli Kavanaugh, 1979

Nebria kincaidi balli Kavanaugh, 1979a: 107. Type locality: «Paradise River (above Narada Falls; 4580-4800'), Mount Rainier National Park [Pierce County], Washington» (original citation). Holotype (♂) in CAS [# 12505].

Distribution. This subspecies is restricted to the Cascade Range of central Washington and northern Oregon [see Kavanaugh 1979a: Fig. 65].
Records. USA: OR, WA

Nebria kincaidi kincaidi Schwarz, 1900

Nebria kincaidi Schwarz, 1900: 525. Type locality: «Farragut Bay [Alaska]» (original citation). Holotype (♂) in USNM [# 5258]. Etymology. The species name honors Trevor Kincaid [1872-1968], naturalist and professor at the University of Washington. Early in his career Kincaid worked mainly on insects and taxonomy but later became involved with oysters and was largely responsible for bringing the Japanese oyster to Washington. He served as entomologist on the Harriman Alaska Expedition in 1899 and was selected by L.O. Howard in 1908 and 1909 to go to Japan and then to southwestern Russia in search of parasites of the gypsy moth.

Nebria columbiana Casey, 1913: 48. Type locality: «Inverness [probably Inverness Passage], British Columbia» (original citation). Lectotype (♂), designated by Lindroth (1975: 113), in USNM [# 46848]. Synonymy established by Darlington (1930: 104), confirmed by Lindroth (1961a: 88).

Distribution. This subspecies ranges along the mountains of the Pacific Coast from the Alexander Archipelago to northern Washington [see Kavanaugh 1979a: Fig. 65].
Records. CAN: BC (VCI) **USA**: AK, WA

Nebria ovipennis LeConte, 1878

Nebria ovipennis LeConte, 1878a: 477. Type locality: «Sierra Nevada, Cal[ifornia]» (original citation), restricted to «Chipmunk Flat, Tuolumne County» by Erwin and Ball (1972: 81). Holotype [by monotypy] (♂) in MCZ [# 648].

Distribution. This species is known from the Sierra Nevada in California (Erwin and Ball 1972: 81) and adjacent mountains in Washoe County, western Nevada (Kavanaugh 1978: 798).
Records. USA: CA, NV

Nebria spatulata sierrae Kavanaugh, 1979

Nebria spatulata sierrae Kavanaugh, 1979a: 108. Type locality: «White Mountain (east slope, above Big Horn Lake; 3290-3480 m), Mono County, California» (original citation). Holotype (♂) in CAS [# 12516].

Distribution. This subspecies is restricted to the main chain and Eastern Divide of the Sierra Nevada of California [see Kavanaugh 1979a: Fig. 66; David H. Kavanaugh pers. comm. 2012].
Records. USA: CA

***Nebria spatulata spatulata* Van Dyke, 1925**

Nebria spatulata Van Dyke, 1925: 119. Type locality: «Franklin Lake, Tulare County, California» (original citation). Holotype (♀) in CAS [# 1625].

Distribution. This subspecies is endemic to the Western Divide of the southern Sierra Nevada of California [see Kavanaugh 1979a: Fig. 66; David H. Kavanaugh pers. comm. 2012].
Records. USA: CA

[**trifaria group**]
***Nebria calva* Kavanaugh, 1984**

Nebria calva Kavanaugh, 1984: 164. Type locality: «Mount Baldy (3050-3350 m), s[outh]w[est] of Springerville, Apache County, Arizona» (original citation). Holotype (♂) in CNC [# 22917].

Distribution. This species is yet known only from the type locality in northeastern Arizona [see Kavanaugh 1984: Fig. 32].
Records. USA: AZ

***Nebria catenata* Casey, 1913**

Nebria catenata Casey, 1913: 49. Type locality: «Colorado» (original citation), restricted to «San Juan Mountains» by Erwin and Ball (1972: 97), further to «Wolf Creek Pass, Mineral County» by Kavanaugh (1979a: 112). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46849].

Distribution. This species is restricted to the San Juan Mountains in southwestern Colorado and the Abajo Mountains in southeastern Utah (Erwin and Ball 1972: 97).
Records. USA: CO, UT

***Nebria coloradensis* Van Dyke, 1943**

Nebria coloradensis Van Dyke, 1943: 19. Type locality: «near the Twin Lakes, Lake County, Colorado» (original citation). Holotype (♂) in CAS [# 5298].

Distribution. This species is found in the Rocky Mountains in southern Wyoming and Colorado (Erwin and Ball 1972: 97).
Records. USA: CO, WY

Note. This taxon has been considered a synonym of *N. catenata* by Lindroth (1961a: 84), a subspecies of *N. trifaria* by Erwin and Ball (1972: 96) and Ledoux and Roux (2005: 285), and a distinct species by Kavanaugh (1985: 421, 423).

Nebria ingens ingens Horn, 1870

Nebria ingens G.H. Horn, 1870b: 98. Type locality: «high Sierra Nevada Mountains east of Visalia, California» (original citation), restricted to «Franklin Lakes, Tulare County» by Kavanaugh (1979a: 113). Lectotype (♀), designated by Kavanaugh (1979a: 113), in MCZ [# 8127].

Nebria raveni Van Dyke, 1953b: 102. Type locality: «slopes of M[oun]t Darwin (13,600 feet), Fresno County, California» (original citation). Holotype (♀) in CAS [# 8163]. Synonymy established by Lindroth (1961a: 87).

Distribution. This subspecies is restricted to the Sierra Nevada in Fresno, Inyo, and Tulare Counties, California (Kavanaugh 1978: 753-754).
Records. USA: CA

Nebria ingens riversi Van Dyke, 1925

Nebria riversi Van Dyke, 1925: 115. Type locality: «base of Lyell Glacier (about 11,500 feet), M[oun]t Lyell, California» (original citation). Holotype (♂) in CAS [# 1619]. Etymology. The species name honors James John Rivers [1824-1913], a naturalist born in England who studied medicine at the University of London and came under the influence of Thomas Henry Huxley. In his 40s he moved to the United States and eventually settled in California. Curator of Organic Natural History at the University of California (Berkeley), Rivers published on many subjects, including Coleoptera, Lepidoptera, spiders, and reptiles.

Distribution. This subspecies is known only from Mono and Tuolumne Counties in the Sierra Nevada of California (Kavanaugh 1978: 754; David H. Kavanaugh pers. comm. 2012).
Records. USA: CA

Nebria piperi Van Dyke, 1925

Nebria piperi Van Dyke, 1925: 117. Type locality: «along the margins of the Nesqually River, just below the foot of the Nesqually Glacier, M[oun]t Rainier National Park [Pierce County], Washington» (original citation). Holotype (♂) in CAS [# 1621]. Etymology. The specific name honors the American botanist Charles Vancouver Piper [1867-1926].

Distribution. This species ranges along the mountains paralleling the Pacific Coast from southeastern Alaska along the British Columbia border (Lindroth 1961a: 86) and Kluane National Park in southwestern Yukon Territory (David H. Kavanaugh pers. comm. 2010) to west-central Oregon (Kavanaugh 1978: 811).
Records. CAN: BC, YT **USA**: AK, OR, WA

Note. This species is placed in the *metallica* group by Ledoux and Roux (2005: 240).

Nebria piute piute Erwin and Ball, 1972

Nebria trifaria piute Erwin and Ball, 1972: 95. Type locality: «La Baron Lake (9,700'), Circleville Mountain, 15.9 miles west of Junction, Beaver County, Utah» (original citation). Holotype (♂) in USNM [# 71976].

Distribution. This subspecies is known only from Beaver and Piute Counties in southern Utah (Kavanaugh 1978: 813).
Records. USA: UT

Nebria piute sevieri Kavanaugh, 1984

Nebria piute sevieri Kavanaugh, 1984: 164. Type locality: «Parowan Creek (2800 m), 13.5 miles S[outh] of Parowan, Markagunt Plateau, Iron County, Utah» (original citation). Holotype (♂) in CAS [# 14344].

Distribution. This subspecies is known only from southern Utah [see Kavanaugh 1984: Fig. 32]. One specimen labeled from Navajo County in Arizona seen by Kavanaugh (1984: 165) is likely mislabeled.
Records. USA: UT

Nebria piute utahensis Kavanaugh, 1979

Nebria trifaria utahensis Kavanaugh, 1979a: 110. Type locality: «Lonesome Beaver (7500'), Henry Mountains, Garfield County, Utah» (original citation). Holotype (♂) in CNC [# 20758].

Distribution. This subspecies is restricted to the Henry Mountains in south-central Utah [see Kavanaugh 1979a: Fig. 70].
Records. USA: UT

Nebria praedicta Kavanaugh and Schoville, 2009

Nebria praedicta Kavanaugh and Schoville, 2009: 74. Type locality: «north by northwest slope of Thompson Peak in upper Grizzly Lake Basin (2411-2470 m), Trinity Alps, Trinity County, California» (original citation). Holotype (♂) in CAS [# 18447].

Distribution. This species is endemic to the Trinity Alps of northwestern California.
Records. USA: CA

Nebria purpurata LeConte, 1878

Nebria purpurata LeConte, 1878a: 477. Type locality: «Laevenworth Valley (9,000 to 10,000 feet), above Georgetown [Clear Creek County], Colo[rado]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 649].

Nebria mobilis Casey, 1913: 50. Type locality: «Colorado» (original citation). Lectotype (♀), designated by Lindroth (1975: 112), in USNM [# 46850]. Synonymy established by Lindroth (1961a: 86).

Distribution. This species is found along the Rocky Mountains in Colorado and New Mexico (Kavanaugh 1978: 813-815). The record from Idaho (LeConte 1879d: 500) is probably in error.
Records. USA: CO, NM

Nebria schwarzi beverlianna Kavanaugh, 1979

Nebria schwarzi beverlianna Kavanaugh, 1979a: 110. Type locality: «Hoback River (8 miles n[orth]w[est] of Bondurant; 6900'), Sublette County, Wyoming» (original citation). Holotype (♂) in CAS [# 12515].

Distribution. This beautiful subspecies is recorded only from the type locality in Gros Ventre Mountains, western Wyoming [see Kavanaugh 1979a: Fig. 69].
Records. USA: WY

Nebria schwarzi schwarzi Van Dyke, 1925

Nebria schwarzi Van Dyke, 1925: 116. Type locality: «Banff, Alberta» (original citation). Holotype (♂) in USNM [# 28174].

Distribution. This subspecies is restricted to the Rocky Mountains in western Alberta and southeastern British Columbia [see Kavanaugh 1979a: Fig. 69].
Records. CAN: AB, BC
Note. This species is placed in the *metallica* group by Ledoux and Roux (2005: 240).

Nebria sierrablancae Kavanaugh, 1984

Nebria sierrablancae Kavanaugh, 1984: 164. Type locality: «Sierra Blanca (3200 m), Lincoln County, New Mexico» (original citation). Holotype (♂) in CNC [# 22919].

Distribution. This species is known only from the Sierra Blanca and Capitan Mountains in central New Mexico [see Kavanaugh 1984: Fig. 32].
Records. USA: NM

Nebria steensensis Kavanaugh, 1984

Nebria steensensis Kavanaugh, 1984: 165. Type locality: «South Fork McCoy Creek (2390-2560 m), Steens Mountains, Harney County, Oregon» (original citation). Holotype (♂) in CAS [# 14345].

Distribution. This species is endemic to the Steens Mountains in south-central Oregon [see Kavanaugh 1984: Fig. 32].
Records. USA: OR

Nebria trifaria pasquineli Kavanaugh, 1984

Nebria trifaria pasquineli Kavanaugh, 1984: 165. Type locality: «Lefthand Creek, 5 miles E[ast] of Ward, Front Range, Boulder County, Colorado» (original citation). Holotype (♂) in CAS [# 14346].

Distribution. This subspecies ranges from Medicine Bow and Sierra Madre Ranges in southern Wyoming south to the Rampart Range in central Colorado [see Kavanaugh 1984: Fig. 32].
Records. USA: CO, WY

Nebria trifaria trifaria LeConte, 1878

Nebria trifaria LeConte, 1878a: 478. Type locality: «American Fork Cañon (9,500 feet) [Utah County], Utah» (original citation). Lectotype (♀), designated by Kavanaugh (1979a: 116), in MCZ [# 651].

Nebria trifaria tetonensis Erwin and Ball, 1972: 95. Type locality: «South Fork of Cascade Canyon (10,000'), Teton National Park [Teton County], Wyoming» (original citation). Holotype (♂) in USNM [# 71975]. Synonymy established by Kavanaugh (1984: 167).

Distribution. This subspecies ranges along the Rocky Mountains from southern Montana and southeastern Idaho south to northeastern Nevada, southern Utah, and west-central Wyoming [see Erwin and Ball 1972: Fig. 42)].
Records. USA: ID, MT, NV, UT, WY
Note. The form *tetonensis* is retained as a valid subspecies by Ledoux and Roux (2005: 285).

Nebria vandykei vandykei Bänninger, 1928

Nebria vandykei Bänninger, 1928: 5. Type locality: «Paradise Val[ley], M[oun]t Rainier [Pierce County], Wash[ington]» (lectotype label). Lectotype (♂), designated by Kavanaugh (1979a: 116), in ETHZ. Etymology. The species name was proposed for Edwin Cooper Van Dyke [1869-1952], an outstanding coleopterist and professor of entomology at the University of California in Berkeley.

Distribution. This subspecies is known only from the Olympic Mountains and the Cascade Range of Washington [see Kavanaugh and Schoville 2009: Fig. 13].
Records. USA: WA

Nebria vandykei wyeast Kavanaugh, 1979

Nebria vandykei wyeast Kavanaugh, 1979a: 109. Type locality: «Salmon River headwaters (1830-1950 m), Mount Hood, Clackamas County, Oregon» (original citation). Holotype (♂) in CAS [# 12517].

Distribution. This subspecies is restricted to the Cascade Range in Oregon from Mount Hood south to the Three Sisters area [see Kavanaugh and Schoville 2009: Fig. 13].
Records. USA: OR

Subgenus *Nebria* Latreille, 1802

Nebria Latreille, 1802: 89. Type species: *Carabus brevicollis* Fabricius, 1792 designated by Latreille (1810: 426).

Helobia Curtis, 1826: plate 103. Type species: *Carabus brevicollis* Fabricius, 1792 by original designation. Etymology. From the Greek *helos* (marsh, meadow) and *bios* (life) [feminine].

Harpazobia Gistel, 1856: 356. Type species: *Carabus brevicollis* Fabricius, 1792 by monotypy.

Diversity. Sixty-five species in the Palaearctic Region, one of them adventive in North America.

Nebria brevicollis (Fabricius, 1792)

Carabus cursor O.F. Müller, 1776: 78 [potential *nomen oblitum*]. Type locality: environs de Paris (title of Geoffroy's book). Syntype(s) probably in MHNP. Note. This taxon was first described by Geoffroy (1762: 146) under the name "*Bupreste noir à pattes rougeâtres*" as mentioned by Müller (1776: 78). Müller (1776: 78) reproduced Geoffroy's original description in Latin and provided a scientific name. I consider that Müller's name was made available by a bibliographic reference to a description and as such the type series consists of Geoffroy's specimens (ICZN 1999: Article 72.4.4).

Carabus rufipes Goeze, 1777: 662 [primary homonym of *Carabus rufipes* DeGeer, 1774]. Type locality: environs de Paris (title of Geoffroy's book). Syntype(s) possibly in MHNP. Synonymy established with the name *Carabus cursor* Müller by Goeze (1777: 662). Note. This taxon was first described by Geoffroy (1762: 146) under the name "*Bupreste noir à pattes rougeâtres*" as mentioned by Goeze (1777: 662) and the comment made under *Carabus cursor* also applies here. Goeze (1777: 662) also listed *Carabus ruficornis* Fabricius, 1775, currently considered a synonym of *Harpalus rufipes* (DeGeer, 1774), and *Carabus cursor* Müller, 1776 as synonyms of this taxon.

Carabus brevicollis Fabricius, 1792 [22 December]: 150 [potential *nomen protectum*]. Type locality: «Germania» (original citation). Lectotype (♂), designated by Lindroth (1961a: 78), in ZMUC. Synonymy established by Bedel (1880: 133). Note. Bedel (1881: vii) reported that he had access to the collection of Geoffroy, at the time in the hands of Maurice de Laplanche, which still contained many "authentic types." Therefore it is likely that the synonymy proposed by Bedel (1880: 133) was based upon an examination of the type specimen(s) of the "*Bupreste noir à pattes rougeâtres*" of Geoffroy (1762) upon which *Carabus cursor* Müller, 1776 and *Carabus rufipes* Goeze, 1777 were based.

Carabus infidus Rossi, 1792 ["31 December"]: 88. Type locality: Etruria, Italy (inferred from title of the book). Syntype(s) location unknown (possibly in ZMHB). Synonymy established by Illiger (1798: 190).

Distribution. This Palaearctic species is adventive in North America where it is known from the Willamette Valley in northwestern Oregon and southwestern Washington [see LaBonte 2011: Fig. 4]. Since over 3,000 specimens have been collected, the species is clearly established in the region. The first inventoried specimen found in the area was caught in late 2007 (Kavanaugh and LaBonte 2008: 482). The species has also been collected twice in eastern North America, in Quebec in 1930 and Saint Pierre and Miquelon in 1937 (Lindroth 1961a: 78) but it did not become established in this part of the continent.
Records. USA: OR, WA – **Adventive**

Tribe Notiophilini Motschulsky, 1850

Notiophili Motschulsky, 1850a: iv, 16. Type genus: *Notiophilus* Duméril, 1805.

Diversity. This tribe includes a single genus.

Genus *Notiophilus* Duméril, 1805

Notiophilus Duméril, 1805: 194 (as *Nothiophilus*). Type species: *Cicindela aquatica* Linnaeus, 1758 designated by Curtis (1829: plate 254). Etymology. From the Greek adjective *notios* (wet, moist, damp) and *philos* (beloved), alluding, incorrectly though, to the habitat requirements of the species known to Duméril at the time [masculine]. Note. *Notiophilus* is an incorrect subsequent spelling of *Nothiophilus* in prevailing usage and so deemed to be the correct original spelling (ICZN 1999: Article 33.3.1).

Latviaphilus Barševskis, 1994: 1. Type species: *Elaphrus biguttatus* Fabricius, 1779 by original designation. Etymology. From the geographic name Latvia and the Greek *philos* (beloved) [masculine].

Makarovius Barševskis, 1994: 1. Type species: *Notiophilus rufipes* Curtis, 1829 by original designation.

Diversity. About 55 species in the arctic, subarctic, boreal, and temperate areas of the Nearctic (15 species, of which two are adventive), Neotropical (two species in mountains of Middle America), and Palaearctic (about 40 species) Regions, including northern Africa (see Barševskis 2007). Two species, *N. aquaticus* and *N. borealis*, are Holarctic.
Identification. Lindroth (1961a) reviewed the North American species and provided a key for their identification. One adventive species (*N. palustris*) has been discovered subsequently in eastern Canada.
Faunistic Note. *Notiophilus rufipes* Curtis is known in North America from one specimen collected in Ware County, Georgia (Barševskis 2004). In my opinion, the specimen could be mislabeled and therefore the species is not considered as a North American entity.

Figure 5. *Omoglymmius americanus* (Laporte). This species is one of the seven rhysodid species-group taxa found in eastern North America. These species live in decaying wood, such as logs, stumps or roots, where they feed on slime molds and fungi. The carabids, on the other hand, are carnivorous, herbivorous, or omnivorous feeding on both animal and plant matters.

***Notiophilus aeneus* (Herbst, 1806)**

Elaphrus aeneus Herbst, 1806: 235. Type locality: «Nordamerica» (original citation), restricted to «Boston [Suffolk County], Mass[achusetts]» by Lindroth (1961a: 93). Syntype(s) location unknown (possibly in ZMHB).

Nothiophilus porrectus Say, 1830b: (3) [3]. Type locality: «Penn[sylvania]» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 332), in MCZ [# 33084]. Synonymy established with doubt by Melsheimer (1853: 12).

Distribution. This species ranges from Nova Scotia (Lindroth 1961a: 94) to southeastern Minnesota (Donald P. Schwert pers. comm. 1989), south at least to southeastern Nebraska (Richardson County, Foster F. Purrington pers. comm. 2009), central Missouri (Boone County, CMNH), northeastern Georgia (Leng 1910: 73; Fattig 1949: 11), and southwestern South Carolina (Ciegler 2000: 20). Two specimens labeled from the Santa Catalina Mountains in Arizona (MCZ, collection Fall) are known and so the species probably ranges farther west in southern United States.
Records. CAN: NB, NS, ON, PE, QC **USA**: AZ, CT, DC, DE, GA, IA, IL, IN, MA, MD, ME, MI, MN, MO, NC, NE, NH, NJ, NY, OH, PA, RI, SC, TN, VA, VT, WI, WV

***Notiophilus aquaticus* (Linnaeus, 1758)**

Cicindela aquatica Linnaeus, 1758: 408. Type locality: «Europa» (original citation), restricted to «Sweden» by Lindroth (1961a: 95). Syntype(s) location unknown. Note. Three Linnean specimens are present in LSL under this name, but none belong to the present species (Lindroth 1957b: 336).

Cicindela pusilla Schreber, 1759: 10. Type locality: «prope Halam [= Halle, Germany]» (original citation). Syntype(s) probably lost. Synonymy established by Fabricius (1775: 227).

Elaphrus semipunctatus Fabricius, 1775: 227. Type locality: «Halae Saxonum [= Halle, Germany]» (original citation). Three syntypes in ZMUC (Zimsen 1964: 66). Synonymy established by Fauvel (1883: 90).

Notiophilus metallicus G.R. Waterhouse, 1833: 203. Type locality: England (inferred from title of the paper). Holotype [by monotypy] location unknown (possibly in BMNH). Synonymy established by Dawson (1854: 54).

Notiophilus newmanni G.R. Waterhouse, 1833: 205. Type locality: «Snowdon [Great Britain]» (original citation). Syntype(s) [3 originally cited] location unknown (possibly in BMNH). Synonymy established by Dawson (1854: 54). Etymology. The specific name was proposed for Edward Newman [1801-1876], British naturalist and printer. Newman co-founded *The Entomological Magazine* and founded *The Entomologist*. His publications dealt mainly with entomology but he also wrote on several other natural history subjects including botany, especially ferns.

Notiophilus dauricus Chaudoir, 1850b: 164. Type locality not stated. Syntype(s) probably in MHNP (collection Chaudoir). Synonymy re-established by Reitter (1897:

361). Note. Motschulsky (1859b: 539) first described this taxon under the name *N. aquaticus* var. *dauricus* in a paper about the beetles of the government of Yakutsk, Siberia, and the name has been attributed to him since. However, Chaudoir (1850b: 164) published the name earlier as a junior synonym of *N. aquaticus* ("M. de Motschoulski m'a envoyé l'*Aquaticus* sous le nom de *Dauricus*") and therefore the name is available from its first publication as a synonym (ICZN 1999: Article 11.6.1).

Notiophilus hardyi Putzeys, 1866a: 165. Type locality: «Terre-Neuve» (original citation). Syntype(s) in MHNP (collection Chaudoir). Synonymy established by Fall (1906: 84), confirmed by Lindroth (1954b: 121).

Distribution. The range of this circumpolar species extends from Iceland to the Bering Sea Coast (Bousquet and Barševskis 2003: 96) and from Alaska (Lindroth 1961a: 95) to Newfoundland (Lindroth 1955a: 34), south to Pennsylvania (Capogreco 1989b: 4) and to New Mexico and Arizona (Fall 1906: 85; Lindroth 1961a: 95) along the Rocky Mountains. Fossil remnants from a Plio-Pleistocene sequence have been found in northwestern Greenland (Böcher 1995: 18).
Records. FRA: PM **CAN**: AB, BC, LB, MB, NB, NF, NS (CBI), ON, QC, SK, YT **USA**: AK, AZ, CO, ID, IL, MA, ME, MI, MN, MT, NH, NM, NY, OH, PA, UT, VT, WI, WY – **Holarctic**

Notiophilus biguttatus (Fabricius, 1779)

Elaphrus biguttatus Fabricius, 1779: 231. Type locality: «Bye [Norway]» (original citation) which according to Lindroth (1961a: 100) is located in Guldal (= Gauldal), a valley of the Gaula River, south of Trondheim. Syntype(s) destroyed (Lindroth 1961a: 100).

Distribution. This Palaearctic species is adventive in North America where it is known from Newfoundland and Saint Pierre and Miquelon (Lindroth 1955a: 37) to the Gaspé Peninsula in Quebec (LeSage 1996: 23), south to Connecticut (Krinsky and Oliver 2004: 396) and "Rhode Island" (Sikes 2003: 7), and from southwestern British Columbia (Lindroth 1961a: 101). The first inventoried specimen found on the east side of this continent was caught in Newfoundland in 1923 (Brown 1950b: 197) and on the west coast in Vancouver in 1957 (Lindroth 1961a: 101). Dejean's (1831: 589) record of this species from «Amérique septentrionale» almost certainly refers to *N. novemstriatus* LeConte.
Records. FRA: PM **CAN**: BC, NB, NF, NS, PE, QC **USA**: CT, ME, NH, RI – **Adventive**

Notiophilus borealis Harris, 1869

Notiophilus borealis T.W. Harris [in Scudder], 1869: 213. Type locality: «White Mountains [Coos County, New Hampshire]» (original citation). One syntype in MCZ [# 26409].

Distribution. This species is known from the Far East (Bousquet and Barševskis 2003: 96) and from Alaska (Lindroth 1961a: 97) to Newfoundland (Lindroth 1955a: 36); isolated on some mountains of New England (Lindroth 1961a: 96-97) and New York (Essex County, CNC, MCZ), and also known from northern Wyoming (Johnson County, CMNH). Fossil remnants of this species, dated between about 16,700 and 18,100 years B.P., have been unearthed in southeastern Iowa (Baker et al. 1986: 96).
Records. CAN: AB, BC, LB, MB, NF, NT, NU, ON, QC, SK, YT **USA**: AK, ME, NH, NY, VT, WY – **Holarctic**

Notiophilus directus Casey, 1920

Notiophilus directus Casey, 1920: 142. Type locality: «Indiana; Keokuk, Iowa» (original citation), which according to Lindroth (1961a: 98) are unlikely; «Jasper, Al[ber]ta» selected by Lindroth (1961a: 98). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46841].

Notiophilus lanei Hatch, 1949b: 114. Type locality: «Pierce [Clearwater County], Idaho» (original citation). Holotype (♂) in USNM. Synonymy established by Lindroth (1954b: 121).

Distribution. This species occurs in the western mountain ranges, from southwestern Alberta and southern British Columbia, south to northeastern California (Lindroth 1961a: 98), northeastern Arizona, and northern New Mexico [see Morgan and Morgan 1979: Fig. 5]. Fossil remnants, dated about 11,800 years B.P., have been unearthed in northeastern Wisconsin (Morgan and Morgan 1979: 232).
Records. CAN: AB, BC **USA**: AZ, CA, CO, ID, MT, NM, OR, UT, WA, WY

Notiophilus intermedius Lindroth, 1955

Notiophilus intermedius Lindroth, 1955a: 36. Type locality: «Pinware River, Labrador» (original citation). Holotype (♂) in CNC [# 6569]. Note. Lindroth (1954b: 157) proposed the name earlier but he did not meet the requirements of availability (ICZN, Article 13.1) at the time.

Distribution. This species is known from scattered localities from Newfoundland (Lindroth 1955a: 37) to the Gulf of Alaska coast (Lindroth 1961a: 98); also known from northwestern Minnesota (Clearwater County, CNC).
Records. CAN: BC, LB, MB, NF, QC **USA**: AK, MN

Notiophilus nemoralis Fall, 1906

Notiophilus nemoralis Fall, 1906: 88. Type locality: «White M[oun]t[ain]s, N[ew] H[ampshire]; Moosilauke, N[ew] H[ampshire]; Rangely, M[ain]e; Camels Hump, V[ermon]t» (original citation). Syntype(s) in MCZ [# 23845].

Distribution. This species is restricted to some mountains in New England (Lindroth 1961a: 100) and the Adirondacks in northeastern New York (Notman 1928: 211).

Records. USA: MA, ME, NH, NY, VT

Notiophilus nitens LeConte, 1857

Notiophilus nitens LeConte, 1857c: 31. Type locality: «Prairie Paso [= possibly Bear Prairie Pass, Lewis County, Washington], Oregon [Territory]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 5454].

Distribution. This species is found from Vancouver Island (Lindroth 1961a: 99) to northwestern Montana (Russell 1968: 46), south to southern Oregon (Harney County, CMNH). The record from Texas (Fall 1906: 90) is probably in error.
Records. CAN: BC (VCI) **USA**: ID, MT, OR, WA

Notiophilus novemstriatus LeConte, 1847

Notiophilus 9-striatus LeConte, 1847: 450. Type locality: «provinciis australibus, et mediis» (original citation), restricted to «Boston [Suffolk County], Mass[achusetts]» by Lindroth (1961a: 101). Syntype(s) in MCZ [# 655].

Notiophilus cribrilaterus Motschulsky, 1864: 193. Type locality: «Am[érique] bor[éale]» (original citation). Three syntypes in ZMMU, one labeled "Am. bor. Atlanta" (Keleinikova 1976: 193). Synonymy established by Bousquet and Larochelle (1993: 16).

Notiophilus quadrifoveatus T.W. Harris [in Scudder], 1869: 213. Type locality: «New Hampshire, Vermont, Massachusetts, New York, Pennsylvania, North Carolina, and Alabama» (original citation). One probable syntype, labeled "quadrifoveatus Harris. [handwritten] / 709 [handwritten] / 50," in MCZ (collection Harris). Synonymy established by Fall (1906: 92), herein confirmed.

Notiophilus parvus Casey, 1920: 142. Type locality: «Catskill M[oun]t[ain]s, New York» (original citation). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46840]. Synonymy established by Lindroth (1954b: 121).

Distribution. The range of this species extends from western Maine (Oxford County, André Larochelle pers. comm. 1990) to "South Dakota" (Kirk and Balsbaugh 1975: 15), south to east-central Texas (Riley 2011) and northern Florida (Peck and Thomas 1998: 15), west along the southwest to "Arizona" (Lindroth 1961a: 101) including northwestern Colorado (Barševskis 2009: 138). The record from Cape Breton Island in Nova Scotia (McCorquodale 2000: 339) is based on a misidentified specimen of *N. palustris*.
Records. USA: AL, AR, AZ, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, NE, NH, NJ, NM, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT

Notiophilus palustris (Duftschmid, 1812)

Elaphrus palustris Duftschmid, 1812: 192. Type locality: «Um Linz [Austria]» (original citation). Syntype(s) probably lost. Note. Ledoux and Roux (2005: 682) report-

ed that Duftschmid's collection, supposedly located at the Oberösterreichisches Landesmuseum in Linz (Horn et al. 1990a: 101), is non-existent.

Distribution. This Palaearctic species is adventive in North America where it is known only from Nova Scotia, including Cape Breton Island (McCorquodale 2000: 339, as *N. novemstriatus*), and Prince Edward Island (Larochelle and Larivière 1990b: 211). The first inventoried specimen found on this continent was caught in Halifax, Nova Scotia in 1968 (CNC).
Records. CAN: NS (CBI), PE – **Adventive**

Notiophilus semiopacus Eschscholtz, 1833

Notiophilus semiopacus Eschscholtz, 1833: 25. Type locality: «bei St. Franzisco [San Francisco County], Californien» (original citation). Syntype(s) location unknown (possibly in ZMMU).

Distribution. This species is known from California (Fall 1906: 91; Lindroth 1961a: 99), as far north as the San Francisco Bay area (Alameda County, MCZ), Arizona (Wickham 1898: 300; Lindroth 1961a: 99), and the states of Sonora and Chihuahua in Mexico (Erwin 2007a: 59). The record from "Oregon" (Fall 1906: 91) needs confirmation.
Records. USA: AZ, CA [OR] – Mexico

Notiophilus semistriatus Say, 1823

Nothiophilus semistriatus Say, 1823a: 81. Type locality: «Fairfax Co[unty], V[irgini]a» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 332), in MCZ [# 33083].

Notiophilus confusus LeConte, 1847: 449. Type locality: United States east of the Rocky Mountains (inferred from title of the paper). Syntype(s) in MCZ [# 654]. Synonymy established by LeConte (1850: 210), confirmed by Lindroth (1961a: 94).

Notiophilus punctatus LeConte, 1850: 210. Type locality: Lake Superior (inferred from title of the paper). Four syntypes in MCZ [# 656]. Synonymy established by Lindroth (1961a: 94).

Notiophilus americanus T.W. Harris [in Scudder], 1869: 213. Type locality not stated. Syntype(s) probably lost. Synonymy established by Fall (1906: 91).

Notiophilus coloradensis Casey, 1920: 141. Type locality: «Boulder Co[unty], Colorado» (original citation). Holotype [by monotypy] (♂) in USNM [# 46837]. Synonymy established by Lindroth (1954b: 121).

Notiophilus solodovnikovi Barševskis, 2001: 38. Type locality: «Chehova M[ou]nt[ain], Sahalin isl[and], S[outh], Far East, Russia» (original citation). Holotype (♂) in Baltic Institute of Coleopterology (Daugavpils, Latvia). Synonymy established by Barševskis (2006: 66).

Distribution. This species is found from Labrador to central Alaska, south to northern British Columbia (Lindroth 1961a: 94-95), New Mexico (Fall 1906: 84; Lin-

droth 1961a: 94) along the Rocky Mountains, Oklahoma (Latimer County, UASM), southwestern Arkansas (Columbia County, INHS), east-central Alabama (Lee County, CNC), central Georgia (Fattig 1949: 11), and southern South Carolina (Ciegler 2000: 20); also recorded from Sakhalin Island (Barševskis 2001: 38).
Records. CAN: AB, BC, LB, MB, NB, NS (CBI), ON, QC, YT **USA**: AK, AL, AR, CO, CT, DC, DE, GA, IA, IL, IN, KS, KY, MA, MD, MI, MN, MO, NC, ND, NE, NH, NJ, NM, NY, OH, OK, PA, SC, SD, TN, VA, WI, WV – **Holarctic**

Notiophilus sierranus Casey, 1920

Notiophilus obscurus Fall, 1901a: 207 [primary homonym of *Notiophilus aquaticus obscurus* Dalla Torre, 1877]. Type locality: «San Bernardino Mountains (6,000 to 7,000 feet) [California]» (original citation). Syntype(s) in MCZ [# 23846].
Notiophilus sierranus Casey, 1920: 140. Type locality: «Lake Tahoe [Placer County], California» (original citation). Holotype [by monotypy] (♀) in USNM [# 46838]. Synonymy established by Lindroth (1961a: 98).
Notiophilus obscuratus Fall, 1926b: 125. Replacement name for *Notiophilus obscurus* Fall, 1901.

Distribution. As far as known, this species is restricted to the Sierra Nevada in California (Fall 1906: 90; Lindroth 1961a: 99).
Records. USA: CA

Notiophilus simulator Fall, 1906

Notiophilus simulator Fall, 1906: 86. Type locality: «Mullan, Montana; Leavenworth Valley and Silver Plume, 9000-11000 feet, Colorado; Houston, Texas; Coeur d'Alene, Idaho» (original citation), restricted to «Silver Plume [Clear Creek County], Color[ado]» by Lindroth (1961a: 97). Syntype(s) [5 ♀ originally cited] in MCZ [# 23847].
Notiophilus evanescens Casey, 1913: 47. Type locality: «Boulder Co[unty], Colorado» (original citation). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46836]. Synonymy established by Casey (1914: 356), confirmed by Lindroth (1954b: 121).

Distribution. This species is found in the western mountain ranges from western Alberta and British Columbia (Lindroth 1961a: 97) south at least to central Oregon (Crook County, CNC) and southwestern Colorado (Elias 1987: 632). The record from Houston, Texas (Fall 1906: 87) needs confirmation; that from Alaska (Fall 1926a: 129) refers to *N. intermedius* (Lindroth 1961a: 97).
Records. CAN: AB, BC **USA**: CO, ID, MT, OR, UT, WA, WY [TX]

Notiophilus sylvaticus Dejean, 1831

Notiophilus sylvaticus Dejean, 1831: 589. Type locality: «détroit de Norfolk [= Sitka Sound, Baranof Island, Alaska], sur la côte nord-ouest de l'Amérique septentrio-

nale» (original citation). Holotype [by monotypy] probably in MHNP. Note. Eschscholtz (1833: 24) first described this species and the name has been attributed to him since. However, Dejean (1831: 589) published the name earlier as a junior synonym of *N. biguttatus* and the name therefore is available from its first publication as a synonym (ICZN 1999: Article 11.6.1). The date of 1829 attributed by Lindroth (1961a: 99) to this name, under the authorship of Eschscholtz, is in error.

Distribution. This species ranges from southern Alaska (Lindroth 1961a: 100) to northern California, at least as far south as Mendocino County (Fall 1906: 89), east to northern Idaho (Hatch 1953: 61). Fossil remnants, dated from the Late Pleistocene, have been unearthed in northeastern Siberia (Kiselev 1981: 12).
Records. CAN: BC (QCI, VCI) **USA**: AK, CA, ID, OR, WA

Subfamily CARABINAE Latreille, 1802

Carabici Latreille, 1802: 80. Type genus: *Carabus* Linnaeus, 1758.

Diversity. Worldwide, with about 1,300 species (Lorenz 2005: [i]) arrayed in four tribes: Carabini (about 1,080 species), Ceroglossini (eight South American species), Cychrini (about 200 species), and Pamborini (13 species).

Tribe Cychrini Perty, 1830

Cychridae Perty, 1830: 6. Type genus: *Cychrus* Fabricius, 1794.

Diversity. Northern Hemisphere and mountains in Mexico, with about 200 species arrayed by most authors in four genera: *Cychropsis* Boileau (about 25 Asian species), *Cychrus* (about 115 species), *Scaphinotus* (55 species), and *Sphaeroderus* (six species).

Genus *Sphaeroderus* Dejean, 1826

Sphaeroderus Dejean, 1826: 14. Type species: *Sphaeroderus lecontei* Dejean, 1826 designated by Hope (1838: 65). Etymology (original). From the Greek *sphaera* (sphere) and *dere* (neck, by extension pronotum), alluding to the round or oval shape of the pronota ("*corselet ... arrondi, ovale ou orbiculé*") of the species then known to Dejean [masculine].

Diversity. Six species restricted to the boreal and temperate regions of eastern North America.
Identification. Lindroth's (1961a) key covers four of the species currently recognized; *S. indianae* was not included and *S. schaumii* was considered a junior synonym of *S. nitidicollis*. A taxonomic revision of the genus is needed.

Sphaeroderus bicarinatus (LeConte, 1853)

Cychrus bicarinatus LeConte, 1853c: 399. Type locality: «Habersham Co[unty], Georgia» (original citation). Holotype [by monotypy] (♂) in MCZ [# 616].

Sphaeroderus multicarinatus Darlington, 1932: 151. Type locality: «Newfound Gap (near 5,200 feet), Smoky Mountains, on the North Carolina-Tennessee state line» (original citation). Holotype (♂) in MCZ [# 16432]. Synonymy established by Bousquet and Larochelle (1993: 78) based on Barr (1974a) unpublished manuscript.

Distribution. This species is found along the southern parts of the Appalachians from North Carolina and Tennessee (Darlington 1932: 152) to northern Alabama (Löding 1945: 11) and northeastern Georgia (LeConte 1853c: 399; Leng 1910: 73).
Records. USA: AL, GA, NC, SC, TN
Note. Roeschke (1907a: 263) and Lindroth (1961a: 29) regarded this form as a subspecies of *S. stenostomus* (Weber).

Sphaeroderus canadensis canadensis Chaudoir, 1861

Sphaeroderus canadensis Chaudoir, 1861b: 498. Type locality: «environs de la rivière Ottawa, Canada» (original citation). Syntype(s) in MHNP.
Sphaeroderus palpalis Motschulsky, 1866: 312. Type locality: «Hudson-Bay» (original citation), which is incorrect. Lectotype [as holotype] (♂), designated by Kryzhanovskij (1968: 186), in ZMMU. Synonymy established by Roeschke (1907a: 262), confirmed by Kryzhanovskij (1968: 186).
Sphaeroderus canadensis blanchardi Leng, 1916: 41. Type locality: «Randolph [Coos County], N[ew] H[ampshire]» (original citation). Holotype (♂) in CAS [# 4375]. Synonymy established by Darlington (1933a: 62).

Distribution. The range of this subspecies extends from Cape Breton Island to southern Ontario (Lindroth 1961a: 28), south to the Black Mountains in North Carolina (Darlington 1933a: 64). The record from "South Carolina" (Bousquet and Larochelle 1993: 78) refers to *S. canadensis lengi*; that from "Michigan" (Bousquet and Larochelle 1993: 78) needs confirmation.
Records. CAN: NB, NS (CBI), ON, QC **USA**: CT, KY, MA, MD, ME, NC, NH, NY, OH, PA, TN, VA, VT, WV [MI]

Sphaeroderus canadensis lengi Darlington, 1933

Sphaeroderus canadensis lengi Darlington, 1933a: 63. Type locality: «between Newfound Gap and Clingman's Dome (5,000-6,600 ft.), on the North Carolina-Tennessee state line» (original citation). Holotype (♂) in MCZ [# 17238].

Distribution. This subspecies occurs in the mountains south of the French Broad River (Barr 1969: 76) from southwestern North Carolina and adjacent parts of Tennessee (Darlington 1933a: 64) to northeastern Georgia (Fattig 1949: 9) and northwestern South Carolina (Ciegler 2000: 30).
Records. USA: GA, NC, SC, TN

Sphaeroderus indianae (Blatchley, 1910)

Cychrus stenostomus indianae Blatchley, 1910: 42. Type locality: «Crawford County [Indiana]» (original citation for the lectotype). Lectotype (♀), designated by Blatchley (1930: 33), in PURC.

Distribution. This species ranges from northwestern Ohio (Barr 1974a) to central Indiana (Blatchley 1910: 42), south to north-central Mississippi (Grenada County, Drew A. Hildebrandt pers. comm. 2009) and southwestern Virginia (Barr 1974a).
Records. USA: IN, KY, MS, OH, TN, VA, WV

Sphaeroderus nitidicollis Guérin-Méneville, 1829

Sphaeroderus nitidicollis Guérin-Méneville, 1829: plate 7. Type locality: «Terre-Neuve» (Guérin-Méneville 1844a: 24). Holotype [by monotypy] in UMO (Lindroth 1969a: 1108). Note. This name has been credited to Chevrolat by almost all authors. The validation of the specific name is by association with an illustration drawn by Guérin-Méneville and published in Guérin-Méneville's *Iconographie du Règne Animal* under the name "*Sphaeroderus nitidicollis* Chevr." The nomenclature act was done by Guérin-Méneville and he is to be credited with the species name.

Sphaeroderus brevoorti LeConte, 1847: 443. Type locality: «Maine» (original citation). Syntype(s) in MCZ [# 617]. Synonymy established by Roeschke (1907a: 266).

Sphaeroderus granulosus Chaudoir, 1861b: 497. Type locality: «Terre Rupert, près de la baie d'Hudson» (original citation). Syntype(s) [2 ♂ originally cited] in MHNP. Synonymy established by LeConte (1866: 78).

Distribution. This species ranges from Newfoundland (Lindroth 1955a: 23) to east-central Saskatchewan (Hooper 1978: 19), south to northeastern Minnesota (Gandhi et al. 2005: 923), northern Wisconsin along Lake Superior (Wickham 1896c: 131), the Adirondack Mountains in northeastern New York (Notman 1928: 208), and New England [see Lindroth 1963a: Fig. 68]. The record from southwestern Ohio (Dury 1906: 257) is probably in error. Roeschke (1907a: 268) statement that this species is found "Küstengebiet von Maine bis Washington D.C." is in error. Fossil remnants, dated between 22,200 and 25,200 years B.P., have been unearthed in central Illinois (Schwert 1992: 76).
Records. CAN: MB, NB, NF, NS (CBI), ON, QC, SK **USA**: ME, MN, NH, NY, VT, WI
Note. Lindroth (1961a: 29) retained *brevoorti* as "a weak subspecies, at most." I studied several specimens from Newfoundland, the Maritimes, and Quebec, including Anticosti Island, and found no structural differences between populations of the forms *nitidicollis* and *brevoorti* except for the fact that adults of the *nitidicollis* form are on average slightly larger than those of the *brevoorti* form.

Sphaeroderus schaumii Chaudoir, 1861

Sphaeroderus schaumii Chaudoir, 1861b: 500. Type locality: «Ohio» (original citation), herein restricted to South Bass Island in western Lake Erie (see Will et al. 1995: 68). Holotype [by monotypy] (♂) in MHNP.

Distribution. This species is known from a small area from Michigan to northern Virginia (Barr 1974a) and western Maryland (Bailey et al. 1994: 320). The record from "Illinois" (Bousquet and Larochelle 1993: 78) is probably in error.
Records. USA: DC, MD, MI, OH, VA, WV
Note. Roeschke (1907a: 266), Lindroth (1961a: 29), Lorenz (2005: 64), and Erwin (2007a: 170) listed this taxon as a subspecies of *Sphaeroderus nitidicollis* Guérin-Méneville. Thomas C. Barr, Jr. (pers. comm. 1977) believes it represents a distinct species, though closely related to *S. nitidicollis*.

Sphaeroderus stenostomus lecontei Dejean, 1826

Cychrus stenostomus Say, 1823a: 72 [primary homonym of *Cychrus stenostomus* Weber, 1801]. Type locality: North America (inferred from title of the work). Syntype(s) lost. Note. Say (1823a: 72) described this taxon as a new species as indicated by the presence of an asterisk preceding the specific epithet. Say did not originally indicate the area where his specimen(s) came from but later (Say 1828: [101]) noted that the species "is not uncommon in Pennsylvania" and that he received a specimen "taken in Massachusetts."

Sphaeroderus lecontei Dejean, 1826: 15. Type locality: «Amérique septentrionale» (original citation), restricted to «Rumney [Grafton County], New Hampsh[ire]» by Lindroth (1961a: 29). One possible syntype in MHNP (Lindroth 1955b: 12). Synonymy established by Roeschke (1907a: 263).

Sphaeroderus niagarensis Laporte, 1833: 390. Type locality: «île que forme la chute du Niagara» (original citation). Syntype(s) location unknown. Synonymy established by Chaudoir (1861b: 496).

Sphaeroderus lecontei diffractus Casey, 1914: 25. Type locality: «New Brunswick» (original citation). One syntype in USNM [# 46002]. Synonymy established by Lapouge (1933: 706), confirmed by Lindroth (1961a: 29).

Distribution. This subspecies is found from Newfoundland (Lindroth 1955a: 21) to southeastern Manitoba (Lindroth 1961a: 29), south to east-central Iowa (Wickham 1888: 81, as *Cychrus stenostomus*; Lindroth 1961a: 29), northeastern Mississippi (Tishomingo County, CNC), northern Alabama (Löding 1945: 11; Madison County, CNC), northern Georgia (Fattig 1949: 9), and southern South Carolina (Ciegler 2000: 30). The records from east-central Missouri (Summers 1873: 133) and southeastern Louisiana (Summers 1874a: 79) need confirmation; that from "Saskatchewan" (Bousquet and Larochelle 1993: 78) is in error.

Records. CAN: MB, NB, NF, NS (CBI), ON, PE, QC **USA**: AL, CT, GA, IA, IL, IN, KY, MA, MD, ME, MI, MN, MS, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VA, VT, WI, WV [LA, MO]

***Sphaeroderus stenostomus stenostomus* (Weber, 1801)**

Cychrus stenostomus Weber, 1801: 43. Type locality: «America» (original citation), herein restricted to Chestertown, Kent County, Maryland (CMNH). Syntype(s) location unknown. Note. This species was described the same year under the same name by Knoch (1801: 190). I have not found a date of publication other than the year for Knoch's book. According to Evenhuis (1997b: 809), Weber's book was published before March 1801. Weber is in "prevailing usage" as the author of this taxon.

Sphaeroderus stenostomus aequalis Casey, 1920: 172. Type locality: «Pennsylvania» (original citation). One syntype in USNM [# 46003]. Synonymy established by Erwin (2007a: 171).

Distribution. This mainly coastal subspecies ranges from southeastern New York (Barr 1974a) and southeastern Pennsylvania (York County, CMNH) south to Wake County in east-central North Carolina (Brimley 1938: 115). The record from northern Georgia (Fattig 1949: 9) probably refers to *S. stenostomus lecontei*.
Records. USA: DC, DE, MD, NC, NJ, NY, PA, VA, WV

Genus *Cychrus* Fabricius, 1794

Cychrus Fabricius, 1794a: 440. Type species: *Carabus rostratus* Linnaeus *sensu* Fabricius, 1775 (= *Tenebrio caraboides* Linnaeus, 1758) designated by Latreille (1810: 426). Etymology. Uncertain, possibly from *Cychreus*, son of Poseidon and Salamis, or from *Cychros*, a city in Thrace near a lake whose water was unhealthy [masculine]. Duméril (1823: 167) stated that *Cychros* was the name of a bird (probably in Pliny the Elder) but I have not been able to confirm this. Note. Fabricius (1794b: 70) used the spelling *Cychrys* for this genus in another publication issued the same year. Dates of publication of both works are unknown besides the year. Bousquet (2002b: 16) acted as First Reviser and opted for *Cychrus* as the valid name.

Diversity. Northern Hemisphere, with about 115 species (Lorenz 2005: 64-66) in the Nearctic (two western species) and Palaearctic Regions.
Identification. Gidaspow (1973) revised the North American species. Lindroth (1961a: 25-26) covered the species in his monograph of the Canadian and Alaskan Carabidae.

***Cychrus hemphillii hemphillii* Horn, 1879**

Cychrus hemphillii G.H. Horn, 1879: 184. Type locality: «near Ogden [Weber County], Wahsatch M[oun]t[ain]s, Utah» (original citation). Syntype(s) in MCZ [#

35315]. Etymology. This species was named after Henry Hemphill [1830-1914], mason, bricklayer, and amateur malacologist in San Diego, California. Hemphill collected extensively in western United States.

Distribution. This subspecies is known from southwestern Idaho, western Wyoming, and northern Utah [see Gidaspow 1973: Fig. 7].
Records. USA: ID, UT, WY

Cychrus hemphillii rickseckeri LeConte, 1884

Cychrus rickseckeri LeConte, 1884: 2. Type locality: «Montana» (original citation). Holotype [by monotypy] in MCZ [# 606].

Distribution. This subspecies is found from southeastern British Columbia south to northeastern Oregon (LaBonte 1988: 264), northern Idaho, and the Bitter Root Mountains in western Montana (Roeschke 1907a: 227) [see Gidaspow 1973: Fig. 7]. One specimen labeled from Logan Canyon in northern Utah is also known (Gidaspow 1973: 98).
Records. CAN: BC **USA**: ID, MT, OR, WA [UT]
Note. Lindroth (1961a: 26) treated this form as a valid species but both Roeschke (1907a: 227) and Gidaspow (1973: 96) regarded it as a subspecies of *Cychrus hemphillii* Horn.

Cychrus tuberculatus Harris, 1839

Cychrus tuberculatus T.W. Harris, 1839: 200. Type locality: «Oregon» (original citation, see page 199), restricted to «Portland [Multnomah County]» by Lindroth (1961a: 25). Syntype(s) apparently lost (Lindroth 1969a: 1108).
Cychrus pustulosus Casey, 1905: 160. Type locality: «Washington State» (original citation). Holotype [by monotypy] (♀) in USNM [# 46001]. Synonymy established by Roeschke (1907a: 228), confirmed by Lindroth (1961a: 25).

Distribution. This species ranges from British Columbia, including the Queen Charlotte Islands and Vancouver Island, south at least to southern Oregon [see Gidaspow 1973: Fig. 7], possibly even Mendocino County in northern California (Roeschke 1907a: 229). The record from "Alaska" (Roeschke 1907a: 229) is likely in error.
Records. CAN: BC (QCI, VCI) **USA**: OR, WA [CA]

Genus *Scaphinotus* Dejean, 1826

Scaphinotus Dejean, 1826: 17. Type species: *Carabus elevatus* Fabricius, 1787 by monotypy. Etymology. From the Greek *scaphos* (barque, nacelle, skiff) and *notos* (back, upper surface), presumably alluding to the shape of the pronotum of the sole species known to Dejean which has the sides of the pronotum markedly turned out ("*bords latéraux du corselet très-déprimés, relevés*") giving the impression of a small boat [masculine].
Scaphonotus Agassiz, 1846: 332. Unjustified emendation of *Scaphinotus* Dejean, 1826.

Diversity. Fifty-five species in the boreal and temperate regions of North America and the Sierra Madre Occidental in Mexico.
Identification. Roeschke (1907a) reviewed the species known at the time.

Subgenus *Scaphinotus* Dejean, 1826

Scaphinotus Dejean, 1826: 17. Type species: *Carabus elevatus* Fabricius, 1787 by monotypy.

Diversity. Nine species in North America (seven species) and the Sierra Madre Occidental of Mexico (two species).
Identification. Van Dyke (1938) reviewed the species and provided a key for their identification. One new species was described subsequently by Allen and Carlton in 1988.

[**elevatus group**]

Scaphinotus elevatus coloradensis Van Dyke, 1907

Scaphinotus elevatus coloradensis Van Dyke [in Roeschke], 1907a: 141. Type locality: Colorado (inferred from name of the species), «eastern Colorado» reported by Van Dyke (1938: 123). Holotype (♂) in AMNH [# 402] (Van Dyke 1938: 123).

Distribution. The range of this subspecies extends from southern Manitoba south to "Iowa" (Lindroth 1961a: 18; Esau and Peters 1975: 510), northwestern Nebraska, and north-central New Mexico (Van Dyke 1938: 123-124). The record from Wisconsin (Rauterberg 1885: 12, as *Cychrus elevatus*) needs confirmation.
Records. CAN: MB **USA**: CO, IA, MN, ND, NE, NM, SD [WI]

Scaphinotus elevatus elevatus (Fabricius, 1787)

Carabus elevatus Fabricius, 1787: 198. Type locality: «America meridionali» (original citation), which is incorrect; «Asheville [Buncombe County], North Carolina» selected by Lindroth (1961a: 17). Lectotype [as co-type], designated by Staig (1931: 14), in HMUG.

Distribution. This subspecies ranges from southern New Hampshire (Merrimack and Strafford Counties, Donald S. Chandler pers. comm. 2008) south to the Florida Panhandle (Peck and Thomas 1998: 16), west to eastern Texas (Lamar and Fort Bend Counties, Brian Raber pers. comm. 2010; Riley 2011). The records from Maine (Bousquet and Larochelle 1993: 79) and Lawrence in Kansas (Van Dyke 1938: 120) need confirmation.
Records. USA: AL, CT, DC, DE, FL, LA, MA, MD, MS, NC, NH, NJ, NY, PA, RI, SC, TX [KS, ME]

Scaphinotus elevatus flammeus Haldeman, 1844

Scaphinotus flammeus Haldeman, 1844: 54. Type locality: «Marietta [Washington County], Ohio» (original citation). Holotype [by monotypy] presumably lost.

Cychrus dilatatus LeConte, 1853c: 398. Type locality: «S[ain]t Louis [Missouri]» (original citation for *C. flammeus* (Haldeman) *sensu* LeConte, 1847). Syntype(s) in MCZ [# 615]. Synonymy established by Roeschke (1907a: 140). Note. This name was proposed for *Scaphinotus flammeus* Haldeman, 1844 *sensu* LeConte (1847: 440).

Distribution. This subspecies ranges from Nebraska to Ohio, south to Tennessee, Arkansas (Van Dyke 1938: 121), and southwestern Oklahoma (Kondratieff et al. 2005: 173). The record from "Louisiana" (Roeschke 1907a: 142) needs confirmation.
Records. USA: AR, IA, IL, IN, KS, MO, NE, OH, OK, TN [LA]
Note. Van Dyke (1938: 121) noted that "the subspecies grades gradually into typical *elevatus* along its eastern boundary and into *coloradensis* along its western boundary."

Scaphinotus elevatus lengi Van Dyke, 1938

Scaphinotus elevatus lengi Van Dyke, 1938: 122. Type locality: «Dismal Swamp of Virginia» (original citation). Holotype (♂) in CAS [# 4681].

Distribution. This subspecies is known so far only from the holotype collected in southeastern Virginia.
Records. USA: VA

Scaphinotus elevatus neomexicanus Van Dyke, 1924

Scaphinotus elevatus neomexicanus Van Dyke, 1924b: 1. Type locality: «Cloudcroft (8000 feet) [Otero County], Sacramento Mountains, New Mexico» (original citation). Holotype (♀) in CAS [# 3016].

Distribution. This subspecies is known so far only from the holotype and several specimens collected at the type locality (Eric van den Berghe and Robert L. Davidson pers. comm.) in southern New Mexico.
Records. USA: NM

Scaphinotus elevatus tenebricosus Roeschke, 1907

Scaphinotus elevatus tenebricosus Roeschke, 1907a: 141. Type locality: «Eigentliche Küstenzone von New-Yersey bis Süd-Carolina» (original citation). Three syntypes [4 originally cited] in ZMUA (Boer 2002: 113, 114).

Distribution. According to Roeschke (1907a: 141), this subspecies is found along the coast from New Jersey to South Carolina. Van Dyke (1938: 122) saw specimens from Virginia and North Carolina and noted that "it is apparently confined to the more maritime or coastal portion of the South Atlantic states, replacing almost entirely the [nomino]typical phase in its area of distribution."
Records. USA: NJ, NC, SC, VA

***Scaphinotus kelloggi* (Dury, 1912)**

Cychrus kelloggi Dury, 1912: 104. Type locality: «Box Canyon [Grant County], on the Upper Gila, New Mexico» (original citation). Holotype (♂) in CMC (Vulinec and Davis 1984: 233). Etymology. The specific name was proposed for Ralph Todd Kellogg [1876-1940], an excellent collector of natural history objects, particularly birds and insects.

Distribution. This species is known only from mountains in southwestern New Mexico in Grant County and other places in the neighborhood of Silver City (Van Dyke 1938: 104).
Records. USA: NM

***Scaphinotus petersi biedermani* Roeschke, 1907**

Scaphinotus biedermani Roeschke, 1907b: 571. Type locality: «Cochise Co[unty], Süd-Arizona» (original citation). Two syntypes [2 originally cited] in ZMUA (Boer 2002: 33).

Distribution. This subspecies is confined to the Rincon and Huachuca Mountains of southern Arizona (Ball 1966c: 711-712).
Records. USA: AZ

***Scaphinotus petersi catalinae* Van Dyke, 1924**

Scaphinotus catalinae Van Dyke, 1924b: 2. Type locality: «near the top of M[oun]t Lemon [Pima County], Catalina Mountains, Arizona» (original citation). Holotype (♂) in CAS [# 3334].

Distribution. This subspecies is known from the Santa Catalina Mountains in Pima County (Ball 1966c: 711) and Aravaipa Canyon in Pinal County (McCleve 1979: 452), southern Arizona.
Records. USA: AZ

***Scaphinotus petersi corvus* (Fall, 1910)**

Cychrus corvus Fall, 1910: 89. Type locality: «Chiricahua Mountains [Cochise County], Arizona» (original citation). Holotype [by monotypy] (♂) in MCZ [# 23841].

Distribution. This subspecies is confined to the Chiricahua Mountains in Cochise County, southeastern Arizona (Ball 1966c: 714).
Records. USA: AZ

***Scaphinotus petersi grahami* Van Dyke, 1938**

Scaphinotus grahami Van Dyke, 1938: 107. Type locality: «Graham M[oun]t[ain] [Graham County], Arizona» (original citation). Holotype (♂) in CAS [# 4680].

Distribution. This subspecies is found in the Pinaleño and White Mountains of southeastern Arizona (Ball 1966c: 713-714).
Records. USA: AZ

Scaphinotus petersi kathleenae Ball, 1966

Scaphinotus petersi kathleenae Ball, 1966c: 714. Type locality: «east slope M[oun]t Wrightson, to west of trail between Baldy and Florida Spring, about one mile north of Baldy Spring (8400-8600'), Santa Rita Mountains, Santa Cruz County, Arizona» (original citation). Holotype (♂) in MCZ [# 31183].

Distribution. This subspecies is known only from Mount Wrightson in the Santa Rita Mountains, southern Arizona (Ball 1966c: 715).
Records. USA: AZ

Scaphinotus petersi petersi Roeschke, 1907

Scaphinotus petersi Roeschke, 1907a: 137. Type locality: «Pinal M[oun]t[ain]s [Gila County], circa 8 englische Meilen von Tucson, Arizona» (original citation). Holotype (♂) in ZMUA (Boer 2002: 90).

Distribution. This subspecies is confined to the Pinal and Sierra Ancha Mountains in Gila County, eastern Arizona (Ball 1966c: 709).
Records. USA: AZ

Scaphinotus snowi roeschkei Van Dyke, 1907

Scaphinotus roeschkei Van Dyke [in Roeschke], 1907a: 135. Type locality: «Humphrey's Peak [Coconino County], Arizonas in 9500' Höhe» (original citation). Holotype (♂) in ZMUA (Boer 2002: 100). Etymology. The specific name was proposed for Hans Friedrich Roeschke [1867-1934], a German physician by profession and carabidologist by avocation. Roeschke left his carabid collection (mostly members of the subfamily Carabinae) to the German neurologist, brain researcher, and entomologist Oskar Vogt [1870-1959]. Vogt's collection was acquired by the Zoölogisch Museum of Amsterdam.

Distribution. This subspecies is restricted to high mountains in Coconino County, northern Arizona (Van Dyke 1938: 103).
Records. USA: AZ
Note. Van Dyke (1938: 102) treated this form as a species but Ball (1966c: 693) retained it as a subspecies of *S. snowi*.

Scaphinotus snowi snowi (LeConte, 1881)

Cychrus snowi LeConte [in LeConte and Horn], 1881: 74. Type locality: «Santa Fe cañon (7,000 feet), New Mexico» (original citation). Holotype [by monotypy] (♂)

in MCZ [# 613]. Etymology. The species name was proposed for Francis Huntington Snow [1840-1908], a teacher, minister, field naturalist, mineralogist, and eventually chancellor of the University of Kansas. In one expedition to Wallace County in Kansas, Snow collected several hundred specimens of *Amblycheila cylindriformis*, which at the time was extremely rare in collections, and sold many of them for as much as $25.00 each.

Scaphinotus snowi var. *parkeri* Van Dyke, 1938: 101. Type locality: «White M[oun]t[ain]s [Navajo County], Arizona» (original citation). Holotype (♂) in CAS [# 4679]. Synonymy established by Erwin et al. (1977: 4.6). Etymology. The subspecific name was proposed for Frank Henry Parker [1910-1984], an enthusiastic beetle collector, particularly of meloids and buprestids, in Arizona. Note. This taxon was listed as a junior synonym of the nominotypical subspecies of *S. snowi* by Erwin et al. (1977: 4.6) and as a valid subspecies by Erwin (2007a: 162). Two of the three original specimens of this taxon were taken "in company with numerous more typical specimens" (Van Dyke 1938: 101) suggesting that they are probably simply aberrant specimens.

Distribution. This subspecies is found in western New Mexico, eastern Arizona, southwestern Colorado, and southeastern Utah (Van Dyke 1938: 100).
Records. USA: AZ, CO, NM, UT

Scaphinotus vandykei **Roeschke, 1907**

Scaphinotus van dykei Roeschke, 1907a: 136. Type locality: «S[an]t[a] Maria River und Oak Creek Cañon, Arizona» (original citation). Two syntypes [2 originally cited] in ZMUA (Boer 2002: 118).

Scaphinotus fuchsi Roeschke, 1907b: 570. Type locality: «Cash Mine, M[oun]t Union [Yavapai County], Arizona» (original citation). Syntype(s) [2 originally cited] location unknown (possibly in ZMUA in collection Vogt though not listed by Boer 2002). Synonymy established by Erwin et al. (1977: 4.6).

Distribution. This species is confined to southern Coconino, Yavapai, and Gila Counties in Arizona (Van Dyke 1938: 106).
Records. USA: AZ
Note. Van Dyke (1938: 106) retained *S. fuchsi* Roeschke as a valid subspecies of *S. vandykei* Roeschke.

[**unicolor group**]

Scaphinotus parisiana **Allen and Carlton, 1988**

Scaphinotus parisiana Allen and Carlton, 1988: 130. Type locality: «northwest slope of Magazine Mountain, 13 mi[les] southwest of Paris, Logan Co[unty], Arkansas» (original citation). Holotype (♂) in UAIC.

Distribution. This species is known only from the type locality in western Arkansas.
Records. USA: AR

Scaphinotus unicolor (Fabricius, 1787)

Carabus unicolor Fabricius, 1787: 198 [primary homonym of *Carabus unicolor* Herbst, 1784]. Type locality: «America meridionali» (original citation), which is incorrect; Calvert, Mobile County, Alabama herein selected (see Löding 1945: 10). Lectotype [as type], designated by Staig (1931: 16), in HMUG. Note. Fabricius' name should be permanently invalid because it is a primary homonym. However, to my knowledge *Carabus unicolor* Herbst has never been interpreted since its original description and the name is a *nomen dubium*.

Scaphinotus heros T.W. Harris, 1839: 196. Type locality: «Ohio and Indiana» (original citation). Syntype(s) lost (Van Dyke 1938: 128). Synonymy established by Erwin (2007a: 164).

Scaphinotus grandis Gistel, 1857: 52 [*nomen dubium*]. Type locality not stated. Syntype(s) lost. Synonymy established with doubt by Bousquet and Larochelle (1993: 17).

Scaphonotus hunteri Crotch, 1871: 5. Replacement name for *Scaphinotus unicolor* (Fabricius, 1787).

Scaphinotus shoemakeri Leng, 1914: 143. Type locality: «Washington, D.C. and its vicinity in Virginia and Maryland» (original citation). Holotype in CAS [# 4374]. Synonymy established by Erwin (2007a: 164).

Scaphinotus elevatus var. *floridanus* Leng, 1915: 564. Type locality: Florida (inferred from title of the paper). Holotype [by monotypy] in CAS [# 4372]. Synonymy established by Erwin (2007a: 164).

Distribution. This species ranges from New Jersey (Smith 1910: 199) and Maryland (Van Dyke 1938: 128) to southwestern Illinois (Jackson County, Robert L. Davidson pers. comm. 2012), south to east-central Louisiana (West Feliciana Parish, Igor M. Sokolov pers. comm. 2009), northeastern Mississippi (Snodgrass and Cross 1983: 15), and the Florida Panhandle (Peck and Thomas 1998: 16).

Records. USA: AL, AR, DC, FL, GA, IL, IN, KY, LA, MD, MO, MS, NC, NJ, OH, SC, TN, VA

Subgenus *Irichroa* Newman, 1838

Irichroa Newman, 1838a: 385. Type species: *Cychrus viduus* Dejean, 1826 by monotypy. Etymology. From the Latin *iris* (rainbow) and the Greek *chroa* (surface of the body), probably alluding to the lustre present on the dorsal surface of adults of the sole species in the hands of Newman [feminine].

Anabolus Gistel, 1857: 90. Type species: *Cychrus viduus* Dejean, 1826 by original designation.

Megaliridia Casey, 1920: 175. Type species: *Cychrus viduus* Dejean, 1826 designated by Bousquet and Larochelle (1993: 79). Etymology. From the Greek *mega* (large) and *iridos* (rainbow) [feminine].

Diversity. Three eastern North American species.

Identification. There is no published key for the identification of these species.

***Scaphinotus irregularis* (Beutenmüller, 1903)**

Cychrus viduus var. *irregularis* Beutenmüller, 1903: 513. Type locality: «summit of Black Mountains, North Carolina» (original citation). Three syntypes [7 originally cited] in AMNH [# 3] (Grossbeck 1912: 360).

Distribution. This species ranges along the Appalachian Mountains from southwestern Virginia (Hoffman et al. 2006: 18) to northern Georgia (Towns County, CMNH).
Records. USA: GA, NC, TN, VA
Note. This taxon has been treated as an aberration of *S. viduus* (Dejean) by Roeschke (1907a: 144) but according to Barr (1969: 73) and Hoffman et al. (2006: 18) it represents a distinct species.

***Scaphinotus viduus* (Dejean, 1826)**

Cychrus viduus Dejean, 1826: 12. Type locality: «Amérique septentrionale» (original citation), restricted to «Susquahanna [= Susquehanna] R[iver], Penns[ylvania]» by Lindroth (1961a: 18). One syntype in MHNP (Lindroth 1955b: 11).

Cychrus leonardii T.W. Harris, 1839: 193. Type locality «northern and western parts of Massachusetts and New Hampshire [page 193] and Vermont [page 194]» (original citation). One syntype [5 originally cited] in MCZ [# 26410]. Synonymy established by Darlington (1932: 146). Etymology. The specific name was proposed for Levi Washburn Leonard [1790?-1864], a Unitarian minister who settled in Dublin, New Hampshire. Leonard, a close friend and classmate of Thaddeus Harris, was an enthusiastic collector of insects and provided Harris with many specimens, including at one occasion 600 beetles, probably over 200 species, caught in the shadow of Mount Monadnock (Dow 1913: 109). Leonard is credited with opening the first library in the United States that was free to all the inhabitants of a town or city.

Distribution. This species ranges from Nova Scotia (CNC) to northern Indiana (Barr 1969: 74), south to northeastern Georgia (Fattig 1949: 8) along the Appalachian Mountains. The records from northern Florida (Harris 1839: 192) and "Louisiana" (Roeschke 1907a: 145) are probably in error.
Records. CAN: NB, NS, QC **USA**: CT, DC, DE, GA, IN, MA, ME, MD, NC, NH, NJ, NY, OH, PA, VA, VT, WV

***Scaphinotus webbi* Bell, 1959**

Scaphinotus webbi R.T. Bell, 1959: 11. Type locality: «ten miles southwest of Lynchburg, Campbell County, Virginia» (original citation). Holotype (♂) in USNM [# 73630].

Distribution. This species is known from a few localities in Virginia (Bell 1959: 11), northeastern West Virginia (Hampshire and Randolph Counties, CMNH), the Allegheny Plateau in southwestern Pennsylvania (Allegheny and Fayette Counties, Robert L. Davidson pers. comm. 2008), and the Big Black Mountain in southeastern Kentucky (Davis and Barbour 1978: 139).

Records. USA: KY, PA, VA, WV
Note. Hoffman et al. (2006: 18) reported that distinction between this taxon and *S. viduus* is controversial at best and that adults of the two may be conspecific.

Subgenus *Nomaretus* LeConte, 1853

Nomaretus LeConte, 1853c: 399. Type species: *Cychrus bilobus* Say, 1823 designated by Géhin (1876b: 114). Etymology. Probably from the Greek *nomas* (roving) and *aretos* (pleasing) [masculine].

Diversity. Five eastern North American species.
Identification. Van Dyke (1936) reviewed the species. Gidaspow (1973: 78-89) revised the species and provided a key for their identification. One new species was subsequently described by Allen and Carlton in 1988.

Scaphinotus bilobus (Say, 1823)

Cychrus bilobus Say, 1823a: 73. Type locality: «Nipigon, W[estern] Ont[ario]» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 330), in MCZ [# 33093]. Note. Say (1823a) did not indicate the area where his specimen(s) came from but later (Say 1828: [102]) noted that his "first specimen was obtained in Missouri, and I caught another in the North-Western Territory."

Distribution. This species ranges from Cape Breton Island to southeastern Manitoba, south to eastern Kansas (Popenoe 1877: 22), southeastern Missouri, and Massachusetts [see Gidaspow 1973: Fig. 6]. The record from southeastern Pennsylvania (Rathvon 1869: 524) is likely in error.
Records. CAN: MB, NB, NS (CBI), ON, QC **USA**: IA, IL, KS, MA, ME, MI, MN, MO, NE, NH, NY, OH, VT, WI

Scaphinotus cavicollis (LeConte, 1859)

Nomaretus cavicollis LeConte, 1859c: 3. Type locality: «Fort Riley [junction of Republican and Smoky Hill Rivers, Kansas]» (original citation). Holotype [by monotypy] in MCZ [# 602].

Distribution. This species is known from eastern Kansas, western Missouri, western Arkansas (Allen and Thompson 1977: 32; Allen and Carlton 1988: 136), and central Oklahoma [see Gidaspow 1973: Fig. 6]. The records from "Iowa" and "Texas" (Leng and Beutenmüller 1894: 138) are likely in error; that from Buffalo, New York (Leng and Beutenmüller 1894: 138), is in error.
Records. USA: AR, KS, MO, OK

Scaphinotus fissicollis (LeConte, 1853)

Nomaretus fissicollis LeConte, 1853c: 399. Type locality: «Illinois» (original citation). Holotype [by monotypy] (♀) in MCZ [# 603].

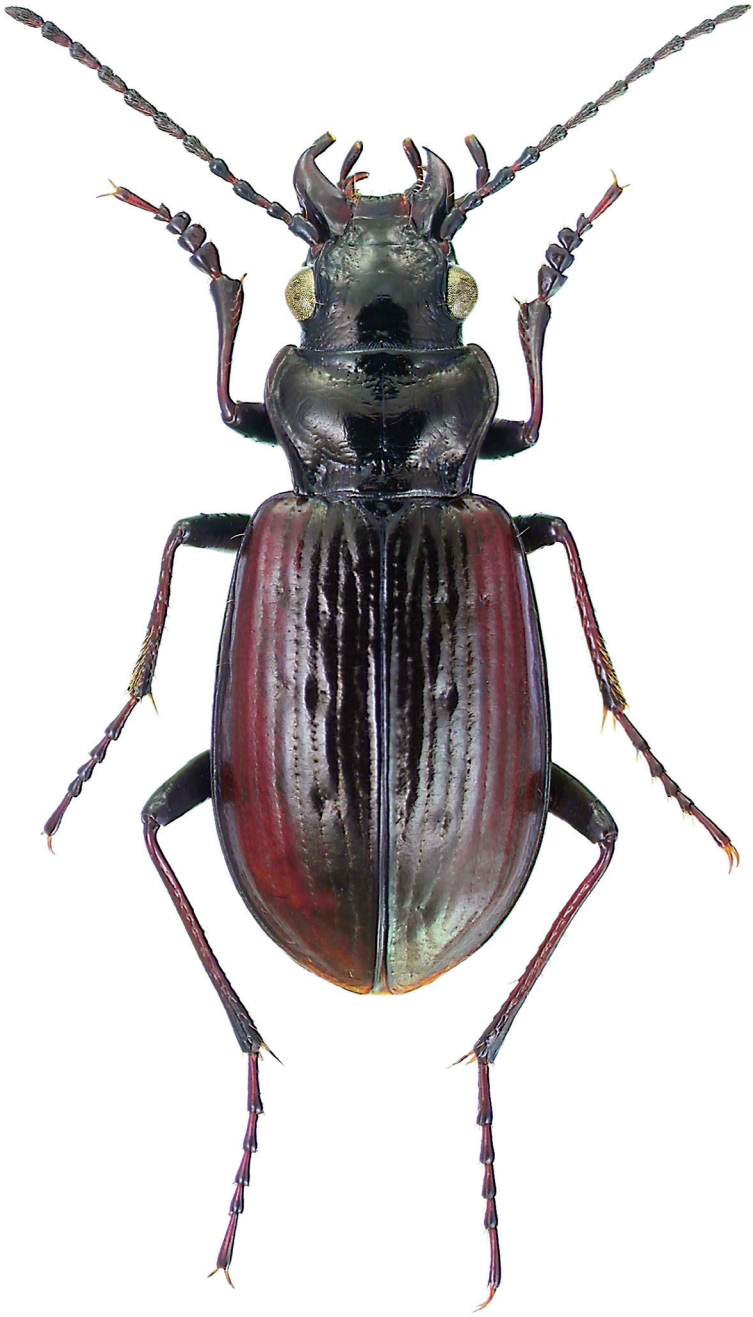

Figure 6. *Pelophila borealis* (Paykull). This pelophiline is one of the 97 species-group taxa which are Holarctic and found naturally in both the Palaearctic and Nearctic Regions. Most of these species are confined to the arctic, subarctic or boreal regions but a few are found mainly in the temperate regions such as *Dyschirius politus*. Most biogeographers agree that these species have spread between the two continents through Beringia during the Quaternary period.

Distribution. This species ranges from southeastern Minnesota (Gandhi et al. 2005: 923) south to northern Arkansas (Allen and Thompson 1977: 32; Allen and Carlton 1988: 136), west to eastern Kansas [see Gidaspow 1973: Fig. 6]. The record from "Texas" (Schwarz 1895: 270) is probably in error.
Records. USA: AR, IA, IL, KS, MN, MO

Scaphinotus infletus Allen and Carlton, 1988

Scaphinotus infletus Allen and Carlton, 1988: 132. Type locality: «Alum Cove Scenic Area, Newton Co[unty], Arkansas» (original citation). Holotype (♂) in UAIC.

Distribution. This species is known only from Newton County in northwestern Arkansas.
Records. USA: AR

Scaphinotus liebecki Van Dyke, 1936

Scaphinotus liebecki Van Dyke, 1936: 40. Type locality: «Tex[as]» (original citation), herein restricted to New Braunfels, Comal County (see Gidaspow 1973: 82). Holotype (♂) in CAS [# 4110]. Etymology. The species name was proposed for Charles Liebeck [1863-1947], a paper scorer in Philadelphia by profession and a beetle collector in his spare time. Over the years Liebeck built up a fine collection of North American beetles, represented by more than 100,000 specimens, which he gave to Henry C. Fall with whom he had been in correspondence for more than 40 years.

Distribution. This species, as far as known, is restricted to Arkansas (Stone County, CNC), western Louisiana, and eastern Texas [see Gidaspow 1973: Fig. 6].
Records. USA: AR, LA, TX

Subgenus *Maronetus* Casey, 1914

Maronetus Casey, 1914: 30. Type species: *Maronetus tenuis* Casey, 1914 by original designation. Etymology. Anagram of the generic name *Nomaretus* [*q.v.*] [masculine].

Diversity. This subgenus includes ten species-group taxa found along the Appalachians. Several undescribed taxa are known (Thomas C. Barr, Jr. pers. comm. 2009).
Identification. There is no recent systematic treatment of the species of *Maronetus* and such work is much needed. A key to the species of the *debilis* group has been published (Barr 2009).

[**debilis group**]

Scaphinotus debilis alpinus (Beutenmüller, 1903)

Nomaretus debilis var. *alpinus* Beutenmüller, 1903: 512. Type locality: «in the valley and on the summit of the Black Mountains» (original citation). Three syntypes [5 originally cited] in AMNH [# 453] (Grossbeck 1912: 360).

Distribution. This subspecies has been recorded so far only from the Black Mountains in southwestern North Carolina. Roeschke (1907a: 160) reported that this form occurs above 5000 feet of altitude.
Records. USA: NC

Scaphinotus debilis debilis (LeConte, 1853)

Nomaretus debilis LeConte, 1853c: 399. Type locality: «Habersham Co[unty], Georgia» (original citation). Holotype [by monotypy] in MCZ [# 604].

Distribution. This subspecies is known along the Appalachian Mountains from western North Carolina (Leng and Beutenmüller 1894: 138), northeastern Georgia (Fattig 1949: 9), and northwestern South Carolina (Ciegler 2000: 32). It is found from 1800 to 5000 feet (Roeschke 1907a: 160).
Records. USA: GA, NC, SC

Scaphinotus hoffmani (Barr, 2009), new combination

Maronetus hoffmani Barr, 2009: 316. Type locality: «5 km N[orth]E[ast] Dungannon, Scott County, Virginia» (original citation). Holotype (♂) in CMNH.

Distribution. This species is known only from the holotype collected in southwestern Virginia.
Records. USA: VA

Scaphinotus incompletus (Schwarz, 1895)

Nomaretus incompletus Schwarz, 1895: 271. Type locality: «Stone Creek, Cumberland M[oun]t[ain]s, Lee Co[unty], V[irgini]a» (original citation). Holotype [by monotypy] (♀) in USNM [# 4571].

Distribution. This species is known from the Cumberland Plateau in southeastern Kentucky and the Appalachian Valley in southwestern Virginia (Barr 1969: 76; Barr 2009: 314).
Records. USA: KY, VA

Scaphinotus reichlei (Barr, 2009), new combination

Maronetus reichlei Barr, 2009: 315. Type locality: «"Cesium Forest" in the Oak Ridge National Laboratory ecology study area, Anderson County, Tennessee» (original citation). Holotype (♂) in CMNH.

Distribution. This species is known from two specimens collected in Cumberland and Anderson Counties, eastern Tennessee (Barr 2009: 315).
Records. USA: TN

[**hubbardi group**]
***Scaphinotus hubbardi* (Schwarz, 1895)**

Nomaretus hubbardi Schwarz, 1895: 272. Type locality: «near Retreat (about 3000'), Haywood Co[unty], N[orth] C[arolina]» (original citation). One syntype in USNM [# 4572]. Etymology. The species name was proposed for Henry Guernsey Hubbard [1850-1899], a field and applied entomologist of great ability. Despite being afflicted with tuberculosis for a long time Hubbard made extensive collecting trips with his lifelong friend Eugene Schwarz.

Distribution. This species is known along the Appalachian Mountains in eastern Tennessee and western North Carolina (Barr 1969: 76).
Records. USA: NC, TN

***Scaphinotus schwarzi* (Beutenmüller, 1913)**

Nomaretus schwarzi Beutenmüller, 1913: 139. Type locality: «Mount Mitchell (6,710 feet) [Yancey County], North Carolina» (original citation). Holotype [by monotypy] (♀) location unknown.

Distribution. This species is known from southwestern Virginia (Hoffman et al. 2006: 18) and the Black Mountains in western North Carolina (Beutenmüller, 1913: 139).
Records. USA: NC, VA

[**imperfectus group**]
***Scaphinotus imperfectus* (Horn, 1861)**

Nomaretus imperfectus G.H. Horn, 1861: 569. Type locality: «Hampshire County, Virginia» (original citation). Syntype(s) in MCZ [# 35317].

Distribution. This species ranges from southeastern Ohio and Pennsylvania (Barr 1969: 76) south to western North Carolina (Thomas C. Barr, Jr. pers. comm. 2009; Leng and Beutenmüller 1894: 138).
Records. USA: MD, NC, OH, PA, VA, WV

***Scaphinotus tenuis* (Casey, 1914)**

Maronetus tenuis Casey, 1914: 31. Type locality: «Black M[oun]t[ain]s, North Carolina» (original citation). One syntype in USNM [# 46049].

Distribution. This species is endemic, as far as known, to the Black Mountains (Barr 1969: 75) in southwestern North Carolina.
Records. USA: NC
Note. Barr (1969: 75) listed this taxon as a subspecies of *S. imperfectus*.

***Scaphinotus unistriatus* (Darlington, 1932)**

Nomaretus unistriatus Darlington, 1932: 149. Type locality: «Highlands [Macon County], N[orth] C[arolina]» (original citation). Holotype (♀) in MCZ [# 16431].

Distribution. This species is found in the Blue Ridge Mountains (Great Balsams and Highlands Plateau) and the Nantahala Mountains (Barr 1969: 75) in southwestern North Carolina and northeastern Georgia.
Records. USA: GA, NC

Subgenus *Steniridia* Casey, 1924

Steniridia Casey, 1924: 336. Type species: *Cychrus andrewsii* Harris, 1839 by monotypy. Etymology. From the Greek *stenos* (narrow) and *iridos* (rainbow) [feminine].

Diversity. Seven species restricted to the Appalachian region.
Identification. Valentine (1935) reviewed the species and provided a key for their identification.

***Scaphinotus aeneicollis* (Beutenmüller, 1903)**

Cychrus aeneicollis Beutenmüller, 1903: 515. Type locality: «summit of the Black Mountains» (original citation), restricted to «M[oun]t Mitchell, North Carolina» by Valentine (1935: 359). Syntype(s) [70 originally cited] in AMNH (Grossbeck 1912: 360), MCZ [# 1793], CUIC, and FMNH.

Cychrus aeneicollis form *purpuratus* Beutenmüller, 1918: 89. Type locality: «Black Mountains in western North Carolina» (original citation). Syntype(s) in AMNH [# 1068] and ANSP. Synonymy established by Lapouge (1933: 690).

Distribution. This species is endemic to the Black Mountains in western North Carolina (Barr 1969: 74). The record from the mountains of Tennessee (Roeschke 1907a: 147) needs confirmation.
Records. USA: NC [TN]

***Scaphinotus andrewsii amplicollis* (Casey, 1920)**

Irichroa violacea amplicollis Casey, 1920: 174. Type locality: «Black M[oun]t[ain]s, North Carolina» (original citation). Two syntypes in USNM [# 46008].

Irichroa andrewsi reflexa Casey, 1924: 22. Type locality: «Black M[oun]t[ain]s, North Carolina» (original citation). One syntype in USNM [# 46009]. Synonymy established by Valentine (1935: 352).

Steniridia andrewsi montana Valentine, 1935: 350. Type locality: «Beech Mountain, Avery Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 56128]. **New synonymy** (Robert L. Davidson pers. comm. 2008).

Distribution. This subspecies is found in the mountains of southwestern Virginia, western North Carolina (Valentine 1936: 227), and northeastern Tennessee (Carter County, CMNH).
Records. USA: NC, TN, VA

Scaphinotus andrewsii andrewsii (Harris, 1839)

Cychrus andrewsii T.W. Harris, 1839: 195. Type locality: Chapel Hill, Orange County, North Carolina (neotype label). Neotype (♀), designated by Valentine (1935: 349), in USNM [# 56127]. Etymology. The specific name was proposed for the son of the American educator Ethan Allen Andrews [1787-1858] who taught ancient languages at the University of North Carolina and later taught at New Haven and Boston. Note. «North Carolina» was the area originally cited by Harris (1839: 195).

Distribution. This subspecies is known only from Orange and Guilford Counties in northern North Carolina (Valentine 1936: 226). The record from "Tennessee" (Roeschke 1907a: 147) needs confirmation.
Records. USA: NC [TN]

Scaphinotus andrewsii darlingtoni (Valentine, 1935)

Steniridia andrewsi darlingtoni Valentine, 1935: 356. Type locality: «Newfound Gap, Sevier Co[unty], Tenn[essee]» (original citation). Holotype (♂) in MCZ [# 22987].

Steniridia andrewsi nantahalae Valentine, 1936: 228. Type locality: «Cashier's (3500 ft.), Jackson Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 56130]. **New synonymy** (Robert L. Davidson pers. comm. 2008; see Barr 1970: 4).

Steniridia andrewsi saludae Valentine, 1936: 229. Type locality: «Melrose, Polk Co[unty], North Carolina» (original citation). Holotype (♀) in USNM [# 56132]. **New synonymy** (Robert L. Davidson pers. comm. 2008; see Barr 1970: 4).

Steniridia andrewsi barksdalei Valentine, 1936: 230. Type locality: «M[oun]t Guyot (about 3500 ft.), Swain and Haywood Co[untie]s, North Carolina» (original citation). Holotype (♂) in USNM [# 56131]. **New synonymy** (Robert L. Davidson pers. comm. 2008; see Barr 1970: 4).

Distribution. This subspecies ranges along the Appalachian Mountains from the Great Smokies in eastern Tennessee and western North Carolina eastwards to the Saluda Mountains (Barr 1970: 4) in northwestern South Carolina.
Records. USA: NC, SC, TN

Scaphinotus andrewsii germari (Chaudoir, 1861)

Cychrus germari Chaudoir, 1861b: 495. Type locality: «Tennessee» (original citation). Holotype [by monotypy] (♀) in MHNP. Etymology. The specific name honors the

German entomologist, paleontologist, and mineralogist Ernst Friedrich Germar [1786-1853].

Distribution. This subspecies is found along the Appalachians in southern West Virginia (Fayette and Webster Counties, CMNH), eastern Kentucky, southwestern Virginia, and northeastern and southeastern Tennessee (Valentine 1936: 231; Davis and Barbour 1978: 139). The records from Pennsylvania (Roeschke 1907a: 148), southwestern Ohio (Wright and Whitehouse 1941: 70), and southern Indiana (Blatchley 1910: 43) probably refer to other subspecies of the species.
Records. USA: KY, TN, VA, WV

***Scaphinotus andrewsii mutabilis* (Casey, 1920)**

Irichroa mutabilis Casey, 1920: 173. Type locality: «Uniontown [Fayette County], Pennsylvania» (original citation). Five syntypes in USNM [# 46005].

Irichroa mutabilis longicollis Casey, 1920: 173. Type locality: «Pennsylvania» (original citation). Nine syntypes in USNM [# 46006]. Synonymy established by Valentine (1935: 354).

Irichroa mutabilis modulata Casey, 1920: 174. Type locality: «Pennsylvania» (original citation). One syntype in USNM [# 46007]. Synonymy established by Valentine (1935: 354).

Distribution. This subspecies ranges from southwestern Pennsylvania and southern Ohio to north-central Kentucky (Valentine 1936: 232) and northwestern Maryland (Glaser 1996: 4).
Records. USA: KY, MD, OH, PA, WV

***Scaphinotus andrewsii parvitarsalis* (Valentine, 1935)**

Steniridia andrewsi parvitarsalis Valentine, 1935: 354. Type locality: «Clayton, Rabun Co[unty], Georgia» (original citation). Holotype (♂) in USNM [# 56129].

Distribution. This subspecies is known in the Appalachians from the Nantahala Mountains, adjacent Blue Ridge, and the Unicoi Mountains in southwestern North Carolina, southeastern Tennessee, and northeastern Georgia (Valentine 1936: 227; Barr 1970: 4).
Records. USA: GA, NC, TN

***Scaphinotus andrewsii waldensius* (Valentine, 1935)**

Steniridia andrewsi waldensia Valentine, 1935: 357. Type locality: «Sawyer's Springs [Hamilton County], Tennessee» (original citation). Holotype (♂) in ANSP [# 8191].

Distribution. This subspecies is known only from southeastern Kentucky (Pulaski County, CMNH) and the Walden Ridge in southeastern Tennessee (Valentine 1935: 357).
Records. USA: KY, TN

Scaphinotus guyotii (LeConte, 1863)

Cychrus guyotii LeConte, 1863b: 50. Type locality: «North Carolina, near M[oun]t Le Conte» (original citation). Holotype [by monotypy] (♀) in MCZ [# 612]. Etymology. The specific name was proposed for Arnold Henri Guyot [1807-1884], geologist involved mainly with hypsometric measurements of eastern mountains, meteorology, and the reform of geographic teaching in colleges and secondary schools. Born in Neuchatel in Switzerland, Guyot emigrated to the United States at the suggestion of his friend Louis Agassiz. In 1856, he founded what is now the Princeton Museum of Natural History. Three mountains are named after him in the White Mountains, the Great Smoky Mountains, and Colorado Rockies as well as a glacier in southeastern Alaska and a crater on the moon. Note. 1. Mount LeConte is located in Sevier County, Tennessee, so LeConte (1863b: 50) probably made an error in the name of the state. 2. This species was redescribed by LeConte (1867b: 363).

Cychrus guyoti form *angelli* Beutenmüller, 1918: 89. Type locality: «Black Mountains in western North Carolina» (original citation). Syntype(s) in AMNH [# 1069] and ANSP. Synonymy established by Darlington (1932: 149).

Scaphinotus confusus Darlington, 1932: 146. Type locality: «M[oun]t Mitchell (about 6,000'), Black Mountains, North Carolina» (original citation). Holotype (♂) in MCZ [# 16430]. Synonymy established, under the name *S. guyoti* var. *angelli* (Beutenmüller), by Valentine (1935: 363).

Distribution. This species is found along the Appalachians from south-central West Virginia (Fayette County, CMNH) and Virginia (Valentine 1935: 363) to northern Georgia (Rabun, Towns, and Union Counties, CMNH) and northwestern South Carolina (Ciegler 2000: 31).
Records. USA: GA, NC, SC, TN, VA, WV

Scaphinotus lodingi lodingi (Valentine, 1935)

Steniridia lodingi Valentine, 1935: 364. Type locality: «Monte Sano, Madison Co[unty], Alabama» (original citation). Holotype (♂) in USNM [# 56134].

Distribution. This subspecies is found from central Tennessee (Barr 1969: 74) to west-central Alabama (Löding 1945: 11).
Records. USA: AL, TN

Scaphinotus lodingi obscurus (Valentine, 1935)

Steniridia lodingi obscura Valentine, 1935: 366. Type locality: «Wadley, Randolph Co[unty], Alabama» (original citation). Holotype (♂) in USNM [# 56135].

Distribution. This subspecies is known only from eastern Alabama (Löding 1945: 11).
Records. USA: AL

Scaphinotus ridingsii monongahelae Leng, 1917

Scaphinotus ridingsii monongahelae Leng, 1917: 36. Type locality: «Uniontown [Fayette County], P[ennsylvani]a» (original citation). Holotype (♂) in CAS [# 4373].

Irichroa tenuiceps Casey, 1920: 172. Type locality: «Uniontown [Fayette County], Pennsylvania» (original citation). Four syntypes in USNM [# 46010]. Synonymy established by Lapouge (1933: 690).

Distribution. This subspecies is known from the Appalachian Plateau in southwestern Pennsylvania and the Allegheny Mountains in West Virginia (Barr 1969: 75), western Virginia (CMNH), and northwestern Maryland (Bailey et al. 1994: 320).
Records. USA: MD, PA, VA, WV

Scaphinotus ridingsii ridingsii (Bland, 1863)

Cychrus ridingsii Bland, 1863: 353. Type locality: «Hampshire Co[unty], [West] Virginia» (original citation). One syntype in ANSP [# 1017]. Etymology. The specific name was proposed for James Ridings [1803-1880]. Born in England, Ridings moved to Philadelphia in his 20s and became associated with the Entomological Society of Philadelphia, now the American Entomological Society. He collected intensively in the Philadelphia region and in Virginia but also made trips to Georgia, Kansas, and Colorado.

Steniridia ridingsi intermedia Valentine, 1935: 368. Type locality: «Natural Bridge, Rockbridge Co[unty], Virginia» (original citation). Holotype (♂) in MCZ [# 22989]. **New synonymy**. Note. Based on the information provided by Valentine (1935: 369), I do not believe that the form *intermedia*, which was based on a single specimen, is subspecifically distinct from the nominotypical form.

Distribution. This subspecies is known from northwestern West Virginia and a few counties in northern and western Virginia (Valentine 1935: 367). The record from "Tennessee" (Roeschke 1907a: 150) needs confirmation.
Records. USA: VA, WV [TN]

Scaphinotus tricarinatus (Casey, 1914)

Irichroa aeneicollis tricarinata Casey, 1914: 25. Type locality: «Blue Ridge M[oun]t[ain]s, North Carolina» (original citation), restricted to the «[Great] Smoky Mountains» by Valentine (1935: 362). One syntype in USNM [# 46004].

Distribution. This species is found at high altitudes in the Great Balsam, Plott Balsam, Great Smoky (Barr 1969: 74), and Nantahala Mountains (Barr 1970: 5) in eastern Tennessee, western North Carolina, and northeastern South Carolina.
Records. USA: NC, SC, TN

Scaphinotus violaceus (LeConte, 1863)

Cychrus violaceus LeConte, 1863c: 4. Type locality: «Mountains of Georgia» (original citation), herein restricted to Tray Mountain (4400 feet), Towns County (see Valentine 1935: 358). Syntype(s) in MCZ [# 614].

Steniridia violacea carolinae Valentine, 1935: 358. Type locality: «Blue Ridge M[oun]-t[ain]s, N[orth] C[arolina]» (original citation). Holotype (♂) in USNM [# 56133]. **New synonymy** (Robert L. Davidson pers. comm. 2008; see Barr 1970: 3).

Distribution. This species has been reported from the Appalachians in western North Carolina, northern Georgia (Valentine 1935: 358), and northwestern South Carolina (Ciegler 2000: 32).
Records. USA: GA, NC, SC

Subgenus *Pseudonomaretus* Roeschke, 1907

Pseudonomaretus Roeschke, 1907a: 154. Type species: *Cychrus relictus* Horn, 1881 designated by Casey (1914: 30). Etymology. From Greek *pseudos* (fallacy, lie) and the generic name *Nomaretus* [*q.v.*] [masculine].

Diversity. Four western North American species.
Identification. Gidaspow (1973: 73-78) revised the species and provided a key for their identification.

Scaphinotus mannii Wickham, 1919

Scaphinotus mannii Wickham, 1919a: 170. Type locality: «Wawawai [Whitman County], Wash[ington]» (original citation). Holotype (♂) in USNM [# 22545]. Etymology. This species was proposed for William M. Mann [1886-1960] who worked for the United States Bureau of Entomology early in his career and then became director of the National Zoological Park in Washington DC. Mann worked mainly on ants and termites but also with myrmecophilous insects, such as staphylinids.

Distribution. This species is restricted to southeastern Washington (Gidaspow 1973: Fig. 4) and northeastern Oregon (Hatch 1953: 46; Westcott et al. 2006: 9).
Records. USA: OR, WA

Scaphinotus merkelii (Horn, 1890)

Cychrus merkelii G.H. Horn, 1890: 71. Type locality: «northern Idaho» (original citation), restricted to «Coeur d'Alene [Kootenai County]» by Lindroth (1961a: 20). Holotype [by monotypy] (♀) in MCZ [# 34934]. Etymology. The specific name honors August Merkel [1837-1897], a collector of beetles. Merkel was born in Einbeck, near Hanover, Germany.

Cychrus idahoensis Webb, 1901: 133. Type locality: «Cedar Mountain, Latah County and Collins, [both] Idaho» (original citation). Syntype(s) [14 originally cited] in WSU and ZMUA (Boer 2002: 57). Synonymy established by Gidaspow (1973: 74).

Distribution. This species is known from western Montana (Russell 1968: 42), northern Idaho, Whitman County in southeastern Washington (CMNH), and the Creston area (Lindroth 1961a: 20) in southeastern British Columbia [see Gidaspow 1973: Fig. 4].
Records. CAN: BC **USA**: ID, MT, WA

Scaphinotus regularis (LeConte, 1884)

Cychrus regularis LeConte, 1884: 2. Type locality: «Coeur d'Aléne Mountains [Sanders County], Idaho» (original citation). Syntype(s) [2 originally cited] in MCZ [# 611].

Distribution. This species is known from southeastern British Columbia, Idaho, and eastern Washington [see Gidaspow 1973: Fig. 5].
Records. CAN: BC **USA**: ID, WA
Note. This form was listed as a synonym of *Scaphinotus relictus* (Horn) by Lindroth (1961a: 20), regarded as a variety of *S. relictus* by Roeschke (1907a: 163) and Hatch (1953: 45), and treated as a valid species by Gidaspow (1973: 77).

Scaphinotus relictus (Horn, 1881)

Cychrus relictus G.H. Horn, 1881: 188. Type locality: «Spokane [Spokane County], Wash[ington] Terr[itory]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 33480].

Distribution. This species is found in southern British Columbia, western Alberta, western Montana (Russell 1968: 42), northern Idaho, eastern Washington, and from one isolated locality in southwestern Oregon [see Gidaspow 1973: Fig. 5]. Old specimens simply labeled from California are also known (Gidaspow 1973: 77).
Records. CAN: AB, BC **USA**: ID, MT, OR, WA [CA]

Subgenus *Stenocantharus* Gistel, 1834

Stenocantharus Gistel, 1834: 1. Type species: *Cychrus angusticollis* Mannerheim, 1823 by monotypy. Etymology (see Gistel 1829: 1068). From the Greek *stenos* (narrow) and *cantharos* (scarab) [masculine]. Note. The name *Stenocantharus* was first introduced by Gistel (1829: 1068) for "*Cychrus debilis* Dejean," a species not available at the time.

Pemphus Motschulsky, 1866: 312. Type species: *Cychrus velutinus* Ménétriés, 1843 designated by Géhin (1876b: 114). Synonymy established by Csiki (1927: 322).

Diversity. Four species restricted to the Pacific coastal and western montane regions of North America.

Identification. Van Dyke (1944) and Gidaspow (1973) revised the species then placed in this subgenus. Gidaspow (1973) provided a key for their identification.

Scaphinotus angusticollis (Mannerheim, 1823)

Cychrus angusticollis Mannerheim [in Fischer von Waldheim], 1823: plate 46. Type locality: «insula Unalaschka [Alaska]» (Fischer von Waldheim 1824: 47), which according to Van Dyke (1944: 4) and Lindroth (1961a: 21) is likely incorrect; «Sitka [Baranof Island, Alaska]» selected by Van Dyke (1944: 4). Syntype(s) in ZILR, ZMH (Lindroth 1961a: 21), and SMTD (Grämer 1960: 101). Note. This name is credited to Fischer von Waldheim by some authors (e.g., Bousquet and Larochelle 1993: 83). However, Fischer von Waldheim's statement (1824: 47) "le Cychrus d'Ounalaschka [i.e. *Cychrus angusticollis*] dont je dois la description exacte et un dessin élégant et fidèle à Mr. Le Comte Mannerheim" clearly points to Mannerheim as the author.

Pemphus angusticollis var. *nigripennis* Roeschke, 1907a: 167. Type locality: «Gualala, Mendocino Co[unty], Cal[ifornien]» (holotype label). Holotype (♂) in ZMUA (Boer 2002: 84). Synonymy established by Gidaspow (1973: 66).

Scaphinotus angusticollis olympiae Van Dyke, 1944: 5. Type locality: «Sol Duc Hot Springs [Clallam County], Olympic Peninsula, Wash[ington]» (original citation). Holotype (♂) in CAS [# 5343]. Synonymy established by Lindroth (1961a: 21).

Distribution. This species ranges from Kodiak Island in the Gulf of Alaska to northwestern California, east at least to eastern British Columbia [see Gidaspow 1973: Fig. 2]. The record from Torrington, Alberta (Gidaspow 1973: 68) is probably based on a mislabeled specimen.
Records. CAN: BC (QCI, VCI) **USA**: AK, CA, OR, WA

Scaphinotus hatchi Beer, 1971

Scaphinotus hatchi Beer, 1971: 257. Type locality: «two miles east of Islet Campground at Waldo Lake, Lane County, Oregon» (original citation). Holotype (♂) in CAS [# 11605]. Etymology. The species name honors Melville Harrison Hatch [1898-1988], coleopterist and professor at the University of Washington for more than 40 years. Hatch is best known for the five-volume series "Beetles of the Pacific Northwest" published from 1953 to 1971. His collection was transferred in 1978 to the Oregon State University and his types were subsequently moved to the USNM.

Distribution. This species is known only from Waldo Lake area in western Oregon (Gidaspow 1973: 66; CNC, CMNH).
Records. USA: OR

Scaphinotus johnsoni Van Dyke, 1924

Scaphinotus johnsoni Van Dyke, 1924b: 3. Type locality: «Olympic Mountains, Washington» (original citation). Holotype (♀) in CAS [# 3335]. Etymology. This specific name

was proposed for Orson Bennett Johnson [1849-1917], a pioneer Pacific Northwest entomologist and first professor of natural science at the University of Washington.

Scaphinotus klahowyae Perrault, 1973b: 47. Type locality: «Klahowya, near Sappho, Clallam Co[unty], Olympic Peninsula, Washington» (original citation). Holotype (♂) location unknown (probably in MHNP). Synonymy established by Greene (1976: 326).

Distribution. This rarely collected species is restricted to the southern part of Vancouver Island (Lindroth 1961a: 22) and the Olympic Mountains in northwestern Washington (Van Dyke 1924b: 3).
Records. CAN: BC (VCI) **USA**: WA
Note. This species has been placed in the subgenus *Brennus* by Lindroth (1961a: 22) and Gidaspow (1968: 155) but van den Berghe and Davidson (Robert L. Davidson pers. comm. 2008) agreed that this small species is a member of the subgenus *Stenocantharus*.

Scaphinotus velutinus (Ménétriés, 1843)

Cychrus velutinus Ménétriés, 1843: 53. Type locality: «Californie» (original citation), herein restricted to Fort Ross, Sonoma County (see Gidaspow 1973: 72). Syntype(s) in ZILR.

Pemphus longipes Casey, 1897: 339. Type locality: «Humboldt Co[unty], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 46012]. Synonymy established by Gidaspow (1973: 70).

Pemphus opacus Casey, 1899: 97. Type locality: «Sonoma Co[unty], California» (original citation). Two syntypes [2 originally cited] in USNM [# 46011]. Synonymy established by Roeschke (1907a: 169).

Distribution. This species ranges from northwestern Oregon to the San Francisco Bay area in California [see Gidaspow 1973: Fig. 3]. The record from Vancouver Island (LeConte 1869c: 370) is probably in error.
Records. USA: CA, OR

Subgenus *Brennus* Motschulsky, 1866

Brennus Motschulsky, 1866: 311. Type species: *Cychrus ventricosus* Dejean, 1831 designated by Géhin (1876b: 114). Etymology. Unknown [masculine].

Diversity. Fifteen western North American species of which two extend into the Baja California Peninsula.
Identification. Gidaspow (1968) revised the species and provided a key for their identification.

Scaphinotus bullatus Van Dyke, 1924

Scaphinotus subtilis bullatus Van Dyke, 1924b: 3. Type locality: «at the mouth of Roaring River (5000 feet), South Fork of Kings River Cañon, Fresno County, California» (original citation). Holotype (♂) in CAS [# 3336].

Scaphinotus subtilis grandis Van Dyke, 1924b: 4. Type locality: «Cedar Creek, Tulare County, California» (original citation). Holotype (♂) in CAS [# 3338]. Synonymy established by Gidaspow (1968: 163).

Distribution. This species is found within the Sierra Nevada in central California, from El Dorado County to Sequoia National Park [see Gidaspow 1968: Fig. 9].
Records. USA: CA

Scaphinotus cordatus (LeConte, 1853)

Cychrus cordatus LeConte, 1853c: 399. Type locality: «San Jose [Santa Clara County], California» (original citation). Holotype [by monotypy] (♂) in MCZ [# 610].

Brennus cordatus vernicatus Casey, 1920: 183. Type locality: «near San Francisco Bay, California» (original citation). One syntype in USNM [# 46047]. Synonymy established by Gidaspow (1968: 160).

Brennus cordatus rufitarsis Casey, 1920: 184. Type locality: «S[an]ta Cruz M[oun]t[ain]s, California» (original citation). One syntype in USNM [# 46048]. Synonymy established by Gidaspow (1968: 161).

Distribution. This species is restricted to central California [see Gidaspow 1968: Fig. 7].
Records. USA: CA

Scaphinotus crenatus (Motschulsky, 1859)

Cychrus crenatus Motschulsky, 1859a: 161. Type locality: «Californie» (original citation), herein restricted to Fort Tejon, Kern County (see LeConte 1859a: 69, as *Cychrus striatus*). Lectotype [as holotype] (♂), designated by Kryzhanovskij (1968: 186), in ZMMU.

Cychrus striatus LeConte, 1859a: 69. Type locality: «Fort Tejon [Kern County, California]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 607]. Synonymy established by LeConte (1863b: 3).

Brennus gentilis Casey, 1897: 322. Type locality: «near Monterey [Monterey County], California» (original citation). Seven syntypes [10 originally cited] in USNM [# 46021]. Synonymy established by Roeschke (1907a: 184), confirmed by Gidaspow (1968: 173).

Brennus productus Casey, 1914: 29. Type locality: «California» (original citation). One syntype in USNM [# 46023]. Synonymy established, under the name *S. ventricosus* var. *striatus* (LeConte), by Lapouge (1933: 696), confirmed by Gidaspow (1968: 173).

Brennus montereyensis Casey, 1920: 177. Type locality: «Monterey [Monterey County], California» (original citation). One syntype in USNM [# 46022]. Synonymy established by Gidaspow (1968: 173).

Distribution. This species ranges from Sonoma County in California to the Pacific Coast of Baja California Norte, east to the San Bernardino Mountains [see Gidaspow

1968: Fig. 10]. One specimen from Hidalgo state in Mexico is probably mislabeled, as pointed out by Gidaspow (1968: 176).
Records. USA: CA – Mexico

***Scaphinotus cristatus* (Harris, 1839)**

Cychrus cristatus T.W. Harris, 1839: 200. Type locality: «Oregon» (original citation, see page 199), herein restricted to Pistol River, Curry County (see Gidaspow 1968: 144). Syntype(s) lost (Roeschke 1907a: 194).

Cychrus reticulatus Motschulsky, 1850a: 90. Type locality: «California?; Unalaschka?» (original citation), listed from «Calif[ornie]» by Motschulsky (1869: 29). Lectotype [as holotype] (♂), designated by Kryzhanovskij (1968: 187), in ZMMU. Synonymy established with doubt by LeConte (1857c: 10), confirmed by Kryzhanovskij (1968: 187).

Brennus basalis Casey, 1897: 311. Type locality: «S[an]ta Cruz Co[unty], California» (original citation). Five syntypes in USNM [# 46013] and at least one in AMNH [# 441]. Synonymy established, under the name *S. cristatus reticulatus* (Motschulsky), by Roeschke (1907a: 194).

Brennus duplicatus Casey, 1897: 312. Type locality: «Lake Co[unty], California» (original citation). Three syntypes [3 originally cited] in USNM [# 46014]. Synonymy established, under the name *S. cristatus reticulatus* (Motschulsky), by Roeschke (1907a: 194).

Distribution. This species ranges from southwestern Oregon south to the Los Angeles region in southern California, east to the northern part of the Sierra Nevada [see Gidaspow 1968: Fig. 2].
Records. USA: CA, OR

***Scaphinotus interruptus* (Ménétriés, 1843)**

Cychrus interruptus Ménétriés, 1843: 54. Type locality: «Californie» (original citation), herein restricted to Hoopa Valley, Humboldt County (see Gidaspow 1968: 159). Two syntypes in ZILR (Roeschke 1907a: 175).

Cychrus constrictus LeConte, 1853c: 398. Type locality: «San Jose [Santa Clara County], California» (original citation). Syntype(s) [2 originally cited] in MCZ [# 609]. Synonymy established by LeConte (1873b: 322).

Cychrus dissolutus Schaum, 1863: 72. Type locality: «Sacramento [Sacramento County, California]» (original citation). One syntype in ZMHB (Roeschke 1907a: 175). Synonymy established, under the name *S. interruptus* var. *constrictus* (LeConte), by Lapouge (1933: 695).

Brennus sinuatus Casey, 1897: 330. Type locality: «California» (original citation). Syntypes [3 originally cited] location unknown. Synonymy established by Roeschke (1907a: 175), confirmed by Gidaspow (1968: 160).

Brennus politus Casey, 1897: 330. Type locality: «Hoopa Valley, Humboldt Co[unty], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 46025]. Synonymy established by Gidaspow (1968: 158).

Brennus corpulentus Casey, 1897: 331. Type locality: «Oakland, Alameda Co[unty], California» (original citation). Two syntypes in USNM [# 46029]. Synonymy established, under the name *S. interruptus* var. *constrictus* (LeConte), by Roeschke (1907a: 175), confirmed by Gidaspow (1968: 160).

Brennus integer Casey, 1914: 29. Type locality: «S[an]ta Cruz [Santa Cruz County], California» (original citation). One syntype in USNM [# 46026]. Synonymy established by Gidaspow (1968: 158).

Brennus parvulicollis Casey, 1920: 176. Type locality: «S[an]ta Cruz [Santa Cruz County], California» (original citation for *B. interruptus* (Ménétriés) *sensu* Casey, 1897). One syntype in USNM [# 46028]. Synonymy established, under the name *S. interruptus* var. *constrictus* (LeConte), by Lapouge (1933: 695), confirmed by Gidaspow (1968: 160). Note. This name was proposed for *Cychrus interruptus* Ménétriés, 1843 *sensu* Casey (1897: 333).

Brennus beringi Casey, 1920: 179. Type locality: «S[ain]t Paul Island, Alaska» (original citation) which is incorrect. One syntype in USNM [# 46024]. Synonymy established by Lindroth (1961a: 24). Etymology. The specific name honors the Danish navigator and explorer Vitus Béring [1681-1741] who is credited for being the first European to discover Alaska and the Aleutian Islands. The Bering Strait, the Bering Sea, Bering Island, and Bering Glacier are named for him.

Brennus procerus Casey, 1920: 179. Type locality: «Piedmont, Alameda Co[unty], California» (original citation). One syntype in USNM [# 46031]. Synonymy established by Gidaspow (1968: 158).

Distribution. The range of this species extends over much of California, including the Coast Ranges and the Sierra Nevada, as far south as Riverside County [see Gidaspow 1968: Fig. 6]. Some specimens simply labeled from Oregon are known.
Records. USA: CA [OR]

Scaphinotus marginatus (Fischer von Waldheim, 1820)

Cychrus marginatus Fischer von Waldheim, 1820: plate 7. Type locality: «insula Unalaschka [Alaska]» (Fischer von Waldheim 1822: 79). Syntype(s) in SMTD (Grämer 1960: 101; Gidaspow 1968: 149) and probably also in MHNP (collection Dejean).

Cychrus marginatus var. *fulleri* G.H. Horn, 1879: 179. Type locality: «Oregon» (original citation). Syntype(s) in MCZ [# 34835]. Synonymy established by Hatch (1953: 47), confirmed by Gidaspow (1968: 154).

Cychrus marginatus var. *gracilis* Géhin, 1885: 76. Type locality: «Mexique» (original citation), which is incorrect (Roeschke 1907a: 173). Syntype(s) in MHNP (collection Oberthür). Synonymy established by Roeschke (1907a: 171).

Brennus cupripennis Casey, 1897: 334. Type locality: «Washington State» (original citation). Two syntypes [2 ♂ originally cited] in USNM [# 46040]. Synonymy established by Hatch (1953: 47), confirmed by Lindroth (1961a: 22).

Brennus insularis Casey, 1897: 334. Type locality: «Queen Charlotte Islands [British Columbia]» (original citation). Holotype [by monotypy] (♀) in USNM [# 46041]. Synonymy established by Roeschke (1907a: 171), confirmed by Lindroth (1961a: 22).

Brennus confusus Casey, 1897: 336. Type locality: «undoubtedly on the coast between northern California and Alaska» (original citation). Two syntypes [2 originally cited] in USNM [# 46043]. Synonymy established by Hatch (1953: 47), confirmed by Lindroth (1961a: 23).

Brennus marginatus var. *fallax* Roeschke, 1907a: 174. Type locality: «Oregon, auch in Idaho und Montana, in den Bitter Root Mountains» (original citation). Three syntypes in ZMUA (Boer 2002: 49). Synonymy established by Lindroth (1961a: 23).

Brennus columbianus Casey, 1920: 180. Type locality: «Victoria, British Columbia» (original citation). Two syntypes in USNM [# 46042]. Synonymy established by Hatch (1953: 47), confirmed by Lindroth (1961a: 23).

Brennus gracilis wrangelli Casey, 1920: 182. Type locality: «Fort Wrangell, Alaska» (original citation). Holotype [by monotypy] (♀) in USNM [# 46045]. Synonymy established by Lindroth (1961a: 23).

Brennus gracilis montanicus Casey, 1920: 182. Type locality: «Helena [Lewis and Clark County], Montana» (original citation). Holotype [by monotypy] (♂) in USNM [# 46046]. Synonymy established by Lindroth (1961a: 23).

Brennus oregonus Casey, 1920: 182. Type locality: «Oregon» (original citation). One syntype in USNM [# 46044]. Synonymy established by Hatch (1953: 47), confirmed by Lindroth (1961a: 23).

Distribution. The range of this species extends from the Aleutians Islands and the Gulf Coast of Alaska south to northern California, northern Arizona (Coconino County, Eric van den Berghe pers. comm. 2009), and northwestern Wyoming [see Gidaspow 1968: Fig. 4]. Gidaspow (1968: 149) considered the possibility that the species ranges further east toward the Hudson Bay because of the presence in collections of several specimens labeled from "Hudson Bay Territory."
Records. CAN: AB, BC (QCI, VCI) **USA**: AK, AZ, CA, ID, MT, OR, WA, WY

***Scaphinotus obliquus* (LeConte, 1868)**

Cychrus obliquus LeConte, 1868b: 61. Type locality: «near Sacramento [Sacramento County], California» (original citation). Holotype [by monotypy] (♂) in MCZ [# 608].

Brennus convergens Casey, 1897: 326. Type locality: «Siskiyou Co[unty], California» (original citation). Three syntypes [4 originally cited] in USNM [# 46035]. Synonymy established by Lapouge (1933: 695), confirmed by Gidaspow (1968: 156).

Brennus opacicollis Casey, 1897: 327. Type locality: «Oregon» (original citation). Two syntypes [2 originally cited] in USNM [# 46033]. Synonymy established, under the name *S. obliquus convergens* (Casey), by Roeschke (1907a: 180), confirmed by Gidaspow (1968: 156).

Brennus sculptipennis Casey, 1897: 327. Type locality: «California» (original citation). One syntype [3 originally cited] in USNM [# 46034]. Synonymy established, under the name *S. obliquus convergens* (Casey), by Roeschke (1907a: 180), confirmed by Gidaspow (1968: 156).

Distribution. This species is known from the northern part of California, as far south as Madera County [see Gidaspow 1968: Fig. 5], and from Washoe County in northwestern Nevada (La Rivers 1947: 133, as *S. obliquus convergens*). Some specimens simply labeled from Oregon are known.
Records. USA: CA, NV [OR]

Scaphinotus oreophilus (Rivers, 1890)

Cychrus oreophilus Rivers, 1890b: 111. Type locality: «Shingle Springs, Eldorado County, California» (original citation). Two syntypes probably in ZMUA (collection Vogt) though not listed by Boer (2002).

Brennus oreophilus hoppingi Roeschke, 1907a: 183. Type locality: «Südlicher Arm des King River (4500-5500'), Fresno Co[unty] [California]» (original citation). Five syntypes in ZMUA (Boer 2002: 56). Synonymy established by Gidaspow (1968: 164). Etymology. The specific name was proposed for Ralph Hopping [1868-1941], forest entomologist in California and later in Vernon, British Columbia. Hopping built up a large collection of western beetles which was sold by his widow to the California Academy of Sciences in 1948.

Brennus oreophilus humeralis Casey, 1914: 30. Type locality: «Mokelumne Hill, Calaveras Co[unty], California» (original citation). One syntype in USNM [# 46039]. Synonymy established by Gidaspow (1968: 164).

Distribution. This species is known from central California [see Gidaspow 1968: Fig. 3] and from Grand County in eastern Utah (Gidaspow 1968: 165). The record from "Nevada" (Bousquet and Larochelle 1993: 84) needs confirmation.
Records. USA: CA, UT [NV]

Scaphinotus punctatus (LeConte, 1859)

Cychrus punctatus LeConte, 1859a: 69. Type locality: «Fort Tejon [Kern County, California]» (original citation). Syntype(s) in MCZ [# 605].

Cychrus mimus G.H. Horn, 1874: 20. Type locality: «along the Santa Ana River, at San Bernardino [San Bernardino County], California» (original citation). Syntype(s) in MCZ [# 618]. Synonymy established by Gidaspow (1968: 167).

Brennus gravidus Casey, 1897: 317. Type locality: «southern California» (original citation). Syntype(s) location unknown. Synonymy established by Roeschke (1907a: 191). Note. The specimen in Casey's collection under the name *gravidus* is the female from Monterey that Casey stated in his remarks as being probably distinct from the male type.

Brennus catenulatus Casey, 1897: 324. Type locality: «southern California» (original citation). Two syntypes in USNM [# 46038]. Synonymy established by Gidaspow (1968: 167).

Distribution. This species is found in the southern third of California, including Santa Catalina Island, and in "Baja California" [see Gidaspow 1968: Fig. 7].
Records. USA: CA (CHI) – Mexico

***Scaphinotus riversi* (Roeschke, 1907)**

Brennus oreophilus riversi Roeschke, 1907a: 183. Type locality: «Hochgebirge der Sierra Nevada der Tulare und Kern Cos., in einer Höhe von etwa 5000 bis 8000 Fuss: Mt. Whitney, Round Meadow, Giant Forest [California]» (original citation). Four syntypes in ZMUA (Boer 2002: 99) and one possible syntype in SIM (Hennessey 1990: 466).

Distribution. This species is found in the southern half of California, in Tulare (Sequoia National Park), Fresno, Kern, and Los Angeles Counties [see Gidaspow 1968: Fig. 5].
Records. USA: CA

***Scaphinotus rugiceps incipiens* (Casey, 1897)**

Brennus incipiens Casey, 1897: 313. Type locality: «northern California?» (original citation), herein restricted to Green Point, Humboldt County (see Gidaspow 1968: 148). Holotype [by monotypy] (♀) in USNM [# 46015].

Distribution. This subspecies is found in southwestern Oregon (Westcott et al. 2006: 9) and northwestern California as far south as Colusa County [see Gidaspow 1968: Fig. 3].
Records. USA: CA, OR

***Scaphinotus rugiceps rugiceps* (Horn, 1872)**

Cychrus rugiceps G.H. Horn, 1872b: 143. Type locality: «Oregon» (original citation), herein restricted to Diamond Lake, Douglas County (see Gidaspow 1968: 148). Syntype(s) in MCZ [# 35352].

Brennus porcatus Casey, 1897: 328. Type locality: «California» (original citation). Holotype [by monotypy] (♂) in USNM [# 46036]. Synonymy established by Gidaspow (1968: 147). Note. This form was listed as a synonym of *S. interruptus dissolutus* by Roeschke (1907a: 175).

Brennus compositus Casey, 1897: 332. Type locality: «California» (original citation). Holotype [by monotypy] (♂) in USNM [# 46030]. Synonymy established by Gidaspow (1968: 147). Note. This form was listed as a synonym of *S. interruptus* by Roeschke (1907a: 175).

Brennus rugiceps congener Casey, 1914: 28. Type locality: «Josephine Co[unty], Oregon» (original citation). Two syntypes [2 originally cited] in USNM [# 46016]. Synonymy established by Hatch (1953: 48).

Distribution. This subspecies is known for sure only from western Oregon as far south as the border with California [see Gidaspow 1968: Fig. 3]. The records from "California" (Casey 1897: 328, 332, as *Brennus porcatus* and *B. compositus*) need confirmation.
Records. USA: OR [CA]

Scaphinotus striatopunctatus (Chaudoir, 1844)

Cychrus striatopunctatus Chaudoir, 1844: 476. Type locality: «Californie» (original citation), herein restricted to Boonville, Mendocino County (see Gidaspow 1968: 169). Holotype [by monotypy] in MHNP.

Cychrus ovalis Motschulsky, 1859a: 162. Type locality: «Californie» (original citation). Lectotype (♀), designated by Kryzhanovskij (1968: 186), in ZMMU. Synonymy established (as aberration) by Roeschke (1907a: 188), confirmed by Kryzhanovskij (1968: 186).

Brennus decipiens Casey, 1897: 316. Type locality: «near Monterey [Monterey County], California» (original citation). Eight syntypes [8 originally cited] in USNM [# 46017]. Synonymy established by Roeschke (1907a: 188).

Brennus subdepressus Casey, 1920: 177. Type locality: «Monterey [Monterey County], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 46018]. Synonymy established by Lapouge (1933: 696), confirmed by Gidaspow (1968: 169).

Distribution. This species is found along western California from Mendocino County south to Los Angeles County [see Gidaspow 1968: Fig. 9].
Records. USA: CA

Scaphinotus subtilis (Schaum, 1863)

Cychrus subtilis Schaum, 1863: 72. Type locality: «Sacramento [Sacramento County, California]» (original citation). Syntype(s) in ZMHB.

Distribution. This species is known only from central California, mostly along the west side of the Sierra Nevada from Calaveras County to Tulare and Kern Counties [see Gidaspow 1968: Fig. 8].
Records. USA: CA

Scaphinotus ventricosus (Dejean, 1831)

Cychrus ventricosus Dejean, 1831: 527. Type locality: «Californie» (original citation), herein restricted to San Francisco, San Francisco County (see Eschscholtz 1833: 21). Holotype [by monotypy] (♂) in MHNP (Lindroth 1955b: 11).

Cychrus lativentris Motschulsky, 1850b: 358. Type locality not stated. Syntype(s) lost (Roeschke 1907a: 184). Synonymy established by Gidaspow (1968: 170).

Cychrus alternatus Motschulsky, 1859a: 163. Type locality: «Californie» (original citation). Syntype(s) lost (Roeschke 1907a: 188). Synonymy established by Gidaspow (1968: 170). Note. Roeschke (1907a: 188) listed this name as an aberration of *S. striatopunctatus* (Chaudoir).

Cychrus fuchsianus Rivers, 1890a: 71. Type locality: «Eldorado and Sonoma Counties, Cal[ifornia]» (original citation). One possible syntype in ZMUA (collection Vogt) but not listed by Boer (2002). Synonymy established (as aberration) by Roeschke (1907a: 184).

Brennus symmetricus Casey, 1897: 319. Type locality: «California» (original citation). Holotype [by monotypy] (♂) in USNM [# 46032]. Synonymy established by Gidaspow (1968: 170).

Brennus strictus Casey, 1897: 322. Type locality: «California» (original citation). One syntype in USNM [# 46019]. Synonymy established, under the name *S. ventricosus lativentris* (Motschulsky), by Roeschke (1907a: 184), confirmed by Gidaspow (1968: 173).

Brennus brevicollis Casey, 1920: 178. Type locality: «Mokelumne Hill, Calaveras Co[unty], California» (original citation). One syntype in USNM [# 46020]. Synonymy established by Gidaspow (1968: 170).

Distribution. This species ranges from southern Oregon to San Luis Obispo County along the coast and to Yosemite National Park along the Sierra Nevada; also known from the Santa Catalina Island [see Gidaspow 1968: Fig. 10].
Records. USA: CA, OR

Subgenus *Neocychrus* Roeschke, 1907

Neocychrus Roeschke, 1907a: 197. Type species: *Cychrus angulatus* Harris, 1839 designated by Lindroth (1961a: 24). Etymology. From the Greek prefix *neo-* (new) and the generic name *Cychrus* [*q.v.*] [masculine].

Diversity. Three species restricted to the Pacific coastal region of North America.
Identification. Van Dyke (1944) first reviewed the species. Subsequently, Gidaspow (1973) revised them and provided a key for their identification.

Scaphinotus angulatus (Harris, 1839)

Cychrus angulatus T.W. Harris, 1839: 200. Type locality: «Oregon» (original citation, see page 199), restricted to «Portland [Multnomah County]» by Lindroth (1961a: 24). Holotype [by monotypy] (♀) apparently lost (LeConte 1869c: 372).

Scaphinotus angulatus maritimus Van Dyke, 1924b: 5. Type locality: «near Port Angeles [Clallam County], Washington» (original citation). Holotype (♀) in CAS [# 3341]. Synonymy established by Lindroth (1961a: 25).

Figure 7. *Notiophilus aquaticus* (Linnaeus). This species is an example of a circumboreal taxon; it is found in the Northern Hemisphere without major gaps north of latitude 45. Linnaeus gave this species the epithet *aquaticus* in the 10th edition of his *Systema Naturae*, published in 1758, on the assumption that the species lived close to water. We know today that this is not the case and the species is found in relatively dry, open habitats. *Notiophilus* larvae and adults prey on collembolans. The adults are challenging to catch by hand because of their small size and swiftness.

Distribution. This species ranges from southwestern British Columbia, including Vancouver Island, to southwestern Oregon [see Gidaspow 1973: Fig. 1].
Records. CAN: BC (VCI) **USA**: OR, WA

Scaphinotus behrensi (Roeschke, 1907)

Neocychrus behrensi Roeschke, 1907a: 199. Type locality: «Riesennadelholzwaldungen (= redwood cañon) im nördlichen Sonoma Co[unty], Californien» (original citation). Holotype [by monotypy] (♂) in ZMUA (Boer 2002: 32).
Scaphinotus behrensi malkini Van Dyke, 1944: 13. Type locality: «Spenser Butte, near Eugene [Lane County], Oregon» (original citation). Holotype (♂) in CAS [# 5345]. Synonymy established by Gidaspow (1973: 61).

Distribution. The range of this species extends near the Pacific Coast from Lincoln County in Oregon (Gidaspow 1973: 61) to Humboldt County in northern California [see Gidaspow 1973: Fig. 1].
Records. USA: CA, OR

Scaphinotus longiceps Van Dyke, 1924

Scaphinotus longiceps Van Dyke, 1924b: 5. Type locality: «interior of Humboldt County, California» (original citation). Holotype (♂) in CAS [# 3340].

Distribution. This species is known only from a few specimens collected in Humboldt and Mendocino Counties (Weber and Kavanaugh 1992: 394), northern California.
Records. USA: CA

Tribe Carabini Latreille, 1802

Carabici Latreille, 1802: 80. Type genus: *Carabus* Linnaeus, 1758.
Calosomii Bonelli, 1810: Tabula Synoptica. Type genus: *Calosoma* Weber, 1801.

Diversity. Worldwide, with about 1,080 species arrayed in three genera: *Aplothorax* Waterhouse (one species on the island of Saint Helena in South Atlantic Ocean), *Calosoma* (about 170 species), and *Carabus* (about 910 species).

Genus *Calosoma* Weber, 1801

Calosoma Weber, 1801: 20. Type species: *Carabus sycophanta* Linnaeus, 1758 designated by Latreille (1810: 426). Etymology (original). From the Greek *calos* (beautiful) and *soma* (body), alluding to the beautiful body coloration of adults of *C. sycophanta* and *C. inquisitor*, the two species included by Weber in the genus [neuter].
Callisoma Agassiz, 1846: 60, 61. Unjustified emendation of *Calosoma* Weber, 1801.

Diversity. Worldwide, with about 170 species in the Nearctic (41 species, of which one is adventive), Neotropical (about 55 species, many shared with North America), Australian (three species), Oriental (six species), Palaearctic (about 45 species), and

Afrotropical (about 35 species) Regions. The species are arrayed in about 25 genus-group taxa.

Identification. Gidaspow (1959) revised the North American species and provided a key for their identification. Subsequently Lindroth (1961a: 50, 55) listed in synonymy some of the species that were considered valid by Gidaspow (e.g., *C. concretum*, *C. pimelioides*, *C. zimmermani*) and Dajoz (1997a) described a new species (*C. dawsoni*).

Taxonomic Note. The genus *Calosoma* is retained here in its wide sense following several authors, including Culot (1988). Others used different arrangements. For example, Lorenz (2005) and Erwin (2007a) listed *Callisthenes* Fischer von Waldheim as a valid genus with *Chrysostigma* Kirby and *Callistenia* Lapouge as subgenera.

Faunistic Note. Burgess and Collins (1917: 86) reported that *Calosoma palmeri* Horn "occurs in California and Mexico." The record for California is doubtful since the species, as far as known, is endemic to Guadalupe Island (Gidaspow 1959: 276).

Subgenus *Castrida* Motschulsky, 1866

Castrida Motschulsky, 1866: 300. Type species: *Calosoma sayi* Dejean, 1826 by monotypy. Etymology. Unknown [feminine].

Camedula Motschulsky, 1866: 304. Type species: *Calosoma rufipenne* Dejean, 1831 designated by Géhin (1885: xxxi). Note. The first type species designation for *Camedula* Motschulsky is that of *Calosoma glabratum* Dejean, 1831 as selected by Géhin (1876b: 114). This species has been accepted as the type species by Jeannel (1940: 199) and Gidaspow (1959: 256). However, Breuning (1928a: 93) accepted *Calosoma rufipenne* Dejean, 1831 as type species following Géhin (1885: xxxi) and this species is currently recognized as the type species (e.g., Lorenz 1998: 59, Lorenz 2005: 57). As discussed by Bousquet (2002b: 11-12), the best solution to preserve nomenclatural stability is to refer the case to the Commission in order to maintain *Calosoma rufipenne* Dejean as type species.

Callistriga Motschulsky, 1866: 307. Type species: *Carabus alternans* Fabricius, 1792 designated by Géhin (1876b: 114). Synonymy established by Csiki (1927: 11).

Calamata Motschulsky, 1866: 307. Type species: *Calamata rugata* Motschulsky, 1866 (= *Calosoma alternans granulatum* Perty, 1830) by monotypy. Synonymy established by Csiki (1927: 11).

Microcalosoma Breuning, 1927: 146. Type species: *Calosoma linelli* Mutchler, 1925 by monotypy. Etymology. From the Greek *micros* (small) and the generic name *Calosoma* [*q.v.*] [neuter].

Acampalita Lapouge, 1929b: 9. Type species: *Calosoma vagans* Dejean, 1831 by subsequent monotypy in Lapouge (1931: 418). Synonymy established by Jeannel (1940: 89). Etymology. From the Greek prefix *a-* (privative) and the generic name *Campalita* [feminine].

Catastriga Lapouge, 1929b: 9. Type species: *Calosoma trapezipenne* Chaudoir, 1869 by subsequent monotypy in Lapouge (1931: 418). Synonymy established by Gidaspow (1959: 240).

Caludema Jeannel, 1940: 89, 91. Type species: *Calosoma rufipenne* Dejean, 1831 by original designation. Synonymy established by Gidaspow (1963: 289). Etymology. Anagram of the generic name *Camedula* [*q.v.*] [neuter].

Diversity. Western Hemisphere, with 14 species in the Nearctic (one species) and Neotropical (14 species) Regions.

Calosoma sayi Dejean, 1826

Calosoma sayi Dejean, 1826: 198. Type locality: «Amérique septentrionale» (original citation), herein restricted to Norfolk, Virginia (see Casey 1897: 344, as *C. sayi virginica*). Lectotype (♀), designated by Deuve (1978: 246), in MHNP. Etymology. The specific name was proposed in honor of Thomas Say [1787-1834], American naturalist and one of the founders of the Academy of Natural Sciences in Philadelphia. Say participated in the geological expedition to the off-shore islands of Georgia and Florida (then a Spanish colony) in 1818, in Major Long's expedition to the Rocky Mountains and the tributaries of the Missouri River in 1819 and 1820, and in Long's expedition to the headwaters of the Mississippi River in 1823. He lived the last eight years of his life in New Harmony, Indiana, in Robert Owen's utopian society experiment where he secretly married Lucy Way Sistare [1801-1886], an artist who illustrated some of her husband's works.

Calosoma armata Laporte, 1835: 156. Type locality: «Mexique» (original citation). Lectotype (♂), designated by Erwin (1991a: 20), in MHNP. Synonymy established by Breuning (1927: 192).

Calosoma sayi var. *abdominale* Géhin, 1885: 58. Type locality: «Mexique» (original citation). Lectotype (♂), designated by Erwin (1991a: 20), in MHNP. Synonymy established, under the name *C. alternans* var. *armatum* Laporte, by Roeschke (1900: 71).

Calosoma sayi virginica Casey, 1897: 344. Type locality: «Norfolk, V[irgini]a» (original citation). Lectotype (♂), designated by Erwin (1991a: 20), in USNM [# 37092]. Synonymy established by Roeschke (1900: 71).

Calosoma alternans var. *cuprascens* Roeschke, 1900: 71. Type locality not stated. Holotype [by monotypy] (♂) location unknown. Synonymy established by Jeannel (1940: 94).

Distribution. This species ranges from Long Island, New York (Notman 1928: 209) to "Iowa" (Burgess and Collins 1917: 62), south to Guatemala (Gidaspow 1963: 301) and southern Florida except for the Keys (Peck and Thomas 1998: 15), west along southern United States to "California" (Burgess and Collins 1917: 62); also known from the Greater Antilles as far south as Puerto Rico (Gidaspow 1963: 301). The records from "Minnesota," "North Dakota," and "Wisconsin" (Bousquet and Larochelle 1993: 70) are probably in error or based on strays.

Records. USA: AL, AR, AZ, CA, DC, FL, GA, IA, IL, IN, KS, KY, LA, MD, MO, MS, NC, NJ, NY, OH, OK, PA, SC, TN, TX, VA – Cuba, Dominican Republic, Guatemala, Haiti, Jamaica, Mexico, Puerto Rico

Subgenus *Calosoma* Weber, 1801

Calosoma Weber, 1801: 20. Type-species: *Carabus sycophanta* Linnaeus, 1758 designated by Latreille (1810: 426).

Callipara Motschulsky, 1866: 309. Type species: *Carabus sycophanta* Linnaeus, 1758 designated by Géhin (1876b: 114).

Syncalosoma Breuning, 1927: 179. Type species: *Calosoma frigidum* Kirby, 1837 by original designation. Synonymy established by Lapouge (1931: 400). Etymology. From the Greek prefix *syn-* (together, with) and the generic name *Calosoma* [*q.v.*] [neuter].

Acalosoma Lafer, 1989: 106. Type species: *Carabus inquisitor* Linnaeus, 1758 by original designation.

Diversity. Northern Hemisphere, with six species in the Nearctic (two species, one of them adventive) and Palaearctic (five species) Regions.

Taxonomic Note. This subgenus is retained in its narrow sense and excludes members of *Australodrepa* Lapouge and *Calodrepa* Motschulsky.

Calosoma frigidum Kirby, 1837

Calosoma frigidum Kirby, 1837: 19. Type locality: «Drummond's Island [Chippewa County, Michigan], Canada» (original citation). One syntype in BMNH (Lindroth 1953b: 169).

Calosoma frigida levettei Casey, 1897: 344. Type locality: «Indiana» (original citation). Holotype [by monotypy] (♀) in USNM [# 37093]. Synonymy established by Breuning (1927: 180).

Distribution. This species occurs from Cape Breton Island to the Skeena River drainage in west-central British Columbia (Lindroth 1961a: 47), south to northeastern Nevada (La Rivers 1947: 134), central Utah (La Rivers 1947: 135), southeastern Texas in the Galveston area (Snow 1906a: 140; Gidaspow 1959: 245), and northern Georgia (Fattig 1949: 11).

Records. CAN: AB, BC, MB, NB, NS (CBI), ON, PE, QC, SK **USA**: CO, CT, GA, IA, IL, IN, LA, MA, MD, ME, MI, MN, MO, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SD, TN, TX, UT, VA, VT, WI, WV

Calosoma sycophanta (Linnaeus, 1758)

Carabus sycophanta Linnaeus, 1758: 414. Type locality: «Europa» (original citation), restricted to «Sweden» by Lindroth (1961a: 47). One possible syntype in LSL (Lindroth 1957b: 334).

Distribution. This European species was introduced as early as 1906 in many places in Canada and United States for the biological control of two introduced lymantriids: the gypsy moth, *Lymantria dispar* (Linnaeus), and the browntail moth, *Euproctis chrysorrhoea* (Linnaeus). Based on the extensive survey of Schaefer et al. (1999), the species

is now established in eastern United States from southern Maine to Maryland and West Virginia, west to western Pennsylvania. The record from "Michigan" (Bousquet and Larochelle 1993: 71) must be in error. There is no confirmation that the species is established on the west coast and the record from "Washington" (Bousquet and Larochelle 1993) should be deleted.
Records. USA: CT, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VA, VT, WV – **Adventive**

Subgenus *Calodrepa* Motschulsky, 1866

Calodrepa Motschulsky, 1866: 310. Type species: *Carabus scrutator* Fabricius, 1775 designated by Géhin (1876b: 114). Etymology. Unknown [feminine].

Diversity. Western Hemisphere, with four species in the Nearctic (four species, one of them endemic) and Neotropical (three species) Regions.
Taxonomic Note. This subgenus is listed in synonymy with the nominotypical subgenus by some authors (e.g., Breuning 1927: 155; Lorenz 2005: 68).

Calosoma aurocinctum Chaudoir, 1850

Calosoma aurocinctum Chaudoir, 1850a: 420. Type locality: «Mexique» (original citation), herein restricted to Merida, Yucatán (see Gidaspow 1959: 248). Lectotype (♀), designated by Deuve (1978: 248), in MHNP. Note. This name is often (e.g., Gidaspow 1963: 283; Erwin 1991a: 24) cited as if it had been proposed by Chaudoir (1850a: 420) as a replacement for *Calosoma splendidum* Perbosc, 1839 (nec Dejean 1831). However, Perbosc (1839: 261) attributed his *C. splendidum* to Dejean and so did not propose a new species.

Distribution. This species is found from the Rio Grande in southeastern Texas (Wickham 1897: 102; Burgess and Collins 1917: 122) south to Nicaragua (Gidaspow 1963: 283) [see Gidaspow 1959: Fig. 2].
Records. USA: TX – Mexico, Nicaragua

Calosoma scrutator (Fabricius, 1775)

Carabus scrutator Fabricius, 1775: 239. Type locality: «Virginia» (original citation). Two syntypes in BMNH (collection Banks) and ZMUC (Zimsen 1964: 60).

Distribution. This widely distributed species ranges from western Maine (Majka et al. 2011: 45) to northeastern North Dakota (Tinerella 2003: 635), including southern Quebec (only as strays) and Ontario (Lindroth 1961a: 46), south to Venezuela (Gidaspow 1963: 283) and southern Florida (Peck and Thomas 1998: 15), west along the southwest to "California" (Gidaspow 1959: 250) and Baja California (Leng 1915: 565). Two specimens, likely strays, have been collected in New Brunswick (Webster and Bousquet 2008: 16) and on Sable Island, Nova Scotia (Majka et al. 2007: 6). The species is not known from the West Indies.

Records. CAN: NB, NS, ON, QC **USA**: AL, AR, AZ, CA, CO, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NM, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, WI, WV – Guatemala, Mexico, Venezuela

Calosoma splendidum Dejean, 1831

Calosoma splendidum Dejean, 1831: 558. Type locality: «S[ain]t-Domingue [Dominican Republic or Hispaniola]» (original citation). Holotype [by monotypy] (♀) in MHNP (Lindroth 1955b: 12).

Distribution. This species is known from northeastern Georgia and southern Florida but only from a few century-old specimens (Gidaspow 1959: 248), and from the Bahamas (Turnbow and Thomas 2008: 12), Cuba, and Hispaniola (Gidaspow 1963: 283). Erwin (2007a: 104) listed this species also from Yucatán, Mexico.
Records. USA: FL, GA – Bahamas, Cuba, Haiti, Dominican Republic, Mexico

Calosoma wilcoxi LeConte, 1847

Calosoma wilcoxi LeConte, 1847: 446. Type locality: «NovEboraco [= New York] ad Texas» (original citation), restricted to «New York state» by Lindroth (1961a: 46). Syntype(s) in MCZ [# 623].

Distribution. This species ranges from southeastern New Hampshire (Rockingham County [probably only as strays], Donald S. Chandler pers. comm. 1992) to southeastern Minnesota (Donald P. Schwert pers. comm. 1989), including southern Quebec (only as strays) and southern Ontario (Lindroth 1961a: 47), south to southeastern Texas (Brazoria County, Brian Raber pers. comm. 2010), southeastern Louisiana (Saint John the Baptist and Saint Tammany Parishes, Igor M. Sokolov pers. comm. 2009), and central Georgia (Fattig 1949: 11). The record from "California" (Burgess and Collins 1917: 38) is likely in error or based on a stray.
Records. CAN: ON, QC **USA**: AR, CT, DC, DE, GA, IA, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, NC, NE, NH, NJ, NY, OH, OK, PA, RI, SC, TN, TX, VA, WI, WV

Subgenus *Camegonia* Lapouge, 1924

Camegonia Lapouge, 1924: 38. Type species: *Calosoma carbonatum* LeConte *sensu* Lapouge, 1924 (= *Calosoma prominens* LeConte, 1853) designated by Breuning (1928a: 95). Etymology. Unknown [feminine]. Note. Lapouge (1924: 38-39) associated two taxa with *Camegonia*, *Calosoma carbonatum* LeConte, 1862 and *C. lugubre* LeConte, 1853. Breuning (1928a: 95) noted that Lapouge misidentified *C. prominens* LeConte, 1853 for *Camegonia carbonata* and designated *C. prominens* LeConte as type species of *Camegonia* Lapouge, 1924. That species was not originally included but since Breuning (1928a: 95) listed the species in synonymy

with *Camegonia carbonata sensu* Lapouge, 1924, one of the two species originally included in *Camegonia*, he is deemed to have designated the latter species as type species (ICZN 1999: Article 69.2.2). Therefore Breuning (1928a: 95) designated as type species a species originally included as an expressly stated misidentification and the species so designated is the nominal species denoted by the name of the taxonomic species actually involved (ICZN 1999: Article 69.2.4), that is *Calosoma prominens* LeConte, 1853.

Diversity. Three North American species, all of them extending into Mexico.
Taxonomic Note. This subgenus is listed in synonymy with *Carabosoma* Géhin by some authors (e.g., Lorenz 2005: 70).

Calosoma marginale Casey, 1897

Calosoma lugubre LeConte, 1853c: 400 [primary homonym of *Calosoma lugubre* Motschulsky, 1844]. Type locality: «New Braunfels [Comal County], Texas» (original citation). Holotype [by monotypy] (♂) in MCZ [# 626].

Calosoma marginalis Casey, 1897: 340. Type locality: «Arizona?» (original citation). Holotype [by monotypy] (♂) in USNM [# 37109]. Synonymy established by Breuning (1928a: 97).

Calosoma lecontei Csiki, 1927: 21. Replacement name for *Calosoma lugubre* LeConte, 1853.

Distribution. This species ranges from "Iowa" (Jaques and Redlinger 1946: 295, as *C. lugubre*) to southeastern Colorado (Michels et al. 2008), south to southern Mexico (Gidaspow 1959: 254-255) and eastern Arkansas (Arkansas County, Ken Karns pers. comm. 2009). Gidaspow (1963: 282) reported the presence of two specimens from Costa Rica. The records from "Illinois" (Bousquet and Larochelle 1993: 71) and northern Arizona (Wickham 1896a: 156) need confirmation. The specimen labeled from Duparquet in Quebec (Lindroth 1961a: 49) is almost certainly mislabeled.
Records. USA: AR, CO, IA, KS, MO, NE, NM, OK, TX [AZ, IL] – Costa Rica, Mexico

Calosoma parvicolle Fall, 1910

Calosoma parvicollis Fall, 1910: 90. Type locality: «San Bernardino, Riverside and Pasadena, southern California» (original citation), restricted to «Pasadena [Los Angeles County]» by Gidaspow (1959: 256). Syntype(s) in MCZ [# 23843].

Calosoma clemens Casey, 1914: 32. Type locality: «Las Vegas [Clark County], Nevada» (original citation). One syntype in USNM [# 37111]. Synonymy established by Breuning (1928a: 95).

Calosoma pertinax Casey, 1920: 163. Type locality: «Albuquerque [Bernalillo County], New Mexico» (original citation). One syntype in USNM [# 37110]. Synonymy established by Breuning (1928a: 95).

Distribution. This species is found from central California to eastern Utah, south to southwestern New Mexico, Sonora in Mexico, and Baja California (Gidaspow 1959: 256).
Records. USA: AZ, CA, NM, NV, UT – Mexico

Calosoma prominens LeConte, 1853

Calosoma angulatum LeConte, 1852a: 199 [primary homonym of *Calosoma angulatum* Chevrolat, 1834]. Type locality: «circa Pimas [Graham County, Arizona]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 624].
Calosoma prominens LeConte, 1853c: 400. Replacement name for *Calosoma angulatum* LeConte, 1852.

Distribution. This species is found from Inyo County in eastern California (Riley 1893: 239; Fall 1901a: 40) to central New Mexico, south to Sonora and the Baja California Peninsula (Gidaspow 1959: 255).
Records. USA: AZ, CA, NM – Mexico

Subgenus *Carabosoma* Géhin, 1885

Carabosoma Géhin, 1885: xxxii. Type species: *Calosoma glabratum* Dejean, 1831 designated by Breuning (1928a: 100). Etymology. From the generic name *Carabus* [*q.v.*] and the Greek *soma* (body), alluding to the resemblance of adults to those of some *Carabus* ("*forme rappelant celles de certains carabes*") [neuter].
Acamegonia Lapouge, 1924: 38. Type species: *Acamegonia peregrinatrix incerta* Lapouge, 1924 (= *Calosoma eremicola* Fall, 1910) by monotypy. Synonymy established by Bousquet and Larochelle (1993: 72).

Diversity. Western Hemisphere, with five species in the Nearctic (four species, one of them endemic) and Neotropical (four species, only one, *C. glabratum*, endemic) Regions.

[**angulatum group**]

Calosoma angulatum Chevrolat, 1834

Calosoma angulatum Chevrolat, 1834: [no. 44]. Type locality: «Bocadelmonte [Veracruz, Mexico]» (original citation). Holotype [by monotypy] in MHNP (Erwin 1991a: 26).
Calosoma angulicolle Chaudoir, 1869a: 377. Type locality: Santa Marta, Colombia (lectotype label). Lectotype (♀), designated by Erwin (1991a: 26), in MHNP. Synonymy established by Erwin (1991a: 26).
Calosoma angulicolle var. *uniforme* Géhin, 1885: 63. Type locality: «Mazatlan [Sinaloa, Mexico]» (original citation). Syntype(s) probably in MHNP (collection Oberthür). Synonymy established by Breuning (1928a: 101).

Calosoma forreri Géhin, 1885: 64. Type locality: «Arizona» (original citation). Syntype(s) in MHNP (Deuve 1978: 253). Synonymy established by Jeannel (1940: 203).

Distribution. This species is found in Mexico south at least to Colombia and Venezuela (Erwin 1991a: 26). It is also occasionally found in southwestern United States from California to Texas (Gidaspow 1959: 253).
Records. USA: AZ, CA, NM, TX – Colombia, Costa Rica, Guatemala, Honduras, Mexico, Nicaragua, Venezuela

[**peregrinator group**]

***Calosoma eremicola* Fall, 1910**

Calosoma eremicola Fall, 1910: 91. Type locality: «San Clemente Island [Los Angeles County], southern California» (original citation). Syntype(s) [2 originally cited] in MCZ [# 23842].

Calosoma rugosipennis Schaeffer, 1911: 113. Type locality: «California» (original citation). Holotype [by monotypy] (♂) location unknown. Synonymy established by Gidaspow (1959: 259).

Calosoma hospes Casey, 1913: 63. Type locality: «Coronado [San Diego County], near San Diego, California» (original citation). Two syntypes in USNM [# 37114]. Synonymy established by Jeannel (1940: 206).

Acamegonia peregrinatrix incerta Lapouge, 1924: 38. Type locality: «Basse Californie [= Baja California]» (original citation). Syntype(s) location unknown. Synonymy established by Gidaspow (1959: 259).

Distribution. This species is found in southern California and northern Baja California (Gidaspow 1959: 259); it is also known from one locality in southwestern New Mexico (Gidaspow 1959: 259), from Montezuma County in Colorado (FFPC), and has been reported from Nevada by Erwin (2007a: 91).
Records. USA: CA (CHI), CO, NM, NV – Mexico

***Calosoma peregrinator* Guérin-Méneville, 1844**

Calosoma peregrinator Guérin-Méneville, 1844c: 255. Type locality: intérieur du Mexique (inferred from title of the paper), herein restricted to Guadalajara, Jalisco (see Gidaspow 1959: 258). Syntype(s) probably in MHNP.

Calosoma carbonatum LeConte, 1862: 53. Type locality: «New Mexico and upper Texas» (original citation), restricted to «New Mexico» by Gidaspow (1959: 257). Syntype(s) in MCZ [# 625]. Synonymy established by Horn (1883b: 270).

Calosoma peregrinator ingens Casey, 1913: 62. Type locality: «San Diego [San Diego County], California» (original citation). Two syntypes [2 originally cited] in

USNM [# 37105]. Synonymy established by Breuning (1928a: 103), confirmed by Gidaspow (1959: 258).

Calosoma peregrinator amplipennis Casey, 1913: 62. Type locality: «probably New Mexico or southern Colorado» (original citation). Holotype [by monotypy] (♂) in USNM [# 37106]. Synonymy established by Breuning (1928a: 103), confirmed by Gidaspow (1959: 258).

Calosoma subgracilis Casey, 1913: 63. Type locality not stated. Holotype [by monotypy] (♂) in USNM [# 37107]. Synonymy established by Jeannel (1940: 204), confirmed by Gidaspow (1959: 259).

Calosoma apacheana Casey, 1913: 63. Type locality: «Arizona» (original citation). Holotype [by monotypy] (♂) in USNM [# 37108]. Synonymy established by Breuning (1928a: 103), confirmed by Gidaspow (1959: 258).

Distribution. The range of this species extends from Sacramento County in central California (Clark 1999: 202) to western Kansas (Popenoe 1877: 22), south to the Federal District in Mexico and Baja California (Gidaspow 1959: 258).
Records. USA: AZ, CA, CO, KS, NM, OK, TX, UT – Mexico

Calosoma sponsa Casey, 1897

Calosoma sponsa Casey, 1897: 340. Type locality: «Utah» (original citation). Holotype [by monotypy] (♂) in USNM [# 37113]. Note. It is obvious that Casey (1897) incorrectly treated *Calosoma* as a feminine name. Therefore the specific name could be a noun in apposition, from the Latin *sponsa*, *-ae* (betrothed woman, bride), or a Latin adjective, from *sponsus*, *-a*, *-um* (promised, engaged, betrothed). In such case, the name is to be treated as a noun in apposition (ICZN 1999: Article 31.2.2) unless the author indicated that he or she regarded the name as an adjective or the evidence of usage is decisive. Casey (1897: 340) did not indicate that the name was an adjective and the evidence of usage is not decisive since the name has been treated as an adjective (e.g., *C. sponsum*) by some authors (e.g., Erwin et al. 1977: 4.4; Bousquet and Larochelle 1993: 72; Lorenz 2005: 70; Erwin 2007: 104) and as a noun in apposition (e.g., *C. sponsa*) by others (e.g., Gidaspow 1959: 260; Culot 1988: 13). Consequently the name is to be treated as a noun in apposition.

Calosoma parviceps Casey, 1897: 341. Type locality: «Arizona» (original citation). One syntype in USNM [# 37112]. Synonymy established by Breuning (1928a: 103), confirmed by Gidaspow (1959: 260).

Distribution. This species is known from western Utah (Millard County, Ken Karns pers. comm. 2009), western Nevada, southern California, and "Arizona" (Gidaspow 1959: 260).
Records. USA: AZ, CA, NV, UT

Subgenus *Callitropa* Motschulsky, 1866

Callitropa Motschulsky, 1866: 300. Type species: *Carabus externus* Say, 1823 by monotypy. Etymology. Uncertain, possibly from the Greek prefix *callo-* (beautiful) and *tropos* (manner) [feminine].

Paratropa Lapouge, 1929b: 3. Type species: *Calosoma macrum* LeConte, 1853 designated by Jeannel (1940: 209). Synonymy established by Jeannel (1940: 209).

Diversity. Three North American species, two of them extending into Mexico.

Calosoma externum (Say, 1823)

Carabus externus Say, 1823b: 150. Type locality: «Little Rock [Pulaski County], Ark[ansas]» (neotype label). Neotype (♀), designated by Lindroth and Freitag (1969: 331), in MCZ [# 33089]. Note. «Arkansa» was the area originally cited by Say (1823b: 150).

Calosoma longipenne Dejean, 1831: 568. Type locality: «Amérique septentrionale» (original citation). One syntype in MHNP (Lindroth 1955b: 12; Deuve 1978: 247). Synonymy established by LeConte (1847: 445), confirmed by Lindroth (1955b: 12).

Distribution. This species ranges from "Vermont" (Ross T. Bell pers. comm. 1989; probably only as strays) to "Nebraska," including southernmost Ontario (only as strays), south to "Texas" (Gidaspow 1959: 274) and southern Georgia (Fattig 1949: 10).
Records. CAN: ON **USA**: AL, AR, CT, DC, DE, GA, IA, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, NC, NE, NJ, NY, OH, OK, PA, SC, TN, TX, VA, VT, WI

Calosoma macrum LeConte, 1853

Calosoma macrum LeConte, 1853c: 400. Type locality: «Texas» (original citation), herein restricted to San Antonio, Bexar County (see Breuning 1928a: 118). Syntype(s) in MCZ [# 621].

Distribution. This species is known from "Arkansas" (Jeannel 1940: 214) to "New Mexico" (Erwin 2007a: 98), south to northeastern Mexico (Gidaspow 1959: 274) and "Louisiana" (Burgess and Collins 1917: 25).
Records. USA: AR, LA, NM, OK, TX – Mexico

Calosoma protractum LeConte, 1862

Calosoma protractum LeConte, 1862: 52. Type locality: «Arizona» (original citation). Syntype(s) in MCZ [# 622].

Calosoma dolens Chaudoir, 1869a: 376. Type locality: «près d'Oaxaca, Mexique» (original citation). Lectotype (♂), designated by Deuve (1978: 250), in MHNP. Synonymy established by Breuning (1928a: 118).

Calosoma truncatum Géhin, 1885: 64. Type locality: «Mexico» (original citation). Syntype(s) probably in MHNP (collection Oberthür). Synonymy established by Breuning (1928a: 118).

Distribution. This species is known from "Colorado" (Gidaspow 1959: 275) and southeastern Arizona (Snow 1906b: 161) south at least to the state of Guerrero in Mexico (Gidaspow 1959: 275). The records from southern Kansas (Snow 1903: 192; Knaus 1905a: 218; Burgess and Collins 1917: 26) are doubtful (see Gidaspow 1959: 275).
Records. USA: AZ, CO – Mexico

Subgenus *Blaptosoma* Géhin, 1876

Blaptosoma Géhin, 1876a: 45. Type species: *Calosoma laeve* Dejean, 1826 designated by Breuning (1928b: 43). Etymology. From the Greek *blapto* (hurt) and *soma* (body) [neuter].
Aulacopterum Géhin, 1885: xxxiv. Type species: *Calosoma viridisulcatum* Chaudoir, 1863 by original designation. Synonymy established by Breuning (1928b: 43).

Diversity. Seven Mexican species, one of them extending into North America.

Calosoma haydeni haydeni Horn, 1870

Calosoma haydeni G.H. Horn, 1870a: 69. Type locality: «southern Colorado» (original citation). Syntype(s) in MCZ [# 34552]. Etymology. This species was proposed for Ferdinand Vandeveer Hayden [1828-1887], American geologist, explorer, teacher, and physician. Hayden played the leading role in 1871 and 1872 for the establishment of Yellowstone National Park, the first national "public park or pleasuring-ground for the benefit and enjoyment of the people."

Distribution. This subspecies is known from southern Colorado (Wickham 1902: 231), northwestern Arizona, "New Mexico," Brewster County in western Texas (Gidaspow 1959: 281), and Chihuahua in Mexico (Erwin 2007a: 96).
Records. USA: AZ, CO, NM, TX – Mexico

Calosoma haydeni punctulicolle Bates, 1891

Calosoma laeve var. *punctulicolle* Bates, 1891a: 225. Type locality: «Santa Clara, in Chihuahua; Durango city; Monterey, in Nuevo Leon» (original citation). Syntype(s) probably in BMNH.

Distribution. This subspecies is known from Mexico as far south as the Federal District and from Brewster County in western Texas (Gidaspow 1959: 281).
Records. USA: TX – Mexico

Subgenus *Chrysostigma* Kirby, 1837

Chrysostigma Kirby, 1837: 19. Type species: *Carabus calidus* Fabricius, 1775 designated by Hope (1838: 47). Etymology. From the Greek *chrysos* (gold) and *stigma* (mark, spot), alluding to the conspicuous gilded elytral punctures ("elytra obscure with gilded punctiform impressions") of the adult [neuter].

Tapinosthenes Kolbe, 1895: 56. Type species: *Calosoma cancellatum* Eschscholtz, 1833 by monotypy. Synonymy established by Jeannel (1940: 161). Etymology. From the Greek *tapeinos* (low, humble) and *sthenos* (strength) [masculine].

Lyperostenia Lapouge, 1929b: 3. Type species: *Calosoma triste* LeConte, 1845 (= *Calosoma affine* Chaudoir, 1843) by subsequent monotypy in Lapouge (1931: 382). Synonymy established by Gidaspow (1959: 260). Etymology. From the Greek *lyperos* (painful, by extension sad) and the Greek *stenos* (narrow) [feminine].

Diversity. Western Hemisphere, with ten species in North America (nine species) and Middle America (four species, only one, *C. ampliator* Bates, being endemic).

Calosoma affine Chaudoir, 1843

Calosoma affine Chaudoir, 1843b: 746. Type locality: «Mexique» (original citation), herein restricted to Villa Lerdo, Durango (see Gidaspow 1959: 269). Syntype(s) in MHNP (Deuve 1978: 250).

Calosoma triste LeConte, 1845a: 201. Type locality: «Missouri [Territory]» (original citation). Syntype(s) in MCZ [# 627]. Synonymy established by Jeannel (1940: 169).

Calosoma tristoides Fall, 1910: 92. Type locality: «at or near San Diego [San Diego County], California» (original citation). Syntype(s) in MCZ [# 23844]. Synonymy established by Jeannel (1940: 169).

Distribution. This species ranges from southern Minnesota (Gandhi et al. 2005: 922) to the Pacific Coast in southern California, south to the state of Oaxaca in Mexico (Gidaspow 1959: 269). The records from Missouri (probably based on the type locality of *C. triste*) and "Arkansas" (Burgess and Collins 1917: 87), possibly based on a stray, need confirmation.
Records. USA: AZ, CA, CO, KS, MN, NE, NM, NV, OK, TX, UT [AR, MO] – Mexico

Calosoma calidum (Fabricius, 1775)

Carabus calidus Fabricius, 1775: 237. Type locality: «America» (original citation), restricted to «Rumney [Grafton County], N[ew] H[ampshire]» by Lindroth (1961a: 50). Lectotype (♂), designated by Lindroth (1961a: 50), in ZMUC.

Calosoma calida stellata Casey, 1897: 344. Type locality: «Lake Superior» (original citation). One syntype in USNM [# 37088]. Synonymy established by Gidaspow (1959: 265).

Calosoma calida expansa Casey, 1897: 344. Type locality: «Keokuk [Lee County], Iowa» (original citation). One syntype in USNM [# 37087]. Synonymy established by Casey (1913: 60), confirmed by Lindroth (1961a: 50).

Calosoma calida laticollis Casey, 1897: 344. Type locality: «Las Vegas [San Miguel County], New Mexico» (original citation). One syntype in USNM [# 37089]. Synonymy established by Breuning (1928a: 84), confirmed by Lindroth (1961a: 50).

Calosoma comes Casey, 1920: 156. Type locality: «Northwest Territory» (original citation). Holotype [by monotypy] (♂) in USNM [# 37090]. Synonymy established by Breuning (1928a: 84), confirmed by Lindroth (1961a: 50).

Calosoma concreta Casey, 1920: 157. Type locality: «apparently north of Lake Superior» (original citation). Holotype [by monotypy] (♂) in USNM [# 37091]. Synonymy established, under the name *C. calidum stellatum* Casey, by Breuning (1928a: 84), confirmed by Lindroth (1961a: 50).

Chrysostigma lepidum ocellatum Lapouge, 1931: 381. Type locality: «Canada méridional, Etats-Unis» (original citation). Syntype(s) probably in MCZ, BMNH, and MHNP. Synonymy established with the name *C. expansum* Casey by Lapouge (1931: 381). Note. This name was proposed for *Calosoma calidum* (Fabricius, 1775) *sensu* Dejean (1826: 197), Kirby (1837: 19), LeConte (1878e: 65), Burgess and Collins (1917: 98) and Breuning (1928a: 84).

Distribution. The range of this species extends from Newfoundland (Larson and Langor 1982: 592) and Saint Pierre and Miquelon (Lindroth 1955a: 28) to eastern British Columbia (Lindroth 1961a: 51), south to "Oregon" (Hatch 1953: 52), northeastern New Mexico (Casey 1897: 344), "Kansas" (Horn 1872c: 384), east-central Missouri (Summers 1873: 133), and northern Georgia (Fattig 1949: 11); several specimens have also been caught along the Slave and Mackenzie Rivers, up to 65°30'N, in Northwest Territories (White 1851: 357; Lindroth 1961a: 51). The records from southeastern Louisiana (Summers 1874a: 79), "Alabama," "Arkansas," and "Mississippi" (Bousquet and Larochelle 1993: 72) are probably in error.

Records. FRA: PM **CAN**: AB, BC, MB, NB, NS (CBI), NT, ON, QC, SK **USA**: CO, CT, DC, DE, GA, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OR, PA, RI, SD, TN, UT, VA, VT, WA, WI, WV, WY

Note. Gidaspow (1959: 266) treated *C. concretum* Casey as a valid species. However, both Lindroth (1961a: 50) and Obydov (2003: 534) retained the name as synonym of *C. calidum* (Fabricius).

Calosoma cancellatum Eschscholtz, 1833

Calosoma cancellatum Eschscholtz, 1833: 23. Type locality: «bei St. Franzisco [San Francisco County], Californien» (original citation). Syntype(s) location unknown (possibly in ZMMU).

Calosoma aenescens LeConte, 1854a: 16. Type locality: «Fort Vancouver» (original citation). Syntype(s) in MCZ [# 632]. Synonymy established by LeConte (1857c:

30). Note. Fort Vancouver was a massive British outpost on the north bank of the Columbia River, slightly upstream from the mouth of the Willamette River, in Washington.

Calosoma esuriens Casey, 1913: 64. Type locality: «near San Diego [San Diego County], California» (original citation). One syntype in USNM [# 37094]. Synonymy established by Breuning (1928a: 90).

Calosoma transversa Casey, 1913: 65. Type locality: «near San Diego [San Diego County], California» (original citation). One syntype in USNM [# 37095]. Synonymy established by Breuning (1928a: 90).

Calosoma sagax Casey, 1920: 158. Type locality: «Lassen Co[unty], California» (original citation). One syntype in USNM [# 37096]. Synonymy established by Breuning (1928a: 90).

Calosoma rectilatera Casey, 1920: 158. Type locality: «Palm Spring [Riverside County], California» (original citation). One syntype in USNM [# 37097]. Synonymy established by Breuning (1928a: 91).

Calosoma praestans Casey, 1920: 159. Type locality: «Butte Co[unty], California» (original citation). One syntype in USNM [# 37098]. Synonymy established by Breuning (1928a: 91).

Distribution. This species ranges from south-central British Columbia (Lindroth 1961a: 53) to north-central North Dakota (McHenry County, Foster F. Purrington pers. comm. 2009), south to "Arizona" (Gidaspow 1959: 263) and southern California along the coast (Casey 1913: 64-65, as *C. esuriens* and *C. transversa*). The record from "Indian Territory" (= Oklahoma) (Burgess and Collins 1917: 111) is probably in error.
Records. CAN: BC **USA**: AZ, CA, ID, MT, ND, NV, OR, UT, WA

Calosoma lepidum LeConte, 1845

Calosoma lepidum LeConte, 1845a: 201. Type locality: «Missouri [Territory]» (original citation), cited from «ad flumen Yellow-stone» by LeConte (1847: 446). Syntype(s) in MCZ [# 630].

Distribution. This species inhabits the Great Plains ranging from the southern parts of the Prairie Provinces south to Montana (Gidaspow 1959: 265; Lindroth 1961a: 51) and north-central South Dakota (Walworth County, CNC). The record from "Wyoming" (Bousquet and Larochelle 1993: 73) needs confirmation.
Records. CAN: AB, MB, SK **USA**: MT, ND, SD [WY]

Calosoma morrisonii Horn, 1885

Calosoma morrisonii G.H. Horn, 1885a: 128. Type locality: «Colorado» (original citation). Syntype(s) in MCZ [# 35318] and ZMUA (Boer 2002: 79). Etymology. The specific name honors Herbert Knowles Morrison [1854-1885] who became a professional insect collector in the 1870s. Morrison travelled across the United States and sometimes walked 40 miles a day in pursuit of insects (Sorensen 1995: 37).

Calosoma mexicanum Géhin, 1885: 67. Type locality: «Mexique» (original citation). Syntype(s) in MHNP (Deuve 1978: 252). Synonymy established by Gidaspow (1959: 270). Note. Bruschi (2010), who saw a syntype of *C. mexicanum* Géhin, believed the specimen is very similar to, and probably conspecific with, those of *C. calidum* (Fabricius). If this is correct, then the provenance indicated by Géhin (1885: 67) is incorrect since *C. calidum* is not found in Mexico.

Distribution. This species is known from southern California to "Colorado," south to Durango in western Mexico (Gidaspow 1959: 270).
Records. USA: CA, CO, NM, NV – Mexico

Calosoma obsoletum Say, 1823

Calosoma obsoleta Say, 1823b: 149. Type locality: «F[or]t Reynolds [Pueblo County], Colo[rado]» (neotype label). Neotype (♀), designated by Lindroth and Freitag (1969: 331), in MCZ [# 33088]. Note. «Arkansa» was the area originally cited by Say (1823b: 150).

Calosoma indistinctum LeConte, 1845b: 208. Type locality: United States of America (inferred from title of the paper). Syntype(s) probably in MCZ. Synonymy established by Breuning (1928a: 110). Note. LeConte's collection contains six specimens under the name *C. obsoletum*. Any or all of them could be syntypes.

Calosoma obsoleta microsticta Casey, 1897: 345. Type locality: «Fort Wingate [McKinley County], New Mexico; Kansas» (original citation). Two syntypes [2 ♂ originally cited] in USNM [# 37104]. Synonymy established by Breuning (1928a: 110). Note. Gidaspow (1959: 267) pointed out that of the two specimens in Casey's collection (USNM) under this name, one belongs to *C. lepidum* LeConte, the other to *C. obsoletum* Say. Until a lectotype is designated, the name *C. microsticta* Casey is listed as a junior synonym of *C. obsoletum* Say following Breuning (1928a: 110).

Distribution. This species ranges from Saskatchewan (Lindroth 1961a: 50) to eastern Oregon, south to northeastern Nevada (La Rivers 1947: 136), northwestern New Mexico (Casey 1897: 345, as *C. obsoleta microsticta*; McKinley County, UASM) and southwestern Oklahoma (Kondratieff et al. 2005: 171), east to eastern Minnesota (Gandhi et al. 2005: 922). The record from "Texas" (Burgess and Collins 1917: 87) needs confirmation.
Records. CAN: AB, MB, SK **USA**: CO, IA, ID, KS, MN, MT, ND, NE, NM, NV, OK, OR, SD, UT, WY [TX]

Calosoma semilaeve LeConte, 1852

Calosoma semilaeve LeConte, 1852a: 199. Type locality: «San Jose; San Diego [California]» (original citation), restricted to «San Diego [San Diego County]» by Gidaspow (1959: 271). Syntype(s) in MCZ [# 628].

Calosoma semilaevis davidsoni Casey, 1914: 33. Type locality: «Alameda Co[unty], California» (original citation). Two syntypes in USNM [# 37116]. Synonymy estab-

lished by Breuning (1928a: 111). Etymology. The subspecific name was proposed for George Davidson [1825-1911], surveyor, geodesist, and astronomer. Born in England, Davidson was put in charge of the survey on the west coast in 1850 soon after the United States took over California from Mexico. The Davidson Seamount off the coast of California and Mount Davidson and Davidson Street in San Francisco are named for him.

Calosoma semilaevis adjutor Casey, 1920: 162. Type locality: «Alameda [Alameda County], California» (original citation). One syntype in USNM [# 37115]. Synonymy established by Breuning (1928a: 111).

Distribution. This species ranges from eastern Oregon and "Idaho" (Gidaspow 1959: 271) south to southern Arizona (Snow 1907: 141) and southern California along the coast (Fall 1901a: 40; Moore 1937: 4); also found on Guadalupe Island, Mexico (Gidaspow 1959: 271). The record from northeastern Kansas (Popenoe 1877: 22) is likely in error.

Records. USA: AZ, CA (CHI), ID, OR, UT – Mexico

Calosoma simplex LeConte, 1878

Calosoma simplex LeConte, 1878d: 61. Type locality: «middle California» (original citation), herein restricted to Pinoche Hill, Merced County (see Gidaspow 1959: 272). Holotype [by monotypy] (♂) in MCZ [# 629].

Distribution. This species is confined to California where it is known from Yolo County to Riverside (Gidaspow 1959: 272) and San Diego Counties (Moore 1937: 4). The records from "Arizona," "Colorado," "Texas," and "Mexico" (Burgess and Collins 1917: 93) are probably in error.

Records. USA: CA

Calosoma tepidum LeConte, 1852

Calosoma tepidum LeConte, 1852a: 199. Type locality: «Oregon» (original citation), herein restricted to Oregon City, Clackamas County (see Breuning 1928a: 89). Syntype(s) in MCZ [# 631].

Calosoma irregulare Walker, 1866: 312. Type locality: British Columbia (inferred from title of the book). Syntype(s) location unknown (possibly in BMNH). Synonymy established by Horn (1870a: 70).

Calosoma tepida caelator Casey, 1913: 61. Type locality: «Coeur d'Alene [Kootenai County], Idaho» (original citation). Holotype [by monotypy] (♂) in USNM [# 37101]. Synonymy established by Breuning (1928a: 88), confirmed by Lindroth (1961a: 51).

Calosoma tepida indigens Casey, 1913: 61. Type locality: «Oregon» (original citation). Two syntypes in USNM [# 37099]. Synonymy established by Breuning (1928a: 88), confirmed by Lindroth (1961a: 51).

Calosoma pellax Casey, 1920: 160. Type locality: «probably Oregon or adjacent region» (original citation). Holotype [by monotypy] (♂) in USNM [# 37100]. Synonymy established by Breuning (1928a: 88), confirmed by Lindroth (1961a: 51).

Calosoma semicuprea Casey, 1920: 161. Type locality: «probably northern Rocky Mountain region» (original citation). Holotype [by monotypy] (♂) in USNM [# 37102]. Synonymy established by Breuning (1928a: 88), confirmed by Lindroth (1961a: 51).

Calosoma cogitans Casey, 1920: 161. Type locality: «Stockton [Tooele County], Utah» (original citation). Lectotype (♀), designated by Lindroth (1975: 111), in USNM [# 37103]. Synonymy established by Breuning (1928a: 88), confirmed by Lindroth (1961a: 52).

Distribution. This species is found from Vancouver Island (Lindroth 1961a: 52) to "Nebraska," south to "Colorado" (Gidaspow 1959: 264) and southern California (La Rivers 1947: 136). The records from "North Dakota" (Bousquet and Larochelle 1993: 73) and "Alberta" (Burgess and Collins 1917: 107) need confirmation.

Records. CAN: BC (VCI) **USA**: AZ, CA, CO, ID, MT, NE, NV, OR, UT, WA, WY [AB, ND]

Note. Obydov (2003: 536), based on a study of two specimens only, concluded that *C. cogitans* Casey represents a valid subspecies of *C. tepidum* LeConte. I agree with Gidaspow (1959: 263) and Lindroth (1961a: 52) that the name does not apply to a distinct taxon.

Subgenus *Callistenia* Lapouge, 1929

Callistenia Lapouge, 1929b: 2. Type species: *Calosoma moniliatum* LeConte, 1852 designated by Jeannel (1940: 170). Etymology. Uncertain, possibly from the Greek *callos* (beauty) and *stenos* (narrow) [feminine].

Isostenia Lapouge, 1929b: 2. Type species: *Calosoma wilkesii* LeConte, 1852 by subsequent monotypy in Lapouge (1931: 380). Synonymy established by Jeannel (1940: 170).

Diversity. Fourteen North American species in the western half of the continent.

Calosoma dawsoni (Dajoz, 1997), new combination

Callisthenes dawsoni Dajoz, 1997a: 70. Type locality: «proximité du Big Alkali Lake (2100 mètres) au voisinage de la route de Mammoth Lakes à Benton, Mono County, Californie» (original citation). Holotype probably in Dajoz's collection (Paris, France).

Distribution. This species is known only from the original 16 specimens collected at the type locality in the Sierra Nevada.

Records. USA: CA

Calosoma dietzii Schaeffer, 1904

Calosoma dietzii Schaeffer, 1904: 197. Type locality: «Tulare Co[unty], California» (original citation). Syntype(s) [4 originally cited] location unknown. Etymology. The specific name was proposed for Ottomar Dietz [1854-1901], an enthusiastic beetle collector. Born in Germany, Dietz moved to America in his 20s, living in Milwaukee and Cincinnati before settling in New York where he was engaged in the newspaper advertising business. He was a founding member of the New York Entomological Society.

Callisthenes gravidulus Casey, 1913: 69. Type locality: «Sequoia National Park (4600'), Tulare Co[unty], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 37120]. Synonymy established by Breuning (1928b: 79).

Distribution. This species has been recorded so far from the Sierra Nevada in Tulare County and "South Fork" in Humboldt County, California (Gidaspow 1959: 308).
Records. USA: CA

Calosoma discors LeConte, 1857

Calosoma discors LeConte, 1857c: 31. Type locality: «San Francisco; Sacramento [California]» (original citation), restricted to «Sacramento [Sacramento County]» by Gidaspow (1959: 308). Syntype(s) in MCZ [# 634].

Callisthenes discors inversus Casey, 1913: 67. Type locality: «San Francisco [San Francisco County], California» (original citation). Holotype [by monotypy] (♀) in USNM [# 37117]. Synonymy established by Breuning (1928b: 79).

Distribution. This species is found in California from El Dorado and Sacramento Counties to Santa Cruz and Madera Counties (Gidaspow 1959: 308); it was cited also from Washington (Burgess and Collins 1917: 119) but the record is probably in error or based on a stray.
Records. USA: CA

Calosoma lariversi Van Dyke, 1943

Calosoma lariversi Van Dyke, 1943: 17. Type locality: «near Lamoille [Elko County], Nevada» (original citation). Holotype (♂) in CAS [# 5294]. Etymology. The specific name honors Ira John La Rivers, II [1915-1977], professor of biology at the University of Nevada in Reno. La Rivers was a naturalist and published on many living groups including beetles, true bugs, ants, fishes, and algae.

Distribution. According to La Rivers (1947: 137), this species is "apparently the predominant *Calosoma* of eastern Nevada, and a marked montane isolate."
Records. USA: NV

Figure 8. *Cychrus tuberculatus* (Harris). This species belongs to a genus that contains numerous species in the Palaearctic Region but only two in North America, both west coastal elements. The two species are morphologically very similar and likely sister-species, suggesting that a single ancestral stock crossed Beringia. *Stomis* and *Trechoblemus* are other carabid genera well represented in the Palaearctic with a single species each on the West Coast of North America.

***Calosoma latipenne* Horn, 1870**

Calosoma latipenne G.H. Horn, 1870a: 70. Type locality: «elevated regions of the South Sierras of California» (original citation). Syntype(s) in MCZ [# 8125].

Calosoma arcuata Casey, 1897: 343. Type locality: «Arizona» (original citation), which may be in error (Gidaspow 1959: 307). One syntype in USNM [# 37121]. Synonymy established with doubt, under the name *C. subaeneum opimum* (Casey), by Breuning (1928b: 81), confirmed by Gidaspow (1959: 306).

Callisthenes tularensis Casey, 1913: 68. Type locality: «Tulare Co[unty], California» (original citation). One syntype in USNM [# 37119]. Synonymy established by Gidaspow (1959: 306).

Callisthenes opimus Casey, 1913: 69. Type locality: «Kern Co[unty], California» (original citation). Two syntypes in USNM [# 37118]. Synonymy established by Gidaspow (1959: 306).

Distribution. This species is found in California from Sacramento County to Los Angeles and San Bernardino Counties (Gidaspow 1959: 307); according to Burgess and Collins (1917: 122), it was also collected in Reno, western Nevada.
Records. USA: CA, NV

***Calosoma luxatum* Say, 1823**

Calosoma luxata Say, 1823b: 149. Type locality: «Douglas Spring, Routt Co[unty], Colo[rado]» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 331), in MCZ [# 33087]. Note. «Arkansa [probably the Arkansas River since Say added "found near the Rocky mountains"]» was the area originally cited by Say (1823b: 150).

Carabus zimmermani LeConte, 1847: 445. Type locality: «Rocky Mountains» (original citation). Holotype [by monotypy] in MCZ [# 638]. Synonymy established by Jeannel (1940: 175). Etymology. The species name honors Christian Zimmermann [1800-1867], an accomplished entomologist. Born in Germany, Zimmermann immigrated to the United States at the age of 31 and eventually settled in South Carolina where he divided his time between collecting trips along the East Coast and working on his collection at home. His collection was bought by Dr. Lewis of Philadelphia and from him by George Robert Crotch who sold it to the MCZ. According to Hagen (1889: 57), "a great part [of Zimmermann's specimens] is in Leconte's collection, and can be recognized at once by the number on the pins in Zimmermann's hand-writing."

Calosoma striatulum LeConte, 1859c: 4 [primary homonym of *Calosoma striatulum* Chevrolat, 1835]. Type locality: «Milk river [probably in Montana]; Utah» (original citation). Syntype(s) in MCZ [# 639]. Synonymy established by Burgess and Collins (1917: 120), confirmed by Lindroth (1961a: 54).

Callisthenes pimelioides Walker, 1866: 312. Type locality: British Columbia (inferred from title of the book), restricted to «Oliver» by Lindroth (1961a: 54). At least

one syntype in BMNH (Lindroth 1961a: 55). Synonymy established, under the name *C. zimmermani* LeConte, by LeConte (1870: 399) and Horn (1870a: 70), confirmed by Lindroth (1961a: 54).

Callisthenes luxatus var. *opacus* Géhin, 1885: 70. Type locality: «Orégon» (original citation). Syntype(s) in MHNP (Deuve 1978: 252). Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 83).

Callisthenes exaratus Casey, 1913: 72. Type locality: «Placer Co[unty], California» (original citation). Three syntypes [3 originally cited] in USNM [# 37132]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 84).

Callisthenes tegulatus Casey, 1913: 72. Type locality: «California» (original citation). One syntype in USNM [# 37128]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 83).

Callisthenes tegulatus viator Casey, 1913: 72. Type locality: «California» (original citation). One syntype in USNM [# 37129]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 83).

Callisthenes pustulosus Casey, 1913: 73. Type locality: «Yreka [Siskiyou County], California» (original citation). One syntype in USNM [# 37127]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 84).

Callisthenes diffractus Casey, 1913: 75. Type locality: «Coolidge [McKinley County], New Mexico» (original citation). One syntype in USNM [# 37126]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 84).

Callisthenes reflexus Casey, 1920: 164. Type locality: «northern Rocky Mountain region» (original citation). One syntype in USNM [# 37130]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 84).

Callisthenes utensis Casey, 1920: 165. Type locality: «Stockton [Tooele County], Utah» (original citation). One syntype in USNM [# 37131]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 84).

Callisthenes semotus Casey, 1920: 166. Type locality: «Stockton [Tooele County], Utah» (original citation). One syntype in USNM [# 37133]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 84).

Callisthenes debilis Casey, 1920: 167. Type locality: «Oregon» (original citation). One syntype in USNM [# 37134] and one in SIM (Hennessey 1990: 466). Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 84).

Callisthenes parowanus Casey, 1920: 167. Type locality: «Parowan [Iron County], Utah» (original citation). One syntype in USNM [# 37136]. Synonymy established, under the name *C. luxatum zimmermanni* LeConte, by Breuning (1928b: 84).

Calosoma striata Breuning, 1928b: 86. Replacement name for *Calosoma striatulum* LeConte, 1859.

Calosoma zimmermanni tahoensis Van Dyke, 1943: 18. Type locality: «slopes of M[oun]t Tallac, near Lake Tahoe [Placer County], California» (original citation). Holotype (♂) in CAS [# 5296]. Synonymy established, under the name *C. zimmermanni* LeConte, by Gidaspow (1959: 318).

Distribution. This species ranges from southern Saskatchewan to the Okanagan Valley in south-central British Columbia (Lindroth 1961a: 56), south to southeastern California, northwestern New Mexico (Casey, 1913: 75, as *Callisthenes diffractus*), and northern Kansas [see Gidaspow 1959: Fig. 11, as *C. luxatus*, *C. pimelioides*, and *C. zimmermanni*]. At least one specimen simply labeled from New Mexico is known (Gidaspow 1959: 311). The records from "Oklahoma" and "Texas" (Burgess and Collins 1917: 121, as *C. zimmermani*) need confirmation.
Records. CAN: AB, BC, SK **USA**: AZ, CA, CO, ID, KS, MT, NE, NM, NV, OR, SD, UT, WA, WY [OK, TX]
Note. Gidaspow (1959) considered *C. pimeloides* Walker [synonyms: *tegulatus* Casey, *viator* Casey, *pustulosus* Casey, *reflexus* Casey, and *parowanus* Casey] and *C. zimmermanni* LeConte [synonyms: *opacus* Géhin, *exaratus* Casey, *debilis* Casey, and *tahoensis* Van Dyke] as distinct species but Lindroth (1961a: 55) argued that the structural differences noted between these forms are no more than intraspecific variation.

Calosoma moniliatum (LeConte, 1852)

Callisthenes moniliatus LeConte, 1852a: 200. Type locality: «Oregon» (original citation). Syntype(s) in MCZ [# 633].
Calosoma laqueatum LeConte, 1860: 318. Type locality: «Saskatchewan» (original citation). Syntype(s) in MCZ [# 637]. Synonymy established by LeConte (1878e: 66).
Carabus bicolor Walker, 1866: 313 [primary homonym of *Carabus bicolor* Drury, 1773]. Type locality: British Columbia (inferred from title of the book). Syntype(s) in BMNH. Synonymy established, under the name *C. laqueatum* LeConte, by LeConte (1870: 399), confirmed by Lindroth (1961a: 53).
Callisthenes concinnus Casey, 1913: 66. Type locality: «Priest Lake [Bonner County], Idaho» (original citation). Lectotype (♂), designated by Lindroth (1975: 111), in USNM [# 37135]. Synonymy established by Jeannel (1940: 177).
Carabus taedatus var. *vancouvericus* Csiki, 1927: 286. Replacement name for *Carabus taedatus* var. *bicolor* Walker, 1866.

Distribution. This species ranges from Saskatchewan to southeastern British Columbia (Lindroth 1961a: 53-54), south to "California," "Arizona," and "Nebraska" (Gidaspow 1959: 305). The records from "Vancouver Island" (Gidaspow 1959: 305) and "Northwest Territory, Canada" (Burgess and Collins 1917: 114) are probably in error.
Records. CAN: AB, BC, SK **USA**: AZ, CA, ID, MT, NE, OR, WA

Calosoma monticola Casey, 1897

Calosoma monticola Casey, 1897: 342. Type locality: «Reno [Washoe County], Nevada» (original citation). One syntype in USNM [# 37124].

Callisthenes nevadensis Casey, 1913: 74. Type locality: «near Reno [Washoe County], Nevada» (original citation). One syntype in USNM [# 37125]. Synonymy established by Gidaspow (1959: 314).

Distribution. The range of this species extends from central Washington south at least to El Dorado County in California and western Nevada (Gidaspow 1959: 315); also recorded from "Utah" (Erwin 2007a: 79). One specimen simply labeled from Wyoming is known (Gidaspow 1959: 315). Notwithstanding Gidaspow (1959: 315), Hatch (1953: 54) did not record this species from Washington, Idaho, Oregon, and British Columbia and so the records from "Oregon" and "Idaho" (Bousquet and Larochelle 1993: 74) need confirmation.
Records. USA: CA, NV, UT, WA [ID, OR, WY]

Calosoma oregonum (Gidaspow, 1959)

Callisthenes oregonus Gidaspow, 1959: 317. Type species: «Oregon» (original citation). Holotype (♂) in SIM.

Distribution. This species is known from four specimens without locality data from "Oregon" (Gidaspow 1959: 317).
Records. USA: OR

Calosoma placerum (Gidaspow, 1959)

Callisthenes placerus Gidaspow, 1959: 309. Type locality: «Forest Hill, Placer County, California» (original citation). Holotype (♂) in CAS [# 8516].

Distribution. This species is confined to California where it is found as far south as San Diego County along the coast and Tuolumne County in the Sierra Nevada (Gidaspow 1959: 310).
Records. USA: CA

Calosoma schaefferi Breuning, 1928

Calosoma irregulare Schaeffer, 1915b: 235 [primary homonym of *Calosoma irregulare* Walker, 1866 and *Calosoma irregulare* Reitter, 1902]. Type locality: «Castella [Siskiyou County], California» (original citation). Holotype (♂) in USNM [# 42495].

Calosoma discors schaefferi Breuning, 1928b: 79. Replacement name for *Calosoma discors irregulare* Schaeffer, 1915.

Calosoma striatius Hatch, 1953: 54. Type locality: «Spencer's Butte, Eugene [Lane County], Oregon» (original citation). Holotype (♂) in USNM. Synonymy established by Erwin (2007a: 81).

Distribution. This species ranges from western Oregon (Hatch 1953: 54, as *C. striatus*) to Santa Cruz County in California (Gidaspow 1959: 309) along the Coast Ranges.
Records. USA: CA, OR

Calosoma subaeneum Chaudoir, 1869

Calosoma subaeneum Chaudoir, 1869b: 28. Type locality: «Californie» (original citation). Holotype [by monotypy] (♂) in MHNP (Deuve 1978: 250).

Distribution. This species is known from "Washington," "Idaho," and "California" (Burgess and Collins 1917: 114; Gidaspow 1959: 305). The records from British Columbia (Hatch 1953: 53; Gidaspow 1959: 305) probably refer to *C. cancellatum* Eschscholtz as pointed out by Lindroth (1961a: 53).
Records. USA: CA, ID, WA

Calosoma subasperatum Schaeffer, 1915

Calosoma subasperatum Schaeffer, 1915b: 235. Type locality: «California» (original citation), herein restricted to Dorris, Siskiyou County (see Gidaspow 1959: 316). Holotype location unknown.
Callisthenes klamathensis Casey, 1920: 169. Type locality: «Klamath Co[unty], Oregon» (original citation). One syntype in USNM [# 37123]. Synonymy established by Gidaspow (1959: 315).

Distribution. This rarely collected species is known from Klamath and Harney Counties in southern Oregon and Siskiyou County in northern California (Gidaspow 1959: 316); also recorded from "Nevada" (Erwin 2007a: 82).
Records. USA: CA, NV, OR

Calosoma wilkesii (LeConte, 1852)

Callisthenes wilkesii LeConte, 1852a: 200. Type locality: «Oregon» (original citation). Syntype(s) in MCZ [# 635]. Etymology. The specific name honors Charles Wilkes [1798-1877], American naval officer and explorer who commanded the United States Exploring Expedition (1838-1842), commonly known as the Wilkes Expedition. The expedition included naturalists who brought back entomological specimens.

Distribution. This species is found west of the Rocky Mountains from south-central British Columbia south to "California" (Lindroth 1961a: 54).
Records. CAN: BC **USA**: CA, ID, OR, WA

Genus *Carabus* Linnaeus, 1758

Carabus Linnaeus, 1758: 413. Type species: *Carabus granulatus* Linnaeus, 1758 (ICZN 1954). Etymology. From the Greek *carabos* (an animal in Aristotle) [mas-

culine]. The animal in question, named *Locusta* in Latin, is uncertain. According to Camus (1783: 259), *carabos* was a grasshopper, to Cuvier (1803: 369, 370) a crawfish, and to Latreille (1812: 142) a Cerambycidae. Olivier (1795: [35] 1) reported that the name *Carabus* came from the scientific name *Scarabaeus* slightly modified.

Diversity. About 910 species (Lorenz 2005: 72-114) in North America (14 species), Mexico (two species), and the Palaearctic (about 895 species) and Oriental (about five species) Regions.
Identification. Van Dyke (1944) reviewed the North American species and provided a key for the identification of all species except *C. auratus*. Lindroth (1961a: 30-42) covered all but two species (*C. finitimus* and *C. forreri*).

Subgenus *Carabus* Linnaeus, 1758

Carabus Linnaeus, 1758: 413. Type species: *Carabus granulatus* Linnaeus, 1758 (ICZN 1954).

Lichnocarabus Reitter, 1896: 161. Type species: *Tachypus vinctus* Weber, 1801 designated by Deuve (1991: 29). Etymology. From the Greek *lichnos* (greedy, dainty) and the generic name *Carabus* [*q.v.*] [masculine].

Paracarabus Lapouge, 1930: 263 [junior homonym of *Paracarabus* Reitter, 1896]. Type species: *Carabus granulatus* Linnaeus, 1758 designated by Nakane (1962: 39). Etymology. From the Greek *para* (beside, near) and the generic name *Carabus* [*q.v.*] [masculine].

Neocarabus Hatch, 1953: 50 [junior homonym of *Neocarabus* Bengtsson, 1927 and *Neocarabus* Lapouge, 1930]. Type species: *Carabus granulatus* Linnaeus, 1758 by monotypy. Note. Hatch (1949c: 144) proposed this name earlier but failed to provide at the time a description of the taxon. Therefore the name is unavailable from that date.

Diversity. Twenty-six species (Deuve 2004: 109-119) in the Nearctic (three species, one of them adventive) and Palaearctic (24 species) Regions.
Taxonomic Note. Members of *Archaeocarabus* Semenov (38 Chinese species) are included in this subgenus by some authors (e.g., Lorenz 2005: 72-73).

[**granulatus group**]

Carabus granulatus granulatus Linnaeus, 1758

Carabus granulatus Linnaeus, 1758: 413. Type locality not stated; «Suecia» selected by Lindroth (1957b: 339). Four possible syntypes, only one belonging to the present species, in LSL (Lindroth 1957b: 331).

Carabus granulatus hibernicus Lindroth, 1956a: 7. Type locality: «Killarney, Kerry Co[unty], Ireland» (original citation). Holotype (♂) in BMNH. Synonymy established by Deuve (1994a: 90).

Distribution. This European subspecies is adventive in North America where it is known from Newfoundland (Larson and Langor 1982: 592) to southeastern Manitoba (Roughley et al. 2010: 230; CMNH), and from east-central Minnesota (Gandhi et al. 2011: 673), Massachusetts (Van Dyke 1945a: 129), and Connecticut (Middlesex County, William L. Krinsky pers. comm. 2012) in the east, and from western British Columbia (Lindroth 1961a: 37), including the Queen Charlotte Islands (Kavanaugh 2010: 385), western Washington (Hatch 1953: 51), and Edmonton, Alberta (UASM), in the west. The first inventoried specimen collected in the east was found in New Brunswick in 1890 (Lindroth 1961a: 37) and in the west in Seattle, Washington, in 1924 (Hatch 1933c: 117).
Records. FRA: PM **CAN**: AB, BC (QCI, VCI), MB, NB, NF, NS, ON, PE, QC **USA**: CT, MA, MN, WA – **Adventive**

[**vinctus group**]

***Carabus goryi* Dejean, 1831**

Carabus limbatus Say, 1823a: 77 [primary homonym of *Carabus limbatus* Fabricius, 1777]. Type locality: «Charles Co[unty], Maryland» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 331), in MCZ [# 33091]. Note. «Maryland» was the area originally cited by Say (1823a: 77).

Carabus goryi Dejean, 1831: 544. Type locality: «Amérique septentrionale» (original citation). Holotype [by monotypy] (♀) in MHNP (Lindroth 1955b: 12; Toulgoët 1975: 17). Synonymy established by LeConte (1847: 444), confirmed by Lindroth (1955b: 12). Etymology. The specific name was proposed for Hippolyte Louis Gory [1800-1852], captain of cavalry and coleopterist in France. Gory was a founding member of the *Société Entomologique de France*. His collection, which contained over 18,000 species, was scattered after his death.

Carabus limbatus clarkei Blumenthal, 1958: 64. Type locality: «Klingman's Dome [= Clingmans Dome] (etwa 1900 m), Alleghenies, an der Grenze von North Carolina» (original citation). Syntype(s) [2 specimens (left elytra only) stated] location unknown. Synonymy established by Lindroth (1961a: 35). Etymology. The subspecific name was proposed for the American lepidopterist John Frederick Gates Clarke [1905-1990] who worked at the USNM.

Distribution. The range of this species extends from southern Maine (Dearborn and Donahue 1993: 2) to southeastern Minnesota (Donald P. Schwert pers. comm. 1989), including southernmost Ontario (Lindroth 1961a: 35), south to northeastern Mississippi (Snodgrass and Cross 1983: 14), northern Alabama (Löding 1945: 11), and northern Georgia (Fattig 1949: 10; CMNH). The record from Idaho (LeConte 1878a: 471; Hatch 1953: 51) is in error (Lindroth 1961a: 35); that from southeastern Louisiana (Summers 1874a: 79) needs confirmation.
Records. CAN: ON **USA**: AL, CT, DC, DE, GA, IA, IL, IN, KY, MA, MD, ME, MI, MN, MS, NC, NH, NJ, NY, OH, PA, RI, SC, TN, VA, VT, WI, WV [LA]

Carabus vinctus (Weber, 1801)

Tachypus vinctus Weber, 1801: 42. Type locality: «America septentrionali» (original citation), herein restricted to Newport News, Virginia (CNC). Syntype(s) location unknown.

Carabus interruptus Say, 1823a: 76 [primary homonym of *Carabus interruptus* Herbst, 1784]. Type locality: «Germantown [probably the neighborhood of Philadelphia], P[ennsylvani]a» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 331), in MCZ [# 33090]. Synonymy established by Dejean (1826: 79).

Carabus ligatus Germar, 1824: 6. Type locality: «America septentrionali» (original citation). Syntype(s) probably lost. Synonymy established by Horn (1876e: 127).

Carabus carinatus Dejean, 1826: 80 [primary homonym of *Carabus carinatus* Duftschmid, 1812]. Type locality: «Géorgie; environs de Philadelphie [Pennsylvania]» (original citation). Lectotype (♂), designated by Toulgoët (1975: 17), in MHNP. Synonymy established doubtfully with *C. ligatus* Germar by Dejean (1826: 80), confirmed by Lindroth (1955b: 12).

Carabus vinctus var. *georgiae* Csiki, 1927: 185. Replacement name for *Carabus vinctus* var. *carinatus* Dejean, 1826.

Distribution. This species ranges from Massachusetts (Harris 1833: 567; Frost 1910: 86) to southeastern Minnesota (Gandhi et al. 2005: 923), including southern Ontario (Lindroth 1961a: 34), south to southeastern Mississippi (Stone County, UASM), southwestern Alabama (Van Dyke 1945a: 126), and the Florida Panhandle (Peck and Thomas 1998: 16). The record from "Louisiana" (Summers 1874a: 79) is probably in error.
Records. CAN: ON **USA**: AL, CT, DC, DE, FL, GA, IA, IL, IN, MA, MD, MI, MN, MS, NC, NJ, NY, OH, PA, RI, SC, TN, VA, WV

Subgenus *Diocarabus* Reitter, 1896

Diocarabus Reitter, 1896: 185. Type species: *Carabus loschnikovii* Fischer von Waldheim, 1823 by monotypy. Etymology. Uncertain, possibly from the Greek *dis* (twice) or *dios* (Zeus, chief of the Greek gods) and the generic name *Carabus* [*q.v.*] [masculine].

Cryocarabus Lapouge, 1931: 575. Type species: *Carabus chamissonis* Fischer von Waldheim, 1820 by monotypy. Etymology. From the Greek *cryos* (cold) and the generic name *Carabus* [*q.v.*] [masculine].

Diversity. Eleven species in North America (one northern species) and Asia (ten species, one of them extending into northern European Russia).
Taxonomic Note. Deuve (2004: 186) included members of this taxon in the subgenus *Tomocarabus* Reitter, 1896.

Carabus chamissonis Fischer von Waldheim, 1820

Carabus chamissonis Fischer von Waldheim, 1820: plate 7. Type locality: «île d'Ounalachka [Alaska]» (Fischer von Waldheim 1822: 89). Syntype(s) in ZMH

(collection Mannerheim) (Silfverberg 1987: 14), SMTD (Grämer 1960: 98), and probably also in ZMMU (collection Eschscholtz). Etymology. This species was named after the German poet Adelbert Loginovich von Chamisso [1781-1838], who served as botanist on the first scientific voyage around the world, 1815-1818, under the command of Otto Evstaf'evich von Kotzebue on the Russian ship *Rurik*.

Carabus brachyderus Wiedemann [in Wiedemann and Germar], 1821: 110. Type locality: «Unalaschka [Alaska]» (original citation). Syntype(s) location unknown (possibly in ZMUC). Synonymy established by Mannerheim (1843: 186).

Carabus groenlandicus Dejean, 1831: 554. Type locality: «côtes du Groenland» (original citation), which is incorrect (Lindroth 1955b: 12). Lectotype (♂), designated by Toulgoët (1975: 16), in MHNP. Synonymy established by LeConte (1863b: 3), confirmed by Lindroth (1955b: 12).

Carabus groenlandicus washingtoni Casey, 1920: 155. Type locality: «M[oun]t Washington [Coos County], New Hampshire» (original citation). Three syntypes [3 originally cited] in USNM [# 46058]. Synonymy established by Breuning (1932: 300).

Carabus rugosostrigatus Mandl, 1955: 237. Type locality: «Juldus [= Kaidu He, Xinjiang Uygur Autonomous Region, China]» (original citation), which is incorrect (Deuve 1991: 51). Holotype (♀) in NHMW. Synonymy established by Deuve (1991: 51).

Distribution. This species occurs from the Labrador coast to the Seward Peninsula in Alaska (Lindroth 1961a: 33-34), including the Aleutians and Kodiak Island, south to northern British Columbia (CNC); isolated on high mountains in Gaspé Peninsula (Quebec), New Hampshire (Lindroth 1961a: 34), and Maine (Mount Katahdin, CNC). Fossil remnants of this species, dated between about 16,700 and 21,500 years B.P., have been unearthed in southeastern Iowa (Baker et al. 1986: 96) and northeastern Illinois (Garry et al. 1990: 394).

Records. CAN: AB, BC, LB, MB, NT, NU, ON, QC, SK, YT **USA**: AK, ME, NH

Subgenus *Aulonocarabus* Reitter, 1896

Aulonocarabus Reitter, 1896: 192. Type species: *Carabus canaliculatus* Adams, 1812 designated by Nakane (1962: 39). Etymology. From the Greek *aulonos* (channel) and the generic name *Carabus* [*q.v.*], probably alluding to one of the two species included, *Carabus canaliculatus* which is the Latin name for channel [masculine].

Baptaulonocarabus Imura, 2002: 130. Type species: *Carabus truncaticollis* Eschscholtz, 1833 by original designation. Synonymy established by Deuve (2004: 197). Etymology. From the Greek *baptos* (dyed) and the generic name *Aulonocarabus* [*q.v.*] [masculine].

Diversity. Thirteen species (Deuve 2004: 197-203) in North America (one Holarctic species) and Asia (13 species, one of them extending into northern European Russia).

Carabus truncaticollis truncaticollis Eschscholtz, 1833

Carabus truncaticollis Eschscholtz, 1833: 22. Type locality: «Auf den Inseln des Kamtschatkischen Meeres, St. Georg und St. Paul [Pribilof Islands, Alaska]» (original citation). Syntype(s) [2 originally cited] location unknown (possibly in ZMMU).

Carabus lutshnikianus Basilewsky, 1937: 63. Type locality: «Ile Saint-Paul, Alaska» (original citation). Holotype (♀) location unknown. Synonymy established by Van Dyke (1945a: 97).

Carabus truncaticollis alaskensis Basilewsky, 1937: 63. Type locality: «Ile Saint-Paul, Alaska» (original citation). Holotype location unknown. Synonymy established by Van Dyke (1945a: 97).

Distribution. This Holarctic subspecies is known from a few old specimens collected on the Kamchatka Peninsula (Shilenkov in Kryzhanovskij et al. 1995: 43) and from Alaska, including the Pribilof Islands, to the Mackenzie River delta in northern Northwest Territories (Lindroth 1961a: 40).

Records. CAN: NT, YT **USA**: AK – **Holarctic**

Note. 1. This species is listed in the subgenus *Aulonocarabus* Reitter by Kryzhanovskij et al. (1995: 43), Bousquet et al. (2003: 134), and Deuve (2004: 197) and in the subgenus *Diocarabus* by Casale and Kryzhanovskij (2003: 93) and Lorenz (2005: 85). 2. Two other subspecies of *Carabus truncaticollis* occur in Asia (Deuve 2004: 197-198).

Subgenus *Homoeocarabus* Reitter, 1896

Homoeocarabus Reitter, 1896: 144. Type species: *Carabus maeander* Fischer von Waldheim, 1820 by monotypy. Etymology. From the Greek *homoios* (like, resembling) and the generic name *Carabus* [*q.v.*] [masculine].

Diversity. One Holarctic species.

Carabus maeander maeander Fischer von Waldheim, 1820

Carabus maeander Fischer von Waldheim, 1820: plate 10. Type locality: «Sibiria, propre Nertschinsk» (Fischer von Waldheim 1822: 104). Syntype(s) in SMTD (Grämer 1960: 96).

Carabus incompletus Fischer von Waldheim, 1828: 303. Type locality: «Kamtschatka [Russia]» (original citation). Syntype(s) location unknown. Synonymy established by Breuning (1932: 411).

Carabus ehrenbergii Fischer von Waldheim, 1829b: 368. Type locality: «Kamtschatkae [Russia]» (original citation). Syntype(s) location unknown. Synonymy established, under the name *C. incompletus* Fischer von Waldheim, by Heyden (1879: 166).

Carabus lapilayi Laporte, 1834: 89. Type locality: «Terre-Neuve [= Newfoundland]» (original citation). Syntype(s) location unknown. Synonymy established by LeConte (1866: 78). Etymology. The specific name was proposed for Auguste Jean Marie Bachelot de la Pylaie (also spelled de Lapilaye) [1786-1856], French bota-

nist, explorer, and archaeologist. Bachelot de la Pylaie made two trips to Newfoundland and Saint-Pierre and Miquelon and published a flora (unfinished) of the region.

Carabus hudsonicus Motschulsky, 1866: 293. Type locality: «Hudson-Bay» (original citation). Lectotype [as holotype], designated by Kryzhanovskij (1968: 178), in ZMMU. Synonymy established with doubt by Horn (1870a: 70), confirmed by Kryzhanovskij (1968: 178).

Carabus maeander var. *simoni* Heyden, 1879: 166. Type locality: «Huds[on Bay]» (original citation). Syntype(s) location unknown. Synonymy established by Roeschke (1900: 70).

Carabus maeander var. *excostatus* Kraatz, 1880: 338. Type locality not stated. Holotype [by monotypy] location unknown (possibly in DEI). Synonymy established by Breuning (1932: 412).

Carabus lecontei Géhin, 1885: 26. Type locality: «Detroit [Wayne County, Michigan]» (original citation for *Carabus* [no] 3 of LeConte 1847: 444). Syntype(s) presumably lost. Synonymy established by Breuning (1932: 412). Note. This taxon was described by a bibliographic reference to a previously published description, that of *Carabus* [no] 3 of LeConte (1847: 444).

Carabus maeander atlanticus Lapouge, 1925: 191. Type locality: «Saint-Pierre-Miquelon» (original citation). Syntype(s) location unknown (most probably destroyed). Synonymy established, under the name *C. maeander* n[atio] *lapilayi* Laporte, by Breuning (1932: 412).

Distribution. This Holarctic subspecies ranges from western Siberia (Bousquet et al. 2003: 154) to the Bering Sea Coast and from Alaska (Lindroth 1961a: 36) to Newfoundland (Lindroth 1955a: 23), south at least to northeastern New York (Powell 1977: 148), northern Iowa (Larsen et al. 2003: 292), and northern New Mexico (Brantley et al. 2003: 382; Sandoval County, UASM). The record from "Pennsylvania" (Bousquet and Larochelle 1993: 76) needs confirmation.

Records. FRA: PM **CAN**: AB, BC, LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK **USA**: AK, CO, IA, IL, IN, ME, MI, MN, MT, ND, NM, NY, OH, SD, VT, WI [PA] – **Holarctic**

Note. Two other subspecies of this species, *C. maeander chejuensis* Deuve from South Korea and *C. maeander paludis* Géhin from the Far East, Japan, and China, are found in Asia. Deuve (2004: 183) also retained *C. lapilayi* Laporte as a valid subspecies.

Subgenus *Hemicarabus* Géhin, 1876

Hemicarabus Géhin, 1876a: 25. Type species: *Carabus nitens* Linnaeus, 1758 designated by Géhin (1885: xix). Etymology. From the Greek prefix *hemi-* (half) and the generic name *Carabus* [*q.v.*] [masculine].

Diversity. Four species in North America (one species), Asia (two species), and Europe (one species).

Carabus serratus Say, 1823

Carabus serratus Say, 1823a: 77. Type locality: «Asheville [Buncombe County], N[orth] C[arolina]» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 331), in MCZ [# 33092].

Carabus lineatopunctatus Dejean, 1826: 77. Type locality: «Amérique septentrionale» (original citation). Three possible syntypes in MHNP (Lindroth 1955b: 12). Synonymy established by Dejean (1826: 77), confirmed by Lindroth (1955b: 12).

Carabus canadensis LeConte [in Melsheimer], 1853: 10. Type locality: «Canada» (original citation for *C. ligatus* Germar *sensu* Kirby, 1837), restricted to «Nipigon, W[estern] Ont[ario]» by Lindroth (1961a: 40). Syntype(s) probably in BMNH. Synonymy established by Henshaw (1882: 207). Note. This name was proposed for *Carabus ligatus* Germar, 1824 *sensu* Kirby (1837: 18).

Carabus tatumi Motschulsky, 1866: 293. Type locality: «Hudson-Bay dans l'Amérique arctique» (original citation). Lectotype [as holotype] (♀), designated by Kryzhanovskij (1968: 184), in ZMMU. Synonymy established by Horn (1870a: 70), confirmed by Kryzhanovskij (1968: 184).

Carabus serratus vegasensis Casey, 1913: 59. Type locality: «Las Vegas [San Miguel County], New Mexico; probably Colorado» (original citation). Three syntypes in USNM [# 46055]. Synonymy established by Breuning (1933b: 858).

Distribution. This species ranges from Newfoundland (Lindroth 1955a: 26) to the Okanagan Valley in south-central British Columbia (Lindroth 1961a: 41), south to eastern Oregon (Hatch 1953: 50), central New Mexico (Fall and Cockerell 1907: 156), eastern Kansas (Popenoe 1877: 22; Horn 1872c: 384), and northwestern South Carolina (Ciegler 2000: 29).

Records. CAN: AB, BC, MB, NB, NF, NS (CBI), ON, PE, QC, SK **USA**: CO, CT, DC, DE, GA, IA, ID, IL, IN, KS, MA, MD, ME, MI, MN, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OR, PA, RI, SC, SD, VA, VT, WA, WI, WV, WY

Subgenus *Archicarabus* Seidlitz, 1887

Archicarabus Seidlitz, 1887: 6 [Gattung]. Type species: *Carabus nemoralis* Müller, 1764 by monotypy. Etymology. From the Greek *arche* (beginning) and the generic name *Carabus* [*q.v.*] [masculine].

Archeocarabus Bengtsson, 1927: 83. Type species: *Carabus nemoralis* Müller, 1764 by original designation. Etymology. From the Greek *arche* (beginning) and the generic name *Carabus* [*q.v.*] [masculine].

Diversity. Ten species in Europe and the Middle East (Deuve 2004: 167-173), one of them adventive in North America.

Carabus nemoralis nemoralis Müller, 1764

Carabus nemoralis O.F. Müller, 1764: 21. Type locality: Frederiksdal [Sjaelland, Denmark] (inferred from title of the book). Syntype(s) lost.

Carabus nemoralis var. *canadensis* Lapouge, 1908a: 19 [primary homonym of *Carabus canadensis* LeConte, 1853]. Type locality: «Terre-Neuve et New Brunswick» (original citation). Syntype(s) location unknown. Synonymy established by Breuning (1933a: 667). Note. The specimen from "France: Ardèche" in MHNP designated as lectotype of this taxon by Toulgoët (1976: 32) is certainly not a syntype since the taxon was described from specimens collected in Newfoundland and New Brunswick.

Distribution. This European subspecies is adventive in North America where it is found from Newfoundland (Lindroth 1955a: 27) to central Minnesota (Crow Wing County, CNC), south to northeastern Virginia (Falls Church, UASM) in the east, and from the Queen Charlotte Islands (Kavanaugh 1992: 51) to central Alberta (Lindroth 1961a: 37), south to southeastern Wyoming (Burne 1989: 290), northern Utah (Salt Lake County, CMNH), and central California (Lindroth 1961a: 37); seemingly isolated in the Saskatoon area, Saskatchewan (Ronald R. Hooper pers. comm. 1990). The first inventoried specimens collected on this continent was found in New Brunswick in 1890 (Horn 1892d: 61) and on the west coast around 1909 in Seattle, Washington (Hatch 1933c: 117). The date of 1870 listed by Lindroth (1961a: 37) for the first occurrence of this species on the continent is probably a lapsus for 1890. The species was also intentionally introduced in New England as predators of gypsy moths prior to 1911 (Smith 1959: 9).
Records. CAN: AB, BC (QCI, VCI), NB, NF, NS, ON, PE, QC, SK **USA**: CA, CT, DE, ID, IL, IN, MA, ME, MI, MN, MT, NH, NJ, NV, NY, OH, OR, PA, RI, SD, UT, VA, VT, WA, WI, WY – **Adventive**

Subgenus *Tachypus* Weber, 1801

Tachypus Weber, 1801: 19. Type species: *Carabus auratus* Linnaeus, 1760 designated by Ádám (1996: 11). Etymology. From the Greek *tachys* (swift, quick, fast) and *pous* (foot) [masculine].

Autocarabus Seidlitz, 1887: 9 [Gattung]. Type species: *Carabus auratus* Linnaeus, 1760 by monotypy. Etymology. From the Greek *autos* (self) and the generic name *Carabus* [*q.v.*] [masculine].

Goniocarabus Reitter, 1896: 150 [junior homonym of *Goniocarabus* Géhin, 1885]. Type species: *Carabus cancellatus* Illiger, 1798 designated by Jeannel (1941b: 109). Etymology. From the Greek *gonios* (angle) and the generic name *Carabus* [*q.v.*] [masculine].

Cancellocarabus Lutshnik, 1924: 38, 49. Replacement name for *Goniocarabus* Reitter, 1896. Etymology. From the Latin *cancellus* (lattice) and the generic name *Carabus* [*q.v.*] [masculine].

Diversity. Four European species, one of them extending into Siberia. One species is adventive in eastern North America.

Faunistic Note. The European *Carabus cancellatus* Illiger has been recorded from North Carolina (Horn 1883b: 270), Georgia (Fattig 1949: 10), and Wisconsin (Leng 1920: 44) but no specimens have been collected in recent decades. The species is probably not established on this continent.

Carabus auratus auratus Linnaeus, 1760

Carabus auratus Linnaeus, 1760: 219. Type locality: «Suecia» (original citation), which is probably incorrect (Lindroth 1957b: 328). One possible syntype in LSL (Lindroth 1957b: 328).

Distribution. This European subspecies was intentionally introduced into Massachusetts in 1908 and 1910 (Smith 1959: 7) for gypsy moth control. It is now established in New England (Lindroth 1961a: 37). The first inventoried specimen collected subsequently to its release was found in June 1920 in Winchester, Massachusetts (Smith 1959: 7).

Records. USA: CT, MA, ME, NH, VT – **Adventive**

Note. In a cladistic analysis conducted by Arndt et al. (2003: 312, Fig. 7.16), this species turned out as the sister-group to all remaining species of *Carabus*.

Subgenus *Tanaocarabus* Reitter, 1896

Tanaocarabus Reitter, 1896: 135. Type species: *Carabus sylvosus* Say, 1823 designated by Breuning (1933b: 895). Etymology. From the Greek *tanaos* (outstretched, long) and the generic name *Carabus* [*q.v.*], probably alluding to the elongate shape of the adults [masculine].

Neocarabus Lapouge, 1931: 569 [junior homonym of *Neocarabus* Bengtsson, 1927]. Type species: *Carabus taedatus* Fabricius, 1787 by monotypy.

Durangocarabus Imura, 2002: 141. Type species: *Carabus forreri* Bates, 1882 by original designation. Synonymy established by Deuve (2004: 195). Etymology. From the name of the state Durango in Mexico and the generic name *Carabus* [*q.v.*] [masculine].

Diversity. Five species in North America (four species) and Mexico (two species). One of Mexican species, *C. hendrichsi* Bolivar, Rotger, and Coronado, is endemic to the Sierra Madre Oriental.

Carabus finitimus Haldeman, 1852

Carabus finitimus Haldeman, 1852: 373. Type locality: «Fort Gates [Coryell County, Texas]» (original citation). Three possible syntypes, each with a dark red disc, in MCZ (collection LeConte).

Carabus lecontei Casey, 1913: 57 [primary homonym of *Carabus lecontei* Géhin, 1885]. Type locality: «Texas» (original citation). Holotype [by monotypy] (♀) in USNM [# 46052]. Synonymy established by Breuning (1933b: 896).

Carabus caseyi Angell, 1914: 75. Replacement name for *Carabus lecontei* Casey, 1913.

Distribution. This species is known from Kansas (Chautauqua County, CMNH; Erwin 2007a: 110), Wichita National Forest in Oklahoma, and eastern Texas (Van Dyke 1945a: 117).
Records. USA: KS, OK, TX

Carabus forreri forreri Bates, 1882

Carabus forreri Bates, 1882b: 320. Type locality: «Ciudad, Durango, Mexico» (original citation). Syntype(s) in MHNP (Toulgoët 1975: 232). Etymology. The specific name was proposed for Alfonse Forrer [1836-1899], a collector of natural history objects. Born in London, Forrer moved to the United States while a young man and, at the close of the civil war, accepted a commission from the British Museum to collect zoological material along the west coast of the United States and Mexico. He supplied many other European museums with his material and also collected for Salvin and Godman. In July 1900, his personal collection, consisting mainly of fishes, birds, and insects, was offered for sale for $500 by his widow.

Carabus townsendi Casey, 1905: 160. Type locality: «Meadow Valley (7,300 feet), six miles south of Colonia Garcia, Chihuahua, Mexico, in the Sierra Madre Mountains» (original citation). Holotype [by monotypy] in USNM. Synonymy established by Breuning (1933b: 897). Etymology. This taxon was named after the American entomologist Charles Henry Tyler Townsend [1863-1944] who published on many subjects but is primarily known for his studies on Sarcophagidae and Tachinidae. Townsend worked for many years in South America and made significant contributions in the fields of agricultural and medical entomology. At the time of his death he was living in a suburb of São Paulo where he founded his own publishing company.

Distribution. This species is known from southeastern Arizona and the state of Durango in Mexico (Van Dyke 1945a: 118-119).
Records. USA: AZ – Mexico
Note. *Carabus forreri willi* Deuve is known from Chihuahua in Mexico.

Carabus sylvosus Say, 1823

Carabus sylvosus Say, 1823a: 75. Type locality: North America (inferred from title of the book), restricted to «Asheville [Buncombe County], N[orth] C[arolina]» by Lindroth (1961a: 41). Lectotype (♂), designated by Lindroth and Freitag (1969: 330), in MHNP.

Carabus lherminieri Dejean, 1826: 152. Type locality: «Amérique septentrionale» (original citation). One syntype in MHNP (Lindroth 1955b: 12; Toulgoët 1975: 20). Synonymy established by LeConte (1863b: 3), confirmed by Lindroth (1955b: 12). Etymology. The specific name was proposed for Félix Louis L'Herminier [1779-1833], a French pharmacist and naturalist who lived for over 30 years in

Guadeloupe. L'Herminier also spent times in South Carolina where he gathered insects; some of them were sent to Dejean.

Distribution. This species ranges from "Maine" (Larochelle and Larivière 1990a: 27) to northern Minnesota (Gandhi et al. 2005: 923), north to north-central Ontario (Spires 1985: 79), south to "Texas" (Van Dyke 1945a: 116, as *C. sylvosus lherminieri*) and central Florida (Peck and Thomas 1998: 16). The record from "Utah" (Bousquet and Larochelle 1993: 77) is in error.
Records. CAN: ON, QC **USA**: AL, AR, CT, DC, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, NH, NJ, NY, OH, OK, PA, RI, SC, TN, TX, VA, VT, WI, WV

Carabus taedatus agassii LeConte, 1850

Carabus agassii LeConte, 1850: 209. Type locality: «Kakàbeka [Ontario]» (original citation). Syntype(s) in MCZ [# 619]. Etymology. The specific was proposed in honor of the Swiss zoologist, geologist, paleontologist, and nomenclatorist Jean Louis Rodolphe Agassiz [1807-1873], one of the best-known scientists of his time. In his late 30s, Agassiz moved to United States and became professor of zoology and geology at Harvard University where he founded the Museum of Comparative Zoology in 1859 and served as the museum's first director until his death. Agassiz is remembered today for his theories on ice ages and other scientific accomplishments but also for his scientific racism and his resistance to Darwin's theory of evolution.

Carabus oregonensis LeConte, 1854a: 16. Type locality: «Prairie Paso [= possibly Bear Prairie Pass, Lewis County, Washington]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 620]. Synonymy established by Breuning (1933b: 719).

Carabus taedatus var. *canadicus* Roeschke, 1900: 69. Type locality: «Canada, wenigstens über den östlichen» (original citation). Syntype(s) in DEI (Edelbrock 1986: 64). Synonymy established by Breuning (1933b: 719).

Carabus patulicollis Casey, 1913: 57. Type locality: «probably Colorado» (original citation). Holotype [by monotypy] (♂) in USNM [# 46053]. Synonymy established by Lindroth (1961a: 39)

Carabus taedatus montanicus Casey, 1913: 58. Type locality: «Coeur d'Alene [Kootenai County], Idaho» (original citation). Holotype [by monotypy] (♂) in USNM [# 46051]. Synonymy established by Breuning (1933b: 719).

Carabus franciscanus Casey, 1913: 58. Type locality: «coast region near San Francisco, California» (original citation), which is probably incorrect (Lindroth 1961a: 38). Holotype [by monotypy] (♂) in USNM [# 46054]. **New synonymy**.

Carabus stocktonensis Casey, 1920: 155. Type locality: «Eureka and Stockton, Utah» (original citation). Two syntypes in USNM [# 46056]. Synonymy established by Lindroth (1961a: 39).

Carabus taedatus coloradensis Breuning, 1933b: 719. Type locality: «Longs Peak [Boulder County], Colorado» (original citation). Holotype (♂) in ZMUA (Boer 2002:

41). Synonymy established, under the name *C. taedatus patulicollis* Casey, by Van Dyke (1945a: 113).

Distribution. This subspecies ranges from Newfoundland (Lindroth 1955a: 25) to Yukon Territory, south to the Sierra Nevada in east-central California, southern Arizona, southern New Mexico, and southwestern South Dakota (Purrington et al. 2002: 202) [see Edelbrock 1986: Fig. 69].
Records. CAN: AB, BC (QCI), MB, NF, NT, ON, QC, SK, YT **USA**: AZ, CA, CO, ID, MT, ND, NM, NV, OR, SD, UT, WA, WY

Carabus taedatus bicanaliceps Casey, 1920

Carabus bicanaliceps Casey, 1920: 154. Type locality: «Olympia [Thurston County], Washington» (original citation). Holotype [by monotypy] (♀) in USNM [# 46057].

Distribution. This subspecies is known from Vancouver Island and the Puget Sound area in Washington south to central Oregon between the coast and the Cascade Range (Edelbrock 1986: 49, Fig. 69).
Records. CAN: BC (VCI) **USA**: OR, WA

Carabus taedatus rainieri Van Dyke, 1945

Carabus taedatus rainieri Van Dyke, 1945a: 108. Type locality: «Paradise Park (6000 ft.), M[oun]t Rainier [Pierce County], Wash[ington]» (original citation). Holotype (♂) in CAS [# 5442].

Distribution. This subspecies is known from high altitude along the northern Cascades and from coastal mountains of Oregon (Edelbrock 1986: 49).
Records. CAN: BC **USA**: OR, WA

Carabus taedatus taedatus Fabricius, 1787

Carabus taedatus Fabricius, 1787: 196. Type locality: «America boreali» (original citation), restricted to «Unalaska, Aleut[ian] Isl[ands] [Alaska]» by Lindroth (1961a: 38). Two syntypes in BMNH (collection Banks) and ZMUC (Zimsen 1964: 52).

Carabus baccivorus Fischer von Waldheim, 1820: plate 7. Type locality: «insula Unalaschka [Alaska]» (Fischer von Waldheim 1822: 87). Syntype(s) in ZMH (collection Mannerheim) (Silfverberg 1987: 13), SMTD (Grämer 1960: 100), and probably also in ZMMU (collection Eschscholtz). Synonymy established by LeConte (1857c: 30), confirmed by Edelbrock (1986: 43).

Carabus seriatus Wiedemann [in Wiedemann and Germar], 1821: 109. Type locality: «Unalaschka [Alaska]» (original citation). Syntype(s) location unknown (possibly in ZMUC). Synonymy established, under the name *C. baccivorus* Fischer von Waldheim, by Mannerheim (1843: 187).

Carabus gladiator Motschulsky, 1866: 285. Type locality: «Hudson-Bay» (original citation), which is likely incorrect. Syntype(s) in ZMMU (Edelbrock 1986: 64)

though not listed by Keleinikova (1976). Synonymy established, under the name *C. taedatus* var. *baccivorus* Fischer von Waldheim, by Horn (1870a: 70), confirmed by Edelbrock (1986: 43).

Distribution. This subspecies is restricted to southeastern Alaska including the Aleutian Islands (Edelbrock 1986: 49, Fig. 69).
Records. USA: AK
Note. 1. Edelbrock (1986) studied the geographical variation in *Carabus taedatus* and recognized four species, and one of them (*C. agassii*) was segregated into two subspecies (*agassii* and *franciscanus*). I have followed Deuve (1994a: 144) in listing Edelbrock's species as subspecies. Furthermore I do not recognize the form *C. agassii franciscanus* as subspecifically distinct. 2. This species is placed in the subgenus *Oreocarabus* Géhin by some authors (e.g., Breuning 1933b: 719; Lorenz 2005: 91).

Subgenus *Megodontus* Solier, 1848

Megodontus Solier, 1848: 58. Type species: *Carabus caelatus* Fabricius, 1801 by original designation. Etymology. From the Greek *megas* (large) and *odontos* (tooth), probably alluding to the large mentum tooth of the adult ("*dent du sinus du mentum grande*") [masculine].

Megalodontus Jacobson, 1905: 217. Unjustified emendation of *Megodontus* Solier, 1848.

Nabicarabus Kwon and Lee, 1984: 102. Type species: *Carabus vietinghoffii* Adams, 1812 by original designation. Synonymy established by Deuve (1994a: 153). Etymology. From the Greek *nabis* (giraffe) and the generic name *Carabus* [*q.v.*] [masculine].

Diversity. Twenty-two species (Deuve 2004: 363-375) in North America (one Holarctic species) and Eurasia (22 species).

Carabus vietinghoffii vietinghoffii Adams, 1812

Carabus vietinghoffii Adams, 1812: 170. Type locality: «ubi ducentis fere milliaribus ultra urbem Jakutzk, ad ripas fluvii Lenae [= about 200 "miles" pass the city of Yakutsk, on the banks of the Lena River], Sibiriae orientalis [Russia]» (original citation). Syntypes in SMTD (Grämer 1960: 95). Etymology. The specific name was proposed for Baron de Vietinghoff [1767-1829], Latvian naturalist also named Christoph Burchard Scheel.

Carabus vietinghovi var. *schtschegolewi* Poppius, 1906a: 15. Type locality: «oberen Lena [Siberia, Russia]» (original citation). Holotype [by monotypy] (♀) location unknown. Synonymy established by Breuning (1926: 70).

Carabus vietinghoffi alaskanus Obydov, 1996: 85. Type locality: «Umiat, Alaska» (original citation). Holotype (♂) in Obydov's collection (Moscow, Russia). Synonymy established by Lorenz (2005: 108).

Distribution. This subspecies is found in eastern Siberia and in North America from the Seward Peninsula in Alaska to Bathurst Inlet on the arctic coast of Nunavut (Lindroth 1961a: 42).
Records. CAN: NT, NU, YT **USA**: AK – **Holarctic**
Note. Two other subspecies of this species occur in eastern Asia.

Subfamily CICINDELINAE Latreille, 1802

Cicindeletae Latreille, 1802: 77. Type genus: *Cicindela* Linnaeus, 1758.

Diversity. Worldwide, with more than 2,500 species (Lorenz 2005: 22-62) arrayed in five tribes: Amblycheilini (13 species), Cicindelini (more than 1,710 species), Collyridini (about 335 Asian species), Ctenostomatini (about 225 species in the Neotropical and Afrotropical Regions), Manticorini (14 Afrotropical species), and Megacephalini (about 200 species).

Tribe Amblycheilini Csiki, 1903

Amblychilinae Csiki, 1903: 124. Type genus: *Amblychila* Agassiz, 1846 (unjustified emendation of *Amblycheila* Say, 1830 not in prevailing usage) (= *Amblycheila* Say, 1830).
Omites W. Horn, 1907b: 466. Type genus: *Omus* Eschscholtz, 1829.

Diversity. Western Hemisphere, with 13 species in North America (ten species), Mexico (two species), and South America (one species) arrayed in three genera: *Amblycheila* (seven species), *Omus* (five species), and *Picnochile* Motschulsky (one species in Chile and Argentina).

Genus *Amblycheila* Say, 1830

Amblycheila Say, 1830a: 67. Type species: *Manticora cylindriformis* Say, 1823 by original designation. Etymology. From the Greek *amblys* (blunt, obtuse) and *cheila* (lip, by extension labrum [upper lip]), probably alluding to absence of teeth on the apical edge of the labrum of adults of this genus contrary to those of the genus *Cicindela* [feminine].
Amblychila Agassiz, 1846: 16. Unjustified emendation of *Amblycheila* Say, 1830.
Amblyprosopa Gistel, 1850: 75. Unnecessary replacement name for *Amblycheila* Say, 1830.
Chaleposomus Chaudoir, 1861a: 337. Unnecessary replacement name for *Amblycheila* Say, 1830. Etymology. From the Greek *chalepos* (difficult, severe, harsh) and *soma* (body) [masculine].

Diversity. Seven species (Pearson et al. 2006: 48) in western North America (five species) and northern Mexico (two species: *A. nyx* Sumlin from west-central Coahuila and *A. halffteri* Mateu from San Luis Potosí).

Identification. Vaurie (1955) reviewed the species and offered a key for their identification. Subsequently one new North American species, *A. hoversoni* Gage, was described in 1991. Pearson et al. (2006: 22) field guide includes a key to the North American species.
Faunistic Note. The record of *A. halffteri* from "Texas" (Bousquet and Larochelle 1993: 52) is in error. The species is known so far only from San Luis Potosí in Mexico.

Amblycheila baroni Rivers, 1890

Amblychila baroni Rivers, 1890b: 111. Type locality: «Pantano [= Pima] County, Arizona» (original citation). Holotype [by monotypy] (♀) probably in DEI. Etymology. The specific name was proposed in honor of Oscar Theodor Baron [1847-1926]. Born in Germany, Baron spent about 30 years in California where he collected extensively Lepidoptera but also Coleoptera and other insects in Mendocino and Fresno Counties. Moreover he travelled to Arizona, Mexico, Central America, and South America. He returned to Germany where he lived his last 30 years. Note. Leng (1902: 98) reported that the holotype was "found dead in a canyon ... at an elevation of 5000 feet."

Amblychila baroni longipes Casey, 1909: 253. Type locality: «Baboquivari M[oun]t[ain]s [Pima County], Arizona» (original citation). One syntype in USNM [# 45890]. Synonymy established by Horn (1910a: 123).

Amblycheila baroni enodis Casey, 1916: 5. Type locality: «Garces, Huachuca M[oun]t[ain]s, Cochise Co[unty], Arizona» (original citation). One syntype in USNM [# 45892]. Synonymy established by Horn (1926: 52).

Amblycheila ventricosa Casey, 1924: 1. Type locality: «Huachuca M[oun]t[ain]s [Cochise County], Arizona» (original citation). Holotype [by monotypy] (♀) in USNM [# 45891]. Synonymy established by Horn (1926: 52).

Distribution. This species, also known as the "Montane Giant Tiger Beetle[7]," is restricted to mountains in southeastern Arizona and a small area in western Texas near Big Bend National Park (Pearson et al. 2006: 48).
Records. USA: AZ, TX

Amblycheila cylindriformis (Say, 1823)

Manticora cylindriformis Say, 1823b: 139. Type locality: «Arkansa[s] [River] ... found at the base of the Rocky Mountains» (original citation). Syntype(s) lost. Note. Say's specimen(s) were probably collected in Colorado.

Distribution. This species, also known as the "Great Plains Giant Tiger Beetle," ranges from southwestern South Dakota (Howden 1970: 8) and eastern Wyoming (Huber 1978: 75) south to western Texas [see Pearson et al. 2006: Map 3]. The record from

[7] All vernacular names of tiger beetles are taken from Pearson et al. (2006) and Erwin and Pearson (2008).

"Arizona" (Horn 1910a: 123) is in error; those from "Arkansas" (Leng 1902: 97; Erwin and Pearson 2008: 20) are probably based on a misinterpretation of the type locality.
Records. USA: CO, KS, NE, NM, OK, SD, TX, WY

Amblycheila hoversoni Gage, 1991

Amblycheila hoversoni Gage, 1991: 2. Type locality: «16 mi[les] south of George West, Live Oak County, Texas» (original citation). Holotype (♂) in MCZ [# 33379].

Distribution. This species, also known as the "South Texas Giant Tiger Beetle," is found only in south and west-central Texas (Pearson et al. 2006: 51).
Records. USA: TX

Amblycheila picolominii Reiche, 1840

Amblycheila picolominii Reiche, 1840: 560. Type locality: «port ou baie de Saint-Francisco, dans la Nouvelle-Californie, sous le 48e degré environ de latitude septentrionale» (original citation), which is incorrect. Holotype [by monotypy] (♀) in MHNP (Horn 1904: 97). Etymology. The specific name was proposed for the collector of the type specimen, count Enea Silvio Vincenzo [Vincent] Piccolomini who spent ten years, "engaged in scientific pursuits," in Mexico and United States. Note. 1. Reiche originally used two different spellings for this species, *picolominii* (page 560) and *piccolominii* (plate 19). As far as I know, Reiche did not subsequently use the species name and nobody acted as "First Reviser." Therefore, I select "*picolominii*" as the correct original spelling since it is in prevailing usage. 2. George Horn (1893: 281) remarked that the specimens collected by "Picolomini" and sold by Richard Henri Dupont (born Richard Henry Puech) as found in California, which included the holotype of this species, were in fact collected "anywhere from western Texas to central Arizona."

Distribution. This species, also known as the "Plateau Giant Tiger Beetle," occurs from the northern half of Arizona to western Texas, north to southwestern Colorado (Kippenhan 1994: 21) and southeastern Utah (Krell and Brookhart 2012: 110). The record from "Oklahoma" (Bousquet and Larochelle 1993: 52) is in error.
Records. USA: AZ, CO, NM, TX, UT

Amblycheila schwarzi Horn, 1904

Amblychila schwarzi W. Horn, 1904: 98. Type locality not stated; «Truxton Valley, Peach Springs (5,000 ft.), Arizona» selected by Freitag (1999: 8). Syntype(s) [2 originally cited] probably in ZMHB. Note. This name is usually credited to Horn (1903a: 196) who first proposed it. Horn (1903a: 196) reported that "*Amblycheila piccolomini* G. Horn, Leconte, Leng ex parte" is different from "*A. piccolomini* Rivers" and gave the name *A. schwarzi* to the form not identical with "*A. piccolomini* Reiche." In my opinion, Horn's statement does not constitute a description by

indication. The next year Horn published a description of *A. schwarzi* and stated, after seeing the type of *A. picolominii* Reiche in Paris, that his new species was the "*A. piccolomini* Rivers and Leng, ex parte."

Amblycheila utahensis Tanner, 1951: 47. Type locality: «Diamond Valley, 15 miles north of S[ain]t George, Washington County, Utah» (original citation). Holotype (♂) in BYUC (Shawn M. Clark pers. comm. 2007). Synonymy established by Vaurie (1955: 20).

Distribution. This species, also known as the "Mojave Giant Tiger Beetle," is found from northwestern Arizona and southwestern Utah west to the desert mountains of southeastern California east of the Sierra Nevada [see Vaurie 1955: Fig. 1 and Pearson et al. 2006: Map 2].

Records. USA: AZ, CA, NV, UT

Genus *Omus* Eschscholtz, 1829

Omus Eschscholtz, 1829: 3. Type species: *Omus californicus* Eschscholtz, 1829 by monotypy. Etymology. From the Greek *omos* (cruel), possibly alluding to the apparent ferocious habits of the species in the eyes of Eschscholtz [masculine].

Leptomus Casey, 1914: 1. Type species: *Omus submetallicus* Horn, 1869 by original designation. Synonymy established by Horn (1915: 443). Etymology. From the Greek *leptos* (fine, small, thin, delicate) and the generic name *Omus* [*q.v.*] [masculine].

Megomus Casey, 1914: 1. Type species: *Omus dejeanii* Reiche, 1838 by original designation. Synonymy established by Horn (1915: 443). Etymology. From the Greek *megas* (large) and the generic name *Omus* [*q.v.*] [masculine].

Diversity. Five species in western North America inhabiting the Pacific coastal lowlands and the mountain slopes, including those of the Cascade and Sierra Nevada ranges.

Identification. Casey, between 1897 and 1924, described so many forms in this genus (90 species-group taxa) that at the time of his death in 1925 it was virtually impossible to identify members of *Omus*. Cazier (1942) wrote a detailed monographic revision of the genus and recognized three species (*A. californicus*, *A. dejeanii*, and *A. submetallicus*) with four subspecies for *A. californicus*. He also provided keys for the identification of the taxa. Unfortunately his thesis was not published. In his thesis on the cicindelids of the Pacific Northwest, Leffler (1979a) followed Cazier's (1942) conclusions concerning the taxonomy of *Omus* except that he recognized a fourth species, according specific rank to *O. audouini* considered a synonym of *O. californicus californicus* by Cazier. Leffler (1979a) provided a key for the separation of the species but his work also remained unpublished. Subsequently, a new species was described by van den Berghe in 1994. The field guide of Pearson et al. (2006: 23) includes a key to all five species.

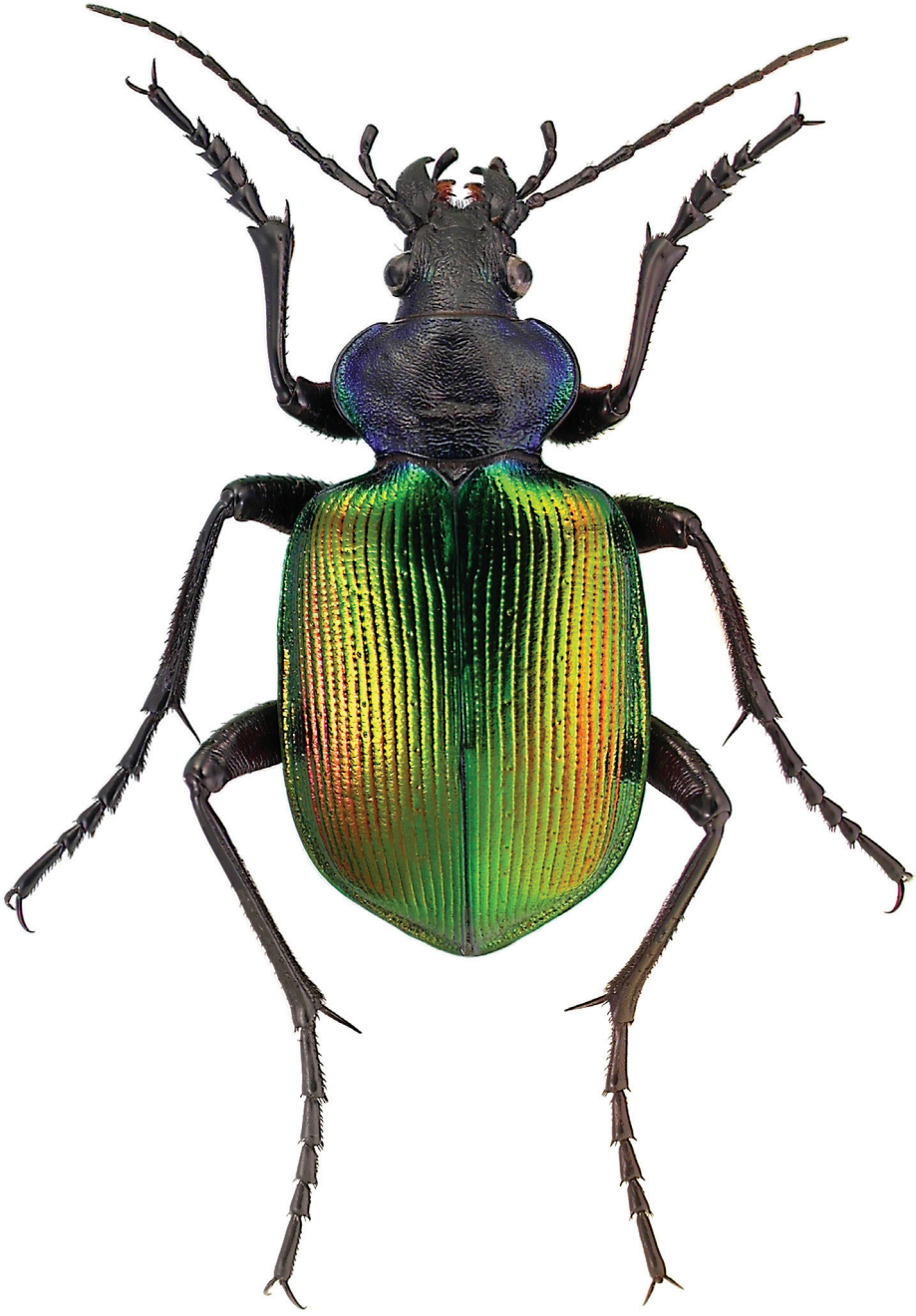

Figure 9. *Calosoma sycophanta* (Linnaeus). This species is one of only two intentionally introduced carabids in North America that became established on this continent, the other one being *Carabus auratus*. These species were introduced for the biological control of the gypsy moth, *Lymantria dispar*, and the browntail moth, *Euproctis chrysorrhoea*. Since its release in the vicinity of Boston in 1906-1907, *C. sycophanta* has spread to southern Maine and to West Virginia.

Omus audouini Reiche, 1838

Omus audouini Reiche, 1838: 300. Type locality: «versant occidental des montagnes rocheuses, dans le district d'Oregon, aux États-Unis de l'Amérique du Nord» (original citation, see page 297). Syntype(s) probably in MHNP. Etymology. The specific name was proposed for the French zoologist Jean-Victor Audouin [1797-1841], co-founder of the *Annales des Sciences Naturelles* and a founding member of the *Société Entomologique de France*. In 1823 Audouin became assistant librarian at the Muséum d'Histoire Naturelle in Paris and obtained his doctorate in 1826. He succeeded Latreille as assistant naturalist at the chair of Crustacean and Insects at the Museum in 1830 and three years later as professor of the same chair. He died of apoplexy. He had no insect collection but held a large entomological library which he willingly made available to scholars.

Omus ambiguus Schaupp, 1884b: 121. Type locality: «M[oun]t Shasta District [Siskiyou County], Cal[ifornia]» (original citation). Holotype [by monotypy] (♂) in USNM (collection Casey). Synonymy established by Bousquet and Larochelle (1993: 52) based on Leffler (1979a: 192) unpublished thesis. Note. Leng (1902: 108) reported that the holotype was probably collected at "Upper Soda Springs" in Siskiyou County, at 3000-4000 feet.

Omus van dykei W. Horn, 1903a: 185. Type locality: «Mittel-Oregon» (original citation). Holotype [by monotypy, *cf.* Horn 1903a: 197] (♂) location unknown. Synonymy established by Boyd (1982: 2).

Omus borealis Casey, 1909: 256. Type locality: «Oregon» (original citation). One syntype in USNM [# 45857]. Synonymy established with doubt by Horn (1910a: 125), confirmed by Leffler (1979a: 198).

Omus californicus humeroplanatus W. Horn, 1910b: 293. Type locality: «Provincia Del Norte, Calif[ornia]» (original citation). Syntype(s) in MHNP. Synonymy established, under the name *O. californicus borealis* Casey, by Horn (1915: 431).

Omus audouini parvulus Casey, 1913: 2. Type locality: «Oregon» (original citation). One syntype in USNM [# 45809]. Synonymy established by Horn (1915: 431), confirmed by Leffler (1979a: 199).

Omus oregonensis Casey, 1913: 2. Type locality: «Josephine Co[unty], Oregon» (original citation). One syntype in USNM [# 45832]. Synonymy established, under the name *O. californicus borealis* Casey, by Hatch (1953: 36), confirmed by Leffler (1979a: 199) and van den Berghe (1994: 33). Note. According to Leffler (1979a: 199), the type series was collected at Selma and Waldo (abandoned townsite 5 km ESE of O'Brien), Josephine County, by F.W. Nunenmacher.

Omus rugipennis Casey, 1914: 3. Type locality: «northern California» (original citation). One syntype in USNM [# 45803]. Synonymy established, under the name *O. californicus ambiguus* Schaupp, by Horn (1915: 443), confirmed by Leffler (1979a: 200). Note. According to Leffler (1979a: 200), the type series was collected at Mud Lake, 7 miles NW Cottage Grove, in Siskiyou County, by F.W. Nunenmacher.

Omus solidulus Casey, 1914: 3. Type locality: «Shasta Retreat [Bucks Lake], Siskiyou Co[unty], California» (original citation). One syntype in USNM [# 45812]. Synonymy established, under the name *O. californicus ambiguus* Schaupp, by Horn (1915: 443), confirmed by Leffler (1979a: 200).

Omus audouini brevicornis Casey, 1916: 8. Type locality: «Humboldt Co[unty], California» (original citation). One syntype in USNM [# 45806]. Synonymy established, under the name *O. californicus humeroplanatus* Horn, by Horn (1926: 55), confirmed by Leffler (1979a: 200). Note. According to Leffler (1979a: 200), the type series was not collected in Humboldt County as indicated by Casey (1916: 8) but at Mud Lake, 7 miles North West Cottage Grove, Siskiyou County, by F.W. Nunenmacher.

Omus audouini aequicornis Casey, 1916: 9. Type locality: «Josephine Co[unty], Oregon» (original citation). Two syntypes in USNM [# 45807]. Synonymy established, under the name *O. californicus humeroplanatus* Horn, by Horn (1926: 55), confirmed by Leffler (1979a: 201) and van den Berghe (1994: 33). Note. According to Leffler (1979a: 201), the two original specimens were collected at Selma and Waldo in Josephine County.

Omus audouini tacomae Casey, 1916: 9. Type locality: «Tacoma [Pierce County], Washington» (original citation). One syntype in USNM [# 45804]. Synonymy established by Horn (1926: 55), confirmed by Leffler (1979a: 201).

Omus audouini delicatulus Casey, 1916: 9. Type locality: «Oregon» (original citation). One syntype in USNM [# 45814]. Synonymy established by Horn (1926: 55), confirmed by Leffler (1979a: 201).

Omus audouini distans Casey, 1916: 10. Type locality: «Seattle [King County], Washington» (original citation). One syntype in USNM [# 45813]. Synonymy established by Horn (1926: 55), confirmed by Leffler (1979a: 201).

Omus ambiguus humeralis Casey, 1916: 10. Type locality: «Humboldt Co[unty], California» (original citation). One syntype in USNM [# 45811]. Synonymy established, under the name *O. californicus humeroplanatus* Horn, by Horn (1926: 55), confirmed by Leffler (1979a: 201). Note. According to Cazier (1942: 104), the type series was collected at 10 miles east of Orick, in Humboldt County, by F.W. Nunenmacher.

Omus thoracicus Casey, 1916: 11. Type locality: «Klamath Co[unty], Oregon» (original citation). One syntype in USNM [# 45816]. Synonymy established, under the name *O. californicus oregonensis* Casey, by Horn (1926: 55), confirmed by Leffler (1979a: 202) and van den Berghe (1994: 33). Note. According to Leffler (1979a: 202), the type series was collected at Upper Klamath Lake, Klamath County, by F.W. Nunenmacher.

Omus [*cephalicus*] *audens* Casey, 1924: 3. Type locality: «Seattle [King County], Washington» (original citation). One syntype in USNM [# 45805]. Synonymy established by Horn (1926: 55), confirmed by Leffler (1979a: 202).

Omus [*ambiguus*] *socius* Casey, 1924: 4. Type locality: «Shasta Co[unty], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 45810]. Synonymy

established, under the name *O. californicus ambiguus* Schaupp, by Horn (1926: 56), confirmed by Leffler (1979a: 203). Note. According to Leffler (1979a: 203), the holotype was collected by F.W. Nunenmacher at Round Mountain, Shasta County.

Distribution. The range of this species, also known as the "Audouin's Night-stalking Tiger Beetle," extends from southwestern British Columbia, including southern Vancouver Island, south to northwestern California [see Pearson et al. 2006: Map 9].
Records. CAN: BC (VCI) **USA**: CA, OR, WA

Omus californicus angustocylindricus Horn, 1913

Omus californicus angusto-cylindricus W. Horn, 1913: 348. Type locality: «Lassen Co[unty] borealis, Calif[ornia]» (original citation). Syntype(s) in MHNP and MCZ [# 25599].

Omus cylindricus Casey, 1914: 4. Unjustified emendation of *Omus angustocylindricus* Horn, 1913.

Distribution. This subspecies, also known as the "Narrow Night-stalking Tiger Beetle," is found above 1500 m of elevation in Plumas and Lassen Counties in northeastern California (Leffler 1979a: 218).
Records. USA: CA

Omus californicus californicus Eschscholtz, 1829

Omus californicus Eschscholtz, 1829: 3. Type locality: «Cabo de los Reyes [Marin County], Californien» (original citation). Syntype(s) location unknown (possibly in ZMMU).

Omus xanti LeConte, 1859a: 69. Type locality: «Fort Tejon [Kern County, California]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 23592]. Synonymy established by Horn (1903a: 196). Etymology. The species name was proposed for John Xantus de Vesey [1825-1894], a Hungarian exile who worked in the United States as a bookseller, druggist, teacher, and hospital steward. He became over the years a gifted collector of natural history specimens. He eventually returned to his native Hungary and served as Director of the Zoological Garden of Budapest and as curator of ethnography at the Hungarian National Museum.

Omus laevis G.H. Horn, 1867a: 394. Type locality: «high Sierras near the head waters of King's and Tulé rivers [California]» (original citation), restricted to «southeast Fresno County and East Tulare County» by Ward (1982: 59). Lectotype (♂), designated by Ward (1982: 59), in MCZ [# 35314]. Synonymy established by Bousquet and Larochelle (1993: 52) based on Leffler (1979a: 209) unpublished thesis.

Omus lecontei G.H. Horn, 1872b: 143. Type locality: «near Monterey [Monterey County], California» (original citation). Lectotype (♂), designated by Ward (1982: 59), in MCZ [# 58]. Synonymy established by Bousquet and Larochelle (1993: 52) based on Leffler (1979a: 209) unpublished thesis. Note. This form is

considered a valid subspecies of *O. californicus* Eschscholtz by Knisley and Haines (2010).

Omus sequoiarum Crotch, 1874b: 73. Type locality: «Calaveras in the Sierra Nevada» (original citation). Syntype(s) [20 originally cited] in MCZ [# 57] and AMNH [# 444]. Synonymy established by Bousquet and Larochelle (1993: 52) based on Leffler (1979a: 209) unpublished thesis.

Omus edwardsii Crotch, 1874b: 73. Type locality: «Lake Tahoe [Placer County, California]» (original citation). Syntype(s) [6 originally cited] in MCZ [# 56] and AMNH [# 445] (Grossbeck 1912: 360). Synonymy established by Bousquet and Larochelle (1993: 52) based on Leffler (1979a: 209) unpublished thesis. Etymology. The specific name honors Henry Edwards [1830-1891], a stage actor by profession and enthusiastic collector of Lepidoptera and other insects. Born in England, Edwards travelled to Australia, South and Central America, Mexico, and from 1865 to 1877 resided in San Francisco before moving to eastern United States. In 1891, his widow put Edwards' collection, which consisted of about 300,000 specimens of all orders, for sale. The American Museum of Natural History acquired the collection as well as his correspondence and notes.

Omus hornii LeConte, 1875a: 157. Type locality: «Yosemite, California» (original citation). Holotype [by monotypy] (♀) in MCZ [# 46]. Synonymy established, under the name *O. californicus sequoiarum* Crotch, by Horn (1930: 78).

Omus hornianus W. Horn, 1892a: 91. Type locality: «California?» (original citation). Holotype [by monotypy] (♂) in DEI (Döbler 1973: 384). Synonymy established by Horn (1902b: 388).

Omus montanus Casey, 1897: 290. Type locality: «Placer Co[unty], California» (original citation). Two syntypes in USNM [# 45842]. Synonymy established by, under the name *O. californicus edwardsii* Crotch, by Horn (1905: 54).

Omus lugubris Casey, 1897: 290. Type locality: «California» (original citation). One syntype [2 ♂ originally cited] in USNM [# 45859]. Synonymy established, under the name *O. edwardsii* Crotch, by Leng (1902: 102).

Omus punctifrons Casey, 1897: 291. Type locality: «California» (original citation). Holotype [by monotypy] (♀) in USNM [# 45861]. Synonymy established, under the name *O. sequoiarum* Crotch, by Leng (1902: 102).

Omus confluens Casey, 1897: 291. Type locality: «California» (original citation). Holotype [by monotypy] (♀) in USNM [# 45863]. Synonymy established, under the name *O. sequoiarum* Crotch, by Leng (1902: 102).

Omus sculptilis Casey, 1897: 292. Type locality: «coast regions north of San Francisco, California» (original citation). Holotype [by monotypy] (♂) in USNM [# 45824]. Synonymy established by Horn (1902b: 388).

Omus elongatus Casey, 1897: 293. Type locality: «near San Francisco, California» (original citation). One syntype in USNM [# 45852]. Synonymy established, under the name *O. lecontei* Horn, by Horn (1903a: 188, 198).

Omus californicus fuchsi W. Horn, 1903a: 188. Type locality: «Küste von Californien, südlich von San Francisco gefangen: wahrscheinlich in oder in der Nähe

von Monterey Co. [= coast of California, south of San Francisco, probably in or close to Monterey County]» (original citation). One syntype in CMNH. Synonymy established, under the name *O. californicus lecontei* Horn, by Boyd (1982: 2).

Omus mimus Casey, 1909: 256. Type locality: «probably northern California» (original citation). One syntype in USNM [# 45819]. Synonymy established with doubt by Horn (1910a: 125).

Omus dunni Casey, 1909: 258. Type locality: «vicinity of San Francisco [California]» (original citation). Two syntypes in USNM [# 45853]. Synonymy established, under the name *O. californicus lecontei* Horn, by Horn (1910a: 126).

Omus dunni regularis Casey, 1909: 258. Type locality: «Carmel, Monterey Co[unty] [California]» (original citation). Two syntypes in USNM [# 45854]. Synonymy established, under the name *O. californicus lecontei* Horn, by Horn (1910a: 126).

Omus dunni maritimus Casey, 1909: 259. Type locality: «Monterey Co[unty] [California]» (original citation). One syntype in USNM [# 45855]. Synonymy established, under the name *O. californicus lecontei* Horn, by Horn (1910a: 126).

Omus cribripennis Casey, 1909: 261. Type locality: «Placerville, El Dorado Co[unty] [California]» (original citation). One syntype in USNM [# 45846]. Synonymy established by Bousquet and Larochelle (1993: 53) based on Leffler (1979a: 210) unpublished thesis.

Omus edwardsi lobatus Casey, 1909: 261. Type locality: «Placer Co[unty] [California]» (original citation). One syntype in USNM [# 45840]. Synonymy established, under the name *O. californicus edwardsii* Crotch, by Horn (1910a: 126).

Omus montanus lucidicollis Casey, 1909: 262. Type locality: «Placer Co[unty] [California]» (original citation). Two syntypes in USNM [# 45841]. Synonymy established, under the name *O. californicus edwardsii* Crotch, by Horn (1910a: 126).

Omus montanus brunnescens Casey, 1909: 262. Type locality: «Placer Co[unty] [California]» (original citation). Two syntypes in USNM [# 45843]. Synonymy established, under the name *O. californicus edwardsii* Crotch, by Horn (1910a: 126).

Omus punctifrons degener Casey, 1909: 263. Type locality: «Sierra Co[unty] [California]» (original citation). One syntype in USNM [# 45865]. Synonymy established, under the name *O. californicus punctifrons* Casey, by Horn (1910a: 125).

Omus fraterculus Casey, 1909: 263. Type locality: «Placer Co[unty] [California]» (original citation). Syntype(s) in USNM [# 45862]. Synonymy established, under the name *O. californicus punctifrons* Casey, by Horn (1930: 78).

Omus collaris Casey, 1909: 265. Type locality: «Wawona, Mariposa Co[unty] [California]» (original citation). One syntype in USNM [# 45881]. Synonymy established, under the name *O. hornii* LeConte, by Horn (1910a: 126).

Omus compositus Casey, 1909: 265. Type locality: «Wawona, Mariposa Co[unty] [California]» (original citation). One syntype in USNM [# 45882]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1910a: 126).

Omus tularensis Casey, 1909: 265. Type locality: «Davenport (6,400 feet), Soldiers' Camp (5,800 feet), and Colony Mill (5,415 feet), Tulare Co[unty] [California]»

(original citation). Six syntypes in USNM [# 45885]. Synonymy established, under the name *O. californicus laevis* LeConte, by Horn (1910a: 126).

Omus tularensis gracilior Casey, 1909: 266. Type locality: «Tulare Co[unty] [California]» (original citation). Holotype [by monotypy] (♂) in USNM [# 45886]. Synonymy established, under the name *O. californicus laevis* LeConte, by Horn (1910a: 126).

Omus lugubris sierricola Casey, 1913: 3. Type locality: «California» (original citation). Holotype [by monotypy] (♂) in USNM [# 45860]. Synonymy established, under the name *O. californicus sequoiarum* Crotch, by Horn (1915: 432).

Omus californicus intermedio-pronotalis W. Horn, 1913: 346. Type locality: «Plumas Co[unty] orientalis, Calif[ornia]» (original citation). Two syntypes in MCZ [# 25598] and IRSN. Synonymy established, under the name *O. californicus edwardsii* Crotch, by Horn (1930: 79).

Omus californicus nunenmacheri W. Horn, 1913: 347. Type locality: «Lassen Co[unty] centralis, Calif[ornia]» (original citation). Syntype(s) [6 originally cited] in MHNP and MCZ [# 25597]. Synonymy established by Bousquet and Larochelle (1993: 53) based on Leffler's (1979a: 210) unpublished thesis. Etymology. The subspecific name was proposed for Frederick William Nunenmacher [1870-1946], a successful collector of beetles in western United States and a specialist of Coccinellidae. His coccinellid collection went to the California Academy of Sciences and his general collection to the Field Museum of Natural History.

Omus californicus vermiculatus Casey, 1914: 5. Type locality: «probably near San Francisco, California» (original citation). Three syntypes [3 originally cited] in USNM [# 45823]. Synonymy established by Horn (1915: 443).

Omus pronotalis Casey, 1914: 10. Unjustified emendation of *Omus intermediopronotalis* Horn, 1913.

Omus sequoiarum longitarsis Casey, 1914: 12. Type locality: «Big Trees, Calaveras Co[unty], California» (original citation). One syntype in USNM [# 45858]. Synonymy established, under the name *O. californicus sequoiarum* Crotch, by Horn (1915: 443).

Omus horni temperatus Casey, 1914: 15. Type locality: «Giant Forest, Tulare Co[unty], California» (original citation). One syntype in USNM [# 45866]. Synonymy established, under the name *O. californicus laevis* LeConte, by Horn (1915: 443).

Omus tularensis opacellus Casey, 1914: 16. Type locality: «Tulare Co[unty], California» (original citation). One syntype in USNM [# 45889]. Synonymy established, under the name *O. californicus laevis* LeConte, by Horn (1915: 443).

Omus levis W. Horn, 1915: 443. Unjustified emendation of *Omus laevis* Horn, 1867.

Omus shastanicus Casey, 1916: 11. Type locality: «Shasta Co[unty], California» (original citation). Two syntypes in USNM [# 45808]. Synonymy established by Bousquet and Larochelle (1993: 53) based on Leffler (1979a: 211) unpublished thesis.

Omus shastanicus cephalicus Casey, 1916: 11. Type locality: «Shasta Co[unty], California» (original citation). One syntype in USNM [# 45802]. Synonymy established, under the name *O. californicus shastanicus* Casey, by Horn (1926: 55).

Omus shastanicus tenuiculus Casey, 1916: 12. Type locality: «Shasta Co[unty], California» (original citation). One syntype in USNM [# 45815]. Synonymy established, under the name *O. californicus shastanicus* Casey, by Horn (1926: 55).

Omus semilucens Casey, 1916: 12. Type locality: «San Francisco Co[unty], California» (original citation). One syntype in USNM [# 45834]. Synonymy established by Horn (1926: 54).

Omus semilucens diminuens Casey, 1916: 13. Type locality: «Leona Heights, Alameda Co[unty], California» (original citation). One syntype in USNM [# 45833]. Synonymy established by Horn (1926: 55).

Omus californicus latipennis Casey, 1916: 13. Type locality: «Leona Heights, Alameda Co[unty], California» (original citation). One syntype in USNM [# 45822]. Synonymy established by Horn (1926: 55).

Omus sculptilis opacipennis Casey, 1916: 13. Type locality: «S[ain]t Helena, Napa Co[unty], California» (original citation). One syntype in USNM [# 45817]. Synonymy established by Horn (1926: 55).

Omus lacertus Casey, 1916: 15. Type locality: «Carmel, Monterey Co[unty], California» (original citation). One syntype in USNM [# 45856]. Synonymy established, under the name *O. californicus lecontei* Horn, by Horn (1926: 59).

Omus laticollis Casey, 1916: 16. Type locality: «Tuolumne Co[unty], California» (original citation). Two syntypes in USNM [# 45864]. Synonymy established, under the name *O. californicus fuchsi* Horn, by Horn (1930: 78).

Omus temperatus difficilis Casey, 1916: 17. Type locality: «Mariposa Co[unty], California» (original citation). One syntype in USNM [# 45867]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus temperatus mariposae Casey, 1916: 17. Type locality: «Mariposa Co[unty], California» (original citation). One syntype in USNM [# 45869]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus temperatus sparsellus Casey, 1916: 18. Type locality: «Wawona, Mariposa Co[unty], California» (original citation). One syntype in USNM [# 45873]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus subsericeus Casey, 1916: 18. Type locality: «Kaweah [Tulare County], California» (original citation). One syntype in USNM [# 45874]. Synonymy established, under the name *O. californicus laevis* Horn, by Horn (1926: 57).

Omus collaris antennalis Casey, 1916: 19. Type locality: «Mariposa Co[unty], California» (original citation). Two syntypes in USNM [# 45875]. Synonymy established, under the name *O. californicus laevis* Horn, by Horn (1926: 57).

Omus collaris trapezicollis Casey, 1916: 19. Type locality: «Mariposa Co[unty], California» (original citation). One syntype in USNM [# 45872]. Synonymy established, under the name *O. californicus laevis* Horn, by Horn (1926: 57).

Omus collaris erraticus Casey, 1916: 20. Type locality: «Tuolumne Co[unty], California» (original citation). One syntype [2 originally cited] in USNM [# 45868]. Synonymy established, under the name *O. californicus laevis* Horn, by Horn (1926: 57).

Omus horni brevis Casey, 1916: 21. Type locality: «Tuolumne Co[unty], California» (original citation). One syntype in USNM [# 45883]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus horni propinquus Casey, 1916: 21. Type locality: «Mariposa Co[unty], California» (original citation). One syntype in USNM [# 45871]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus horni asperatus Casey, 1916: 22. Type locality: «Tuolumne Co[unty], California» (original citation). One syntype in USNM [# 45879]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus horni granosus Casey, 1916: 22. Type locality: «Mariposa Co[unty], California» (original citation). One syntype in USNM [# 45880]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus horni sinuosus Casey, 1916: 23. Type locality: «Wawona, Mariposa Co[unty], California» (original citation). One syntype in USNM [# 45877]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus horni punctatus Casey, 1916: 23. Type locality: «Tuolumne Co[unty], California» (original citation). Four syntypes [4 originally cited] in USNM [# 45878]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57). Note. Hennessey (1990: 467) reported the presence of a syntype of *O. punctatus* Casey in SIM.

Omus horni farctus Casey, 1916: 23. Type locality: «Mariposa Co[unty], California» (original citation). One syntype in USNM [# 45884]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus marginalis Casey, 1916: 24. Type locality: «Tuolumne Co[unty], California» (original citation). One syntype in USNM [# 45870]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus tularensis remissus Casey, 1916: 25. Type locality: «Colony Mill (5400 ft.), Tulare Co[unty], California» (original citation). One syntype in USNM [# 45887]. Synonymy established, under the name *O. californicus laevis* Horn, by Horn (1926: 57).

Omus laevis peropacus Casey, 1916: 25. Type locality: «Tulare Co[unty], California» (original citation). One syntype [3 originally cited] in USNM [# 45888]. Synonymy established, under the name *O. californicus laevis* Horn, by Horn (1926: 57).

Omus cupreonitens Blaisdell and Reynolds, 1917: 49. Type locality: «shore of Humboldt Bay near Arcata, Humboldt County, California» (original citation). Holotype (♂) in USNM [# 21355]. Synonymy established by Bousquet and Larochelle (1993: 53) based on Leffler (1979a: 212) unpublished thesis.

Omus [*cupreonitens*] *reynoldsi* Casey, 1924: 5. Type locality: «Arcata, Humboldt Co[unty], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 45839]. Synonymy established, under the name *O. cupreonitens* Blaisdell and Reynolds, by Blaisdell (1925: 80).

Omus [*sculptilis*] *densicollis* Casey, 1924: 5. Type locality: «Mendocino Co[unty], California» (original citation). One syntype in USNM [# 45825]. Synonymy established by Horn (1926: 55).

Omus [*sculptilis*] *argutus* Casey, 1924: 6. Type locality: «Alameda Co[unty], California» (original citation). One syntype in USNM [# 45826]. Synonymy established by Horn (1930: 78).

Omus [*mimus*] *debiliceps* Casey, 1924: 6. Type locality: «San Francisco [San Francisco County], California» (original citation). One syntype in USNM [# 45818]. Synonymy established by Horn (1926: 54).

Omus [*mimus*] *insulsus* Casey, 1924: 6. Type locality: «S[an]ta Cruz Co[unty], California» (original citation). Two syntypes in USNM [# 45828]. Synonymy established by Horn (1926: 55).

Omus [*mimus*] *modicus* Casey, 1924: 7. Type locality: «Mendocino Co[unty], California» (original citation). Two syntypes [2 ♂ originally cited] in USNM [# 45827]. Synonymy established by Horn (1926: 55).

Omus [*mimus*] *stolidus* Casey, 1924: 7. Type locality: «Mendocino Co[unty], California» (original citation). Two syntypes in USNM [# 45829]. Synonymy established by Horn (1926: 54).

Omus [*mimus*] *subparallelus* Casey, 1924: 7. Type locality: «S[an]ta Cruz Co[unty], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 45830]. Synonymy established by Horn (1926: 55).

Omus ventricosus Casey, 1924: 8. Type locality: «Mendocino Co[unty], California» (original citation). One syntype in USNM [# 45831]. Synonymy established by Horn (1926: 54).

Omus leachi Casey, 1924: 8. Type locality: «Trinity Co[unty], California» (original citation). Four syntypes [4 originally cited] in USNM [# 45838]. Synonymy established by Horn (1926: 55).

Omus pullatus Casey, 1924: 9. Type locality: «Sonoma Co[unty], California» (original citation). One syntype in USNM [# 45820]. Synonymy established by Horn (1926: 55).

Omus [*vermiculatus*] *pollens* Casey, 1924: 9. Type locality: «Marin Co[unty], California» (original citation). One syntype in USNM [# 45821]. Synonymy established by Horn (1926: 55).

Omus [*californicus*] *turbulentus* Casey, 1924: 10. Type locality: «Sonoma Co[unty], California» (original citation). One syntype in USNM [# 45835]. Synonymy established by Horn (1926: 55).

Omus [*californicus*] *aethiops* Casey, 1924: 10. Type locality: «Shasta Co[unty], California» (original citation). One syntype in USNM [# 45836]. Synonymy established by Horn (1926: 55).

Omus [*californicus*] *sparsus* Casey, 1924: 10. Type locality: «S[an]ta Cruz, California» (original citation). One syntype in USNM [# 45837]. Synonymy established by Horn (1926: 55).

Omus [*horni*] *callosus* Casey, 1924: 12. Type locality: «Tuolumne Co[unty], California» (original citation). One syntype in USNM [# 45876]. Synonymy established, under the name *O. californicus hornii* LeConte, by Horn (1926: 57).

Omus vanlooi Nunenmacher, 1940: 144. Type locality: «Butte County, California» (original citation). Holotype (♂) in CAS [# 8164]. Synonymy established by Bousquet and Larochelle (1993: 53) based on Leffler (1979a: 212) unpublished thesis.

Distribution. This subspecies, also known as the "California Night-stalking Tiger Beetle," ranges from southwestern Oregon to southern California along the coast and through the Sierra Nevada, at elevation below 900 m near the range of *O. californicus intermedius* (Leffler 1979a: 218; Fig. 18).
Records. USA: CA, OR

Omus californicus intermedius Leng, 1902

Omus intermedius Leng, 1902: 104. Type locality: «Coulterville, Mariposa Co[unty], Cal[ifornia]» (original citation). Syntype(s) location unknown. Note. The specimen labeled "CoType 25595" in MCZ is not a syntype (see Dahl 1941: 169) but was determined by Leng; the specimen is labeled "Harris Collection - Colony Mill Ro[ad] n[orth] Kaweah California."

Omus procerus Casey, 1909: 259. Type locality: «Tulare Co[unty] [California]» (original citation). One syntype in USNM [# 45850]. Synonymy established by Horn (1910a: 126).

Omus procerus parvicollis Casey, 1909: 260. Type locality: «Redwood and Mabel Creeks and Watson Springs, Tulare Co[unty] [California]» (original citation). Five syntypes in USNM [# 45848]. Synonymy established by Horn (1910a: 126).

Omus blaisdelli Casey, 1909: 260. Type locality: «Mokalumne Hill, Calaveras Co[unty] [California]» (original citation). Five syntypes in USNM [# 45844]. Synonymy established by Horn (1910a: 126).

Omus spissipes Casey, 1913: 3. Type locality: «Tulare Co[unty], California» (original citation). One syntype in USNM [# 45849]. Synonymy established by Horn (1915: 432).

Omus parvicollis ovipennis Casey, 1916: 14. Type locality: «Mokelumne Hill, Calaveras Co[unty], California» (original citation). One syntype in USNM [# 45851]. Synonymy established, under the name *O. blaisdelli* Casey, by Blaisdell (1925: 80).

Omus [*blaisdelli*] *torvus* Casey, 1924: 11. Type locality: «Lampson's Flat (1800 feet), California» (original citation). One syntype in USNM [# 45845]. Synonymy established, under the name *O. blaisdelli* Casey, by Blaisdell (1925: 80).

Omus [*cribripennis*] *maurus* Casey, 1924: 11. Type locality: «El Dorado Co[unty], California» (original citation). Three syntypes [3 originally cited] in USNM [# 45847]. Synonymy established by Horn (1926: 58).

Distribution. This subspecies, also known as the "Intermediate Night-stalking Tiger Beetle," is found above 900 meters in the Sierra Nevada between El Dorado and Tulare Counties, California (Leffler 1979a: 222).
Records. USA: CA

Omus californicus subcylindricus Nunenmacher, 1940

Omus subcylindricus Nunenmacher, 1940: 143. Type locality: «Santa Clara County, California» (original citation). Holotype (♂) in CAS [# 8165].

Distribution. This subspecies, also known as the "Subcylindrical Night-stalking Tiger Beetle," is restricted to San Martin, Santa Clara County, in western California (Leffler 1979a: 217).
Records. USA: CA

Omus cazieri van den Berghe, 1994

Omus cazieri van den Berghe, 1994: 33. Type locality: «north side M[oun]t Ashland (1080-1200 m), Jackson Co[unty], Oregon» (original citation). Holotype (♂) in CMNH. Etymology. The specific name was proposed in honor of Mont Adelbert Cazier [1911-1995], curator at the American Museum of Natural History and later professor of zoology at Arizona State University. Cazier published on the behaviour, ecology, and systematics of various arthropod groups, including tiger beetles.

Distribution. This taxon, also known as the "Mount Ashland Night-stalking Tiger Beetle," is known only from Jackson County in southwestern Oregon.
Records. USA: OR

Omus dejeanii Reiche, 1838

Omus dejeanii Reiche, 1838: 299. Type locality: «versant occidental des montagnes rocheuses, dans le district d'Oregon, aux États-Unis de l'Amérique du Nord» (original citation, see page 297), herein restricted to Bull Run, Clackamas County, Oregon (see Casey 1916: 8, as *O. dejeani foveatus*). Syntype(s) probably in MHNP. Etymology. The specific name was proposed in honor of Pierre François Marie Auguste Dejean [1780-1845], a French military officer who held the title of aide-de-camp to Napoleon Bonaparte from 1813 to 1815. Forced to leave his country in January 1816, he was able to come back in 1818 thanks to the relations of his father. At the death of this one in 1824, Dejean inherited his double title of count and pair-de-France. In 1844, Dejean was awarded the rank of "Grand Croix" (the highest) of the prestigious order Légion d'Honneur.

Omus dejeani robustus Casey, 1916: 7. Type locality: «Seattle [King County], Washington» (original citation). Two syntypes in USNM [# 45800]. Synonymy established by Horn (1926: 54).

Omus dejeani foveatus Casey, 1916: 8. Type locality: «Bull Run, Clackamas Co[unty], Oregon» (original citation). Two syntypes in USNM [# 45801]. Synonymy established by Horn (1926: 54).

Distribution. This species, also known as the "Greater Night-stalking Tiger Beetle," is found from southwestern British Columbia, including Vancouver Island, to southwestern Oregon [see Pearson et al. 2006: Map 6]. The record from northern California

(Leng 1902: 105) needs confirmation; that from "Montana" (Leng 1902: 105) is in error.
Records. CAN: BC (VCI) **USA**: OR, WA [CA]

***Omus submetallicus* Horn, 1869**

Omus submetallicus G.H. Horn, 1869b: 129. Type locality: «California» (original citation), restricted, incorrectly so, to «mountains near Alleghany City, Sierra Co[unty]» by Ward (1982: 59), based on information provided by Fuchs to Leng (1902: 109), and subsequently to «Warthan Canyon, mouth of Mulch Canyon, 601 m, 43.6 km (by road) E[ast] San Lucas, St[ate] H[y]w[a]y 198, Fresno Co[unty]» by Leffler (1986a: 38). Holotype [by monotypy] (♂) in MCZ [# 33469].
Omus submetallicus niger Cazier, 1937b: 94. Type locality: «Wartham Canyon, Fresno Co[unty], California» (original citation). Holotype (♂) in CAS [# 4478]. Synonymy established by Bousquet and Larochelle (1993: 52) based on Leffler's statement (1979a: 181).

Distribution. This species, also known as the "Lustrous Night-stalking Tiger Beetle," is restricted to a small area east of Warthan Canyon in western Fresno County, central California (Knisley and Haines 2010: 245).
Records. USA: CA

Tribe Megacephalini Laporte, 1834

Megacephalidae Laporte, 1834: 33. Type genus: *Megacephala* Latreille, 1802.
Megalocephalidae Gistel, 1850: 75. Type genus: *Megalocephala* Gistel, 1850 (= *Megacephala* Latreille, 1802).
Oxycheilites J. Thomson, 1857: 17, 53. Type genus: *Oxycheila* Dejean, 1825.
Tetrachae Leng and Mutchler, 1916: 683. Type genus: *Tetracha* Hope, 1838.

Diversity. About 200 species in the Nearctic (four species), Neotropical (about 165 species), Australian (25 species), Palaearctic (one species), and Afrotropical (12 species) Regions. The species are arrayed in 11 genera (see Naviaux 2007: 10-11): *Aniara* Hope (one Neotropical species), *Australicapitona* Sumlin (eight Australian species), *Cheiloxia* Guérin-Méneville (two Neotropical species), *Grammognatha* Motschulsky (one Mediterranean species), *Megacephala* Latreille (12 Afrotropical species), *Metriocheila* Thomson (one Neotropical species), *Oxycheila* Dejean (about 30 Neotropical species), *Phaeoxantha* Chaudoir (12 Neotropical species), *Pseudotetracha* Fleutiaux (17 Australian species), *Pseudoxycheila* Guérin-Méneville (about 20 Neotropical species), and *Tetracha* (about 95 species).

Genus *Tetracha* Hope, 1838

Gnatho Illiger, 1807: 348 [potential *nomen oblitum*, see Bousquet (2002b: 23)]. Type species: *Cicindela carolina* Linnaeus, 1763 designated by Bousquet (2002b: 24).

Etymology. Uncertain, either from the Latin *Gnatho* (name of a parasite in *Eunuchus*, title of a comedy by Terence; a parasite in general) or the Greek *gnathos* (jaw).

Tetracha Hope, 1838: 6 [potential *nomen protectum*]. Type species: *Cicindela carolina* Linnaeus, 1763 by monotypy. Etymology. From the Greek *tetra* (four) and perhaps *chaite* (long hair) contracted, possibly alluding to the presence of four setae on the labrum (Naviaux 2007: 16) [feminine].

Diversity. Western Hemisphere, with about 95 species (110 species-group taxa) (Naviaux 2007: 3) in the Nearctic (four species, only one endemic) and Neotropical (about 95 species) Regions. The species are arrayed in seven subgenera: *Apterotetracha* Naviaux (three Brazilian species), *Microtetracha* Naviaux (one Argentine species), *Neotetracha* (about 55 species), *Oblongotetracha* Naviaux (one Venezuelan species), *Paratetracha* Naviaux (five South American species), *Prototetracha* Naviaux (one Mexican species), and *Tetracha s.str.* (29 species).

Identification. Naviaux (2007) recently revised the species and provided keys for the subgenera and the species groups but not for all species. Pearson et al. (2006: 24) field guide to the tiger beetles of North America included a key to all North American species (*T. impressa* under the name *T. affinis*) except *T. floridana*. Naviaux (2007: 42-43) redescribed *T. floridana* and pointed out the structural differences between the species and *T. carolina*.

Taxonomic Note. In their phylogenetic analysis based on the nuclear 18S and the mitochondrial 16S and cytochrome oxidase III genes, Zerm et al. (2007) found out that the genus *Tetracha* was paraphyletic in regard to the monospecific genus *Aniara* Hope and that the two genera and *Phaeoxantha* form a clade.

Faunistic Note. From a zoogeographical point of view it is of interest to note that a specimen identical to present day *T. carolina carolina* has been found in amber from the east coast of Germany (Horn 1906).

Subgenus *Tetracha* Hope, 1838

Tetracha Hope, 1838: 6. Type species: *Cicindela carolina* Linnaeus, 1763 by original designation.

Diversity. Twenty-nine species in North America (three species, one of them endemic) and the Neotropical Region (28 species), including the West Indies.

[**carolina group**]

Tetracha carolina carolina (Linnaeus, 1763)

Cicindela carolina Linnaeus, 1763: 395. Type locality: «Carolina» (original citation). Two possible syntypes in LSL (Lindroth 1957b: 336).

Megacephala carolinensis Latreille, 1805: 175. Unjustified emendation of *Megacephala carolina* (Linnaeus, 1763).

Megacephala mexicana Gray, 1831: 263. Type locality: «Mexico» (original citation). Syntype(s) location unknown. Synonymy established by Cresson (1861: 8).

Megacephala boisduvalii Gistel, 1837: 7. Type locality: «Mexico» (original citation). Syntype(s) lost. Synonymy established by Horn (1903b: 220). Etymology. The specific name honors the French naturalist and physician Jean Baptiste Antoine Déchauffour de Boisduval [1801-1879] who for some time was employed by count Dejean as curator of his collection. Boisduval is primarily known for his work on Lepidoptera. Among other things he published with John Eatton LeConte an iconography of the Lepidoptera and caterpillars of North America between 1829 and 1834.

Distribution. The range of this subspecies, also known as the "Pan-American Bigheaded Tiger Beetle" (Pearson et al. 2006: 57) or the "Carolina Metallic Tiger Beetle" (Erwin and Pearson 2008: 70), extends from Maryland to southeastern California, south to Nicaragua (Naviaux 2010: 70) and the Florida Keys [see Pearson et al. 1997: Fig. 3]; two specimens from San Diego County in California are also known (Moore 1937: 3). The records from the Bahamas, Cuba, Cayman Islands, and Jamaica refer to *T. carolina occidentalis*. The records from "Colorado" (Wickham 1902: 228), "Connecticut," "Indiana," "New Jersey," and "New York" (see Bousquet and Larochelle 1993: 54) are probably in error or based on strays; that from Nebraska (Bruner 1901: 97) needs confirmation (see Spomer et al. 2008a: 11).
Records. USA: AL, AR, AZ, CA, DC, FL, GA, IA, IL, KS, KY, LA, MD, MO, MS, NC, NM, NV, OK, SC, TN, TX, VA [NE] – Guatemala, Mexico, Nicaragua
Note. Three more subspecies are recognized by Naviaux (2007: 40): *T. carolina chevrolatii* Chaudoir from the Yucatán Peninsula and Belize, *T. carolina moraveci* Naviaux from the state of Mexico, and *T. carolina occidentalis* (Klug) from the West Indies.

Tetracha floridana Leng and Mutchler, 1916

Tetracha carolina var. *floridana* Leng and Mutchler, 1916: 688. Type locality: «[The] Everglade[s], Fl[orid]a» (original citation). Holotype in AMNH [# 129] (Dahl 1941: 170).

Distribution. This species, also known as the "Florida Metallic Tiger Beetle," is found only in southern Florida, from Dixie County to the Keys (Choate 2003: 63).
Records. USA: FL

[**virginica group**]

Tetracha virginica (Linnaeus, 1767)

Cicindela virginica Linnaeus, 1767: 657. Type locality: «Carolina» (original citation). Syntype(s) probably lost. Note. *Cicindela virginata*, usually attributed to Linnaeus, is an incorrect subsequent spelling introduced by Gmelin (1790: 1922).

Tetracha virginica var. *melaena* Cartwright, 1935: 70. Type locality: «Clemson College [Anderson and Pickens Counties], S[outh] C[arolina]» (original citation). Holotype (♂) in USNM [# 50765]. Synonymy established by Boyd (1982: 5).

Distribution. The range of this species, also known as the "Virginia Big-headed Tiger Beetle" (Pearson et al. 2006: 59) or the "Virginia Metallic Tiger Beetle" (Erwin and Pearson 2008: 100), extends from southwestern Connecticut (Dunn 1985b: 21) to southwestern Nebraska (Spomer et al. 2008a: 54), south to southwestern Texas, northeastern Mexico (Pearson et al. 2006: 60), and the Florida Keys [see Pearson et al. 2006: Map 13]; apparently isolated in southeastern Arizona (Dajoz 2004: 116) and south-central Wisconsin (Lawton 1971: 57). The records from "Colorado" (Boyd 1982: 5) and "Tabasco" (Erwin and Pearson 2008: 100) need confirmation.
Records. USA: AL, AR, AZ, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MD, MO, MS, NC, NE, NJ, NY, OH, OK, PA, SC, TN, TX, VA, WI, WV [CO] – Mexico

Subgenus *Neotetracha* Naviaux, 2007

Neotetracha Naviaux, 2007: 29, 79. Type species: *Megacephala distinguenda* Dejean, 1831 by original designation. Etymology. From Greek prefix *neo-* (new) and the generic name *Tetracha* [*q.v.*] [feminine].

Diversity. About 55 Neotropical species, one of them extending into southeastern Texas.

Tetracha impressa (Chevrolat, 1841)

Megacephala impressa Chevrolat, 1841: [plate 55] 3. Type locality: «en allant de la Vera-Cruz à Mexico» (original citation). Holotype [by monotypy] (♀) in MHNP (Naviaux 2007: 143).

Distribution. This species, also known as the "Upland Metallic Tiger Beetle," ranges from southeastern Texas (Darlington 1935b: 161, as *T. angustata*) to Veracruz, Mexico (Naviaux 2007: 144).
Records. USA: TX – Mexico
Note. This species has passed under the name *T. angustata* (Chevrolat, 1841) or *T. affinis angustata* in the North American literature until recently.

Tribe Cicindelini Latreille, 1802

Cicindeletae Latreille, 1802: 77. Type genus: *Cicindela* Linnaeus, 1758.

Diversity. Worldwide, with more than 1,710 species arrayed in five subtribes: Apteroessina (one species from south India known only from three partial specimens collected in the early XIX Century), Cicindelina (more than 1,090 species), Iresina (about 45 species, most in the Neotropical and Australian Regions), Dromicina [= Prothymina] (about 475 species in the Neotropical, Australian, Oriental, Asian Palaearctic, and Afrotropical Regions), and Theratina (about 100 Asian species in the genus *Therates* Latreille).

Subtribe Cicindelina Latreille, 1802

Cicindeletae Latreille, 1802: 77. Type genus: *Cicindela* Linnaeus, 1758.

Diversity. Worldwide, with about 1,090 species. The North American fauna is represented by 98 species (about 9% of the world fauna). The number of genera recognized varies greatly depending on the approach used (lumper versus splitter).
Identification. Willis (1968) published a simplified key based on external characters for 91 North American forms, representing all the current recognized species except for the following 11: *Cicindela albissima*, *C. arida*, *C. cazieri*, *C. highlandensis*, *C. nigrior*, *C. ohlone*, *C. scabrosa*, *C. waynei*, *Habroscelimorpha fulgoris*, *Cylindera lunalonga*, and *Dromochorus velutinigrens*. Pearson et al. (2006: 24-42) field guide to the North American tiger beetles included a key to all currently recognized species, except *Cylindera lunalonga* which has been raised to species level very recently, and a few subspecies. The key is based on external characters and distribution ranges.

Genus *Cylindera* Westwood, 1831

Cylindera Westwood, 1831: 300. Type species: *Cicindela germanica* Linnaeus, 1758 by monotypy. Etymology. From the Greek *cylindros* (cylinder), probably alluding to the more cylindrical shape of the sole species known to Westwood [feminine].

Diversity. About 210 species in all zoogeographical regions. The North American fauna includes eight species (about 4% of the world fauna) placed in the nominotypical subgenus.
Taxonomic Note. Lorenz (2005: 54-58) listed the following taxa as subgenera of *Cylindera*: *Apterodela* Rivalier (four species), *Conidera* Rivalier (two species), *Eriodera* Rivalier (one species), *Eugrapha* Rivalier (32 species), *Gaymara* Freitag and Barnes (five Neotropical species), *Glomera* Acciavatti and Pearson (two species), *Ifasina* Jeannel (67 species), *Leptinomera* Rivalier (25 species), *Oligoma* Rivalier (two species), *Plectographa* Rivalier (19 species), *Setinteridenta* Acciavatti (one species), and *Verticina* Rivalier (six species). *Cicindelina* Jeannel (one Madagascan species) was transferred from the genus *Cicindela* to *Cylindera* by Moravec (2010: 198).

Subgenus *Cylindera* Westwood, 1831

Cylindera Westwood, 1831: 300. Type species: *Cicindela germanica* Linnaeus, 1758 by monotypy.

Eumecus Motschulsky, 1850a: 4. Type species: *Cicindela germanica* Linnaeus, 1758 designated by Motschulsky (1862b: 22).

Cicindosa Motschulsky, 1864: 173. Type species: *Cicindosa obliquealba* Motschulsky, 1864 (= *Cicindela morio* Klug, 1834) designated by Horn (1915: 236). Synonymy established by Freitag and Barnes (1989: 317).

Cylindrodera Bedel, 1879: 6. Unjustified emendation of *Cylindera* Westwood, 1831. Note. Bedel (1879) used the spelling *Cylindera* in the key (page 3) and *Cylindrodera* in the text (page 6), both as valid.

Cylindella Jacobson, 1924: 238. Unnecessary replacement name for *Cylindera* Westwood, 1831.

Diversity. About 45 species (Lorenz 2005: 55-56) in the Nearctic (eight species, 14 species-group taxa), Neotropical (about 15 species), Oriental (four species), Palaearctic (14 species), and Afrotropical (six species) Regions.

Cylindera celeripes (LeConte, 1846)

Cicindela celeripes LeConte, 1846b: 183. Type locality: «ad fluminis Kansas Republican Fork [Kansas]» (original citation). Syntype(s) in MCZ [# 4]. Note. According to MacRae and Brown (2011b: 231), the type locality is the area occupied by present day Fort Riley Military Reservation in the Flint Hills near Junction City, Riley County, Kansas, at the confluence of the Kansas and Republican Rivers.

Distribution. This species, also known as the "Swift Tiger Beetle," has been recorded from Nebraska and western Iowa south to north-central Texas and north-central Arkansas [see MacRae and Brown 2011b: Fig. 8]. The record from Indiana (Montgomery and Montgomery 1931: 359) was based on misidentified *C. cursitans* (Knisley et al. 1990: 279); those from "Illinois," and "Dakota" (Leng 1902: 117) are in error or based on strays. According to MacRae and Brown (2011b: 230), once abundant in Nebraska, western Iowa, and eastern Kansas, the species has declined below detectable levels in much of this area during the past century.
Records. USA: AR, IA, KS, MO, NE, OK, TX

Cylindera cursitans (LeConte, 1856)

Cicindela cursitans LeConte, 1856a: 60. Type locality: «Fort Riley [junction of Republican and Smoky Hill Rivers, Kansas]» (original citation). Holotype [by monotypy] (♀) in MCZ [# 10].

Cicindela alata Liljeblad, 1932: 215. Type locality: «Chicago [Cook County], Illinois» (original citation). Holotype (♂) in FMNH (Kippenhan 1996b: 52). Synonymy established by Horn (1935: 66). Note. Kippenhan (1996b: 53) reported that the original specimens of Liljeblad were "introduced" into Chicago since *C. cursitans* is unknown from the vicinity of the city.

Distribution. The range of this species, also known as the "Ant-like Tiger Beetle," extends from North Dakota and west-central Minnesota (Tinerella and Rider 2000: 367) to the Ohio River Valley in West Virginia (Kirchner and Kondratieff 1999: 84), south to western Alabama (Löding 1945: 10), Louisiana, and northern Kansas (Popenoe 1877: 22) [see Pearson et al. 2006: Map 90]; also recorded from "Montana" (Erwin and Pearson 2008: 207).

Records. USA: AL, AR, IA, IL, IN, KS, KY, LA, MN, MO, MS, ND, NE, OH, SD, TN, WV [MT]

Cylindera debilis (Bates, 1890)

Cicindela debilis Bates, 1890: 509. Type locality: «Ciudad in Durango [Mexico]» (original citation). Three syntypes in DEI (Döbler 1973: 372).

Cicindela debilis var. *segnis* E.D. Harris, 1913: 69. Type locality: «Sonoita [Santa Cruz County], Ariz[ona]» (original citation). Syntype(s) in MCZ [# 23553]. Synonymy established by Cazier (1954: 287).

Distribution. This species, also known as the "Grass-runner Tiger Beetle," ranges from southeastern Arizona to southwestern Texas [see Pearson et al. 2006: Map 87], south to Durango (Cazier 1954: 287).
Records. USA: AZ, NM, TX – Mexico

Cylindera lemniscata lemniscata (LeConte, 1854)

Cicindela lemniscata LeConte, 1854d: 220. Type locality not stated; cited from «probably the valley of the Gila [River]» by LeConte (1856a: 59). Holotype [by monotypy] (♂) in MCZ [# 19].

Distribution. This subspecies, also known as the "White-striped Tiger Beetle," ranges from southern California to southwestern New Mexico, as far north as southwestern Utah (Tanner 1929a: 86), south to Nayarit (Cazier 1960: 12) [see Shook 1989: Fig. 1].
Records. USA: AZ, CA, NM, NV, UT – Mexico

Cylindera lemniscata rebaptisata (Vaurie, 1951)

Cicindela lemniscata rufipes Vaurie, 1950: 5 [primary homonym of *Cicindela rufipes* Klug, 1825]. Type locality: «Van Horn, Culberson County, Texas» (original citation). Holotype (♂) in AMNH [# 1209].

Cicindela lemniscata rebaptisata Vaurie, 1951: 12. Replacement name for *Cicindela lemniscata rufipes* Vaurie, 1950.

Distribution. This subspecies, the "Rouged Tiger Beetle," is known from northeastern New Mexico south to southern Durango and Tamaulipas [see Shook 1989: Fig. 1].
Records. USA: NM, TX – Mexico
Note. Intergrades between the two subspecies of *C. lemniscata* occur over a small area in south-central New Mexico and northern Chihuahua [see Shook 1989: Fig. 1]. On the Baja California Peninsula, this species is represented by *C. lemniscata bajacalifornica* (Shook).

Cylindera lunalonga (Schaupp, 1884)

Cicindela lunalonga Schaupp, 1884b: 122. Type locality: «Sierra Nevada, Cal[ifornia]» (original citation), herein restricted to near Westwood, Lassen County (see Kippenhan and Knisley 2009: 30). Holotype [by monotypy] (♀) apparently destroyed.

Cicindela lunalonga var. *tuolumnae* Leng, 1902: 157. Type locality: «Hetch Hetchy Valley, Tuolumne Co[unty], Cal[ifornia]» (original citation). Lectotype (♀), designated by Dahl (1941: 191), in AMNH [# 1228]. Synonymy established (as aberration) by Horn (1905: 23), confirmed by Kippenhan and Knisley (2009: 30).

Cicindela tularensis Casey, 1914: 19. Type locality: «Tulare Co[unty], California» (original citation). Four syntypes [4 originally cited] in USNM [# 45919]. Synonymy established by Horn (1915: 444), confirmed by Kippenhan and Knisley (2009: 31).

Cicindela pusilla wagneri Cazier, 1937c: 117. Type locality: «Friant, Freno Co[unty], Cal[ifornia]» (original citation). Holotype (♀) in AMNH [# 1203]. Synonymy established by Cazier (1948: 17), confirmed by Kippenhan and Knisley (2009: 31).

Distribution. This species, also known as the "Meadow Tiger Beetle," is restricted to the western and northern slopes of the Sierra Nevada and adjacent eastern portion of the San Joaquin Valley of California (Woodcock et al. 2006: 869). Specimens labeled from Riverside in California, Prescott in Arizona (see Cazier 1939: 28), and Olmito and San Benito in Texas are doubtful or in error (Woodcock et al. 2006: 869); the records from San Pedro Mártir Mountains in Baja California (Cazier 1948: 18) and "Nevada" (Boyd 1982: 16) need confirmation. Extensive surveys in the past 20 years have produce a sole extant population, near Westwood in Lassen County leading Woodcock et al. (2006: 875) to suggest that the species should be considered as a candidate for listing as a Threatened and Endangered species by the U.S. Fish and Wildlife Service.
Records. USA: CA [NV]
Note. This form has been considered a subspecies of *C. terricola* (Say) or a full species depending on the author until mitochondrial DNA analysis indicates that it is a distinct species (Woodcock et al. 2006).

Cylindera terricola cinctipennis (LeConte, 1846)

Cicindela cinctipennis LeConte, 1846b: 182. Type locality: «apud Rocky Mountains» (original citation), cited from «Platte and Arkansas River» by LeConte (1856a: 46). Syntype(s) in MCZ [# 6].

Cicindela cyanella LeConte, 1856a: 46. Type locality: «Yellowstone River, Upper Missouri [probably in northeastern Montana]» (original citation). Holotype [by monotypy] in MCZ [# 11]. Synonymy established (as aberration) by Horn (1905: 23).

Distribution. The range of the "Belted-winged Tiger Beetle" is disputed. According to Johnson (1990b: Fig. 1), it ranges from west-central Alberta to southeastern Saskatchewan, south to central New Mexico and central Arizona; isolated in southwestern Utah and southwestern Yukon Territory. According to Pearson et al. (2006: 153), it is found in "lower elevations of Colorado, New Mexico, and Arizona." Erwin and Pearson (2008: 222) recorded the subspecies from the same states as Pearson et al. (2006: 153) and added Kansas (also cited by Leng 1902: 155).
Records. CAN: AB, SK, YT **USA**: AZ, CO, MT, ND, NE, NM, SD, UT, WY

***Cylindera terricola continua* (Knaus, 1923)**

Cicindela pusilla imperfecta form *continua* Knaus, 1923: 195. Type locality: «Baldwin Lake near Pine Knot (8,500 feet), San Bernardino Mountains [San Bernardino County], California» (original citation). Holotype probably in KSUC. Note. This taxon was clearly proposed as an infrasubspecific entity by Knaus (1923: 195) but since it was adopted as the valid name of a subspecies before 1985 (e.g., Boyd 1982: 16), it is deemed to be subspecific from its original publication (ICZN 1999: Article 45.6.4.1). The subspecies is credited to Pearson, Knisley and Kazilek (2006: 153) by some authors (e.g., Kippenhan 2007: 7; Erwin and Pearson 2008: 222) but since these authors failed to indicate explicitly that the taxon was intentionally new, a mandatory requirement (ICZN 1999: Article 16.1), the name could not be credited to them even if Knaus' name was unavailable.

Distribution. This subspecies, the "Interior Tiger Beetle," is known from Nye County in western Nevada and from the Traverse Mountain Range in western Ventura County eastwards to the San Bernardino Mountains in San Bernardino County and the southern tip of the Sierra Nevada in Kern County, California (Kippenhan 2007: 14, Fig. 8). The record from "NE" (Erwin and Pearson 2008: 222) is probably an error for "NV."
Records. USA: CA, NV
Note. Freitag (1999: 87) listed this taxon as a junior synonym of *C. terricola imperfecta* (LeConte) but Pearson et al. (2006: 153) and Kippenhan (2007: 7) retained it as a valid subspecies.

***Cylindera terricola imperfecta* (LeConte, 1851)**

Cicindela imperfecta LeConte, 1851: 171. Type locality: «California borealis» (original citation), cited from «Sacramento» by LeConte (1856a: 45). One syntype in MCZ [# 17].

Distribution. This subspecies, the "Imperfect Tiger Beetle," ranges from westernmost Alberta and British Columbia, as far north as Fort Saint John along the Peace River (Catling 2007: 19), south to southern Utah, southern Nevada, and Mono County (Kippenhan 2007: 13) in west-central California [see Johnson 1990b: Fig. 1]; also recorded from "Arizona" and "Wyoming" by Erwin and Pearson (2008: 222). The record from New Mexico (Fall and Cockerell 1907: 155) must be in error.
Records. CAN: AB, BC **USA**: CA, ID, MT, NV, OR, UT, WA [AZ, WY]

***Cylindera terricola kaibabensis* (Johnson, 1990)**

Cicindela pusilla kaibabensis Johnson, 1990b: 4. Type locality: «8 miles north of Kaibab Lodge, Coconino Co[unty], Arizona» (original citation). Holotype (♂) in AMNH [# 1551].

Distribution. This subspecies, the "Kaibab Tiger Beetle," is known only from the Kaibab Plateau of northern Arizona (Johnson 1990b: 1).
Records. USA: AZ

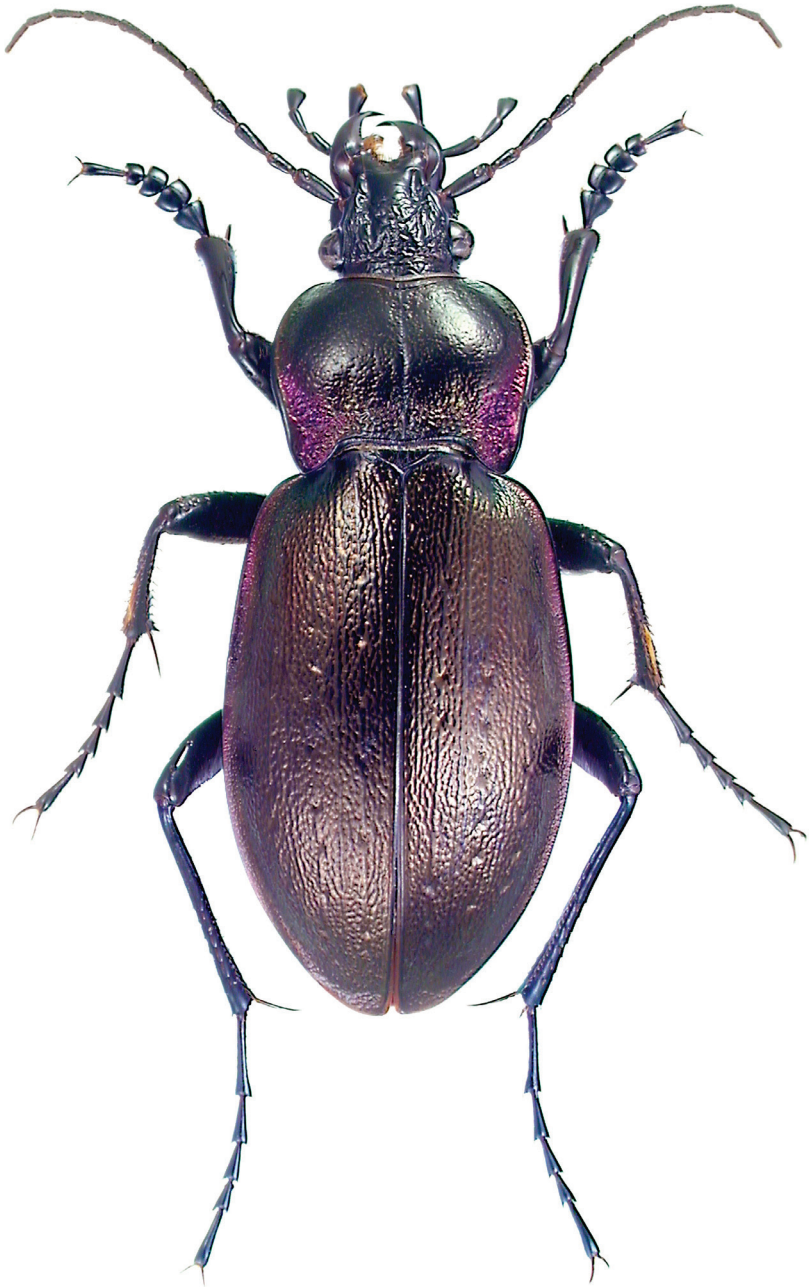

Figure 10. *Carabus nemoralis* Müller. This European species was first discovered on this continent in New Brunswick around 1890 and was recovered on the west side of Lake Ontario in 1919 and in southeastern Wisconsin by 1934. Unless the species went undetected for a long period of time, these dates would suggest that the species spread westwards for an average of 38 km per year. This is highly improbable for a wingless species and therefore its spread on this continent was undoubtedly enhanced by human transport unless separate introductions occurred.

***Cylindera terricola susanagreae* (Kippenhan, 2007)**

Cicindela terricola susanagreae Kippenhan, 2007: 15. Type locality: «4 mi[les] N[orth] of Big Pine, Inyo Co[unty], Calif[ornia]» (original citation). Holotype (♂) in CAS.

Distribution. This subspecies, the "Susan's Tiger Beetle," is restricted to the valleys east of the Sierra Nevada Mountains in Mono and Inyo Counties, California [see Kippenhan 2007: Fig. 8].
Records. USA: CA

***Cylindera terricola terricola* (Say, 1824)**

Cicindela pusilla Say, 1817b: 21 [primary homonym of *Cicindela pusilla* Schreber, 1759]. Type locality: «the Missouri, above the confluence of the river Platte» (original citation, see page 19 for *Cicindela formosa*). Syntype(s) lost.

Cicindela terricola Say, 1824: 269. Type locality: «North-west Territory» (original citation). Syntype(s) lost. Synonymy established by Horn (1915: 390). Note. In the late 1810s and early 1820s, the Northwest Territory consisted of Ohio and parts of Michigan and Minnesota. Say's specimen(s) was collected during the expedition to Saint Peter's River which extended also into southeastern Manitoba and western Ontario. Say's specimen(s) of *C. terricola* was probably collected in Manitoba.

Cicindela pusilla sayanella Casey, 1914: 19. Type locality: «Monroe Cañon, Sioux Co[unty], Nebraska» (original citation). One syntype in USNM [# 45920]. Synonymy established by Horn (1915: 444).

Distribution. This subspecies, also known as the "Variable Tiger Beetle," ranges from northwestern Ontario (Lawton 2008: 73) to southeastern Saskatchewan, south to northwestern Nebraska [see Johnson 1990b: Fig. 1]. The record from Minnesota (Horn 1928: 12) needs confirmation.
Records. CAN: MB, ON, SK **USA**: ND, NE, SD [MN]

***Cylindera unipunctata* (Fabricius, 1775)**

Cicindela unipunctata Fabricius, 1775: 225. Type locality: «America» (original citation), herein restricted to "Brown's Woods", near Pittsburgh, Allegheny County, Pennsylvania (see Leng 1902: 119). Lectotype [as type], designated by Staig (1931: 8), in HMUG.

Distribution. The range of this species, also known as the "One-spotted Tiger Beetle," extends from northeastern New York to central Georgia and southern Mississippi, west to western Missouri [see Pearson et al. 1997: Fig. 19]. The record from "Texas" (Horn 1915: 389) is probably in error or based on a stray.
Records. USA: AL, AR, DC, GA, IA, IL, IN, KY, MD, MN, MO, MS, NC, NJ, NY, OH, PA, SC, TN, VA, WV

***Cylindera viridisticta arizonensis* (Bates, 1884)**

Cicindela viridisticta var. *arizonensis* Bates, 1884: 260. Type locality: «Arizona; northern Sonora, Mexico» (original citation). Syntype(s) in BMNH.

Distribution. This subspecies, the "Pygmy Tiger Beetle," ranges from central Arizona (Pearson et al. 2006: 156) south to Durango (Cazier 1954: 285).
Records. USA: AZ – Mexico
Note. The subspecies *C. viridisticta viridisticta* (Bates) and *C. viridisticta interjecta* (Horn) are Mexican endemics.

Genus *Ellipsoptera* Dokhtouroff, 1883

Ellipsoptera Dokhtouroff, 1883b: 70. Type species: *Cicindela hirtilabris* LeConte, 1875 designated by Horn (1915: 236). Etymology. From the Latin *ellipsis* (lack, defect) and the Greek *pteron* (wing) [feminine].

Diversity. Thirteen North American species (27 species-group taxa), of which five extend into Mexico, as far south as the state of Yucatan, and one into the Bahamas and Cuba.

[**marginata group**]
***Ellipsoptera blanda* (Dejean, 1831)**

Cicindela blanda Dejean, 1831: 238. Type locality: «Amérique septentrionale» (original citation), herein restricted to Lynches River State Park, Florence County, South Carolina (see Cartwright 1935: 75). Syntype(s) in MHNP.
Cicindela tarsalis LeConte, 1852b: 66. Type locality: «Canootche river, Georgia» (original citation). Holotype [by monotypy] (♂) in MCZ [# 39]. Synonymy established by LeConte (1856a: 49).

Distribution. This species, also known as the "Sandbar Tiger Beetle," is endemic to the Coastal Plain ranging from southeastern North Carolina to the Florida Panhandle west to southeastern Mississippi and southwestern Louisiana [see Pearson et al. 2006: Map 97].
Records. USA: AL, FL, GA, LA, MS, NC, SC

***Ellipsoptera cuprascens* (LeConte, 1852)**

Cicindela cuprascens LeConte, 1852b: 65. Type locality: «Arkansas river» (original citation), cited from «Missouri and Kansas» by LeConte (1856a: 49). Syntype(s) in MCZ [# 9].
Cicindela cuprascens amnicola Casey, 1913: 37. Type locality: «Kentucky, Illinois and Missouri» (original citation). Four syntypes in USNM [# 45956]. Synonymy established by Horn (1915: 395).
Cicindela mundula Casey, 1913: 37. Type locality: «Vicksburg [Warren County], Mississippi» (original citation). One syntype in USNM [# 45957]. Synonymy established by Horn (1915: 395).

Distribution. This species, also known as the "Coppery Tiger Beetle," ranges from southern Ohio to southwestern Manitoba and central Montana, south to east-central New Mexico, eastern Texas, and southern Alabama [see Pearson et al. 2006: Map 100]; also known from one locality in northern Georgia. The record from "Wisconsin" (Bousquet and Larochelle 1993: 68) is likely in error (Peter W. Messer pers. comm. 2007).
Records. CAN: MB **USA**: AL, AR, CO, GA, IA, IL, IN, KS, KY, LA, MN, MO, MS, MT, ND, NE, NM, OH, OK, SD, TN, TX, WV, WY

Ellipsoptera gratiosa (Guérin-Méneville, 1840)

Cicindela gratiosa Guérin-Méneville, 1840: 37. Type locality: Pensacola, Escambia County, Florida (inferred from title of the paper). One syntype in MCZ (collection LeConte).

Distribution. This species, also known as the "Whitish Tiger Beetle," inhabits the Coastal Plain ranging from Virginia (Hoffman et al. 2006: 17) to the Florida Panhandle, west to southwestern Alabama (Löding 1945: 10) [see Pearson et al. 2006: Map 106]; also recorded from "Mississippi" (Erwin and Pearson 2008: 229). The record from Louisiana (Boyd 1982: 17) is probably in error or based on a stray.
Records. USA: AL, FL, GA, NC, SC, VA [MS]

Ellipsoptera hamata lacerata (Chaudoir, 1854)

Cicindela lacerata Chaudoir, 1854: 115. Type locality: «Floride» (original citation), herein restricted to Cedar Key, Levy County (see Leng 1915: 561, as *C. hamata*). Syntype(s) in MHNP.

Distribution. This subspecies, the "Gulf Beach Tiger Beetle," is found along the Gulf coast of Florida, including the Keys (Choate 2003: Map 61), and Alabama (Löding 1945: 10). The record from Horn Island, Mississippi (Richmond 1968: 234), is in error for *E. hamata monti* (Graves and Pearson 1973: 187); those from "North Carolina," "South Carolina," "Georgia," and "Louisiana" (Erwin and Pearson 2008: 229) are probably in error or based on strays.
Records. USA: AL, FL
Note. The nominotypical subspecies is known from the states of Tabasco and Veracruz and *E. hamata pallifera* (Chaudoir) from the states of Quintana Roo and Yucatán (Erwin and Pearson 2008: 229-230).

Ellipsoptera hamata monti (Vaurie, 1951)

Cicindela hamata monti Vaurie, 1951: 4. Type locality: «Ten miles southwest of Sabine, Jefferson County, Texas» (original citation). Holotype (♂) in AMNH [# 1213].

Distribution. This subspecies, the "Coastal Tiger Beetle," is found along the Gulf Coast from Mississippi (Graves and Pearson 1973: 187) to the state of Veracruz in Mexico (Erwin and Pearson 2008: 230).

Records. USA: LA, MS, TX – Mexico

Ellipsoptera hirtilabris (LeConte, 1875)

Cicindela hirtilabris LeConte, 1875a: 161. Type locality: «near Hogarth's landing, and near Spring Cove, Florida» (original citation), herein restricted to Hogarths Landing, Saint Johns County. Syntype(s) in MCZ [# 15].

Distribution. This species, also known as the "Moustached Tiger Beetle," ranges from east-central Georgia (Beaton 2008: 42) to southern Florida (Choate 2003: Map 63; Pearson et al. 2006: 174). The record from "North Carolina" (Erwin and Pearson 2008: 230) is probably in error or based on a stray.
Records. USA: FL, GA

Ellipsoptera lepida (Dejean, 1831)

Cicindela lepida Dejean, 1831: 255. Type locality: «Amérique septentrionale» (original citation), herein restricted to Trenton, Mercer County, New Jersey (see LeConte 1846b: 181). Syntype(s) in MHNP.

Cicindela lepida insomnis Casey, 1913: 35. Type locality: «Seward Co[unty], Kansas» (original citation). One syntype in USNM [# 46000]. Synonymy established by Horn (1915: 395).

Distribution. This species, also known as the "Ghost Tiger Beetle," ranges from southern Quebec to southeastern Alberta (Hilchie 1985: 333), south to Chihuahua (Cazier 1954: 297), central Texas, southern Louisiana, and eastern North Carolina, west to western Arizona and eastern Nevada [see Pearson et al. 1997: Fig. 17]. The record from South Carolina, based on a specimen in CMNH, is probably in error (Knisley and Schultz 1997: 113). According to Erwin and Pearson (2008: 231), the Ghost Tiger Beetle has been extirpated over much of its former range due to habitat loss.
Records. CAN: AB, MB, ON, QC, SK **USA**: AL, AR, AZ, CO, CT, DE, IA, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, MT, NC, ND, NE, NJ, NM, NV, NY, OH, OK, PA, SD, TN, TX, UT, VA, WI, WY – Mexico

Ellipsoptera macra ampliata (Vaurie, 1951)

Cicindela macra ampliata Vaurie, 1951: 10. Type locality: «Denton County, Texas» (original citation). Holotype (♂) in AMNH [# 1214].

Distribution. This subspecies, the "Denton Tiger Beetle," is known from Dallas, Denton, and Kaufman Counties in northern Texas (Vaurie 1951: 10) [see Willis 1967: Fig. 137].
Records. USA: TX

***Ellipsoptera macra fluviatilis* (Vaurie, 1951)**

Cicindela macra fluviatilis Vaurie, 1951: 8. Type locality: «Red River, north of Quanah, Hardeman County, Texas» (original citation). Holotype (♂) in AMNH [# 1215].

Distribution. This subspecies, the "Panhandle Tiger Beetle," is found in Oklahoma, northern Texas, and northeastern New Mexico [see Pearson et al. 2006: Map 101]. The records from "Arkansas" and "Kansas" (Boyd 1982: 17) need confirmation.
Records. USA: NM, OK, TX [AR, KS]
Note. Willis (1967) indicated the presence of narrow zones of intergradation between this subspecies and the other two.

***Ellipsoptera macra macra* (LeConte, 1856)**

Cicindela macra LeConte, 1856a: 50. Type locality: «Wisconsin and Minnesota» (original citation), herein restricted to Jordan, Scott County, Minnesota (see Horn 1928: 13). Syntype(s) in MCZ [# 21].
Cicindela macra mercurialis Casey, 1913: 36. Type locality: «Iowa» (original citation). One syntype in USNM [# 45955]. Synonymy established by Horn (1915: 395).
Cicindela macra topekana Casey, 1916: 31. Type locality: «M[oun]t Hope, Kansas» (original citation). Three syntypes [3 originally cited] in USNM [# 45954]. Synonymy established by Horn (1926: 299).

Distribution. This subspecies, also known as the "Sandy Stream Tiger Beetle," ranges from Beaver Islands in northern Michigan (Dunn 1987: 11) to southern Wyoming, south to north-central Colorado (Kippenhan 1990: 314), Arkansas, and Tennessee [see Pearson et al. 2006: Map 101]. The record from "Ohio" (Willis 1967: 269) needs confirmation (see Graves and Brzoska 1991: 28); that from "Texas" (Freitag 1999: 94) probably refers to the *fluviatilis* form; those from central and southeastern New Mexico (Fall and Cockerell 1907: 155) are probably in error.
Records. USA: AR, CO, IA, IL, IN, KS, KY, LA, MI, MN, MO, NE, OK, SD, TN, WI, WY [OH]
Note. Intergrades between this and the *fluviatilis* forms occur in southern Kansas and eastern Oklahoma (Pearson et al. 2006: 169).

***Ellipsoptera marginata* (Fabricius, 1775)**

Cicindela marginata Fabricius, 1775: 226. Type locality: «Virginia» (original citation), herein restricted to Cobbs Island, Chesterfield County (see Harris 1911: 57). One syntype in ZMUC (Zimsen 1964: 65).
Cicindela variegata Dejean, 1825: 84. Type locality: «Amérique septentrionale» (original citation). Holotype [by monotypy] (♀) in MHNP. Synonymy established by Say (1830a: 68).

Distribution. This species, also known as the "Margined Tiger Beetle," is found along the Atlantic Coast from Kings County in Nova Scotia (Neil and Majka 2008:

4) to the Florida Keys and along the Gulf Coast in Florida [see Pearson et al. 2006: Map 96]; it is also recorded from the Bahamas and Cuba (Peck 2005: 27). According to Dunn (1983: 4), the species has declined significantly along the New Hampshire coast.
Records. CAN: NS **USA**: CT, DC, DE, FL, GA, MA, MD, ME, NC, NH, NJ, NY, RI, SC, VA – Bahamas, Cuba

***Ellipsoptera puritana* (Horn, 1871)**

Cicindela puritana G.H. Horn, 1871: 325. Type locality: «N[ew] H[ampshire]» (lectotype label). Lectotype (♂), designated by Ward (1982: 61), in MCZ [# 16273].

Distribution. This species, also known as the "Puritan Tiger Beetle," is now restricted to two areas, one along the Connecticut River in southern Massachusetts and Connecticut, the other one along the Chesapeake Bay in Maryland (Pearson et al. 2006: 170, 193). It formerly occurred along the Connecticut River as far north as central New Hampshire.
Records. USA: CT, MA, MD, NH, NJ, NY, VA, VT
Note. This species has been listed as threatened by the U.S. Fish and Wildlife Service in August 1990.

***Ellipsoptera wapleri* (LeConte, 1875)**

Cicindela wapleri LeConte, 1875a: 158. Type locality: «Mississippi» (original citation). Holotype [by monotypy] (♂) in MCZ [# 44]. Etymology. The specific name was proposed for Émile Wapler, a French from Mulhouse, who collected insects in southern United States.

Distribution. This species, also known as the "White-sand Tiger Beetle," is found along a small area within the Coastal Plain from south-central Georgia to eastern Louisiana [see Pearson et al. 2006: Map 98]. Beaton (2008: 42) did not find this species at any historical sites in Georgia during his survey of the tiger beetles of the state.
Records. USA: AL, FL, GA, LA, MS

[**sperata group**]
***Ellipsoptera nevadica citata* (Rumpp, 1977)**

Cicindela nevadica citata Rumpp, 1977: 175. Type locality: «8 kilometers west-southwest of Willcox [Cochise County, Arizona]» (original citation). Holotype (♂) in CAS [# 12528].

Distribution. This subspecies, the "Chiracahua Tiger Beetle," is known from southeastern Arizona and Sonora, Mexico (Spomer 2004: 409); also recorded from "New Mexico" (Erwin and Pearson 2008: 233).
Records. USA: AZ [NM] – Mexico

***Ellipsoptera nevadica knausii* (Leng, 1902)**

Cicindela knausii Leng, 1902: 166. Type locality: «near Kackley, Belvidere, and Great Spirit Springs, Kansas» (original citation). Syntype(s) location unknown. Etymology. This taxon was proposed in honor of Warren Knaus [1858-1937], amateur coleopterist and founder, owner, and editor of *The Democrat* in McPherson, Kansas which became, after the purchase of *The Opinion* in 1912, the *Democratic Opinion* until the time of his death. Knaus made several collecting trips to western United States and assembled a collection of nearly 90,000 specimens which he donated to the Kansas State University (at the time the Kansas State College) in Manhattan, March 1917. The collection was transferred to the university only in July 1937, shortly after Knaus' death.

Distribution. This subspecies, the "Knaus's Tiger Beetle," ranges from southern Manitoba to southeastern Alberta, south to central New Mexico and central Texas [see Willis 1967: Fig. 143].
Records. CAN: AB, MB, SK **USA**: CO, KS, MT, ND, NE, NM, OK, SD, TX, WY

***Ellipsoptera nevadica lincolniana* (Casey, 1916)**

Cicindela lincolniana Casey, 1916: 32. Type locality: «Lincoln [Lancaster County], Nebraska» (original citation). Two syntypes in USNM [# 45959].

Distribution. This subspecies, also known as the "Salt Creek Nevada Tiger Beetle," has been reported yet only from around the type locality in eastern Nebraska [see Willis 1967: Fig. 143]. Population estimates vary yearly from a few hundred to under a thousand specimens (Spomer et al. 2008a: 43).
Records. USA: NE
Note. This species has been listed as endangered by the U.S. Fish and Wildlife Service in October 2005.

***Ellipsoptera nevadica makosika* (Spomer, 2004)**

Cicindela nevadica makosika Spomer, 2004: 410. Type locality: «Indian Creek, Pennington Co[unty], S[outh]D[akota]» (original citation). Holotype (♂) in USNM.

Distribution. This subspecies, the "Indian Creek Tiger Beetle," is known only from the type locality in the South Dakota Badlands (Spomer 2004: 410).
Records. USA: SD

***Ellipsoptera nevadica nevadica* (LeConte, 1875)**

Cicindela nevadica LeConte, 1875a: 159. Type locality: «Nevada» (original citation), herein restricted to Ash Meadows, Nye County (see Willis 1967: 280). Syntype(s) in MCZ [# 26].

Distribution. This subspecies, also known as the "Nevada Tiger Beetle," is found in the Great Basin region of Nevada and California south to northern Sonora [see Willis 1967: Fig. 143].
Records. USA: CA, NV – Mexico
Note. Another subspecies, *E. nevadica metallica* (Sumlin), is known from the state of Coahuila.

Ellipsoptera nevadica olmosa (Vaurie, 1951)

Cicindela nevadica olmosa Vaurie, 1951: 6. Type locality: «Los Olmos, Kenedy County, Texas» (original citation). Holotype (♂) in AMNH [# 1216].

Distribution. This subspecies, the "Olmos Creek Tiger Beetle," ranges from southeastern Arizona to southeastern Texas, including northern Coahuila [see Willis 1967: Fig. 143].
Records. USA: AZ, NM, TX – Mexico

Ellipsoptera nevadica tubensis (Cazier, 1939)

Cicindela nevadica tubensis Cazier, 1939: 25. Type locality: «Tuba City, Coconino Co[unty], Arizona» (original citation). Holotype (♀) probably in AMNH.

Distribution. This subspecies, the "Tube Tiger Beetle," ranges from northeastern Utah to central Arizona and northwestern New Mexico [see Willis 1967: Fig. 143].
Records. USA: AZ, CO, NM, UT

Ellipsoptera rubicunda (Harris, 1911)

Cicindela cuprascens sperata var. *rubicunda* E.D. Harris, 1911 [before 31 May]: 55. Type locality: «Albuquerque and Deming, New Mex[ico]» (original citation). Syntype(s) in MCZ [# 25613]. Note. 1. Even if Harris (1911: 55) expressly gave this name an infrasubspecific rank, it is subspecific because it was adopted as the valid name of a subspecies before 1985 (e.g., Rumpp 1977: 176) (ICZN 1999: Article 45.6.4.1). 2. This name has been listed as a junior synonym of *E. marutha* (Dow) since Cazier (1954: 296). However, Harris' name is older than Dow's name. Indeed *E. marutha* was made available by Dow in the June 1911 (page 272) issue of volume 22 of the *Entomological News* mailed on 31 May. In the same issue (page 283), Henry Skinner reviewed Harris' catalogue where the name *rubicunda* was proposed. Furthermore, Dow (1911: 271) reported "I have a good share of the color forms recognized in the E.D. Harris catalogue" indicating that he had Harris' catalogue at the time. The statement of Harris (1911: 55) that "*marutha* is the brilliant green form lately described by Dow" was certainly in error. There is no precise date on Harris' catalogue except that the "introduction" is dated February 1911. 3. *Cicindela cuprascens sperata* var. *marutha* was first described by Harris (1911: 55) in the same catalogue. However, his name was not adopted as the valid name

of a subspecies since, to my knowledge, *marutha* has always been subsequently attributed to Dow.

Cicindela sperata var. *marutha* Dow, 1911 [31 May]: 272. Type locality: «[possibly] F[or]t Wingate [McKinley County], New Mexico» (original citation). Syntype(s) [2 originally cited] in AMNH [# 1204]. Synonymy established by Cazier (1954: 296). Note. Dow (1911: 271) did not formerly state a locality for his syntypes but simply wrote that he received the material "from Mr. John Woodgate, Ft. Wingate, New Mexico."

Distribution. This species, also known as the "Aridland Tiger Beetle," is found from northern Utah to southern Colorado, south to Chihuahua (Cazier 1954: 297) [see Pearson et al. 1997: Fig. 29]. The record from "Arkansas" (Boyd 1982: 17) is in error or based on a stray.

Records. USA: AZ, CO, NM, TX, UT – Mexico

Note. Rumpp (1977: 176) recognized *marutha* and *rubicunda* as distinct subspecies under the specific name *E. marutha*. I have followed Freitag (1999: 95) in considering the two taxa as synonyms.

Ellipsoptera sperata inquisitor (Casey, 1897)

Cicindela inquisitor Casey, 1897: 298. Type locality: «Austin [Travis County], Texas» (original citation). One syntype in USNM [# 45958].

Distribution. This subspecies, the "Inquisitor Tiger Beetle," is found in central Texas (Pearson et al. 2006: 171).

Records. USA: TX

Ellipsoptera sperata sperata (LeConte, 1856)

Cicindela sperata LeConte, 1856a: 50. Type locality: «Rio Grande, at various places» (original citation), herein restricted to El Paso, El Paso County, Texas (see Harris 1911: 55). Syntype(s) in MCZ [# 36].

Distribution. This subspecies, also known as the "Rio Grande Tiger Beetle," ranges from northern Utah to northeastern New Mexico [see Pearson et al. 2006: Map 103], south to Durango and Tamaulipas (Cazier 1954: 296). The records from western Kansas (Popenoe 1877: 22; Snow 1878: 63) and "Oklahoma" (Boyd 1982: 17) need confirmation; that from Yuma, California (Leng 1902: 167) is likely in error.

Records. USA: AZ, CO, NM, TX, UT [KS, OK] – Mexico

Note. Another subspecies, *E. sperata vauriei* (Cazier), is known from the state of Sonora in Mexico.

Genus *Microthylax* Rivalier, 1954

Microthylax Rivalier, 1954: 260. Type species: *Cicindela digueti* Horn, 1897 by original designation. Etymology. From Greek *micros* (small, little) and *thylax* (bag, sack,

pouch), alluding to the small size of the endophallus ("*pénis ... avec un sac interne très peu développé et occupant seulement la portion subterminale du pénis*") [masculine].

Diversity. Three species (five species-group taxa) in United States and Cuba (one species) and Mexico (two species), including Baja California.

Microthylax olivaceus (Chaudoir, 1854)

Cicindela olivacea Chaudoir, 1854: 118. Type locality: «Cuba» (original citation). Syntype(s) [2 originally cited] in MHNP.

Distribution. This species, also known as the "Olive Tiger Beetle," is found in Cuba and southern Florida, including the Keys [see Woodruff and Graves 1963: Fig. 3]. Apparently the species has not been sighted in Florida since the 1980s (Pearson et al. 2006: 149).
Records. USA: FL – Cuba

Genus *Opilidia* Rivalier, 1954

Opilidia Rivalier, 1954: 261. Type species: *Cicindela macrocnema* Chaudoir, 1852 by original designation. Etymology. Unknown [feminine].

Diversity. Six Neotropical species, of which one is represented by a distinct subspecies in southeastern Texas.

Opilidia chlorocephala smythi (Harris, 1913)

Cicindela smythi E.D. Harris, 1913: 67. Type locality: «ocean side of Padre Island [Kenedy County], Texas» (original citation). Syntype(s) in MCZ [# 23551]. Etymology. This species was named after Eugene Graywood Smyth [1886-1975], economic entomologist with the United States Department of Agriculture. Smyth had an interest in tiger beetles.

Distribution. This subspecies, the "Smyth's Beach Tiger Beetle," is known only from the type locality in southeastern Texas. No specimens have been collected since the original ones (over 80 specimens) in June 1912.
Records. USA: TX
Note. The nominotypical subspecies is found along the Gulf Coast of Mexico, as far south as Veracruz, and from Honduras (Erwin and Pearson 2008: 290).

Genus *Brasiella* Rivalier, 1954

Brasiella Rivalier, 1954: 261. Type species: *Cicindela argentata* Fabricius, 1801 by original designation. Etymology. Unknown [feminine].

Diversity. Thirty-eight Neotropical species (Lorenz 2005: 58), of which one extends into southwestern North America.

Faunistic Note. The Cuban *B. viridicollis* (Dejean) is known in North America from a single specimen, probably a stray, collected in the Florida Keys in 1983 (Schiefer 2005: 551; Pearson et al. 2006: 151). The species is not considered here as a North American entity.

***Brasiella wickhami* (Horn, 1903)**

Cicindela wickhami W. Horn, 1903a: 182. Type locality: «Tucson, S[üd] Arizona» (original citation). Three syntypes in DEI (Döbler 1973: 418).

Distribution. This species, also known as the "Sonoran Tiger Beetle," ranges from southern Arizona south to Sinaloa; it is also found in southern Baja California Peninsula (Cazier 1954: 286). The record from "California" (Erwin and Pearson 2008: 118) needs confirmation.
Records. USA: AZ [CA] – Mexico

Genus *Dromochorus* Guérin-Méneville, 1849

Dromochorus Guérin-Méneville, 1849: [plate 162] 1. Type species: *Dromochorus pilatei* Guérin-Méneville, 1849 by monotypy. Etymology (original). From the Greek *dromos* (running) and *choros* (land, country, by extension field), probably alluding to the circumstance upon which the holotype of *C. pilatei* was found [masculine].
Dromeochora Gistel, 1850: 75. Unnecessary replacement name for *Dromochorus* Guérin-Méneville, 1849.

Diversity. Four North American species, one of them extending into northern Mexico.

***Dromochorus belfragei* Sallé, 1877**

Dromochorus belfragei Sallé, 1877: 6. Type locality: «Dallas, Wasco, sur les bords de la Trinity-River, Texas» (original citation). Syntype(s) probably in MHNP. Etymology. The specific name honors Gustav Wilhelm Belfrage [1834-1882], a professional insect collector in Texas. Belfrage was born in Stockholm, Sweden, and moved to the United States in his 20s. During Belfrage's time, the standard rate was five cents per specimen (Sorensen 1995: 37).
Dromochorus bellefragei Heyne, 1893: 3. Unjustified emendation for *Dromochorus belfragei* Sallé, 1877.
Dromochorus sericeus Casey, 1897: 294. Type locality: «Texas» (original citation). Two syntypes [3 originally cited] in USNM [# 45894] and one in DEI (Döbler 1973: 409). Synonymy established by Leng (1902: 110).

Distribution. This species, also known as the "Loamy-ground Dromo Tiger Beetle," ranges from central and coastal Texas (Pearson et al. 2006: 160) south to Tamaulipas (Cazier 1954: 297); it was also recorded from southeastern Colorado (Michels et al. 2008).
Records. USA: CO, TX – Mexico

Dromochorus pilatei Guérin-Méneville, 1849

Dromochorus pilatei Guérin-Méneville, 1849: [plate 162] 2. Type locality: «Velasco [Brazoria County], Texas» (original citation). Holotype [by monotypy] (♂) probably in MHNP (collection J. Thomson, see Schaupp 1884a: 85). Etymology. The specific name honors Louis Pilate [1816-1852], a French naturalist traveller who collected in Alabama, Louisiana, Texas, and the state of Yucatán in Mexico. Pilate died at the age of 36 of hypertrophy of the heart.

Cicindela maga LeConte, 1875a: 161. Type locality: «near Lake Ponchartrain [Jefferson Parish], Louisiana» (original citation). Syntype(s) [3 originally cited] in MCZ [# 22]. Synonymy established by Sallé (1877: 5).

Distribution. This species, also known as the "Cajun Dromo Tiger Beetle," is found along and near the Gulf Coast in southern Louisiana (Schaupp 1884a: 85) and northeastern Texas [see Pearson et al. 2006: Map 92].
Records. USA: LA, TX

Dromochorus pruininus Casey, 1897

Dromochorus pruininus Casey, 1897: 294. Type locality: «Kansas» (original citation), herein restricted to Onaga, Pottawatomie County (see Harris 1911: 51, as *C. belfragei*). Three syntypes [3 originally cited] in USNM [# 45893].

Distribution. This species, also known as the "Frosted Dromo Tiger Beetle," ranges from northern Kansas and central Missouri (MacRae and Brown 2011a) south to Nueces and Webb Counties in southern Texas and west into the Texas Panhandle (Pearson et al. 2006: 160). There is also one record from east-central Nebraska (Pearson et al. 2006: 160).
Records. USA: KS, MO, OK, TX [NE]

Dromochorus velutinigrens Johnson, 1992

Dromochorus velutinigrens Johnson, 1992 [5 February]: 50. Type locality: «10 km east of Riviera, Kleberg Co[unty], Texas» (original citation). Holotype (♂) in CMN.

Dromochorus venetavelutinus Gage, 1992 ["31 December"]: 4. Type locality: «Port Mansfield, Willacy County, Texas» (original citation). Holotype (♀) in TME. Synonymy established by Pearson et al. (1997: 37).

Distribution. This species, also known as the "Velvet Dromo Tiger Beetle," is found only in southern Texas, primarily along the coast [see Pearson et al. 2006: Map 94].
Records. USA: TX

Genus *Habroscelimorpha* Dokhtouroff, 1883

Habroscelimorpha Dokhtouroff, 1883b: 69. Type species: *Cicindela dorsalis* Say, 1817 designated by Horn (1915: 236). Etymology. From the generic name *Habroscelis*

(an unjustified emendation of *Abroscelis*) and the Greek *morphe* (form), probably alluding to the resemblance of the adults to those of *Abroscelis* [feminine].

Habroscelidomorpha Bertkau, 1884: 266. Unjustified emendation of *Habroscelimorpha* Dokhtouroff, 1883.

Diversity. Western Hemisphere, with 18 species (33 species-group taxa) in the Nearctic (nine species, 18 species-group taxa) and Neotropical (14 species) Regions.

Habroscelimorpha californica mojavi (Cazier, 1937)

Cicindela californica mojavi Cazier, 1937c: 116. Type locality: «Mojave, Cal[ifornia]» (holotype label). Holotype (♂) in AMNH [# 1200].

Distribution. This subspecies, the "California Tiger Beetle," ranges from the Mojave Desert of southern California (Pearson et al. 2006: 138) south to northeastern Baja California Peninsula and northwestern Sonora (Cazier 1954: 289).

Records. USA: CA – Mexico

Note. This form intergrades with the *pseudoerronea* form at Soda Lake in northeastern San Bernardino County, California (Pearson et al. 2006: 139).

Habroscelimorpha californica pseudoerronea (Rumpp, 1958)

Cicindela californica pseudoerronea Rumpp, 1958: 150. Type locality: «seven miles north of Furnace Creek (260 feet), Death Valley, Inyo County, California» (original citation). Holotype (♂) in CAS [# 17194].

Distribution. This subspecies, the "Inland Tiger Beetle," is found only in the Death Valley in Inyo and San Bernardino Counties, California (Rumpp 1958: 151).

Records. USA: CA

Note. The nominotypical subspecies is found in the Baja California Peninsula and *H. californica brevihamata* (Horn) occurs in the states of Sinaloa and Sonora in Mexico.

Habroscelimorpha circumpicta circumpicta (LaFerté-Sénectère, 1841)

Cicindela circumpicta LaFerté-Sénectère, 1841a: 39. Type locality: Texas (inferred from title of the paper), herein restricted to Brownsville, Cameron County (see Willis 1967: 243). Syntype(s) probably in MHNP (collection Chaudoir).

Cicindela circumpicta inspiciens Casey, 1913: 33. Type locality: «Point Isabel [Cameron County], Texas» (original citation). One syntype in USNM [# 45997]. Synonymy established by Horn (1915: 390).

Distribution. This subspecies, also known as the "Cream-edged Tiger Beetle," is found from southeastern Oklahoma to northeastern Mexico [see Johnson 1993b: Fig. 1].

Records. USA: OK, TX – Mexico

Note. This form intergrades with the *johnsonii* form along the Oklahoma-Texas border (Pearson et al. 2006: 140).

Habroscelimorpha circumpicta johnsonii (Fitch, 1857)

Cicindela johnsonii Fitch, 1857: 487. Type locality: «prairies west of Arkansas» (original citation). Syntype(s) location unknown (no original specimens have been located by Barnes 1988: 107). Etymology. The specific name was proposed for Benjamin P. Johnson [1793-1869], lawyer, politician, office holder, and for more than 20 years Secretary of the New York State Agricultural Society.

Cicindela circumpicta ambiens Casey, 1913: 33. Type locality: «Kansas» (original citation). One syntype in USNM [# 45996]. Synonymy established by Drew and Van Cleave (1962: 108).

Cicindela circumpicta salinae Vaurie, 1951: 3. Type locality: «Lincoln (Salt Basin), Lancaster County, Nebraska» (original citation). Holotype (♂) in AMNH [# 1212]. Synonymy established by Willis (1967: 250).

Distribution. This subspecies, the "Johnson's Tiger Beetle," ranges from central Missouri to southeastern Colorado, north to west-central Nebraska (Spomer et al. 2008a: 58), south to New Mexico and southwestern Texas [see Johnson 1993b: Fig. 1]. The taxon is also found in Coahuila in northern Mexico (Murray 1979: 55). The records from "North Dakota" (Boyd 1982: 14; Freitag 1999: 77) probably refer to the *pembina* form.

Records. USA: CO, KS, MO, NE, NM, OK, TX – Mexico

Habroscelimorpha circumpicta pembina (Johnson, 1993)

Cicindela circumspicta pembina Johnson, 1993b: 55. Type locality: «near Pembina, Pembina County, North Dakota» (original citation). Holotype in AMNH [# 1550].

Distribution. This subspecies, the "Pembina Tiger Beetle," is known only from a small area in northeastern North Dakota [see Johnson 1993b: Fig. 1].

Records. USA: ND

Habroscelimorpha dorsalis dorsalis (Say, 1817)

Cicindela dorsalis Say, 1817b: 20. Type locality: «New Jersey» (original citation), herein restricted to Ocean City, Cape May County (see Boyd 1978: 231). Syntype(s) lost.

Cicindela signata Dejean, 1825: 124. Type locality: «Amérique septentrionale» (original citation). Syntype(s) in MHNP. Synonymy established by Dejean (1826: 414).

Cicindela dorsalis semipicta Casey, 1897: 299 [primary homonym of *Cicindela semipicta* Fairmaire, 1871]. Type locality not stated. One syntype in USNM [# 45994]. Synonymy established by Leng (1902: 161).

Cicindela munifica Casey, 1913: 31. Type locality: «Rhode Island» (original citation). Two syntypes in USNM [# 45993]. Synonymy established by Horn (1915: 392).

Cicindela dorsalis lineoscripta Casey, 1924: 16. Replacement name for *Cicindela dorsalis semipicta* Casey, 1897.

Distribution. This subspecies, also known as the "Eastern Beach Tiger Beetle," once occurred along the Atlantic Coast from Cape Cod, Massachusetts to the Chesapeake Bay. It is now found at two isolated sites on the coast of Massachusetts and along both shores of the Chesapeake Bay in Maryland and Virginia (Boyd and Rust 1982: 234; Pearson et al. 2006: 144). The subspecies was successfully reintroduced at Sandy Hook, New Jersey (Pearson et al. 2006: 192). The records from "Delaware" (Bousquet and Larochelle 1993: 65) and from near Lancaster, Pennsylvania (Cresson 1861: 12) are probably based on strays.
Records. USA: CT, MA, MD, NJ, NY, RI, VA
Note. This subspecies is listed as threatened under the Endangered Species Act by the U.S. Fish and Wildlife in 1990 (Pearson et al. 2006: 191).

Habroscelimorpha dorsalis media (LeConte, 1856)

Cicindela media LeConte, 1856a: 47. Type locality: «sea coast of Georgia and South Carolina» (original citation), herein restricted to Hilton Head Island, Beaufort County, South Carolina (see Cartwright 1935: 75). Syntype(s) in MCZ [# 23].

Distribution. This subspecies, the "Eastern Beach Tiger Beetle," is found along the Atlantic Coast from Ocean County in New Jersey to southern Florida (Boyd and Rust 1982: 234).
Records. USA: DE, FL, GA, MD, NC, NJ, SC, VA
Note. According to Knisley and Schultz (1997: 103), the ranges of this form and of the *dorsalis* form are contiguous in southern New Jersey, the southern tip of coastal Virginia, and near the mouth of the Chesapeake Bay on the Virginia side and little intergradation can be observed on those sites.

Habroscelimorpha dorsalis saulcyi (Guérin-Méneville, 1840)

Cicindela saulcyi Guérin-Méneville, 1840: 37. Type locality: Pensacola, Escambia County, Florida (inferred from title of the paper). Two syntypes in IRSN. Etymology. The specific name honors Ernest de Saulcy [1803-1899], a French naval officer who sailed to many places including America. Saulcy was interested in natural history and collected insects. He was the older brother of the archaeologist and numismatist Louis-Félicien-Joseph [Félix] de Saulcy [1807-1880] who also collected beetles and uncle of Félicien de Saulcy [1832-1912], who worked on the systematics of Coleoptera, particularly those of small size.

Cicindela castissima Bates, 1884: 260. Type locality: «Arcas Islets [off the coast of Campeche], Gulf of Mexico» (original citation). Syntype(s) in BMNH. Synonymy established by Horn (1905: 23).

Cicindela apricoidea Casey, 1913: 32. Type locality: «seabeaches of Louisiana and Mississippi» (original citation). Four syntypes [4 originally cited] in USNM [# 45995]. Synonymy established by Horn (1915: 393).

Distribution. This subspecies, the "Saulcy's Beach Tiger Beetle," ranges from the Gulf Coast of Florida to the Mississippi River delta in Louisiana (Pearson et al. 2006: 144); it is also known from the Isla Arcas in Campeche (Bates 1884: 260). The records from Cuba (Leng and Mutchler 1916: 697, as *Cicindela dorsalis* var. *venusta*; Cazier 1954: 294; Erwin and Pearson 2008: 247) are based on mislabeled specimens (Valdés 1999: 13).
Records. USA: AL, FL, LA, MS – Mexico

Habroscelimorpha dorsalis venusta (LaFerté-Sénectère, 1841)

Cicindela venusta LaFerté-Sénectère, 1841a: 37. Type locality: Texas (inferred from title of the paper). Syntype(s) probably in MHNP (collection Chaudoir).

Distribution. This subspecies, the "Gulf Beach Tiger Beetle," is found from coastal Mississippi (Lago et al. 2002: 201) south along the Gulf to the state of Tamaulipas (Cazier 1954: 294). The record from east-central Colorado (Snow 1877: 16) is probably in error.
Records. USA: LA, MS, TX – Mexico

Habroscelimorpha fulgoris albilata (Acciavatti, 1981)

Cicindela fulgoris albilata Acciavatti, 1981: 238. Type locality: «2 miles east at playa lakes, Salt Flat, Hudspeth County, Texas» (original citation). Holotype (♂) in AMNH [# 1473].

Distribution. This subspecies, the "Pale Tiger Beetle," is known from the Salt Basin of western Texas and adjacent New Mexico and from a single site in Dawson County, Texas (Acciavatti 1981: 239).
Records. USA: NM, TX

Habroscelimorpha fulgoris erronea (Vaurie, 1951)

Cicindela californica viridicyanea Vaurie, 1950: 1 [primary homonym of *Cicindela viridicyanea* Audouin and Brullé, 1839]. Type locality: «Wil[l]cox, Cochise County, Arizona» (original citation). Holotype (♂) in AMNH [# 1208].
Cicindela californica erronea Vaurie, 1951: 12. Replacement name for *Cicindela californica viridicyanea* Vaurie, 1950.

Distribution. This subspecies, the "Willcox Tiger Beetle," is known only from the type locality in southeastern Arizona (Acciavatti 1981: 238).
Records. USA: AZ

Habroscelimorpha fulgoris fulgoris (Casey, 1913)

Cicindela praetextata fulgoris Casey, 1913: 34. Type locality: «El Paso [El Paso County], Texas» (original citation). Lectotype (♂), designated by Acciavatti (1981: 237), in USNM [# 45998].

Cicindela praetextata stringens Casey, 1913: 34. Type locality: «El Paso [El Paso County], Texas» (original citation). One syntype in USNM [# 45999]. Synonymy established by Acciavatti (1981: 237)

Distribution. This subspecies, also known as the "Glittering Tiger Beetle," is found from east-central Arizona to north-central New Mexico, south to the Rio Grande area in westernmost Texas and southeastern New Mexico [see Acciavatti 1981: Fig. 1]; also recorded from Chihuahua in Mexico (Murray 1979: 55).
Records. USA: AZ, NM, TX – Mexico
Note. This subspecies intergrades with the *albilata* form in southeastern New Mexico (Pearson et al. 2006: 143).

Habroscelimorpha gabbii (Horn, 1867)

Cicindela gabbii G.H. Horn, 1867a: 395. Type locality: «near Wilmington (San Pedro) [Los Angeles County], California» (original citation). Lectotype (♂), designated by Ward (1982: 62), in MCZ [# 35316]. Etymology. The specific name honors the American paleontologist William More Gabb [1839-1878] who worked for the California Geological Survey.

Distribution. This species, also known as the "Western Tidal Flat Tiger Beetle," occurs along the Pacific Coast from southern California to central Baja California Peninsula, and along the Gulf of California Coast from northern Sonora to Sinaloa (Cazier 1954: 291) [see Pearson et al. 1997: Fig. 28]. According to Pearson et al. (2006: 139), this species is now found in the United States only in three or four protected areas in Ventura, Orange, and San Diego Counties.
Records. USA: CA – Mexico

Habroscelimorpha pamphila (LeConte, 1873)

Cicindela pamphila LeConte, 1873b: 321. Type locality: «Texas» (original citation), herein restricted to Corpus Christi, Nueces County (see LeConte 1881: xxxvi). Syntype(s) in MCZ [# 29].

Distribution. This species, also known as the "Gulfshore Tiger Beetle," is found along the Gulf Coast from eastern Mississippi (Grammer 2009) to northern Tamaulipas in Mexico (Pearson et al. 2006: 145).
Records. USA: LA, MS, TX – Mexico

Habroscelimorpha praetextata pallidofemora (Acciavatti, 1981)

Cicindela praetextata pallidofemora Acciavatti, 1981: 236. Type locality: «Virgin River, S[ain]t George, Washington County, Utah» (original citation). Holotype (♂) in AMNH [# 1474].

Distribution. This subspecies, the "Virgin River Tiger Beetle," is found only along the Virgin River in southwestern Utah and southeastern Nevada [see Acciavatti 1981: Fig. 1].
Records. USA: NV, UT

***Habroscelimorpha praetextata praetextata* (LeConte, 1854)**

Cicindela praetextata LeConte, 1854d: 220. Type locality: «San Diego to El Paso» (original citation); «probably found in the valley of the Gila» (LeConte 1856a: 58), herein restricted to Phoenix, Maricopa County, Arizona (see Harris 1911: 53). Lectotype (♂), designated by Acciavatti (1981: 233), in MCZ [# 32].

Distribution. This subspecies, also known as the "Riparian Tiger Beetle," is found from the Gila River Basin in eastern Arizona westwards to the Salton Sea Basin in California, north to southern Nevada [see Pearson et al. 2006: Map 74]. The record from New Mexico (Fall and Cockerell 1907: 155) needs confirmation. According to Erwin and Pearson (2008: 251), the species has been extirpated from many of its historic sites.
Records. USA: AZ, CA, NV [NM]

***Habroscelimorpha severa* (LaFerté-Sénectère, 1841)**

Cicindela severa LaFerté-Sénectère, 1841a: 41. Type locality: Texas (inferred from title of the paper), herein restricted to Port Isabel, Cameron County (see Leng 1902: 173, as "Point Isabel"). Syntype(s) probably in MHNP (collection Chaudoir).

Cicindela yucatana W. Horn, 1897a: 354 (as *yukatana*). Type locality: «Yucatan mer.» (syntype label). One syntype in MHNP (Cassola 1994: 2). Synonymy established by Horn (1897a: 354), confirmed by Cassola (1994: 2). Note. This taxon was briefly described by Horn (1897a: 354) but treated as a junior synonym of *C. severa*. It was redescribed and treated as a valid taxon by Horn (1903b: 219), Cazier (1954: 261), and Johnson (1993a: 42), the first and last authors based on misidentified specimens of *C. wellingi* Cassola and Sawada (see Cassola 1994). Therefore the name was first published as a junior synonym but treated as an available name before 1961. In such case, the name is available but dates from its first publication as a synonym (ICZN 1999: Article 50.7).

Cicindela severa alabamae Casey, 1920: 134. Type locality: «Coden [Mobile County], Alabama» (original citation). Three syntypes in USNM [# 45963]. Synonymy established by Horn (1926: 284).

Distribution. This subspecies, also known as the "Saltmarsh Tiger Beetle," is found along the Gulf Coast from the Florida Keys to Tamaulipas in Mexico (Cazier 1954: 261) [see Pearson et al. 1997: Fig. 4]; also recorded from Yucatán (Horn 1897a: 354).
Records. USA: AL, FL, LA, MS, TX – Mexico
Note. *Habroscelimorpha yucatana* (Horn) from Yucatán is considered a subspecies of *H. severa* by some authors, including Erwin and Pearson (2008: 253).

***Habroscelimorpha striga* (LeConte, 1875)**

Cicindela striga LeConte, 1875a: 160. Type locality: «Lake Harvey [Hillsborough County], Florida» (original citation). Syntype(s) in MCZ [# 38].

Distribution. This species, also known as the "Elusive Tiger Beetle," is found along the Atlantic Coast from southern South Carolina (Cartwright 1935: 73; Ciegler 1997: 191) to central Florida, and along the Gulf Coast of Florida [see Pearson et al. 1997: Fig. 10].
Records. USA: FL, GA, SC

Genus *Eunota* Rivalier, 1954

Eunota Rivalier, 1954: 259. Type species: *Cicindela togata* LaFerté-Sénectère, 1841 by original designation. Etymology. From the Greek *eu* (good, beautiful) and *notos* (back, dorsum), probably alluding to the nice coloration of the adults [feminine].

Diversity. One North American species which extends into northern Mexico.

***Eunota togata fascinans* (Casey, 1914)**

Cicindela fascinans Casey, 1914: 23. Type locality: «Santa Rosa [Guadalupe County], New Mexico» (original citation). One syntype in USNM [# 45953].

Distribution. This subspecies, the "Salt Flat Tiger Beetle," is known only from Torrance and Guadalupe Counties in central New Mexico and Hudspeth County in western Texas (Pearson et al. 2006: 148).
Records. USA: NM, TX

***Eunota togata globicollis* (Casey, 1913)**

Cicindela togata var. *apicalis* W. Horn, 1897b: 17 [primary homonym of *Cicindela apicalis* Chaudoir, 1843]. Type locality: «Nebraska; Ka[c]kley, Kansas» (original citation). Three syntypes in DEI (Döbler 1973: 358).
Cicindela globicollis Casey, 1913: 35. Type locality: «Clark Co[unty], Kansas» (original citation). Three syntypes [3 originally cited] in USNM [# 45952]. Synonymy established by Horn (1915: 396).
Cicindela togata latilabris Willis, 1967: 286. Replacement name for *Cicindela togata apicalis* Horn, 1897.

Distribution. This subspecies, the "Alkali Tiger Beetle," ranges from eastern Nebraska (Carter 1989: 15) and central Colorado (Kippenhan 1990: 312) south to northern Texas (Gaumer and Murray 1971: 10) and southeastern New Mexico (Acciavatti et al. 1980: 31) [see Pearson et al. 2006: Map 80]. The record from north-central Utah (Tanner 1929a: 87) is probably in error.
Records. USA: CO, KS, NE, NM, OK, TX

***Eunota togata togata* (LaFerté-Sénectère, 1841)**

Cicindela togata LaFerté-Sénectère, 1841a: 40. Type locality: Texas (inferred from title of the paper), herein restricted to Port Isabel, Cameron County (see Harris 1911: 57). Syntype(s) probably in MHNP (collection Chaudoir).

Distribution. This subspecies, also known as the "White-cloaked Tiger Beetle," is known from scattered localities from southern South Carolina (Cartwright 1935: 75) to northeastern Texas, south to northern Florida (Choate 2003: Map 48) and Tamaulipas (Cazier 1954: 297) [see Pearson et al. 2006: Map 80]. Ciegler (1997: 191) reported that the last specimen seen from South Carolina was collected in 1935 and that the species may be extinct in the state.
Records. USA: AL, FL, LA, MS, SC, TX – Mexico

Genus *Cicindela* Linnaeus, 1758

Cicindela Linnaeus, 1758: 407. Type species: *Cicindela campestris* Linnaeus, 1758 designated by Latreille (1810: 425). Etymology. From the Latin *cicindela* (glow-worm in Pliny the Elder) [feminine].
Cicindella Gistel, 1850: 75. Unnecessary replacement name for *Cicindela* Linnaeus, 1758.

Diversity. Worldwide, with about 340 species described by 2005 assigned to 24 subgenera (Lorenz 2005: 41-51). The North American fauna is represented by 60 species (about 18% of the world fauna) placed in two subgenera.
Taxonomic Note. The genus is employed here in a restricted sense as used by most taxonomists working on the Palaearctic and African faunas and recently by Erwin and Pearson (2008) for the North American fauna.

Subgenus *Cicindelidia* Rivalier, 1954

Cicindelidia Rivalier, 1954: 255. Type species: *Cicindela carthagena* Dejean, 1831 by original designation. Etymology. From the generic name *Cicindela* [*q.v.*] and the Latin suffix *-idia* (little, small), probably alluding to the small size ("*toutes les espèces sont de taille petite ou moyenne*") of adults of these tiger beetles [feminine].

Diversity. Western Hemisphere, with about 65 species (Lorenz 2005: 48-49) in the Nearctic (21 species, 42 species-group taxa) and Neotropical (about 55 species).
Faunistic Note. 1. *Cicindela fera* Chevrolat is known north of Mexico from a single specimen collected in the 1950s at the southern border of Arizona and New Mexico (Pearson et al. 2006: 125). The specimen was probably a stray and the species is not listed here as a North American entity. 2. *Cicindela sommeri* Mannerheim is known from the Sierra Madre Occidental of western Mexico and from several specimens labeled from San Diego County, California (Leng 1902: 181; Pearson et al. 2006: 136). However, there is serious doubt about the origin of the California specimens and the species is not included here as a North American entity.

Figure 11. *Omus dejeanii* Reiche. The Greater Night-stalking Tiger Beetle is one of the few species-group taxa currently recognized in the genus *Omus* although over one hundred taxa have been described, particularly by Thomas Casey. Even today, taxonomists do not agree on the number of valid taxa that should be recognized in *Omus*. The difficulty of defining the species-group taxa is not unusual among old, apterous carabid lineages because they tend to form small, local populations.

Cicindela abdominalis Fabricius, 1801

Cicindela abdominalis Fabricius, 1801: 237. Type locality: «Carolina» (original citation), herein restricted to McClellanville, Charleston County, South Carolina (see Cartwright 1935: 74). One syntype in ZMUC (Zimsen 1964: 64).

Cicindela ventralis Newman [in Doubleday], 1838: 414 [primary homonym of *Cicindela ventralis* Dejean, 1825]. Type locality: «S[ain]t John's Bluff [Duval County], Florida» (original citation). Syntype(s) [9 originally cited] location unknown. Synonymy established by Harris and Leng (1916: 18).

Cicindela abdominalis faceta Casey, 1913: 38. Type locality not stated. Holotype [by monotypy] (♀) in USNM [# 45969]. Synonymy established by Horn (1915: 385), confirmed by Choate (1984: 75).

Distribution. This species, also known as the "Eastern Pinebarrens Tiger Beetle," is found mainly along the Coastal Plain and Piedmont Plateau from Long Island in southeastern New York (Leng 1928: 206) to central Florida, west to southeastern Louisiana [see Pearson et al. 1997: Fig. 11].

Records. USA: AL, DE, FL, GA, LA, MD, MS, NC, NJ, NY, PA, SC, VA

Cicindela amargosae amargosae Dahl, 1939

Cicindela willistoni amargosae Dahl, 1939: 221. Type locality: «four miles north of Furnace Creek, Death Valley, Inyo County, California» (original citation). Holotype (♂) in CAS [# 8152].

Distribution. This subspecies, also known as the "Great Basin Tiger Beetle," is found in the Death Valley area in eastern California (Leffler 1987: 8).

Records. USA: CA

Note. 1. Rumpp (1956: 141) reported the presence of intergrade populations between this subspecies and the *nyensis* form at places located between the type localities of *amargosae* and *nyensis*. 2. *Cicindela amargosae* has been regarded as a subspecies of *C. senilis* LeConte by some authors (e.g., Willis 1968) or *C. willistoni* LeConte (e.g., Kippenhan 1996b: 56) but treated as a closely related but distinct species by Leffler (1987: 8) and Pearson et al. (2006: 117).

Cicindela amargosae nyensis Rumpp, 1956

Cicindela amargosae nyensis Rumpp, 1956: 140. Type locality: «1.6 miles south of Springdale, Nye County, Nevada» (original citation). Holotype (♂) in CAS [# 17193].

Distribution. This subspecies, also known as the "Nye Tiger Beetle," is found in southeastern Oregon (Leffler 1979a: Fig. 60) and western Nevada (Rumpp 1956: 140).

Records. USA: NV, OR

Note. Kippenhan (2005) indicated from an analysis of populations that the variation in the dorsal coloration in *C. amargosae* did not coincide with the accepted

subspecific criteria. Probably the form *nyensis* should not be recognized as a valid entity. Kippenhan (2005: Fig. 1) provided a detailed map of the known populations of *C. amargosae*.

Cicindela cazieri Vogt, 1949

Cicindela cazieri Vogt, 1949: 6. Type locality: «ten miles north of Rio Grande City, Starr County, Texas» (original citation). Holotype (♂) in USNM [# 59057].

Distribution. This species, also known as the "Cazier's Tiger Beetle," is found along a small area in Jim Hogg and Starr Counties, southeastern Texas [see Pearson et al. 2006: Map 63], and in Tamaulipas, Mexico (Erwin and Pearson 2008: 127).
Records. USA: TX – Mexico
Note. This taxon is listed as a subspecies of *C. politula* LeConte by some authors (e.g., Murray and Acciavatti 1976).

Cicindela floridana Cartwright, 1939

Cicindela abdominalis var. *floridana* Cartwright, 1939: 364. Type locality: «Miami [Dade County], Florida» (original citation). Holotype (♂) in USNM [# 53417].

Distribution. This species is known only from a few sites in the Richmond Heights area of Miami (Brzoska et al. 2011: 5).
Records. USA: FL

Cicindela hemorrhagica arizonae Wickham, 1899

Cicindela rufiventris var. *arizonae* Wickham, 1899: 226. Type locality: «Cañon of the Colorado River [Arizona]» (original citation). One syntype in USNM [# 56137].

Distribution. This subspecies, also known as the "Grand Canyon Tiger Beetle," is restricted to the Colorado River at the bottom of the Grand Canyon in northern Arizona and along the Virgin River in adjacent Utah and Nevada (Pearson et al. 2006: 135).
Records. USA: AZ, NV, UT

Cicindela hemorrhagica hemorrhagica LeConte, 1851

Cicindela hemorrhagica LeConte, 1851: 171. Type locality: «San Diego [San Diego County, California]» (original citation). Syntype(s) in MCZ [# 14].

Cicindela bisignata Dokhtouroff, 1883a: 12. Type locality: «Californie» (original citation). Syntype(s) location unknown (possibly in DEI). Synonymy established by Horn (1905: 22).

Cicindela haemorrhagica var. *pacifica* Schaupp, 1884a: 106. Type locality: «San Diego [San Diego County], Cal[ifornia]» (original citation). Syntype(s) apparently destroyed. Synonymy established (as aberration) by Horn (1905: 22).

Cicindela woodgatei Casey, 1913: 40. Type locality: «Jemez Springs [Sandoval County], New Mexico» (original citation). Sixteen syntypes in USNM [# 45965]. Synonymy established by Cazier (1948: 11).

Cicindela pacifica nevadiana Casey, 1924: 16. Type locality: «Las Vegas [Clark County], Nevada» (original citation). Two syntypes [2 originally cited] in USNM [# 45964]. Synonymy established by Horn (1926: 290).

Distribution. The range of this subspecies, also known as the "Wetsalts Tiger Beetle," extends from central Washington to northwestern Wyoming, south to western Texas and along the Pacific Coast to the northern parts of the Baja California Peninsula (Cazier 1948: 11) [see Pearson et al. 1997: Fig. 35].

Records. USA: AZ, CA (CHI), CO, ID, NM, NV, OR, TX, UT, WA, WY – Mexico

Note. 1. Some authors (e.g., Nagano 1982: 39) have treated *C. pacifica* Schaupp as a valid subspecies of *C. hemorrhagica* LeConte. 2. Freitag (1999: 62), Pearson et al. (2006: 135), and Erwin and Pearson (2008: 141) considered *C. woodgatei* Casey as a valid subspecies of *C. hemorrhagica* LeConte despite the fact that there seem to be no consistent characters to separate the adults from those of the nominate form. 3. Another subspecies, *C. hemorrhagica hentziana* Leng, is found in Baja California; its record from "Utah" (Leng 1920: 42) is in error.

Cicindela highlandensis Choate, 1984

Cicindela highlandensis Choate, 1984: 74. Type locality: «0.25 mi[les] south of Josephine Creek, 4.3 mi[les] north of junction of Rt. S-17 and 621, Highlands Co[unty], Florida» (original citation). Holotype (♀) in FSCA.

Distribution. This species, also known as the "Highlands Tiger Beetle," is found in Highlands and Polk Counties, central Florida (Choate 2003: 84; Pearson et al. 2006: 126).

Records. USA: FL

Cicindela hornii hornii Schaupp, 1883

Cicindela anthracina G.H. Horn, 1880a: 139 [primary homonym of *Cicindela anthracina* Klug, 1834]. Type locality: «Fort Bayard [Grant County], New Mexico» (original citation). Lectotype (♀), designated by Ward (1982: 60), in MCZ [# 33470].

Cicindela hornii Schaupp, 1883d: 80. Replacement name for *Cicindela anthracina* Horn, 1880. Note. There is no indication on page 80 that Schaupp proposed this name as a replacement name but this is evident on page 88 published in 1884.

Cicindela ritteri Bates, 1890: 496. Type locality: «Villa Lerdo in Durango [Mexico]» (original citation). Holotype [by monotypy] (♀) in BMNH. Synonymy established (as aberration) by Horn (1905: 21).

Distribution. This species, also known as the "Horn's Tiger Beetle," ranges from southern Arizona to southwestern Texas, south to Durango (Cazier 1954: 248) [see Pearson et al. 1997: Fig. 25].

Records. USA: AZ, NM, TX – Mexico
Note. The subspecies *C. hornii scotina* Bates is known from the states of Chihuahua, Durango, and Zacatecas in Mexico (Erwin and Pearson 2008: 146).

Cicindela marginipennis Dejean, 1831

Cicindela marginipennis Dejean, 1831: 260. Type locality: «Amérique septentrionale» (original citation), herein restricted to the banks of the Susquehanna below the bridge at Harrisburg, Dauphin County, Pennsylvania (see Leng 1902: 179). Syntype(s) in MHNP.

Distribution. The range of this species, also known as the "Cobblestone Tiger Beetle," is disjunct: one population is known from New Brunswick (Sabine 2005: 53) south to central New Jersey (Boyd 1978: Fig. 28), northwestern West Virginia (Allen and Acciavatti 2002: 26), southeastern Kentucky (Laudermilk et al. 2010: 28), and southeastern Indiana; the second is found in northeastern Mississippi and western Alabama [see Pearson et al. 2006: Map 67]. The record from "South Carolina" (Choate 2003: Map 30) needs confirmation.
Records. CAN: NB **USA**: AL, IN, KY, ME, MS, NH, NJ, NY, OH, PA, VT, WV [SC]
Note. This species is listed on the IUCN Red List of Threatened Species (IUCN 2007) and has been extirpated from many historical sites (Erwin and Pearson 2008: 155).

Cicindela nigrocoerulea bowditchi Leng, 1902

Cicindela bowditchi Leng, 1902: 124. Type locality: «vicinity of Durango [La Plata County], Colo[rado]» (original citation). Lectotype (♀), designated by Dahl (1941: 190), in MCZ [# 16272]. Etymology. The specific name was proposed for Frederick Channing Bowditch [*c.* 1853-1925], a conveyancer by profession and amateur coleopterist. Bowditch accompanied Samuel Hubbard Scudder in Colorado and Wyoming to collect fossils from Florissant shales.

Distribution. This subspecies, the "Bowditch's Tiger Beetle," is known from southwestern Colorado (Kippenhan 1994: 65) and northwestern New Mexico (Rumpp 1962: 172). The record from "Arizona" (Boyd 1982: 11) is in error or based on a stray.
Records. USA: CO, NM
Note. This subspecies intergrades with the nominate form in north-central New Mexico (Pearson et al. 2006: 119).

Cicindela nigrocoerulea nigrocoerulea LeConte, 1846

Cicindela nigrocoerulea LeConte, 1846b: 181. Type locality: «ad flumen Arkansas» (original citation); cited from «near Bent's Fort [Colorado] on the Arkansas River» by LeConte (1856a: 35). Syntype(s) in MCZ [# 27]. Note. According to Leng (1902: 124), LeConte's original specimens consisted of "one pair found near Bent's

Fort on the Arkansas River, about 100 miles east of Pueblo, Col., and between Upper Dry Creek and Lower Dry Creek."

Cicindela robusta Leng, 1902: 124. Type locality: «Alpine [Brewster County], Tex[as]» (original citation for the lectotype). Lectotype (♀), designated by Dahl (1941: 190), in AMNH [# 1231]. Synonymy established (as aberration) by Horn (1905: 21).

Cicindela [*nigrocoerulea*] *feminalis* Casey, 1909: 269. Type locality: «Las Animas [Bent County], Colorado» (original citation). Three syntypes in USNM [# 45906]. Synonymy established by Horn (1915: 381).

Cicindela snowi Casey, 1909: 269. Type locality: «Congress Junction [Yavapai County], Arizona» (original citation). One syntype in USNM [# 45908]. Synonymy established by Horn (1915: 381).

Cicindela [*snowi*] *triplicans* Casey, 1909: 270. Type locality: «Robinson [probably Robinson Place, Moffat County], Colorado» (original citation). One syntype in USNM [# 45907]. Synonymy established by Horn (1915: 381).

Cicindela [*snowi*] *velutoidea* Casey, 1909: 270. Type locality: «probably Colorado» (original citation). Holotype [by monotypy] (♂) in USNM [# 45909]. Synonymy established by Horn (1915: 381).

Distribution. This subspecies, also known as the "Black Sky Tiger Beetle," occurs from Salton Sea in southern California (LaRue 1991: 49) and southernmost Nevada (Kippenhan 2002: 381) to western Texas (Gaumer and Murray 1971: 10), north to southwestern Utah (Tanner 1929a: 85) and northeastern Colorado (Kippenhan 1990: 311), south to Aguascalientes and San Luis Potosí in Mexico (Cazier 1960: 8).
Records. USA: AZ, CA, CO, KS, NM, NV, OK, TX, UT – Mexico

Cicindela nigrocoerulea subtropica Vogt, 1949

Cicindela nigrocoerulea subtropica Vogt, 1949: 2. Type locality: «five miles southwest of Mission, S[outh]W[est] Hidalgo Co[unty], Texas» (original citation for the holotype, see Bellamy 1991: 736). Holotype (♀) in USNM [# 59055].

Distribution. This subspecies, the "Subtropic Tiger Beetle," is confined to Hidalgo and Cameron Counties in southern Texas (Pearson et al. 2006: 119).
Records. USA: TX

Cicindela obsoleta neojuvenilis Vogt, 1949

Cicindela obsoleta neojuvenilis Vogt, 1949: 4. Type locality: «five miles southwest of Mission, S[outh]W[est] Hidalgo County, Texas» (original citation). Holotype (♂) in USNM [# 59056].

Distribution. This subspecies, the "Rio Grande Grassland Tiger Beetle," is known from the lower Rio Grande Valley in southern Texas from Maverick County to Hidalgo County (Pearson et al. 2006: 122), north to Kimble County in central Texas (Mawdsley 2009: 9).

Records. USA: TX

Cicindela obsoleta obsoleta Say, 1823

Cicindela obsoleta Say, 1823b: 143. Type locality: «banks of the Arkansa river, near the mountains, Missouri Territory [= probably Colorado]» (original citation). Syntype(s) lost.

Cicindela prasina LeConte, 1856a: 31. Type locality: «Arkansas River below Bent's Fort [Colorado]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 33]. Synonymy established by Cresson (1861: 15), confirmed by Mawdsley (2009: 5).

Distribution. This subspecies, also known as the "Large Grassland Tiger Beetle," ranges from western Kansas to central Arizona, north to northern Colorado (Kippenhan 1994: 66), south to southern New Mexico and southwestern Texas; also known from one locality in eastern Kansas [see Mawdsley 2009: Fig. 18]. The record from "Utah" (Boyd 1982: 11) is likely in error.

Records. USA: AZ, CO, KS, NM, OK, TX

Note. This subspecies intergrades with the *santaclarae* form in New Mexico and western Texas (Mawdsley 2009: 6). Two other subspecies of this species are found in Mexico, *C. obsoleta juvenilis* Horn from the states of Jalisco, Nayarit, Sonora, and Sinaloa and *C. obsoleta latemaculata* Becker from the state of Durango (Erwin and Pearson 2008: 159, 160).

Cicindela obsoleta santaclarae Bates, 1890

Cicindela obsoleta var. or race *santaclarae* Bates, 1890: 493. Type locality: «Santa Clara in Chihuahua [Mexico]» (original citation). One syntype in BMNH (Mawdsley 2009: 6) and one in SIM (Hennessey 1990: 467).

Cicindela santaclarae var. *anita* Dow, 1911: 271. Type locality: «F[or]t Wingate, N[ew] Mex[ico]» (syntype label). One syntype in AMNH [# 1205] (Mawdsley 2009: 6) and one in CUIC. Synonymy established by Horn (1915: 382), confirmed by Mawdsley (2009: 6).

Distribution. This subspecies, the "Santa Clara Grassland Tiger Beetle," ranges from southern Colorado (Kippenhan 1994: 67) south to northern Durango (Cazier 1954: 251), including southwestern Texas and western Arizona [see Mawdsley 2009: Fig. 18].

Records. USA: AZ, CO, NM, TX – Mexico

Cicindela obsoleta vulturina LeConte, 1853

Cicindela vulturina LeConte, 1853b: 439. Type locality: «Eagle Pass [Maverick County, Texas]» (original citation). One syntype in MCZ [# 43].

Distribution. This subspecies, the "Prairie Tiger Beetle," ranges from southern Missouri and north-central Arkansas to north-central Texas, south to southeastern Texas [see Mawdsley 2009: Fig. 18] and Coahuila in Mexico (Cazier 1954: 250). The record

from central New Mexico (Fall and Cockerell 1907: 154) is suspect (Mawdsley 2009: 8); that from "Colorado" (Wickham 1902: 228) is probably in error.
Records. USA: AR, LA, MO, OK, TX [NM] – Mexico

Cicindela ocellata ocellata Klug, 1834

Cicindela flavo-punctata Chevrolat, 1834 [8 March]: [no. 28] [primary homonym of *Cicindela flavopunctata* Audouin, 1832]. Type locality: Mexico (inferred from title of the book). Syntype(s) location unknown (possibly in UMO).

Cicindela ocellata Klug, 1834 [19 November]: 33. Type locality: «Jalapa [=Jalapa Enríquez, Veracruz, Mexico]» (original citation). Holotype [by monotypy] (♂) location unknown. Synonymy established by Gemminger and Harold (1868a: 15).

Cicindela incerta Chevrolat, 1835c: [no. 127]. Type locality: «Tutepec, Véra-Cruz? [Mexico]» (original citation). Holotype [by monotypy] location unknown (possibly in UMO). Synonymy established, under the name *C. flavopunctata* Chevrolat, by Gemminger and Harold (1868a: 15).

Cicindela humeralis Chevrolat, 1841: [plate 59] 13. Type locality: Mexico (inferred from title of the paper). Syntype(s) location unknown (possibly in UMO). Synonymy established, under the name *C. flavopunctata* Chevrolat, by Gemminger and Harold (1868a: 15).

Cicindela flavopunctata var. *chiapana* Bates, 1890: 505. Type locality: «Tapachula in Chiapas; La Noria in Sinaloa; Guatemala, near the city» (original citation), restricted to «Tapachula, Chiapas» by Freitag (1999: 66). Two syntypes in DEI (Döbler 1973: 368). Synonymy established, under the name *C. flavopunctata humeralis* Chevrolat, by Horn (1915: 387).

Distribution. This subspecies, also known as the "Ocellated Tiger Beetle," occurs from southeastern Arizona and adjacent New Mexico (Pearson et al. 2006: 133) south to Costa Rica (Blackwelder 1944: 18); also recorded from "Texas" (Erwin and Pearson 2008: 162).
Records. USA: AZ, NM [TX] – Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua

Cicindela ocellata rectilatera Chaudoir, 1843

Cicindela rectilatera Chaudoir, 1843b: 693. Type locality: «Mexique» (original citation). Syntype(s) in MHNP.

Cicindela texana LeConte, 1863b: 1. Type locality: «Fredericksburg, Texas; Tampico, Mexico; Rio Bravo» (original citation for *C. decostigma* Chevrolat *sensu* LeConte, 1856). Syntype(s) probably in MCZ. Synonymy established by LeConte (1867b: 363). Note. This name was proposed for *Cicindela decostigma* Chevrolat, 1835 *sensu* LeConte (1856a: 54).

Distribution. This subspecies, the "Dark-abdomened Tiger Beetle," ranges from western Louisiana (Graves and Pearson 1973: 180) to northern New Mexico [see Pearson

et al. 2006: Map 66], including southern Oklahoma (Schmidt 2004: 5), south to southern Tamaulipas (Cazier 1954: 278).
Records. USA: LA, NM, OK, TX – Mexico

Cicindela politula barbaraannae Sumlin, 1976

Cicindela politula barbaraannae Sumlin, 1976b: 523. Type locality: «Hueco Mountains, 18.6 mi[les] E[ast] El Paso, Hudspeth Co[unty], Texas» (original citation). Holotype (♂) in CAS [# 13147].

Distribution. This subspecies, the "Barbaraann's Tiger Beetle," occurs in the Hueco, Sierra Diablo, and Apache mountains in western Texas (Gage 1988: 146-147) and in the Sacramento Mountains of southern New Mexico (Pearson et al. 2006: 129) where it is found above 1500 m.
Records. USA: NM, TX

Cicindela politula petrophila Sumlin, 1985

Cicindela politula petrophila Sumlin, 1985: 223. Type locality: «Guadalupe Mountains National Park, Culberson Co[unty], Texas» (original citation). Holotype (♂) in SMEK.

Distribution. This subspecies, the "Rock-loving Tiger Beetle," is known only from above 1670 m in the Guadalupe Mountains in western Texas and southeastern New Mexico (Gage 1988: 146).
Records. USA: NM, TX

Cicindela politula politula LeConte, 1875

Cicindela politula LeConte, 1875a: 159. Type locality: «Texas» (original citation), herein restricted to Signal Mountains, Howard County (see Cazier 1939: 24 as *C. alleni*). Syntype(s) in MCZ [# 31].
Cicindela politula cribrum Casey, 1913: 39. Type locality: «Texas» (original citation). One syntype in USNM [# 45968]. Synonymy established by Horn (1915: 385).
Cicindela alleni Cazier, 1939: 24 [primary homonym of *Cicindela alleni* Horn, 1908]. Type locality: «Signal M[oun]t[ain]s, Howard Co[unty], Texas» (original citation). Holotype (♀) in AMNH [# 1199]. Synonymy established by Sumlin (1985: 221).
Cicindela alleniana Mandl, 1961: 25. Replacement name for *Cicindela alleni* Cazier, 1939.

Distribution. This subspecies, also known as the "Limestone Tiger Beetle," occurs from Carter and Murray Counties in southern Oklahoma (Pearson et al. 2006: 128) south to Coahuila and Nuevo León (Sumlin 1985: Fig. 9).
Records. USA: OK, TX – Mexico
Note. Another subspecies, *C. politula laetipennis* Horn, is known from the state of Coahuila in Mexico.

Cicindela politula viridimonticola Gage, 1988

Cicindela politula viridimonticola Gage, 1988: 143. Type locality: «129.16 kilometers south of Artesia (above 2192.8 m), Eddy County, New Mexico» (original citation). Holotype (♂) in FSCA.

Distribution. This subspecies, the "Green Mountain Tiger Beetle," is known only from the type locality in southeastern New Mexico.
Records. USA: NM

Cicindela punctulata chihuahuae Bates, 1890

Cicindela punctulata var. *chihuahuae* Bates, 1890: 500. Type locality: «Arizona; Mexico: Santa Clara in Chihuahua, and Chihuahua City» (original citation). Syntype(s) in BMNH.

Cicindela fontinaria Casey, 1916: 33. Type locality: «Jemez Springs [Sandoval County], New Mexico» (original citation). One syntype in USNM [# 45960]. Synonymy established by Boyd (1982: 11).

Distribution. This subspecies, the "Chihuahua Tiger Beetle," is known from northeastern Colorado to west-central Nevada [see Pearson et al. 2006: Map 56], south to Chihuahua (Cazier 1954: 253). The records from Oklahoma (Drew and Van Cleave 1962: 113), "Nebraska," "Kansas," and "Texas" (Freitag 1999: 68) apparently refer to intergrades and these records are registered under the nominotypical subspecies.
Records. USA: AZ, CO, NM, NV, UT – Mexico
Note. Bertholf (1983: 21) listed this form in synonymy with the nominotypical subspecies.

Cicindela punctulata punctulata Olivier, 1790

Cicindela punctulata Olivier, 1790a: [No. 33] 27. Type locality: «Nouvelle-Jersey» (original citation), herein restricted to Bay Head, Ocean County (see Harris 1911: 39). Syntype(s) location unknown (possibly in MHNP).

Cicindela micans Fabricius, 1798: 61. Type locality: «America boreali» (original citation). One syntype in ZMUC (Zimsen 1964: 64). Synonymy established by Schönherr (1806: 245).

Cicindela punctulata var. *jenisonii* Gistel, 1837: 55. Type locality: «America septentrionali» (original citation). Syntype(s) lost. Synonymy established by Horn (1905: 22).

Cicindela boulderensis Casey, 1909: 271. Type locality: «Boulder Co[unty], Colorado» (original citation). One syntype in USNM [# 45961]. Synonymy established by Horn (1915: 383).

Cicindela prolixa Casey, 1916: 33. Type locality: «Akron [Washington County], Colorado» (original citation). One syntype in USNM [# 45962]. Synonymy established by Leng (1920: 41).

Distribution. This subspecies, also known as the "Punctured Tiger Beetle," ranges from New Brunswick to southern Alberta, south to southern Texas and southern Florida [see Pearson et al. 2006: Map 56].
Records. CAN: AB, MB, NB, ON, QC, SK **USA**: AL, AR, CO, CT, DC, DE, FL, GA, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK, PA, RI, SC, SD, TN, TX, UT, VA, VT, WI, WV, WY
Note. The two subspecies of *C. punctulata* intergrade over a large area in southwestern United States (Pearson et al. 2006: 123) and northern Mexico (Murray 1979: 51). Another subspecies, *C. punctulata catharinae* Chevrolat, is endemic to Mexico.

Cicindela roseiventris tascosaensis Davis, 1918

Cicindela roseiventris linearis W. Horn, 1905: 22 [primary homonym of *Cicindela linearis* Chaudoir, 1843]. Type locality: «San Carlos [= Cuidad Quesada], Costa Rica» (original citation). Five syntypes in DEI (Döbler 1973: 406).
Cicindela tascosaensis W.T. Davis, 1918: 34. Type locality: «Tascosa [Oldham County], Texas» (original citation). Holotype (♂) location unknown. Synonymy established by Horn (in Davis 1922: 130). Note. The holotype was in W.T. Davis' collection but is not at AMNH (Lee Herman pers. comm. 2009) or SIM (Hennessey 1990). One syntype exists in DEI (Döbler 1973: 414).

Distribution. This subspecies, also known as the "Tascoa Tiger Beetle," has been recorded from Oldham County in northwestern Texas (Davis 1918: 34), Alajuela province in Costa Rica (Horn 1905: 22), and Panama (Erwin and Pearson 2008: 178).
Records. USA: TX – Costa Rica, Panama
Note. 1. No specimens of this subspecies have been collected in United States since the original ones in 1917 and the subspecies has never been found in Mexico. Cazier (1954: 279) believed that the US specimens of *C. tascosaensis* were probably mislabeled. However, Davis (1922: 130) wrote to the collector of the Texan specimens, Miss Mildred McGill, who replied on December 1920 that she remembered well collecting the tiger beetles "on the sandy, grassy spots of the ground, and on the wide floors of white sand rocks" about "a mile or a little more" of the house she lived in. 2. Two other subspecies, *C. roseiventris mexicana* Klug and *C. roseiventris roseiventris* Chevrolat, are found in Mexico and in Central America.

Cicindela rufiventris cumatilis LeConte, 1851

Cicindela cumatilis LeConte, 1851: 173. Type locality: «Louisiana» (original citation), herein restricted to Shreveport, Caddo Parish (see Chevrolat, 1852: 419 as *C. guexiana*). Syntype(s) in MCZ [# 8].
Cicindela guexiana Chevrolat, 1852: 419. Type locality: «Shreveport [Caddo Parish], Louisiane» (original citation). Syntype(s) location unknown (possibly in UMO). Synonymy established by Melsheimer (1853: 2). Etymology. The specific name

was proposed for John A. Guex [?-1858]. Born in Geneva in Switzerland, Guex came to America as a young man and settled in New York. He was interested in Coleoptera and provided many European correspondents with specimens from America. His collection of beetles, containing over 17,000 species, was presented to the Academy of Natural Sciences in Philadelphia in 1854.

Distribution. This subspecies, the "Mexican Red-bellied Tiger Beetle," ranges from Louisiana (Pearson et al. 2006: 131) south through Texas to Queretaro and Veracruz (Murray 1979: 53). The records from "Georgia" (Boyd 1982: 12) and western Alabama (Löding 1945: 9) probably refer to the nominotypical subspecies; those from "Mississippi," "Arkansas" (Boyd 1982: 12), and Oklahoma (Drew and Van Cleave 1962: 114) are probably based on intergrades and these records are listed under the nominotypical subspecies.
Records. USA: LA, TX – Mexico

Cicindela rufiventris hentzii Dejean, 1831

Cicindela haemorrhoidalis T.W. Harris, 1828a: 91 [primary homonym of *Cicindela haemorrhoidalis* Wiedemann, 1823]. Type locality not stated. Two possible syntypes in MCZ (collection Harris). Note. Gould (1834: 53) reported that this species was first discovered by Harris on the "summit of Blue Hill, in Milton [Norfolk County, Massachusetts]."

Cicindela haemorrhoidalis Hentz, 1830: 254 [primary homonym of *Cicindela haemorrhoidalis* Wiedemann, 1823]. Type locality: «Massachusetts» (original citation). Syntype(s) lost. Synonymy established with *C. hentzii* Dejean by Dejean (1833: 4).

Cicindela hentzii Dejean, 1831: 248 (as *heutzii*). Type locality: «Amérique septentrionale» (original citation), herein restricted to Stoneham, Middlesex County, Massachusetts (see Frost, 1920: 230 as *C. hentzi* var. *niveihamata*). Syntype(s) probably in MHNP. Synonymy established by Gould (1834: 52). Etymology. The specific name honors Nicholas Marcellus Hentz [1797-1856], the first authority on spiders in the United States. In his early years, Hentz published on beetles and described new species from Massachusetts and Pennsylvania. His collection, consisting of about 1,500 species, most of them Coleoptera from all parts of the United States, was purchased for $550 by friends and presented to the Boston Society of Natural History in 1836 (Weiss 1936: 280); little was left of the collection by 1861 (Wilson 1973: 71). Note. This name was originally proposed under the spelling *heutzii* because Dejean believed the name of the collector was Heutz. LeConte (1856a: 55) emended Dejean's name to *hentzii* since the name of the collector was Hentz. This is an unjustified emendation. However since the emendation is in prevailing usage and attributed to the original author and date, it is deemed to be a justified emendation (ICZN 1999: Article 33.2.3.1) and the spelling becomes the correct original spelling (ICZN 1999: Article 32.2.2).

Cicindela erythrogaster T.W. Harris [in Scudder], 1891: 138. Type locality not stated. Holotype [by monotypy] lost. Synonymy established by Horn (1915: 386).

Cicindela hentzi var. *niveihamata* Frost, 1920: 230. Type locality: «Middlesex Fells Reservation near the shore of Spot Pond in the town of Stoneham [Middlesex County], Mass[achusetts]» (original citation). Holotype (♂) in MCZ [# 34727]. Synonymy established by Horn (1926: 287).

Distribution. This subspecies, the "Hentz's Tiger Beetle," is found only along eastern Massachusetts [see Leonard and Bell 1999: Fig. 111]. The record from "Rhode Island" (Bousquet and Larochelle 1993: 64) is in error or based on a stray.
Records. USA: MA

Cicindela rufiventris rufiventris Dejean, 1825

Cicindela rufiventris Dejean, 1825: 102. Type locality: «Saint-Domingue [= Dominican Republic or Hispaniola]» (original citation), which is incorrect; East Plains, a desert tract of stunted pines and oaks, near Brookville, about ten miles inland from Barnegat, Ocean County, New Jersey (see Leng 1902: 177) herein selected. Syntype(s) in MHNP.
Cicindela rufiventris collusor Casey, 1913: 39. Type locality not stated. Holotype [by monotypy] (♀) in USNM [# 45967]. Synonymy established by Horn (1915: 386).

Distribution. This subspecies, also known as the "Eastern Red-bellied Tiger Beetle," ranges from southwestern Vermont (Leonard and Bell 1999: 104) to southwestern Missouri, south to east-central Texas and the Florida Panhandle [see Pearson et al. 2006: Map 64].
Records. USA: AL, AR, CT, DC, DE, FL, GA, IL, IN, KY, LA, MA, MD, MO, MS, NC, NJ, NY, OH, OK, PA, RI, SC, TN, TX, VA, VT, WV
Note. This subspecies intergrades with the *cumatilis* form through southern Missouri, Arkansas, and Louisiana (Pearson et al. 2006: 131). Another subspecies, *C. rufiventris reducens* Horn, is known from the states of Jalisco and Colima in Mexico.

Cicindela scabrosa Schaupp, 1884

Cicindela abdominalis var. *scabrosa* Schaupp, 1884a: 108. Type locality: «Fl[orid]a» (original citation), herein restricted to Crescent City, Putnam County (see Casey 1913: 38, as *C. extenuata*). Syntype(s) apparently destroyed.
Cicindela extenuata Casey, 1913: 38. Type locality: «Crescent City [Putnam County], Florida» (original citation). Two syntypes in USNM [# 45970]. Synonymy established by Leng (1915: 563) and Horn (1915: 385), confirmed by Choate (1984: 76).

Distribution. This species, also known as the "Scabrous Tiger Beetle," is found from southeastern Georgia to southern Florida [see Pearson et al. 2006: Map 61].
Records. USA: FL, GA

Cicindela schauppii Horn, 1876

Cicindela schauppii G.H. Horn, 1876a: 240. Type locality: «Corsicana [Navarro County], eastern Texas» (original citation). Lectotype (♂), designated by Ward (1982: 62), in MCZ [# 10042]. Etymology. This species was named after Franz G. Schaupp [1840?-1904], a German immigrant who settled in New York City but spent his last twenty years in Texas. Schaupp sustained himself mostly by teaching languages and as a hobby collected and studied beetles. He was instrumental in the establishment of the Brooklyn Entomological Society.

Distribution. This species, also known as "Schaupp's Tiger Beetle," occurs from southeastern Kansas and northwestern Arkansas [see Pearson et al. 2006: Map 69] south to Nuevo León (Cazier 1954: 287). The record from "Missouri" (Erwin and Pearson 2008: 181) needs confirmation.
Records. USA: AR, KS, OK, TX [MO] – Mexico

Cicindela sedecimpunctata sedecimpunctata Klug, 1834

Cicindela 16-punctata Klug, 1834: 32. Type locality: «Mexico» (original citation). Holotype [by monotypy] (♂) location unknown.
Cicindela rufiventris var. *ventanasa* Bates, 1890: 503. Type locality: «Ventanas in Durango, and La Noria in Sinaloa [Mexico]» (original citation). One syntype in DEI (Döbler 1973: 416) and two in IRSN. Synonymy established by Horn (1905: 21).
Cicindela sedecimpunctata sonorana Casey, 1913: 40. Type locality: «Arizona, New Mexico and southward to Durango» (original citation). Twenty-five syntypes in USNM [# 45966]. Synonymy established by Horn (1915: 386).

Distribution. This subspecies, also known as the "Western Red-bellied Tiger Beetle," ranges from northeastern New Mexico to central Arizona [see Pearson et al. 2006: Map 65], south to Guanajuato in Mexico (Cazier 1954: 271).
Records. USA: AZ, NM, TX – Mexico
Note. Besides the nominotypical subspecies, four other subspecies are known, ranging collectively from Mexico to Costa Rica (see Pearson et al. 2006: 132; Erwin and Pearson 2008: 185-186).

Cicindela senilis Horn, 1867

Cicindela senilis G.H. Horn, 1867a: 395. Type locality: «California» (original citation), herein restricted to San Rafael, Alameda County (see Leng 1902: 142). Lectotype (♂), designated by Ward (1982: 60), in MCZ [# 33471].
Cicindela senilis exoleta Casey, 1909: 272. Type locality: «Oakland [Alameda County], California» (original citation). One syntype in USNM [# 45927]. Synonymy established by Harris (1911: 22).
Cicindela senilis frosti Varas Arangua, 1928: 174. Type locality: «Manhattan, Los Angeles Co[unty], California» (original citation). Syntype(s) [2 ♂ originally cited]

in CAS [# 8149]. Synonymy established by Cazier (1937a: 159). Etymology. The subspecific name was proposed in honor of Charles Albert Frost [1872-1962], a civil engineer with the Waterworks Division of the Metropolitan District Commission in Massachusetts and amateur coleopterist. Frost left his collection of more than 50,000 specimens to the Museum of Comparative Zoology.

Distribution. This species, also known as the "Senile Tiger Beetle," is found along western California, as far north as Sonoma and Lake Counties, and the northern part of the Baja California Peninsula. According to Pearson et al. (2006: 116), it is now known in the United States only from a few protected coastal populations and two interior populations, one near Lake Elsinore in western Riverside County and one near Jacumba in San Diego County.
Records. USA: CA (CHI) – Mexico

Cicindela tenuisignata LeConte, 1851

Cicindela tenuisignata LeConte, 1851: 171. Type locality: «ad flumen Novum [= New River, Imperial County], in desertis fluminis Colorado [California]» (original citation). Syntype(s) in MCZ [# 40].

Cicindela psilogramma Bates, 1890: 507. Type locality: «Villa Lerdo in Durango [Mexico]» (original citation). Two syntypes in DEI (Döbler 1973: 403) and four in IRSN. Synonymy established by Horn (1892b: 97).

Distribution. This species, also known as the "Thin-lined Tiger Beetle," ranges from western Nebraska (Brust 2007: 9) to southern California [see Pearson et al. 1997: Fig. 38], south to northern Sinaloa and southern Tamaulipas (Cazier 1954: 257).
Records. USA: AZ, CA, CO, KS, NE, NM, NV, OK, TX, UT – Mexico

Cicindela trifasciata ascendens LeConte, 1851

Cicindela ascendens LeConte, 1851: 172. Type locality: «Georgia» (original citation), herein restricted to Saint Simons Island, Glynn County (see Beaton 2008: 41). Holotype [by monotypy] in MCZ [# 2].

Cicindela serpens LeConte, 1851: 173. Type locality: «Key West [Monroe County], Florida» (original citation). Syntype(s) in MCZ [# 34]. Synonymy established by Leng (1902: 160).

Distribution. This highly vagile subspecies, also known as the "Ascendant Tiger Beetle," is found primarily along the Atlantic and Gulf Coasts from Virginia to southern Florida, west to eastern Texas [see Pearson et al. 2006: Map 70], south to Panama (Erwin and Pearson 2008: 197). This form has also been found inland as far north as north-central Kansas (Charlton and Kopper 2000: 266) and along the Atlantic Coast as far north as Massachusetts (Comboni and Schultz 1989: 151); however there is no known established populations inland anywhere in North America (Pearson and Vogler 2001: 105). The record from the "West Indies" (LeConte 1856a: 51) needs confirmation.

Records. USA: AL, AR, FL, GA, KS, LA, MA, MD, MO, MS, NC, NJ, OK, SC, TN, TX, VA – Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama.
Note. Besides the two subspecies found in North America, six other subspecies are recognized among this polymorphic species in Middle and South America and the West Indies.

Cicindela trifasciata sigmoidea LeConte, 1851

Cicindela sigmoidea LeConte, 1851: 172. Type locality: «San Diego [San Diego County, California]» (original citation). Syntype(s) in MCZ [# 35] and MHNP (collection Chaudoir).

Distribution. This subspecies, the "Sigmoid Tiger Beetle," is found along the Pacific Coast from southern California (Nagano 1982: 38) to the Baja California Peninsula (Cazier 1954: 291); it is occasionally found inland, as far as the Salton Sea in Imperial County (see LaRue 1991). The record from "Arizona" (Freitag 1999: 74) needs confirmation.
Records. USA: CA (CHI) [AZ] – Mexico

Cicindela willistoni echo Casey, 1897

Cicindela echo Casey, 1897: 298. Type locality: «Great Salt Lake, Utah» (original citation). Four syntypes in USNM [# 45923].
Cicindela echo amedeensis Casey, 1909: 272 (as *amadeensis*). Type locality: «Amedee, Cal[ifornia]» (original citation). Two syntypes in USNM [# 45924]. Synonymy established by Harris (1911: 23).
Cicindela spaldingi Casey, 1924: 14. Type locality: «Callao [Juab County], Utah» (original citation). One syntype in USNM [# 45922]. Synonymy established by Boyd (1982: 10). Etymology. The specific name was proposed in honor of Thomas Utting Spalding [1866-1929]. Born in England, Spalding came to America and headed west in search of gold. He eventually settled in Utah and became an excellent collector of Lepidoptera and Coleoptera which he sold to students in the east. In 1918 alone, his Lepidoptera sales amounted to $1,150 (Tanner 1929b: 344). At that time he started selling beetles to Thomas Casey who bought in all 820 specimens from him.

Distribution. This subspecies, the "Echo Tiger Beetle," is found mainly within the Great Basin from Wyoming to southern Oregon, south to east-central California, southern Nevada, and southern Utah (Pearson et al. 2006: 114).
Records. USA: CA, ID, NV, OR, UT, WY

Cicindela willistoni estancia Rumpp, 1962

Cicindela willistoni estancia Rumpp, 1962: 166. Type locality: «7.0 miles east of Willard, Torrance County, New Mexico» (original citation). Holotype (♂) in CAS [# 17199].

Distribution. This subspecies, the "Torrance Tiger Beetle," is known only from Torrance County in central New Mexico (Pearson et al. 2006: 114).
Records. USA: NM

Cicindela willistoni funaroi Rotger, 1972

Cicindela willistoni funaroi Rotger, 1972: 25. Type locality: «4.2 miles from the Catholic Church building of San Ysidro, Sandoval County, New Mexico» (original citation). Holotype (♂) in Ronald L. Huber collection (Bloomington, Minnesota).

Distribution. This subspecies, the "Funaro's Tiger Beetle," is known only from the type locality in northwestern New Mexico.
Records. USA: NM

Cicindela willistoni hirtifrons Willis, 1967

Cicindela willistoni hirtifrons Willis, 1967: 301. Type locality: «Big Salt Marsh, 11 mi[les] N[orth]E[ast] of Hudson, Stafford Co[unty], Kansas» (original citation). Holotype (♂) in SMEK.

Distribution. This subspecies, the "Hairy-fronted Tiger Beetle," is found in central Kansas, western Oklahoma, west-central Texas, and east-central New Mexico (Willis 1967: 302); also recorded from "Arizona" (Erwin and Pearson 2008: 202).
Records. USA: KS, NM, OK, TX [AZ]

Cicindela willistoni praedicta Rumpp, 1956

Cicindela willistoni praedicta Rumpp, 1956: 135. Type locality: «3.5 miles south of Shoshone, Inyo County, California» (original citation). Holotype (♂) in CAS [# 17200].

Distribution. This subspecies, the "Augured Tiger Beetle," is known from Inyo County in eastern California and Nye County in Nevada (Rumpp 1956: 135).
Records. USA: CA, NV

Cicindela willistoni pseudosenilis Horn, 1900

Cicindela pseudosenilis W. Horn, 1900: 117. Type locality: «Owen's lake, Inyo Co[unty], California» (original citation). Syntype(s) in DEI (Döbler 1973: 418) and MCZ [# 23808].

Distribution. This subspecies, the "Owens Lake Tiger Beetle," is restricted to Owens and adjacent Panamint Valley of east-central California (Pearson et al. 2006: 115).
Records. USA: CA

Cicindela willistoni sulfontis Rumpp, 1977

Cicindela willistoni sulfontis Rumpp, 1977: 170. Type locality: «5.6 kilometers west-southwest of Willcox [Cochise County, Arizona]» (original citation). Holotype (♂) in CAS [# 12530].

Distribution. This subspecies, the "Sulphur Valley Tiger Beetle," is endemic to the Sulphur Springs Valley in southeastern Arizona.
Records. USA: AZ

Cicindela willistoni willistoni LeConte, 1879

Cicindela willistoni LeConte, 1879d: 507. Type locality: «Lake Como [Carbon County], Wyoming Territory» (original citation). Syntype(s) in MCZ [# 45]. Etymology. The specific name honors Samuel Wendell Williston [1852-1918], well known American paleontologist, dipterist, and teacher.

Distribution. This subspecies, also known as the "Williston's Tiger Beetle," is endemic to the Laramie Plain of Wyoming (Rumpp 1962: 168).
Records. USA: WY
Note. This subspecies intergrades with the *echo* form to the west (Pearson et al. 2006: 114). In a cladistic analysis based on molecular data by Vogler and Welsh (1997), *C. willistoni* clearly embedded within the subgenus *Cicindela* while morphological characters suggest that it belongs to the subgenus *Cicindelidia*.

Subgenus *Cicindela* Linnaeus, 1758

Cicindela Linnaeus, 1758: 407. Type species: *Cicindela campestris* Linnaeus, 1758 designated by Latreille (1810: 425).
Pachydela Rivalier, 1954: 253. Type species: *Cicindela scutellaris* Say, 1823 by original designation. Synonymy established by Boyd (1982: 6).
Tribonia Rivalier, 1954: 254. Type species: *Cicindela tranquebarica* Herbst, 1806 by original designation. Synonymy established by Boyd (1982: 6).

Diversity. Northern Hemisphere, with about 75 species (Lorenz 2005: 43-48) in the Nearctic (38 species, of which four extend into northern Mexico; 92 species-group taxa) and Palaearctic (36 species) Regions.

[**decemnotata group**]

Cicindela ancocisconensis Harris, 1852

Cicindela ancocisconensis T.W. Harris, 1852: 305. Type locality: «mountain streams near the White M[oun]t[ain]s, N[ew] H[ampshire]» (original citation), herein restricted to Conway, Carroll County (see Wilson and Larochelle 1980: 33). Syntypes in MCZ [# 24] (collection LeConte, see LeConte 1856a: 38). Note.

According to his son, Edward, Thaddeus William Harris originally collected this species at Conway, on an island in the river (see Wilson and Larochelle 1980: 33).

Cicindela catharina T.W. Harris [in Scudder], 1869: 229. Unnecessary replacement name for *Cicindela ancocisconensis* Harris, 1852.

Cicindela ancocisconensis dowiana Casey, 1914: 23. Type locality: «De Bruce [Sullivan County], New York» (original citation). Two syntypes in USNM [# 45975]. Synonymy established by Horn (1915: 444).

Cicindela ancocisconensis carolinae Casey, 1916: 28. Type locality: «North Carolina» (original citation). One syntype in USNM [# 45974]. Synonymy established by Horn (1926: 267).

Cicindela ancocisconensis eriensis Casey, 1916: 29. Type locality: «Buffalo [Erie County], New York» (original citation). Two syntypes [2 originally cited] in USNM [# 45976]. Synonymy established by Horn (1926: 267).

Distribution. This eastern species, also known as the "Appalachian Tiger Beetle," ranges from southwestern New Brunswick (Webster and Bousquet 2008: 16) south to northeastern Georgia, west at least to eastern Kentucky (Laudermilk et al. 2010: 28) [see Pearson et al. 1997: Fig. 15]. Old records from Indiana, northern Illinois, and western Missouri (see Wilson and Larochelle 1980: 37-38) suggest that the species was more widely distributed at one time. Beaton (2008: 40) did not find the species in Georgia during his intensive survey of tiger beetles in the state.
Records. CAN: NB, QC **USA**: GA, KY, MA, MD, ME, NC, NH, NJ, NY, OH, PA, TN, VA, VT, WV [IL, IN, MO]

Cicindela arida Davis, 1928

Cicindela denverensis var. *propinqua* Knaus, 1923: 194 [primary homonym of *Cicindela propinqua* Chaudoir, 1835]. Type locality: «Ash Meadow (2,050 feet), Nye County, Nevada» (original citation). Holotype (♂) location unknown (possibly in KSUC).

Cicindela arida A.C. Davis, 1928: 65. Type locality: «Death Valley Junction [Inyo County], California» (original citation). Holotype (♂) in USNM [# 56263]. Synonymy established by Nicolay and Weiss (1932: 352).

Distribution. This species, the "Death Valley Tiger Beetle," is known from the Death Valley region (Kritsky and Horner 1998: 17) in Inyo County, California, and Nye County, Nevada.
Records. USA: CA, NV
Note. This form has been listed as a subspecies of *Cicindela tranquebarica* Herbst by most authors, including Erwin and Pearson (2008: 191), but Kritsky and Horner (1998: 17) found enough structural differences to substantiate that it represents a distinct species.

Cicindela decemnotata bonnevillensis Knisley and Kippenhan, 2012

Cicindela decemnotata bonnevillensis Knisley and Kippenhan [in Knisley et al.], 2012: 19. Type locality: «playa south of Delle, Tooele Co[unty], Utah» (original citation). Holotype (♂) in MCZ.

Distribution. This subspecies is restricted to the area of ancient Lake Bonneville in north-central Utah [see Knisley et al. 2012: Fig. 23].
Records. USA: UT

Cicindela decemnotata decemnotata Say, 1817

Cicindela decemnotata Say, 1817a: [25]. Type locality: «sandy alluvions of the Missouri, above the confluence of the river Platte» (original citation). Holotype [by monotypy] (♀) lost.

Cicindela decemnotata albertina Casey, 1913: 24. Type locality: «Lethbridge, Alberta» (original citation). Two syntypes [2 originally cited] in USNM [# 45937]. Synonymy established by Horn (1915: 374).

Cicindela lantzi E.D. Harris, 1913: 68. Type locality: «Jefferson [Park County], Col[orado]» (original citation). Syntype(s) in MCZ [# 23552]. Synonymy established by Horn (1915: 374). Etymology. The specific name honors David Ernest Lantz [1855-1918], a naturalist and teacher whose main field of study was economic mammology.

Distribution. This subspecies, also known as the "Badlands Tiger Beetle," ranges in patchy colonies from eastern Alaska south through the Rocky Mountains to northeastern New Mexico and southern Utah, east to western North Dakota and western Nebraska [see Knisley et al. 2012: Figs 23, 24]. The records from "Kansas" (Leng 1902: 134) and "Manitoba" (Knisley et al. 2012: 14) need confirmation.
Records. CAN: AB, SK, YT **USA**: AK, CO, ID, MT, ND, NE, NM, UT, WY [KS, MB]

Cicindela decemnotata meriwetheri Knisley and Kippenhan, 2012

Cicindela decemnotata meriwetheri Knisley and Kippenhan [in Knisley et al.], 2012: 15. Type locality: «Grand Coulee Dam Airport, Grant Co[unty], Washington» (original citation). Holotype (♂) in MCZ. Etymology. The subspecific name was proposed for Meriwether Lewis [1774-1809], American explorer, soldier, and public administrator, well-known for his role as leader of the Lewis and Clark Expedition, 1804-06, the first American expedition to the Pacific Coast.

Distribution. This subspecies ranges from south-central British Columbia to southeastern Washington [see Knisley et al. 2012: Fig. 23].
Records. CAN: BC **USA**: WA

Cicindela decemnotata montevolans Knisley and Kippenhan, 2012

Cicindela decemnotata montevolans Knisley and Kippenhan [in Knisley et al.], 2012: 22. Type locality: «1.2 mi S[outh] H[igh]w[a]y 89 @ Cache-Rich Co[unty] line, Cache Co[unty], Utah» (original citation). Holotype (♂) in MCZ.

Distribution. This subspecies is restricted to high elevations of the Bear River Mountains of southeastern Idaho and northeastern Utah [see Knisley et al. 2012: Fig. 23].
Records. USA: ID, UT

Cicindela denverensis Casey, 1897

Cicindela denverensis Casey, 1897: 297. Type locality: «Denver [Denver County], Colorado» (original citation). One syntype in USNM [# 45939].

Cicindela purpurea var. *ludoviciana* Leng, 1902: 132. Type locality: «Vowell's Mill, Natchitoches Parish, in the northwestern part of Louisiana» (original citation). Lectotype (♂), designated by Dahl (1941: 171), in AMNH [# 1222]. Synonymy established by Schincariol and Freitag (1991: 1347).

Cicindela denverensis conquisita Casey, 1914: 357. Type locality: «Sioux Co[unty], Nebraska» (original citation). One syntype in USNM [# 45940]. Synonymy established by Horn (1915: 444).

Cicindela denverensis oreada Casey, 1914: 358. Type locality: «Benkelman [Dundy County], Nebraska» (original citation). One syntype in USNM [# 45941]. Synonymy established by Horn (1915: 444).

Cicindela plattensis Smyth, 1933: 202. Type locality: «valley of the South Platte» (original citation). Syntype(s) location unknown. Synonymy established, under the name *C. denverensis conquisita* Casey, by Nicolay (1934: 154).

Distribution. This species, also known as the "Green Claybank Tiger Beetle," inhabits the Great Plains from eastern Montana and North Dakota south to northern Louisiana, northern Texas, and northeastern New Mexico [see Schincariol and Freitag 1991: Fig. 13].
Records. USA: AR, CO, KS, LA, MT, ND, NE, NM, OK, SD, TX, WY
Note. According to Pearson et al. (2006: 92), individuals with green elytra and blue head and thorax from northwestern Louisiana and southwestern Arkansas (originally described under the name *ludoviciana*) may be either an isolated population of this species or a local green morph of *C. splendida*. They also added that based on the ecology, behavior, and distribution, the greenish population is more likely a local variant of *C. splendida*.

Cicindela fulgida fulgida Say, 1823

Cicindela fulgida Say, 1823b: 141. Type locality: «near the mountains on the Nebraska (Platte) and Arkansa rivers, Missouri Territory» (original citation). Syntype(s) lost.

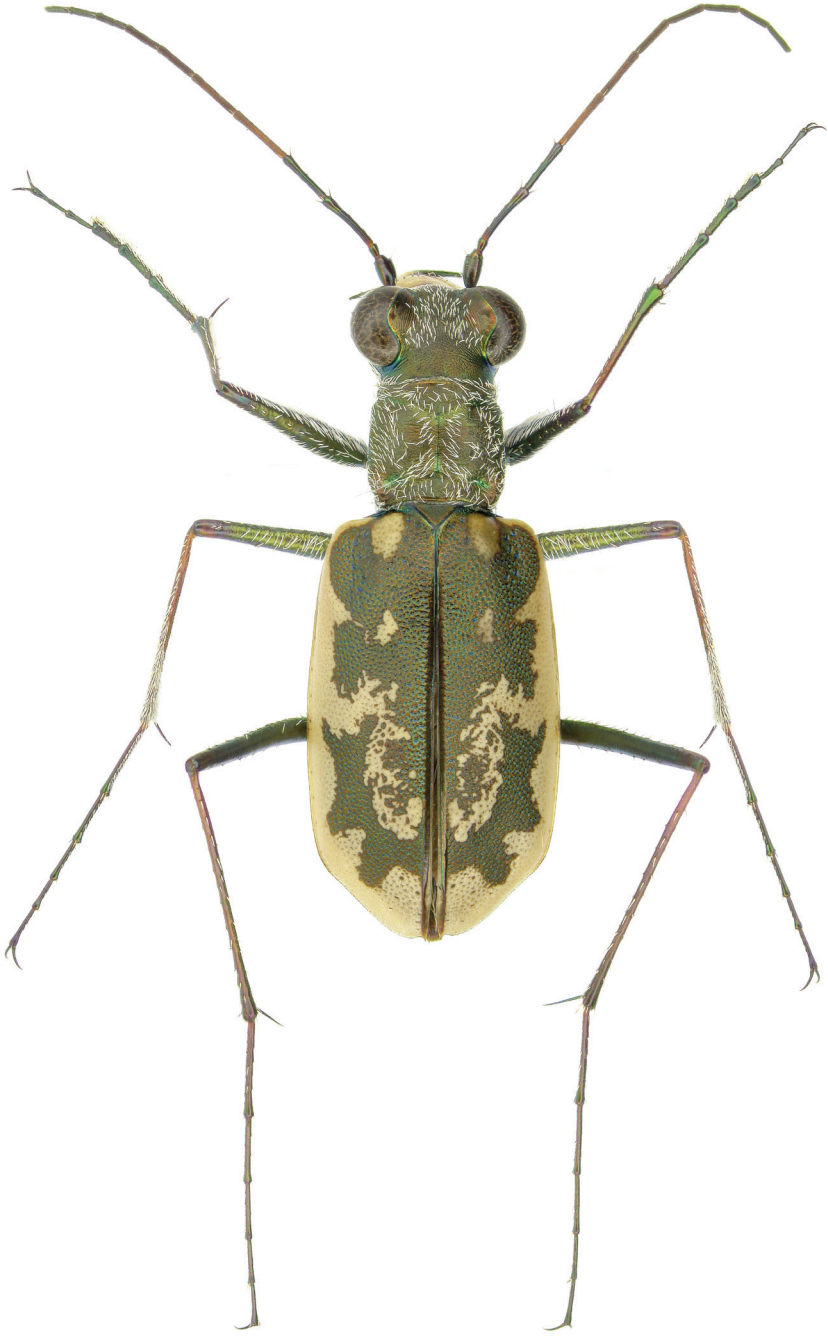

Figure 12. *Cicindela marginata* Fabricius. This species is a typical coastal species inhabiting mudflats and salt marshes from New Brunswick to southern Florida and along the Florida Gulf coast; it is also known from the Bahamas and the coast of Cuba. The breeding populations in New Brunswick were discovered only recently. Whether the species had been in the area for some time but went unnoticed, or extended its range in recent years, is the subject of speculation.

Cicindela fulgida subnitens Calder, 1922a: 62. Type locality: «Lincoln [Lancaster County], Nebr[aska]» (original citation). Holotype location unknown (possibly in UMAA). Synonymy established by Horn (1926: 275).

Cicindela fulgida williamlarsi Knudsen, 1985: 182. Type locality: «San Ysidro, Sandoval Co[unty], N[ew]M[exico]» (original citation). Holotype (♂) in CAS [# 17196]. Synonymy established implicitly by Kippenhan (1994: 52).

Cicindela fulgida winonae Knudsen, 1985: 184. Type locality: «Grants, Valencia Co[unty], N[ew]M[exico]» (original citation). Holotype (♂) in CAS [# 15836]. Synonymy established implicitly by Kippenhan (1994: 52).

Cicindela fulgida rumppi Knudsen, 1985: 185. Type locality: «Laguna del Perro, 7.2 mi[les] E[ast] of Willard, Torrance Co[unty], New Mexico» (original citation). Holotype (♂) in CAS [# 17195]. Synonymy established implicitly by Kippenhan (1994: 52). Etymology. The subspecific name was proposed for Norman L. Rumpp [1913-1991], an engineer for the Navy Department at the U.S. Naval Weapons Center in China Lake, California, by profession and a cicindelophile by avocation.

Distribution. This subspecies, also known as the "Crimson Saltflat Tiger Beetle," ranges from Minnesota to southern Alberta (Hilchie 1985: 330), south to northeastern Arizona and northern Texas [see Pearson et al. 1997: Map 11]. The record from "Saskatchewan" (Freitag 1999: 27) needs confirmation.

Records. CAN: AB **USA**: AZ, CO, KS, MN, MT, ND, NE, NM, OK, SD, TX, UT, WY [SK]

Note. Pearson et al. (2006: 99), followed by Erwin and Pearson (2008: 138), considered *C. f. williamlarsi* Knudsen and *C. f. winonae* Knudsen as synonyms of *C. f. pseudowillistoni* Horn. They also listed *C. f. rumppi* Knudsen as a valid subspecies restricted to the Laguna del Perro area in Torrance County, central New Mexico.

Cicindela fulgida pseudowillistoni Horn, 1938

Cicindela fulgida pseudo-willistoni W. Horn, 1938: 13. Type locality: «Como-See (8000 Fuß hoch) [Carbon County], Süd-Wyoming» (original citation). Lectotype (♀), designated by Kippenhan (1996a: 38), in DEI.

Distribution. This subspecies, also known as the "Alkaline Tiger Beetle," is found in southern Wyoming and northwestern Colorado (Kippenhan 1996a: 42).

Records. USA: CO, WY

Note. Pearson et al. (2006: 99) recorded this subspecies from a much larger area, throughout the western Great Plains and intermontane southern Rocky Mountains.

Cicindela fulgida westbournei Calder, 1922

Cicindela fulgida elegans Calder, 1922a: 62 [primary homonym of *Cicindela elegans* Fischer von Waldheim, 1823]. Type locality: «Westbourne, Man[itoba]» (original citation). Holotype location unknown (possibly in UMAA).

Cicindela westbournei Calder, 1922b: 191. Replacement name for *Cicindela elegans* Calder, 1922.

Distribution. This subspecies, also known as the "Westbourne's Tiger Beetle," is found in southern Manitoba, southern Saskatchewan (Wallis 1961: 51), north-central North Dakota, and northwestern Minnesota (Knudsen 1985: 186); also recorded from "Montana" (Erwin and Pearson 2008: 139).
Records. CAN: MB, SK **USA**: MN, ND, UT [MT]

Cicindela latesignata latesignata LeConte, 1851

Cicindela latesignata LeConte, 1851: 172. Type locality: «San Diego [San Diego County, California]» (original citation). Syntype(s) in MCZ [# 18].
Cicindela latesignata obliviosa Casey, 1913: 20. Type locality: «San Diego [San Diego County], California» (original citation). Three syntypes in USNM [# 45925]. Synonymy established by Horn (1915: 376).

Distribution. This subspecies, also known as the "Western Beach Tiger Beetle," is found along the Pacific Coast from southern California to the central parts of the Baja California Peninsula (Cazier 1948: 14) and also along the Gulf of California coast in northern Sonora [see Pearson et al. 1997: Fig. 27]. According to Pearson et al. (2006: 195), this taxon is now gone from most of its former sites in southern California.
Records. USA: CA – Mexico
Note. Some authors (e.g., Nagano 1982: 37) consider *C. obliviosa* Casey as a valid subspecies. *Cicindela latesignata parkeri* Cazier is found in Sonora and Baja California in Mexico.

Cicindela lengi jordai Rotger, 1974

Cicindela lengi jordai Rotger, 1974: 9. Type locality: «Heart Canyon, four miles north of Aztec, San Juan Co[unty], New Mexico» (original citation). Holotype (♂) in Ronald L. Huber collection (Bloomington, Minnesota).

Distribution. This subspecies, the "Jorda's Tiger Beetle," is known from northeastern Arizona (Bertholf 1983: 12) and northern New Mexico (Acciavatti et al. 1980: 30). Based on Pearson et al. (2006: Map 47), it is also found in southern Utah and southwestern Colorado. The record from "Wyoming" (Boyd 1982: 9) probably refers to the nominotypical subspecies.
Records. USA: AZ, CO, NM, UT

Cicindela lengi lengi Horn, 1908

Cicindela venusta LeConte, 1846b: 179 [primary homonym of *Cicindela venusta* LaFerté-Sénectère, 1841]. Type locality: «apud flumen Platte» (original citation); cited from «near the Forks of Platte River» by LeConte (1856a: 39). Syntype(s) in MCZ [# 42].

Cicindela lengi W. Horn, 1908b: 738. Replacement name for *Cicindela venusta* LeConte, 1846.

Distribution. This subspecies, also known as the "Blowout Tiger Beetle," ranges from western South Dakota (Spomer et al. 2008a: 57) and southern Wyoming, south to northern New Mexico, extreme northwestern Texas, and southern Oklahoma [see Pearson et al. 2006: Map 47]. The records from "Montana" (Horn 1915: 372) and "Iowa" (Boyd 1982: 9) need confirmation.
Records. USA: CO, KS, MO, NE, NM, OK, SD, TX, WY [IA, MT]
Note. This subspecies intergrades with the *jordai* form in the southwestern part of its range and with the *versuta* form in the northern part of its range.

Cicindela lengi versuta Casey, 1913

Cicindela venusta versuta Casey, 1913: 24. Type locality: «Aweme, Manitoba» (original citation). Four syntypes in USNM [# 45973].
Cicindela venusta gracilenta Casey, 1913: 25. Type locality: «Montana» (original citation). One syntype in USNM [# 45972]. Synonymy established by Bousquet and Larochelle (1993: 57).

Distribution. This subspecies, the "Adroit Tiger Beetle," ranges from southern Manitoba to northern Alberta (Wallis 1961: 56), south to Wyoming and northwestern South Dakota (Spomer et al. 2008a: 34).
Records. CAN: AB, MB, SK **USA**: MT, ND, SD, WY

Cicindela limbalis Klug, 1834

Cicindela limbalis Klug, 1834: 29. Type locality: «Nord-Amerika» (original citation), herein restricted to Eastport, Washington County, Maine (see LeConte, 1846b: 177, as *C. spreta*). Holotype [by monotypy] (♀) location unknown.
Cicindela amoena LeConte, 1846b: 177. Type locality: «prope provinciae Missouri terminum occidentalem» (original citation). Holotype [by monotypy] (♀) in MCZ [# 1]. Synonymy established by LeConte (1863b: 1).
Cicindela spreta LeConte, 1846b: 177. Type locality: «Eastport [Washington County], Maine» (original citation). Syntype(s) in MCZ. Synonymy established by LeConte (1863b: 1). Note. According to Frost (1920: 229), there is one syntype of this taxon in the LeConte collection and another one in the Harris collection labeled "Eastport, Me" and the manuscript number "1502." The syntype in the LeConte collection is probably mixed with LeConte's specimens of *Cicindela limbalis*.
Cicindela purpurea var. *transversa* Leng, 1902: 131. Type locality: «Ill[inois]» (original citation for the lectotype). Lectotype (♂), designated by Dahl (1941: 171), in AMNH [# 1221]. Synonymy established by Schincariol and Freitag (1991: 1346).
Cicindela limbalis awemeana Casey, 1913: 23. Type locality: «Aweme, Manitoba» (original citation). Four syntypes in USNM [# 45932]. Synonymy established by Horn (1915: 374).

Cicindela limbalis eldorensis Casey, 1913: 23. Type locality: «Eldora [Boulder County], Colorado» (original citation). One syntype in USNM [# 45933]. Synonymy established by Horn (1915: 374).

Cicindela purpurea limbalis f. *militaris* Varas Arangua, 1929: 242. Type locality: «West Point, Ramsey y Peekskill [New York], Hartford, Conn[ecticut], Warwick, R[hode] I[sland], Rock City, N[ew] Y[ork]» (original citation). Syntype(s) location unknown. Synonymy established by Nicolay and Weiss (1932: 347). Note. Even if this taxon was originally proposed at an infrasubspecific rank, it is deemed to be subspecific from its original publication because it was adopted as the valid name of a subspecies before 1985 (e.g., Leng and Mutchler 1933: 9) (see ICZN 1999: Article 45.6.4.1).

Cicindela sedalia Smyth, 1933: 201. Type locality: «Sedalia [Douglas County, Colorado]» (original citation). Syntype(s) location unknown. Synonymy established by Kippenhan (1994: 47).

Distribution. This species, also known as the "Common Claybank Tiger Beetle," ranges from Newfoundland to eastern British Columbia, north to northern Yukon Territory (Eagle River, Sydney G. Cannings pers. comm. 2009), south to eastern Utah, northern New Mexico, central Missouri, southern Pennsylvania, and New Jersey [see Schincariol and Freitag 1991: Fig. 13; Pearson et al. 1997: Fig. 3]. According to Knisley and Schultz (1997: 114), the literature records from Virginia, western North Carolina, and northwestern Georgia could refer instead to *C. splendida*. The record from the District of Columbia (Boyd 1982: 8) needs confirmation.

Records. CAN: AB, BC, MB, NB, NF, NS (CBI), NT, ON, QC, SK, YT **USA**: CO, CT, IA, IL, IN, KS, KY, MA, ME, MI, MN, MO, MT, ND, NE, NH, NJ, NM, NY, OH, PA, RI, SD, UT, VT, WI, WY [DC, GA, NC, VA]

Note. Spomer et al. (2008a: 25) noted that this species intergrades occasionally with *C. denverensis*, rarely with *C. splendida*. Based on results from a limited mitochondrial DNA analysis, Woodcock and Knisley (2010) concluded that *C. limbalis*, *C. splendida*, and *C. denverensis* may represent a single species.

Cicindela nigrior Schaupp, 1884

Cicindela scutellaris var. *nigrior* Schaupp, 1884a: 87. Type locality: «G[eorgi]a» (original citation). Syntype(s) apparently destroyed in the San Francisco earthquake of 1906 (Horn et al. 1990b: 345).

Distribution. This species, also known as the "Autumn Tiger Beetle," is confined to the Coastal Plain and Piedmont Plateau ranging from "North Carolina" (Knisley and Schultz 1997: 116) to the Florida Panhandle (Choate 2003: Map 13), west to southeastern Mississippi (George County, Drew A. Hildebrandt pers. comm. 2009).

Records. USA: AL, FL, GA, MS, NC, SC

Cicindela ohlone Freitag and Kavanaugh, 1993

Cicindela ohlone Freitag and Kavanaugh [in Freitag et al.], 1993: 114. Type locality: «Soquel, Santa Cruz Co[unty], Calif[ornia]» (original citation). Holotype (♂) in CAS [# 17109].

Distribution. This species, the "Ohlone Tiger Beetle," is known only from remnant stands of native grassland on coastal terraces in Santa Cruz County, California (Freitag et al. 1993: 117). According to Pearson et al. (2006: 193), it is known from only nine sites where populations range from less than 100 to several hundreds.
Records. USA: CA
Note. This species has been listed as endangered under the Endangered Species Act by the U.S. Fish and Wildlife Service in October 2001. Collection of specimens is illegal (Pearson et al. 2006: 88).

Cicindela parowana parowana Wickham, 1905

Cicindela parowana Wickham, 1905: 165. Type locality: «beaches of Little Salt Lake, near Parowan [Iron County], Utah» (original citation). Syntype(s) in DEI (Döbler 1973: 379), MCZ [# 23809], and USNM [# 56136].
Cicindela parowana remittens Casey, 1924: 14. Type locality: «Callao [Juab County], Utah» (original citation). Holotype [by monotypy] (♀) in USNM [# 56136]. Synonymy established by Horn (1926: 275).

Distribution. This subspecies, also known as the "Dark Saltflat Tiger Beetle," occurs from southeastern Oregon and southwestern Idaho to southwestern Utah (Leffler 1987: 7). The record from "Washington" (Freitag 1999: 39) probably refers to the *wallisi* form.
Records. USA: ID, NV, OR, UT
Note. Some authors, including Freitag (1999: 39), consider *C. remittens* Casey as a valid subspecies of *C. parowana* Wickham. According to Pearson et al. (2006: 100), all three subspecies of *C. parowana* intergrade in a narrow zone in southeastern Oregon.

Cicindela parowana platti Cazier, 1937

Cicindela parowana platti Cazier, 1937a: 161. Type locality: «Benton's Crossing, Mono Co[unty], Calif[ornia]» (original citation). Holotype (♂) in AMNH [# 1202].

Distribution. This subspecies, the "Platt Tiger Beetle," occurs in southeastern Oregon, east-central California, and western Nevada [see Pearson et al. 2006: Map 42].
Records. USA: CA, NV, OR

Cicindela parowana wallisi Calder, 1922

Cicindela azurea Calder, 1922a: 62 [primary homonym of *Cicindela azurea* Krausse, 1910]. Type locality: «Penticton, B[ritish]C[olumbia]» (original citation). Holotype (♂) in CNC [# 7315].

Cicindela wallisi Calder, 1922b: 191. Replacement name for *Cicindela azurea* Calder, 1922. Etymology. Although not indicated, the specific name was likely proposed for John Braithwaite Wallis [1877-1962], assistant superintendent of the Winnipeg Public Schools. Wallis wrote "The Cicindelidae of Canada" published in 1961.

Distribution. This subspecies, the "Wallis' Tiger Beetle," ranges from south-central British Columbia south to southeastern Oregon (Leffler 1987: 7), including southwestern Idaho (Shook 1984: 159).
Records. CAN: BC **USA**: OR, WA

Cicindela pimeriana LeConte, 1867

Cicindela pimeriana LeConte, 1867b: 363. Type locality: «Sonora» (original citation for *C. viatica* Chevrolat *sensu* LeConte, 1856). Holotype [by monotypy] (♀) in MCZ [# 30]. Note. This name was proposed for *Cicindela viatica* Chevrolat, 1835 *sensu* LeConte (1856a: 62).
Cicindela cochisensis Casey, 1909: 274. Type locality: «Douglas [Cochise County], Arizona» (original citation). Six syntypes in USNM [# 45921]. Synonymy established by Harris (1911: 24).

Distribution. This species, also known as the "Cochise Tiger Beetle," is restricted to southeastern Arizona, southwestern New Mexico [see Pearson et al. 1997: Fig. 31] and adjacent regions in Sonora, Mexico (LeConte 1856a: 62, as *C. viatica* Chevrolat).
Records. USA: AZ, NM – Mexico

Cicindela plutonica Casey, 1897

Cicindela [*purpurea*] *plutonica* Casey, 1897: 296. Type locality: «Placer Co[unty], California» (original citation). One syntype in USNM [# 45948].
Cicindela plutonica leachi Cazier, 1936: 124. Type locality: «Warner M[oun]t[ain]s (9,000 to 10,000 feet), Modoc Co[unty], Calif[ornia]» (original citation). Holotype (♀) in AMNH [# 1523]. Synonymy established by Bousquet and Larochelle (1993: 59) based on Leffler (1979a: 367) unpublished thesis. Etymology. The subspecific name was proposed in honor of Edwin R. Leach [1878-1971], an amateur coleopterist living in California who was chiefly interested in scarabaeids. Leach donated his collection, estimated at 40-50,000 specimens, to the California Academy of Sciences.

Distribution. This rare species, also known as the "Alpine Tiger Beetle," ranges from southern Idaho to south-central Oregon, south to east-central California and west-central Utah [see Pearson et al. 2006: Map 31]. The record from one locality in northern Montana (see Pearson et al. 2006: Map 31) is possibly based on a stray.
Records. USA: CA, ID, NV, OR, UT [MT]

Cicindela pugetana Casey, 1914

Cicindela pugetana Casey, 1914: 20. Type locality: «British Columbia» (original citation). Holotype [by monotypy] (♂) in USNM [# 45942].

Distribution. This species, also known as the "Sagebrush Tiger Beetle," is found from southern British Columbia south to north-central Oregon [see Pearson et al. 1997: Fig. 32].

Records. CAN: BC **USA**: OR, WA

Note. According to Pearson et al. (2006: 89), further studies may show that this taxon is rather a subspecies of *C. plutonica* Casey.

Cicindela purpurea audubonii LeConte, 1845

Cicindela audubonii LeConte, 1845a: 201. Type locality: «flum[inis] Yellow-Stone» (original citation), cited from «ad ripas fluminis Yellowstone, apud Fort Union [Roosevelt County, northeastern Montana]» by LeConte (1845b: 207). Syntype(s) in MCZ [# 3]. Etymology. The species name honors John James Audubon [1785-1851], celebrated American ornithologist, naturalist, hunter, and painter.

Cicindela purpurea var. *graminea* Schaupp, 1884a: 89. Type locality: «Kans[as], Cal[ifornia]» (original citation). Syntype(s) apparently destroyed. Synonymy established by Nicolay and Weiss (1932: 346).

Cicindela purpurea auguralis Casey, 1913: 21. Type locality: «Colorado» (original citation). Three syntypes [3 originally cited] in USNM [# 45929]. Synonymy established, under the name *C. purpurea graminea* Schaupp, by Horn (1915: 373).

Cicindela purpurea inducta Casey, 1913: 22. Type locality: «Colorado» (original citation). One syntype in USNM [# 45931]. Synonymy established, under the name *C. purpurea graminea* Schaupp, by Horn (1915: 373).

Cicindela purpurea var. *nigerrima* Leng, 1919a: 139. Type locality: «at the West» (original citation for *C. purpurea audubonii* LeConte *sensu* LeConte, 1856), restricted to «Chimney Gulch, Golden, Colorado» by Dahl (1941: 170). Syntype(s) probably in MCZ. Synonymy established by Hatch (1953: 37). Note. This name was proposed for *Cicindela purpurea* var. *audubonii* LeConte, 1845 *sensu* LeConte (1856a: 37). Therefore the type series consists of the specimen(s) which had been misidentified (ICZN 1999: Article 72.4.2). The specimen in AMNH [# 1220] designated as lectotype by Dahl (1941: 170) is not a syntype.

Distribution. This subspecies, the "Audubon's Tiger Beetle," ranges from southern Manitoba to central British Columbia, south to east-central California, Arizona, and northern Texas [see Pearson et al. 2006: Map 28]. The records from "Wisconsin," "Illinois," "Kentucky," "Tennessee" and "Arkansas" (Boyd 1982: 7) apparently refer to the nominate form.

Records. CAN: AB, BC, MB, SK **USA**: AZ, CA, CO, IA, ID, KS, MN, MT, ND, NE, NM, NV, OK, OR, SD, TX, UT, WA, WY

Cicindela purpurea cimarrona LeConte, 1868

Cicindela cimarrona LeConte, 1868a: 49. Type locality: «south of Raton Mountain [= Barela Mesa, Colfax County, New Mexico]» (original citation). Syntype(s) [6 originally cited] in MCZ [# 5].

Cicindela purpurea ardelio Casey, 1913: 21. Type locality: «New Mexico» (original citation). Holotype [by monotypy] (♂) in USNM [# 45930]. Synonymy established by Horn (1915: 374).

Distribution. This subspecies, the "Cimarron Tiger Beetle," is known from north and central Colorado (Kippenhan 1994: 44-45), much of New Mexico (Acciavatti et al. 1980: 30), and southeastern Arizona (Bertholf 1983: 22) [see Pearson et al. 2006: Map 28]. The records from northern (Tanner 1929a: 79) and southwestern (Horn 1926: 266) Utah need confirmation.

Records. USA: AZ, CO, NM [UT]

Cicindela purpurea hatchi Leffler, 1980

Cicindela mirabilis Casey, 1914: 358 [primary homonym of *Cicindela mirabilis* Laporte, 1835]. Type locality: «Dutch Flat, Placer Co[unty], California» (original citation). Holotype [by monotypy] (♀) in USNM [# 45936].

Cicindela purpurea hatchi Leffler, 1980: 128. Replacement name for *Cicindela purpurea mirabilis* Casey, 1914.

Distribution. This subspecies, also known as the "Hatch's Tiger Beetle," ranges from Vancouver Island to the central region of the Sierra Nevada in California (Leffler 1987: 4).

Records. CAN: BC (VCI) **USA**: CA, OR, WA

Note. This subspecies intergrades with the *lauta* form in the Willamette Valley of Oregon south to Shasta and Modoc Counties in northwestern California (Pearson et al. 2006: 87).

Cicindela purpurea lauta Casey, 1897

Cicindela [*purpurea*] *lauta* Casey, 1897: 296. Type locality: «Siskiyou Co[unty], California» (original citation), restricted to «Dunsmuir, Shasta Co[unty]» by Leffler (1987: 5). Two syntypes in USNM [# 45734].

Cicindela lauta franciscana Casey, 1913: 23. Type locality: «California» (original citation). One syntype in USNM [# 45935]. Synonymy established by Horn (1915: 373), confirmed by Leffler (1980: 128).

Distribution. This subspecies, the "Elegant Tiger Beetle," ranges from the Columbia River in southern Washington to northwestern California (Leffler 1987: 4).

Records. USA: CA, OR, WA

Cicindela purpurea purpurea Olivier, 1790

Cicindela purpurea Olivier, 1790a: [No. 33] 14. Type locality: «Géorgie» (original citation). Syntype(s) location unknown (possibly in MHNP).

Cicindela marginalis Fabricius, 1801: 240. Type locality: «Canada» (original citation). One syntype in ZMUC (Zimsen 1964: 64). Synonymy established with doubt by Say (1818: 419).

Cicindela purpurea var. *ramosa* Gistel, 1837: 31. Type locality: «America septentrionali, Canada» (original citation). Syntype(s) lost. Synonymy established by Horn (1915: 373).

Distribution. This subspecies, also known as the "Cow Path Tiger Beetle," ranges from southern Quebec to Minnesota, south to central Arkansas and northern Georgia [see Pearson et al. 2006: Map 28]. Beaton (2008: 39) indicated that despite extensive search he was unable to find any population of this species in Georgia, including at all known historical sites, and Ciegler (1997: 189) noted that it has not been collected in South Carolina since 1936. The record from "Nova Scotia" (Bousquet and Larochelle 1993: 59) was based on a misidentified specimen (see Majka et al. 2007: 6); that from "New Brunswick" (Erwin and Pearson 2008: 175) needs confirmation.

Records. CAN: ON, QC **USA**: AL, AR, CT, DC, DE, GA, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NY, OH, OK, PA, RI, SC, SD, TN, VA, VT, WI, WV [NB]

Note. This subspecies intergrades with the *audubonii* form over a wide area from North Dakota to Oklahoma (Pearson et al. 2006: 86).

Cicindela scutellaris flavoviridis Vaurie, 1950

Cicindela scutellaris flavoviridis Vaurie, 1950: 2. Type locality: «Forestburg, Montague County, Texas» (original citation). Holotype (♂) in AMNH [# 1210].

Distribution. This subspecies, the "Chartreuse Tiger Beetle," is known only from north-central Texas (Pearson et al. 2006: 102).

Records. USA: TX

Cicindela scutellaris lecontei Haldeman, 1853

Cicindela lecontei Haldeman, 1853: 361. Type locality: «Wisconsin» (original citation). One possible syntype, a ♀ labeled "[yellow disc] / C. Lecontei Hald. [handwritten]," in MCZ (collection LeConte).

Cicindela criddlei Casey, 1913: 19. Type locality: «Aweme, Manitoba» (original citation). Four syntypes [4 originally cited] in USNM [# 45916]. Synonymy established by Wallis (1961: 35).

Distribution. This subspecies, the "LeConte's Tiger Beetle," ranges from southern Quebec to southern Manitoba (Wallis 1961: 35-36), south to Kansas, northern Mississippi, West Virginia, and Connecticut [see Pearson et al. 2006: Map 43). The records

from "Saskatchewan" and "Alberta" (Bousquet and Larochelle 1993: 60) refer to the nominotypical subspecies.
Records. CAN: MB, ON, QC **USA**: CT, IA, IL, IN, KS, MA, ME, MI, MN, MO, MS, ND, NE, NH, NY, OH, PA, SD, TN, VT, WI, WV
Note. This subspecies intergrades with the nominate form over a broad area in the Great Plains and with the *unicolor* form in northern Missouri and Tennessee (Pearson et al. 2006: 102, 103).

Cicindela scutellaris rugata Vaurie, 1950

Cicindela varians Ljungh, 1799: 147 [*nomen oblitum*, see Boyd (2000)]. Type locality: «extra Europam» (original citation). Lectotype (♀), designated by Cassola (1999: 76), in ZMLS.
Cicindela scutellaris rugata Vaurie, 1950: 3 [*nomen protectum*]. Type locality: «Vowell's Mill, Natchitoches [Parish] County, Louisiana» (original citation). Holotype (♂) in AMNH [# 1211]. Synonymy established by Cassola (1999: 76).

Distribution. This subspecies, the "Rugate Tiger Beetle," is known from southwestern Arkansas (Ward 1972: 70), western Louisiana (Graves and Pearson 1973: 175), and eastern Texas (Vaurie 1950: 4). The record from "Oklahoma" (Erwin and Pearson 2008: 183) needs confirmation.
Records. USA: AR, LA, TX [OK]
Note. This subspecies intergrades with the nominate form in the northwestern part of its range and with the *lecontei* form in the northeastern part of its range (Pearson et al. 2006: 103).

Cicindela scutellaris rugifrons Dejean, 1825

Cicindela rugifrons Dejean, 1825: 51. Type locality: «Amérique septentrionale» (original citation), herein restricted to Cambridge, Middlesex County, Massachusetts (see Harris 1828a: 90, as *C. denticulata*). Holotype [by monotypy] (♀) probably in MHNP.
Cicindela modesta Dejean, 1825: 52. Type locality: «Saint-Domingue» (original citation), which is incorrect (see Dejean 1831: 210). Syntype(s) in MHNP. Synonymy established by LeConte (1856a: 35). Note. This name is listed in synonymy with *C. scutellaris lecontei* Haldeman by Horn (1928: 12).
Cicindela denticulata T.W. Harris, 1828a: 90. Type locality: «near Sweet Auburn in Cambridge [Middlesex County, Massachusetts]» (original citation). Syntype(s) presumably lost. Synonymy established by LeConte (1846b: 175).
Cicindela denticulata Hentz, 1830: 253 [primary homonym of *Cicindela denticulata* Harris, 1828]. Type locality: «Massachusetts» (original citation). Syntype(s) lost. Synonymy established by Gould (1834: 46).
Cicindela denticulata var. *oberleitneri* Gistel, 1837: 55. Type locality: «America boreali (Massachusetts)» (original citation). Syntype(s) lost. Synonymy established by Horn (1907a: 22).

Cicindela scutellaris var. *carolina* E.D. Harris, 1911: 28. Type locality: «neighborhood of Raleigh [Wake County], N[orth] C[arolina]» (original citation). Syntype(s) in MCZ [# 25609]. Synonymy established by Horn (1915: 379). Note. Harris (1911: 28) stated that *carolina* is "a slightly differentiated race of *rugifrons* existing in the neighborhood of Raleigh, N.C." but at the same time listed the variety from Surry and Newport News in Virginia as well as Raleigh, Southern Pines, Hamlet, Montague, and Manly in North Carolina.

Distribution. This subspecies, also known as the "Wrinkle-fronted Tiger Beetle," ranges east of the Appalachians from Massachusetts (Leonard and Bell 1999: 133) to North Carolina (Harris 1911: 28, as *C. scutellaris* var. *carolina*). The records from South Carolina (Cartwright 1935: 72) and "Georgia" (J.E. LeConte 1849: 25) probably refer to the *unicolor* form.
Records. USA: CT, DC, DE, MA, MD, NC, NJ, NY, PA, RI, VA
Note. This form intergrades with the *lecontei* form in Massachusetts and Connecticut and with the *unicolor* form in North Carolina (Pearson et al. 2006: 103).

Cicindela scutellaris scutellaris Say, 1823

Cicindela scutellaris Say, 1823b: 140 (as *scutelaris*). Type locality: «the Arkansa [River]» (original citation). Syntype(s) lost. Note. The incorrect subsequent spelling *scutellaris* is in prevailing usage and attributed to the publication of the original spelling; therefore it is deemed to be the correct original spelling (ICZN 1999: Article 33.3.1).
Cicindela scutellaris billingsi Casey, 1924: 14. Type locality: «Billings [Yellowstone County], Montana» (original citation). Holotype [by monotypy] (♂) in USNM [# 45915]. Synonymy established by Horn (1926: 276).
Cicindela shantzi Casey, 1924: 14. Type locality: «Colorado» (original citation). Holotype [by monotypy] (♂) in USNM [# 45914]. Synonymy established by Horn (1926: 276).

Distribution. This subspecies, also known as the "Festive Tiger Beetle," ranges from southwestern Saskatchewan and southeastern Alberta (Wallis 1961: 35) south to east-central New Mexico (Acciavatti et al. 1980: 30), northern Texas (Gaumer and Murray 1971: 10), Arkansas (Graves and Pearson 1973: 175), and northwestern Mississippi (Bolivar County, Drew A. Hildebrandt pers. comm. 2009). The record from "Iowa" (Freitag 1999: 49) probably refers to the *lecontei* form.
Records. CAN: AB, SK **USA**: AR, CO, KS, MS, MT, ND, NE, NM, OK, SD, TX, WY
Note. According to Pearson et al. (2006: 102), this subspecies intergrades with the *lecontei* form over a broad zone in eastern South Dakota, Nebraska, and Kansas.

Cicindela scutellaris unicolor Dejean, 1825

Cicindela unicolor Dejean, 1825: 52. Type locality: «Amérique septentrionale» (original citation), herein restricted to Wilmington, New Hanover County, North Carolina (see Leng 1902: 125). Syntype(s) in MHNP.

Distribution. This subspecies, the "Unicolored Tiger Beetle," is known from eastern Tennessee and North Carolina (Pearson et al. 2006: 103) south to central Florida (Peck and Thomas 1998: 16; Choate 2003: Map 74), southern Alabama (Löding 1945: 9), and southern Mississippi (Graves and Pearson 1973: 174); also recorded from "Virginia" (Erwin and Pearson 2008: 184). The records from Texas (Tucker 1906: 85), "Louisiana," "Colorado" (Leng 1902: 125), New Mexico (Fall and Cockerell 1907: 155), and Oklahoma (Drew and Van Cleave 1962: 115) could be based on strays, on intergrades, or be in error.
Records. USA: AL, FL, GA, MS, NC, SC, TN [VA]
Note. According to Pearson et al. (2006: 103), this form intergrades with the *rugifrons* form in North Carolina and with the *lecontei* form in northern Missouri and Tennessee.

Cicindela scutellaris yampae Rumpp, 1986

Cicindela scutellaris yampae Rumpp, 1986: 140. Type locality: «Maybell Sand Hills (between two and 6 km east of Maybell), Moffat County, Colorado» (original citation). Holotype (♂) in AMNH [# 1526].

Distribution. This subspecies, the "Yampa Tiger Beetle," is known only from the Maybell Sand Hills area in northwestern Colorado (Kippenhan 1994: 55).
Records. USA: CO

Cicindela splendida Hentz, 1830

Cicindela splendida Hentz, 1830: 254. Type locality: «North Carolina» (original citation), herein restricted to Asheville, Buncombe County (see Harris 1911: 7). One possible syntype in MCZ [# 20].

Cicindela purpurea splendida f. *cyanocephala* Varas Arangua, 1929: 239 [primary homonym of *Cicindela cyanocephala* Fabricius, 1798]. Type locality: «Kansas, Nebraska» (original citation). Syntype(s) location unknown. Synonymy established by Schincariol and Freitag (1991: 1345). Note. Even if this taxon was originally proposed at an infrasubspecific rank, it is deemed to be subspecific from its original publication because it was adopted before 1985 as the valid name of a subspecies (e.g., Leng and Mutchler 1933: 9) (see ICZN 1999: Article 45.6.4.1).

Cicindela splendida var. *cyanocephalata* Eckhoff, 1939: 211. Replacement name for *Cicindela splendida* var. *cyanocephala* Varas Arangua, 1929.

Cicindela splendida var. *cyanocephalonota* Eckhoff, 1970: 32. Unnecessary replacement name for *Cicindela splendida* var. *cyanocephalata* Eckhoff, 1939.

Distribution. This species, also known as the "Splendid Tiger Beetle," occurs from southern Pennsylvania to eastern Wyoming, north to southern Wisconsin, south to central Texas, northeastern Georgia, and northern South Carolina [see Schincariol and Freitag 1991: Fig. 13; Pearson et al. 1997: Fig. 20]; The records from "New York" (Schaupp 1884a: 90), "Minnesota" (Horn 1928: 10), and "New Mexico" (Freitag 1999: 50, 51) need confirmation.

Records. USA: AL, AR, CO, DC, GA, IA, IL, IN, KS, KY, LA, MD, MO, MS, NC, NE, OH, OK, PA, SC, SD, TN, TX, VA, WI, WV, WY [MN, NM, NY]
Note. 1. The name *Cicindela discus*, credited to Klug (1834: 23), is often listed as a synonym of *C. splendida* Hentz but Klug did not apply the name to a new species. 2. According to Pearson et al. (2006: 91), recent DNA studies on this species, *C. denverensis* and *C. limbalis* suggest that members of all three could be conspecific. Spomer et al. (2008a: 23) noted that this species hybridizes with *C. denverensis* in a narrow zone in central Nebraska and possibly also with *C. limbalis*.

Cicindela tenuicincta Schaupp, 1884

Cicindela latesignata var. *tenuicincta* Schaupp, 1884b: 122. Type locality: «Colorado» (original citation), which is probably incorrect (Freitag 1999: 55); Saltair, Salt Lake County, Utah (see Leng 1902: 138) herein selected. Holotype [by monotypy] (♀) in USNM [# 1204].

Distribution. This species, also known as the "Short-legged Tiger Beetle," is found from southern Oregon to east-central California, east to southeastern Utah [see Pearson et al. 2006: Map 48]. The records from "Arizona" and "New Mexico" (Bousquet and Larochelle 1993: 61) are in error or based on strays.
Records. USA: CA, NV, OR, UT

Cicindela tranquebarica cibecuei Duncan, 1958

Cicindela tranquebarica cibecuei Duncan, 1958: 43. Type locality: «Cibecue Creek, near Cibecue, Gila County, Arizona» (original citation). Holotype (♂) in AMNH [# 1206].

Distribution. This subspecies is known only from east-central Arizona [see Kritsky and Horner 1998: Fig. 5].
Records. USA: AZ
Note. Bertholf (1983: 26) considered this form as a synonym of the *lassenica* form (= *C. tranquebarica parallelonota* Casey).

Cicindela tranquebarica diffracta Casey, 1909

Cicindela diffracta Casey, 1909: 273. Type locality: «Las Vegas [San Miguel County], New Mexico» (original citation). One syntype in USNM [# 45950].
Cicindela admiscens Casey, 1913: 25. Type locality: «Jemez Springs [Sandoval County], New Mexico» (original citation). Thirteen syntypes in USNM [# 45951]. Synonymy established by Horn (1915: 376).

Distribution. This subspecies, the "Diffracted Tiger Beetle," is found from southern Wyoming to New Mexico and eastern Arizona (Kritsky and Horner 1998: 25, Fig. 5). According to Pearson et al. (2006: 107), it occurs in southern Nevada, northern Ari-

zona, and New Mexico; also recorded from Utah (Tanner 1929a: 80) and "Nebraska" (Erwin and Pearson 2008: 192).
Records. USA: AZ, CO, NM, NV, WY [NE, UT]

Cicindela tranquebarica joaquinensis Knisley and Haines, 2007

Cicindela tranquebarica joaquinensis Knisley and Haines, 2007: 112. Type locality: «near Guernsey, Kings Co[unty], Ca[lifornia]» (original citation). Holotype (♂) in CAS.

Distribution. This subspecies, the "Joaquin Tiger Beetle," is known only from the San Joaquin Valley of California.
Records. USA: CA
Note. According to Knisley and Haines (2007: 109), this subspecies intergrades with the *vibex* form along the margins of the San Joaquin Valley.

Cicindela tranquebarica kirbyi LeConte, 1867

Cicindela kirbyi LeConte, 1867b: 362. Type locality: northern parts of North America (inferred from title of Kirby's 1837 book). Syntype(s) in BMNH. Note. This subspecies was described by the inclusion of a drawing of the left elytron as well as by indication to *Cicindela obliquata* Dejean, 1825 *sensu* Kirby (1837: 10).

Distribution. This subspecies, the "Kirby's Tiger Beetle," ranges from Manitoba to Alberta, north to southern Northwest Territories; it southern limit is debated. Kritsky and Horner (1998: Fig. 5) placed it at southern Wyoming and northern Nebraska while Pearson et al. (2006: Map 45) placed it at southeastern New Mexico and northern Texas. I have accepted the latest range for the records. The subspecies is also recorded from "British Columbia," "Ontario," "Arkansas," "Iowa," "Minnesota," "Missouri," "Utah," and "Washington" by Erwin and Pearson (2008: 193).
Records. CAN: AB, MB, NT, SK **USA**: CO, KS, MT, ND, NE, NM, OK, SD, TX, WY [AR, BC, IA, MN, MO, ON, UT, WA]
Note. This subspecies intergrades with the nominotypical form over a large area in the Midwest (Pearson et al. 2006: 106).

Cicindela tranquebarica parallelonota Casey, 1914

Cicindela parallelonota Casey, 1914: 21. Type locality: «Las Vegas [Clark County], Nevada» (original citation). One syntype in USNM [# 45943].

Cicindela lassenica Casey, 1914: 22. Type locality: «California» (original citation). One syntype in USNM [# 45946]. Synonymy established by Kritsky and Horner (1998: 25).

Cicindela moapana Casey, 1914: 22. Type locality: «McGill (6500 feet), White Pine Co[unty], Nevada» (original citation). One syntype in USNM [# 45949]. Synonymy established by Kritsky and Horner (1998: 25).

Cicindela tranquebarica var. *inyo* Fall, 1917: 106. Type locality: «Olancha [Inyo County], California» (original citation). Holotype (♀) in MCZ [# 23838]. Synonymy established by Kritsky and Horner (1998: 25).

Cicindela tranquebarica var. *owena* Fall, 1917: 106. Type locality: «Olancha [Inyo County], California» (original citation). Holotype (♂) in MCZ [# 23839]. Synonymy established implicitly with the name *C. tranquebarica inyo* Fall by Cazier (1939: 27).

Cicindela kirbyi uintana Casey, 1924: 15. Type locality: «Zion Cañon, Utah» (original citation). Holotype [by monotypy] (♀) in USNM [# 45938]. Synonymy established, under the name *C. tranquebarica owena* Fall, by Horn (1926: 272).

Distribution. This subspecies, also known as the "Opal Tiger Beetle," occurs in Utah, Nevada, and eastern California (Kritsky and Horner 1998: 25).

Records. USA: CA, NV, UT

Note. Some authors, including Pearson et al. (2006: 107, 108), consider the forms *inyo* and *moapana* as distinct subspecies: the first one is confined to the Owens Valley of interior central California and adjacent Nevada and the second one is found in east-central Nevada and adjacent Utah. Freitag (1999: 57) and Erwin and Pearson (2008: 194) listed the *lassenica* form as a distinct subspecies and recorded it from "California," "Nevada," "Utah," and "Arizona."

Cicindela tranquebarica sierra Leng, 1902

Cicindela vulgaris var. *sierra* Leng, 1902: 146. Type locality: «Sierra Co[unty], Cal[ifornia]» (original citation). Lectotype (♀), designated by Dahl (1941: 172), in AMNH [# 1224].

Distribution. This subspecies, the "Sierra Tiger Beetle," is restricted to the Sierra Nevada in eastern California [see Kritsky and Horner 1998: Fig. 5].

Records. USA: CA

Cicindela tranquebarica tranquebarica Herbst, 1806

Cicindela tranquebarica Herbst, 1806: 178. Type locality: «Trankenbar [= Tranquebar, Tamil Nadu, India]» (original citation), which is incorrect; herein restricted to Charlotte, Mecklenburg County, North Carolina (see Harris 1911: 18, as *C. tranquebarica* var. *vulgarisminor*). Syntype(s) location unknown (possibly in ZMHB).

Cicindela vulgaris Say, 1818: 409. Type locality: «North America» (original citation). Syntype(s) lost. Synonymy established by LeConte (1863b: 1).

Cicindela obliquata Dejean, 1825: 72. Type locality: «Amérique septentrionale» (original citation). Syntype(s) in MHNP. Synonymy established, under the name *C. vulgaris* Say, by Dejean (1826: 414).

Cicindela vulgaris var. *horiconensis* Leng, 1902: 145. Type locality: «Lake George [Warren County], N[ew] Y[ork] (original citation for the lectotype). Lectotype (♂),

designated by Dahl (1941: 172), in AMNH [# 1223]. Synonymy established by Horn (1905: 20).

Cicindela tranquebarica form *minor* Leng, 1910: 80. Type locality: «Louisiana; Georgia» (original citation). Syntype(s) location unknown. Synonymy established by Horn (1930: 81).

Cicindela tranquebarica var. *vulgaris-minor* E.D. Harris, 1911: 18. Type locality: «Charlotte, Goldsboro, High Point, Montague, Southern Pines, Jamestown, Manly [all in] No[rth] Car[olina]; Vowell's Mill, Louisiana» (original citation). Syntype(s) in MCZ [# 25603]. Synonymy established, under the name *C. tranquebarica minor* Leng, by Horn (1915: 376).

Cicindela tranquebarica turbulenta Casey, 1913: 25. Type locality: «Vicksburg [Warren County], Mississippi» (original citation). One syntype in USNM [# 45944]. Synonymy established by Horn (1915: 376).

Cicindela crinifrons Casey, 1913: 26. Type locality: «Asheville and Southern Pines, North Carolina» (original citation). Nine syntypes in USNM [# 45945]. Synonymy established, under the name *C. tranquebarica minor* Leng, by Horn (1915: 376).

Cicindela wichitana Casey, 1914: 21. Type locality: «Kansas» (original citation). Four syntypes [4 originally cited] in USNM [# 45947]. Synonymy established by Horn (1915: 444).

Cicindela tranquebarica var. *viridula* Varas Arangua, 1928: 173. Type locality: «Concord, Massachusetts; Rhode Island; Connecticut; Long Island, N[ew] Y[ork]» (original citation). Syntype(s) in CAS [# 8151]. Synonymy established by Horn (1930: 81).

Distribution. This subspecies, also known as the "Oblique-lined Tiger Beetle," ranges over much of eastern North America, from Newfoundland to Nebraska, south to northern Texas and northern Florida (Choate 2003: Map 26) [see Kritsky and Horner 1998: Fig. 5; Pearson et al. 2006: Map 45]. Several state and province records (e.g., AB, CA, ID, MB, MT, ND, NT, NV, OR, SK, UT, WY) in Boyd (1982: 9), Bousquet and Larochelle (1993: 61), and Freitag (1999: 57) apparently refer to other subspecies of *C. tranquebarica* Herbst. Choate (2003: 81) reported that there are no recent collection records of this species in Florida.

Records. CAN: LB, NB, NF, NS (CBI), ON, PE, QC **USA**: AR, CO, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, NE, NH, NJ, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, WV

Note. *Cicindela tranquebarica* is extremely variable in color and maculation which lead to the recognition of several subspecies. However, it appears that the species varies seasonally. As remarked by Sumlin (1976a: 103) "if one were to sample this population [at Owen's Lake, Inyo County, California] from early April to the middle of June one would have approximately 5 subspecific phenotypes represented; i.e., *inyo* Fall (green in color with narrow to thick lunules), *kirbyi* LeConte (brown or black in color with very wide lunules), *cibecuei* Duncan (blue in color with wide lunules), *borealis* E.D. Harris (brown or black in color with very narrow lunules), and *parallelonota* Casey

(light to dark green in color with thickened lunules)." A thorough study of the variation in this species would probably lead to a reduction in the number of subspecies.

Cicindela tranquebarica vibex Horn, 1867

Cicindela vibex G.H. Horn, 1867a: 395. Type locality: «Fort Klamath [Klamath County], Oregon» (original citation). Lectotype (♂), designated by Ward (1982: 61), in MCZ [# 33472].

Cicindela vulgaris var. *roguensis* E.D. Harris, 1901: 226. Type locality: «basin of the Rogue River, S[outh]-W[est] Oregon» (original citation). Syntype(s) [20 originally cited] in MCZ [# 25605]. Synonymy established by Harris (1911: 19).

Cicindela tranquebarica var. *borealis* E.D. Harris, 1911: 19. Type locality: «Kootenay region of British Columbia» (original citation). Syntype(s) in MCZ [# 25604]. Synonymy established by Bousquet and Larochelle (1993: 61) based on Leffler (1979a: 578) unpublished thesis. Note. Harris (1911: 19) stated that the taxon is "a race indigenous to the Kootenay region of British Columbia" but listed it from Spokane in Washington, Provo in Utah, as well as Kaslo, Lardo River, Ainsworth, and Bear Foot Mountains in British Columbia.

Distribution. This subspecies, the "Wealed Tiger Beetle," ranges from British Columbia to western Montana, south to northern Utah and northern California [see Kritsky and Horner 1998: Fig. 5]. The record from "Northwest Territories" (Boyd 1982: 10) is probably in error.
Records. CAN: BC **USA**: CA, ID, MT, NV, OR, UT, WA, WY
Note. Freitag (1999: 55) and Pearson et al. (2006: 107) considered the form *borealis* as a valid subspecies although Pearson et al. stated that "perhaps the entire population represents a zone of intergradation and not a distinct subspecies." Erwin and Pearson (2008: 195) also retained the *roguensis* form as a distinct subspecies listing it from several western states (i.e., ID, OR, MT, NV, WA, WY).

Cicindela tranquebarica viridissima Fall, 1910

Cicindela vulgaris var. *viridissima* Fall, 1910: 89. Type locality: «near San Bernardino and Colton; Tulare County [in] southern California» (original citation). Syntype(s) in MCZ [# 23840].

Distribution. This taxon, also known as the "Santa Ana Tiger Beetle," is found in southern California, primarily in Orange and western San Bernardino Counties (Pearson et al. 2006: 108).
Records. USA: CA

[**formosa group**]

Cicindela denikei Brown, 1934

Cicindela sexguttata denikei Brown, 1934: 22. Type locality: «Ingolf, Ont[ario]» (original citation). Holotype (♂) in CNC [# 3529].

Distribution. This species, also known as the "Laurentian Tiger Beetle," is restricted to a small area in southeastern Manitoba, northwestern (Lawton 2008: 73) and southwestern Ontario, and adjacent parts of Minnesota (Kaulbars and Freitag 1993a: 307; Pearson et al. 2006: 95); isolated at Manitoulin Island, Ontario (Bouchard et al. 2006: 21).
Records. CAN: MB, ON **USA**: MN

Cicindela formosa formosa Say, 1817

Cicindela formosa Say, 1817a: [23]. Type locality: «sandy alluvions of the Missouri, above the confluence of the river Platte» (original citation). Syntype(s) lost.

Cicindela formosa luxuriosa Casey, 1913: 24. Type locality: «near Denver [Denver County], Colorado» (original citation). Two syntypes in USNM [# 45971]. Synonymy established by Horn (1915: 371).

Cicindela formosa fletcheri Criddle, 1925: 127. Type locality: «Sunshine Road, Marias River [Chouteau County], Montana» (original citation). Holotype (♂) in CNC [# 1418]. Synonymy established by Horn (1926: 262). Etymology. The subspecific name was proposed for James Fletcher [1852-1908], the first entomologist and botanist in the Dominion Department of Agriculture in Ottawa. Born in England, Fletcher worked mainly on economic insects and particularly Lepidoptera larvae.

Distribution. This subspecies, also known as the "Big Sand Tiger Beetle," ranges from southern Saskatchewan and southern Alberta south to New Mexico and southern Texas (Gaumer 1977: 188-189); also recorded from "Manitoba" and "Minnesota" (Erwin and Pearson 2008: 135).
Records. CAN: AB, SK **USA**: CO, KS, MT, ND, NE, NM, OK, SD, TX, WY [MB, MN]
Note. Gaumer (1977: 194-195) reported the presence of intergrade populations between this subspecies and the *generosa* form in central United States and with the *pigmentosignata* form in north-central and central Texas.

Cicindela formosa generosa Dejean, 1831

Cicindela generosa Dejean, 1831: 231. Type locality: «Amérique septentrionale» (original citation), herein restricted to Ballardvale, Essex County, Massachusetts (see Harris 1911: 2). Syntype(s) in MHNP.

Cicindela formosa var. *manitoba* Leng, 1902: 137. Type locality: «Aweme, Manitoba» (original citation). Lectotype, designated by Dahl (1941: 170), in AMNH [# 1219]. Synonymy established by Horn (1926: 263). Note. Rumpp (1986: 145) listed this name in synonymy with the nominotypical subspecies.

Distribution. This subspecies, also known as the "Eastern Sand Tiger Beetle," ranges from Kings County in Nova Scotia (Neil and Majka 2008: 4) to southern Manitoba, south to northeastern South Dakota (Spomer et al. 2008a: 21), central Louisiana, southern Mississippi, and southern Virginia (Gaumer 1977: 202-203).

The records from "Saskatchewan," "Montana," "Nebraska" (Erwin and Pearson 2008: 136), "Colorado" (Leng 1902: 136), and "Alabama" (Freitag 1999: 25) need confirmation.
Records. CAN: MB, NS, ON, QC **USA**: AR, CT, DE, IA, IL, IN, KY, LA, MA, MD, ME, MI, MN, MO, MS, ND, NH, NJ, NY, OH, PA, RI, SD, TN, VA, VT, WI, WV [AL, CO, MT, NE, SK]

Cicindela formosa gibsoni Brown, 1940

Cicindela formosa gibsoni Brown, 1940b: 182. Type locality: «Great Sand Hills, west of Swift Current, Sask[atchewan]» (original citation). Holotype (♂) in CNC [# 4885]. Etymology. This subspecies was named after Arthur Gibson [1875-1959], Dominion entomologist with a special interest in Lepidoptera. Gibson had no formal training but learned under James Fletcher and Charles Gordon Hewitt, both with the Department of Agriculture in Ottawa.

Distribution. This subspecies, also known as the "Gibson's Sand Tiger Beetle," is known from southwestern Saskatchewan (Wallis 1961: 38; Gaumer 1977: 216) and northwestern Colorado (Kippenhan 1994: 41). The record from "Alberta" (Bousquet and Larochelle 1993: 55) is in error; that from "North Dakota" (Freitag 1999: 26) needs confirmation; that from "Utah" (Erwin and Pearson 2008: 136) is probably based on intergrades found along the Green River (see Pearson et al. 2006: 84).
Records. CAN: SK **USA**: CO [SD, UT]
Note. In his unpublished thesis, Gaumer (1977: 219) treated the Colorado population of this subspecies as a distinct subspecies of *C. formosa*. This subspecies intergrades narrowly with the *formosa* form on all sides of its small range in southern Saskatchewan and along the Green River in northeastern Utah (Pearson et al. 2006: 84).

Cicindela formosa pigmentosignata Horn, 1930

Cicindela formosa pigmento-signata W. Horn, 1930: 76. Type locality: «Mineola [and] Rosser, Texas» (original citation). Syntype(s) [2 originally cited] in USNM [# 41843] and DEI (Döbler 1973: 378).

Distribution. This subspecies, also known as the "Reddish-green Sand Tiger Beetle," is found in southwestern Arkansas, northern Louisiana, and eastern Texas (Gaumer 1977: 210).
Records. USA: AR, LA, TX

Cicindela formosa rutilovirescens Rumpp, 1986

Cicindela formosa rutilovirescens Rumpp, 1986: 142. Type locality: «Mescalero Sands (1300 m), 55 to 65 km due east of Roswell, Chaves County, New Mexico» (original citation). Holotype (♂) in CAS [# 12984].

Distribution. This subspecies, also known as the "Mescalero Sand Tiger Beetle," is found in Terry and Yoakum Counties in northwestern Texas and in Chaves, Eddy, and Roosevelt Counties in eastern New Mexico (Rumpp 1986: 143).
Records. USA: NM, TX
Note. Rumpp (1986: 144) reported the presence of intergrade populations between this subspecies and the nominotypical form in Bailey and Lamb Counties, northwestern Texas, and Quay County, eastern New Mexico.

Cicindela longilabris laurentii Schaupp, 1884

Cicindela longilabris var. *laurentii* Schaupp, 1884a: 87. Type locality: «Col[orado]» (original citation), herein restricted to Golden, Jefferson County (see Leng 1902: 121). Syntype(s) apparently destroyed.
Cicindela longilabris var. *oslari* Leng, 1902: 121. Type locality: «southwest slope of M[oun]t Wilson of the San Miguel Range (12,000 feet) [Dolores County], Colorado» (original citation for the lectotype). Lectotype (♀), designated by Dahl (1941: 189), in AMNH [# 1226]. Synonymy established by Spanton (1988: 123). Etymology. The subspecific name was proposed in honor of Ernest J. Oslar [1858-1944], a resident of Denver who had an interest in Colorado Coleoptera. Oslar was born in England.
Cicindela longilabris var. *vestalia* Leng, 1902: 121. Type locality: «Maiden [Fergus County], Montana» (original citation). Lectotype (♀), designated by Dahl (1941: 188), in AMNH [# 1227]. Synonymy established by Spanton (1988: 123).
Cicindela oslari densissima Casey, 1924: 12. Type locality: «probably Colorado» (original citation). One syntype in USNM [# 45895]. Synonymy established, under the name *C. longilabris oslari* Leng, by Horn (1926: 273), confirmed by Spanton (1988: 123).
Cicindela oslari estesiana Casey, 1924: 13. Type locality: «Colorado» (original citation). Three syntypes [3 originally cited] in USNM [# 45896]. Synonymy established by Horn (1930: 82), confirmed by Spanton (1988: 123).

Distribution. This subspecies, the "Laurent's Long-lipped Tiger Beetle," ranges from north-central Montana to western South Dakota, south to central New Mexico, central Arizona, and southern Nevada [see Spanton 1988: Fig. 39].
Records. USA: AZ, CO, ID, MT, NM, NV, SD, UT, WY

Cicindela longilabris longilabris Say, 1824

Cicindela longilabris Say, 1824: 268. Type locality: «1 km W[est] of Silver Islet on Perry Bay, Sibley Prov[incial] P[ar]k, Ont[ario]» (neotype label). Neotype (♂), designated by Spanton (1988: 123), in MCZ [# 32908]. Note. «North-west Territory» was the area originally cited by Say (1824: 268).
Cicindela albilabris Kirby, 1837: 12. Type locality: «Lat. 64° and also Canada» (original citation). One syntype in BMNH (Lindroth 1953b: 169). Synonymy established by LeConte (1846b: 178).

Figure 13. *Loricera pilicornis* (Fabricius). This is a widely distributed Holarctic species, occurring in Europe as far south as northern Spain and continental Italy, over Asia as far south as Kazakhstan and Sichuan, and in North America as far south as the San Bernardino Mountains in southern California and northern West Virginia. The specific name derives from the Latin *pili* (hairs) and *cornus* (horn) in reference to the presence of conspicuous stiff setae on the basal antennomeres of the adults. These setae, oriented in three main directions, act as a trap for the capture of collembolan prey.

Cicindela longilabris novaterrae Leng, 1919a: 140. Type locality: «near Bay S[ain]t George, Newfoundland» (original citation). Holotype (♀) in AMNH [# 1225]. Synonymy established by Spanton (1988: 123).

Cicindela oslari terracensis Casey, 1924: 13. Type locality: «Terrace, British Columbia» (original citation). Holotype [by monotypy] (♂) in USNM [# 45897]. Synonymy established by Horn (1926: 273), confirmed by Spanton (1988: 123).

Distribution. The range of this subspecies, also known as the "Boreal Long-lipped Tiger Beetle," extends from Newfoundland to eastern Alaska, south to southern Alberta, central Minnesota, central Wisconsin, and southern New York [see Spanton 1988: Fig. 39]. Intergrade populations between the three subspecies of *C. longilabris* are found in southeastern British Columbia, southwestern Alberta, western Montana, Idaho, southeastern Washington, and northeastern Oregon [see Spanton 1988: Fig. 39]; these records are listed under this subspecies.
Records. CAN: AB, BC, LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK, YT **USA**: AK, ID, ME, MI, MN, MT, NH, NY, OR, VT, WA, WI

Cicindela longilabris perviridis Schaupp, 1884

Cicindela longilabris var. *perviridis* Schaupp, 1884a: 87. Type locality: «Cal[ifornia], Oregon, Utah and Newf[oun]dl[an]d» (original citation), restricted to «Sierra» and «Placer» Counties in California by Leng (1902: 122). Syntype(s) location unknown. Note. Leng (1902: 123) reported that the "type of this species" was in Charles Fuchs collection. Much of Fuchs' collection was destroyed in the San Francisco earthquake and fire of 1906.

Cicindela ostenta Casey, 1913: 17. Type locality: «California» (original citation). One syntype in USNM [# 45898]. Synonymy established by Horn (1915: 377).

Cicindela perviridis placerensis Casey, 1913: 18. Type locality: «Placer Co[unty], California» (original citation). Two syntypes in USNM [# 45905]. Synonymy established by Horn (1915: 377).

Cicindela ostenta columbiana Casey, 1924: 13. Type locality: «British Columbia» (original citation). Holotype [by monotypy] (♂) in USNM [# 45899]. Synonymy established by Wallis (1961: 50).

Distribution. The range of this subspecies, the "Green Long-lipped Tiger Beetle," extends along the Cascade Range and Sierra Nevada from southwestern British Columbia to east-central California (Spanton 1988: 129, Fig. 39). The records from Colorado (Wickham 1902: 228), "Idaho," and "Montana" (Boyd 1982: 6) probably refer to the *laurentii* form; that from "Nevada" (Bousquet and Larochelle 1993: 58) needs confirmation.
Records. CAN: BC **USA**: CA, OR, WA [NV]

Cicindela nebraskana Casey, 1909

Cicindela montana LeConte, 1861b: 338 [primary homonym of *Cicindela montana* Charpentier, 1825]. Type locality: «valleys of the Rocky Mountains» (original ci-

tation), restricted to «valleys of the Bitter Root Mountains of eastern Idaho and western Montana» by Spanton (1988: 131). Syntype(s) in MCZ [# 25].

Cicindela [*longilabris*] *nebraskana* Casey, 1909: 268. Type locality: «Nebraska» (original citation). One syntype in USNM [# 45902]. Synonymy established by Boyd (1982: 6).

Cicindela montana canadensis Casey, 1913: 17. Type locality: «Calgary, Alberta» (original citation). Three syntypes in USNM [# 45903]. Synonymy established by Horn (1915: 377).

Cicindela spissitarsis Casey, 1913: 18. Type locality: «Aweme, Manitoba» (original citation). One syntype in USNM [# 45904]. Synonymy established by Horn (1926: 273).

Cicindela calgaryana Casey, 1914: 18. Type locality: «Lethbridge, Alberta» (original citation). Three syntypes in USNM [# 45901]. Synonymy established by Horn (1915: 444).

Cicindela montana uteana Casey, 1924: 12. Type locality: «Provo [Utah County], Utah» (original citation). Holotype [by monotypy] (♂) in USNM [# 45900]. Synonymy established by Horn (1926: 273).

Cicindela longilabris chamberlaini Knaus, 1925: 182. Type locality: «Stein Mountains, Harney County, southeast Oregon» (original citation). Holotype (♂) location unknown (possibly in KSUC). Synonymy established by Spanton (1988: 131). Etymology. The subspecific name was proposed for Willard Joseph Chamberlin [1890-1971], professor and forest entomologist at the Oregon State University. Chamberlin (not Chamberlain as thought by Knaus) worked mainly on Buprestidae and Scolytinae. He sold his collection in 1950 to the California Academy of Sciences.

Distribution. This species, also known as the "Prairie Long-lipped Tiger Beetle," ranges from the Fraser River in British Columbia to northwestern Ontario (Lawton 2008: 72), south to west-central Nebraska (Spomer et al. 2008a: 54), northern Colorado, southern Utah, and east-central California [see Spanton 1988: Fig. 40]. The records from "New Mexico" (Freitag 1999: 35) and Minnesota (Horn 1928: 11) need confirmation.

Records. CAN: AB, BC, MB, ON, SK **USA**: CA, CO, ID, MT, ND, NE, NV, OR, SD, UT, WA, WY [MN, NM]

Cicindela patruela consentanea Dejean, 1825

Cicindela consentanea Dejean, 1825: 63. Type locality: «Amérique septentrionale» (original citation), herein restricted to Lakehurst, Ocean County, New Jersey (see Leng 1902: 130). Syntype(s) in MHNP.

Distribution. This subspecies, also known as the "Consenta's Tiger Beetle," was once found in Long Island and New Jersey but is now restricted to the Pine Barrens region of New Jersey (Mawdsley 2007: 17). Single specimens, possibly strays, are known from

Delaware, "Maryland," and "Pennsylvania" (Mawdsley 2007: 17). The taxon is also recorded from "North Carolina" and "Virginia" by Erwin and Pearson (2008: 166).
Records. USA: NJ, NY [DE, MD, NC, PA, VA]

Cicindela patruela patruela Dejean, 1825

Cicindela patruela Dejean, 1825: 62. Type locality: «Amérique septentrionale» (original citation), herein restricted to Chickies Rock, Lancaster County, Pennsylvania (see Leng 1902: 129). Syntype(s) in MHNP.

Cicindela montana Hentz [in Scudder], 1869: 53 [primary homonym of *Cicindela montana* LeConte, 1861]. Type locality: «near the Pilot Mountain [North Carolina]» (original citation). Syntype(s) lost. Synonymy established by Horn (1915: 381).

Cicindela patruela huberi Johnson, 1990a: 27. Type locality: «2.4 miles southwest of Mather, Monroe Co[unty], Wisconsin» (original citation). Holotype (♂) in FSCA. Synonymy established by Kaulbars and Freitag (1993a: 308).

Distribution. This subspecies, also known as the "Northern Barrens Tiger Beetle," ranges from New Hampshire (Leonard and Bell 1999: 47) to Minnesota, south to northern Alabama (Löding 1945: 9) northeastern Georgia, and northwestern South Carolina [see Kaulbars and Freitag 1993a: Fig. 40]. The species has been collected also at two sites in the Outaouais region in western Quebec and eastern Ontario (Leonard and Bell 1999: 47). The record from New Jersey (Smith 1910: 197) is questionable (see Boyd 1978: 215). Beaton (2008: 39) indicated that he was unable to find any extant populations of this species in Georgia despite intensive searching at historical sites and other areas of suitable habitat.
Records. CAN: ON, QC **USA**: AL, CT, DC, DE, GA, IN, KY, MA, MD, MI, MN, NC, NH, NY, OH, PA, RI, SC, TN, VA, VT, WI, WV [NJ]

Cicindela pulchra dorothea Rumpp, 1977

Cicindela pulchra dorothea Rumpp, 1977: 172. Type locality: «5.2 to 6.2 kilometers southeast of Willcox [Cochise County, Arizona]» (original citation). Holotype (♂) in CAS [# 12529].

Distribution. This subspecies, the "Dorothy's Tiger Beetle," in known from southeastern Arizona (Bertholf 1983: 21), New Mexico (Acciavatti et al. 1980: 30), and a small area in western Texas [see Pearson et al. 2006: Map 39].
Records. USA: AZ, NM, TX

Cicindela pulchra pulchra Say, 1823

Cicindela pulchra Say, 1823b: 142. Type locality: «in the country bordering the Platte and Arkansa rivers near the mountains, Missouri Territory» (original citation). Syntype(s) lost.

Distribution. This subspecies, also known as the "Beautiful Tiger Beetle," ranges from western South Dakota (Larsen and Willis 2008: 480; Brust 2010: 1) and northeastern Wyoming (Brust 2011: 78) south to northern Texas, New Mexico, and Arizona (Bertholf 1983: 20) [see Pearson et al. 2006: Map 39]; also recorded from Nuevo León (Erwin and Pearson 2008: 172).
Records. USA: AZ, CO, KS, NE, NM, OK, SD,TX, WY

Cicindela sexguttata Fabricius, 1775

Cicindela sex guttata Fabricius, 1775: 226. Type locality: «Virginia» (original citation). Four syntypes in ZMUC (Zimsen 1964: 65).

Cicindela violacea Fabricius, 1801: 232. Type locality: «Carolina» (original citation). Syntype(s) probably lost. Synonymy established by Dejean (1833: 2).

Cicindela sexguttata var. *harrisii* Leng, 1902: 128. Type locality: «Lake Memphremagog [Quebec], Canada» (original citation for the lectotype). Lectotype (♂), designated by Dahl (1941: 190), in AMNH [# 1230]. Synonymy established by Horn (1905: 21). Etymology. The subspecific name was proposed in honor of Edward Doubleday Harris [1839-1919], one of the sons of Thaddeus Harris (see *Agonum harrisii* LeConte). Edward Harris, an architect by profession, was interested in genealogy, history, and entomology. He specialized on tiger beetles and his collection is now at the Museum of Comparative Zoology.

Cicindela sexguttata var. *4-guttata* C.A. Davis, 1903: 271. Type locality: «from northern Rhode Island into Massachusetts» (original citation). Syntype(s) location unknown. Synonymy established by Horn (1905: 21).

Cicindela levettei Casey, 1909: 270. Type locality: «Iowa» (original citation). Five syntypes in USNM [# 45918]. Synonymy established by Harris (1911: 29).

Cicindela levettei tridens Casey, 1909: 271. Type locality: «Vowell's Mill, northwestern Louisiana, to Onaga, Kansas» (original citation). Two syntypes in USNM [# 45917]. Synonymy established by Harris (1911: 29).

Cicindela illinoensis Mares, 1921: 310. Type locality: «Riverside [Cook County], Illinois» (original citation). Holotype (♂) in INHS (Webb 1980: 78). Synonymy established by Horn (1926: 279).

Cicindela kansanus Knaus, 1928: 24. Type locality: «near Onaga, Pottawatomie County, Kansas; Bourbon County, Kansas; West Point, Cuming County, South Bend, Cass County, Lawrence, Nuckolls County, Omaha, Douglas County [all Nebraska]; near Iowa City [Iowa]» (original citation). Syntype(s) [10 originally cited] location unknown (possibly in KSUC). Synonymy established, under the name *C. sexguttata violacea* Fabricius, by Horn (1930: 83).

Distribution. This species, also known as the "Six-spotted Tiger Beetle," ranges from Nova Scotia to the Black Hills in southwestern South Dakota, south to east-central Texas and northern Florida [see Kaulbars and Freitag 1993a: Fig. 39; Pearson et al. 2006: Map 36]. The record from "North Dakota" (Freitag 1999: 50) needs confirmation.

Records. CAN: NB, NS, ON, QC **USA**: AL, AR, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, NE, NH, NJ, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, WV [ND]

[**hirticollis group**]

***Cicindela albissima* Rumpp, 1962**

Cicindela limbata albissima Rumpp, 1962: 181. Type locality: «Coral Pink Sand Dunes (6,300 feet), 14 miles south of M[oun]t Carmel Junction, Kane County, Utah» (original citation). Holotype (♂) in CAS [# 17198].

Distribution. This species, also known as the "Coral Pink Sand Dune Tiger Beetle," is confined to a small area of less than 400 hectares in the Coral Pink Sand Dunes formation in southwestern Utah [see Johnson 1991: Fig. 22] and is considered an endangered species.
Records. USA: UT
Note. This taxon was listed as a subspecies of *C. limbata* Say by Johnson (1991) and Freitag (1999: 32). Molecular studies have shown that it represents a distinct species (Morgan et al. 2000).

***Cicindela arenicola* Rumpp, 1967**

Cicindela arenicola Rumpp, 1967: 130. Type locality: «S[ain]t Anthony Sand Dunes, 11 km northeast of S[ain]t Anthony, Fremont County, Idaho» (original citation). Holotype (♂) in CAS [# 9374].

Distribution. This species, also known as the "St. Anthony Dune Tiger Beetle," is found in the Snake River Valley of southeastern Idaho [see Shook and Clark 1988: Fig. 1; Pearson et al. 1997: Fig. 22] and in southwestern Montana (Winton et al. 2010: 43).
Records. USA: ID, MT

***Cicindela bellissima bellissima* Leng, 1902**

Cicindela bellissima Leng, 1902: 142. Type locality: «Yaquina Bay [Lincoln County], on the seacoast of Oregon» (original citation). Lectotype (♂), designated by Dahl (1941: 188), in AMNH [# 1218].

Distribution. This subspecies, also known as the "Pacific Coast Tiger Beetle," ranges along the seacoast from Grays Harbor County in northern Washington to Del Norte County in northern California [see Leffler 1979a: Fig. 30; Pearson et al. 2006: Map 26].
Records. USA: CA, OR, WA

***Cicindela bellissima frechini* Leffler, 1979**

Cicindela bellissima frechini Leffler, 1979b: 466. Type locality: «Mukkah Bay, Clallam Co[unty], Washington» (original citation). Holotype (♂) in AMNH [# 1487].

Distribution. This subspecies, also known as the "Frechin's Tiger Beetle," is known only from a small area around Neah Bay in the extreme northwestern Olympic Peninsula, Washington (Pearson et al. 2006: 82).
Records. USA: WA

Cicindela columbica Hatch, 1938

Cicindela bellissima columbica Hatch, 1938: 234. Type locality: «Perry [Franklin County], Wash[ington]» (original citation). Holotype (♀) in USNM. Note. According to Leffler and Pearson (1976: 41), the type locality is at the junction of the Palouse and Snake Rivers.

Distribution. This species, also known as the "Columbia River Tiger Beetle," was once found along the Columbia, Salmon, and Snake Rivers in north-central Oregon, south-central Washington, and western Idaho [see Leffler 1979a: Fig. 29; Pearson et al. 1997: Fig. 27]. According to Pearson et al. (2006: 81), it is now known only from a few sites along the Salmon River in Idaho.
Records. USA: ID, OR, WA
Note. This species is listed on the IUCN Red List of Threatened Species (IUCN 2007).

Cicindela depressula depressula Casey, 1897

Cicindela depressula Casey, 1897: 297. Type locality: «Placer Co[unty], California» (original citation). Four syntypes in USNM [# 45987].

Distribution. This montane subspecies, also known as the "Dispirited Tiger Beetle," ranges from southern Alaska south to the Sierra Nevada in east-central California and western Nevada; also found in the Rocky Mountains in southeastern British Columbia, northern Idaho, and western Montana [see Freitag 1965: Fig. 33; Pearson et al. 2006: Map 19].
Records. CAN: BC **USA**: AK, CA, ID, MT, NV, OR, WA
Note. Intergrade populations are known between the two subspecies of *C. depressula* in western Washington at intermediate altitudes (Pearson et al. 2006: 70).

Cicindela depressula eureka Fall, 1901

Cicindela eureka Fall, 1901b: 307. Type locality: «Humboldt County, California» (original citation). Syntype(s) [8 originally cited] in MCZ [# 23837].

Distribution. This subspecies, also known as the "Eureka Tiger Beetle," inhabits a narrow area along or near the Pacific Coast from northern Washington to northern California [see Freitag 1965: Fig. 33].
Records. USA: CA, OR, WA

Cicindela duodecimguttata Dejean, 1825

Cicindela duodecimguttata Dejean, 1825: 73. Type locality: «Amérique septentrionale» (original citation), herein restricted to Framingham, Middlesex County, Massachusetts (see Harris 1911: 11). Syntype(s) in MHNP.

Cicindela proteus Kirby, 1837: 9. Type locality: «Canada» (original citation). Two syntypes in BMNH (Lindroth 1953b: 169). Synonymy established by LeConte (1846b: 181).

Cicindela bucolica Casey, 1913: 28. Type locality: «Aweme, Manitoba» (original citation). Four syntypes in USNM [# 45978]. Synonymy established by Horn (1915: 374).

Cicindela hudsonica Casey, 1916: 29. Type locality: «Hudson Bay Territory» (original citation). One syntype in USNM [# 45979]. Synonymy established by Horn (1926: 268).

Cicindela repanda edmontonensis Carr, 1920: 218. Type locality: «Edmonton, Al[ber]ta» (original citation). Holotype (♀) in CNC [# 407]. Synonymy established, under the name *C. bucolica* Casey, by Casey (1924: 16), confirmed by Freitag (1965: 103).

Distribution. This species, also known as the "Twelve-spotted Tiger Beetle," is found from Northwest Territories and the eastern front of the Rocky Mountains in Alberta to Newfoundland (Lindroth 1955a: 16), south to Alabama, central Texas, and Colorado (Kippenhan 1990: 309) [see Freitag 1965: Fig.17]. The record from Vancouver, British Columbia (Wallis 1961: 22) is possibly based on a mislabeled specimen.
Records. FRA: PM **CAN**: AB, LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK **USA**: AL, AR, CO, CT, DC, DE, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, WV, WY

Cicindela hirticollis abrupta Casey, 1913

Cicindela gravida abrupta Casey, 1913: 31. Type locality: «Sacramento [Sacramento County], California» (original citation). Two syntypes in USNM [# 45992].

Distribution. This subspecies, also known as the "Sacramento Valley Hairy-necked Tiger Beetle," is endemic to a small area within the Sacramento Valley of California (Graves et al. 1988: 660). An extensive survey in 2001-2004 within the known distributional range of the subspecies yield no specimens and Knisley and Fenster (2006) concluded that the subspecies has been extirpated in the late 1980s to early 1990s possibly from the construction of the Oroville Dam on the Feather River in the 1960s (see also Fenster and Knisley 2006).
Records. USA: CA

Cicindela hirticollis athabascensis Graves, 1988

Cicindela hirticollis athabascensis Graves [in Graves et al.], 1988: 666. Type locality: «Lake Athabasca, Thompson Bay Dunes, Saskatchewan» (original citation). Holotype (♂) in CNC [# 20586].

Distribution. This subspecies, the "Athabascan Tiger Beetle," is known only from the Lake Athabasca Sand Dunes of northern Alberta and Saskatchewan (Graves et al. 1988: 667). This is the northernmost and most isolated known population of *C. hirticollis*. The record from "Northwest Territories" (Erwin and Pearson 2008: 142) needs confirmation.
Records. CAN: AB, SK [NT]

Cicindela hirticollis coloradula Graves, 1988

Cicindela hirticollis coloradula Graves [in Graves et al.], 1988: 668. Type locality: «I-40 & Little Co[lorado] R[iver], Navajo Co[unty], A[ri]z[ona]» (original citation). Holotype (♂) in USNM [# 105096].

Distribution. This subspecies, also known as the "Colorado River Tiger Beetle," is restricted to the valley of the Little Colorado River in Navajo County, northeastern Arizona (Graves et al. 1988: 669).
Records. USA: AZ

Cicindela hirticollis corpuscula Rumpp, 1962

Cicindela hirticollis corpuscula Rumpp, 1962: 174. Type locality: «Potholes, Imperial County, California» (original citation). Holotype (♂) in CAS [# 17197].

Distribution. This subspecies, the "Southwest Hairy-necked Tiger Beetle," ranges from western Colorado and western New Mexico westwards to southeastern California and the northern parts of the Baja California Peninsula [see Graves et al. 1988: Fig. 6]. The record from "Wyoming" (Erwin and Pearson 2008: 143) needs confirmation. According to Pearson et al. (2006: 73), the subspecies is now probably extirpated from many former sites along the Gila River in central and western Arizona.
Records. USA: AZ, CA, CO, NM, NV, UT [WY] – Mexico

Cicindela hirticollis couleensis Graves, 1988

Cicindela hirticollis couleensis Graves [in Graves et al.], 1988: 669. Type locality: «Vantage [Kittitas County], Wash[ington]» (original citation). Holotype (♂) in USNM [# 105097].

Distribution. This subspecies, the "Coulee Tiger Beetle," inhabits mainly the Columbia-Snake river system (Graves et al. 1988: 671) ranging from southern British Columbia to southern Oregon and Idaho. Its western limit is in Cowlitz County, within 100 km of the coast (Pearson et al. 2006: 73). The record from "Montana" (Erwin and Pearson 2008: 143) needs confirmation.
Records. CAN: BC **USA**: ID, OR, WA [MT]

Cicindela hirticollis gravida LeConte, 1851

Cicindela gravida LeConte, 1851: 170. Type locality: «San Diego [San Diego County, California]» (original citation). Syntype(s) in MCZ [# 12].

Distribution. This subspecies, The "Pacific Hairy-necked Tiger Beetle," is restricted to the Pacific Coast of northern Baja California and southern California (Graves et al. 1988: 659), as far north as Santa Cruz County (Pearson et al. 2006: 73). According to Erwin and Pearson (2008: 143), this taxon is threatened and has been eliminated over most of its former range.
Records. USA: CA (CHI) – Mexico

Cicindela hirticollis hirticollis Say, 1817

Cicindela hirticollis Say, 1817b: 20. Type locality: «Pennsylvania» (original citation). Syntype(s) lost.
Cicindela albohirta Dejean, 1826: 425. Type locality: «Amérique septentrionale» (original citation). Syntype(s) [2 ♂ originally cited] in MHNP. Synonymy established by LeConte (1846b: 180).
Cicindela unita Kollar, 1836: 330. Type locality: «America boreali» (original citation). Syntype(s) location unknown. Synonymy established by Melsheimer (1853: 2).

Distribution. This subspecies, also known as the "Hairy-necked Tiger Beetle," ranges east of the Mississippi River from New Jersey to southern Florida (Peck and Thomas 1998: 16), west to the Mississippi River Valley (Graves et al. 1988: 658, Fig. 6) then north to the southern region of the Great Lakes. According to Allen and Acciavatti (2002: 12), this subspecies is considered rare and even endangered throughout the Ohio River drainage and other regions. The records from Oklahoma (Drew and Van Cleave 1962: 110), "Kansas," and "Nebraska" (Erwin and Pearson 2008: 144) are based on intergrades and are recorded here under the *shelfordi* form; that from "Utah" (Erwin and Pearson 2008: 144) is probably in error or based on a stray.
Records. USA: AL, AR, CT, DC, DE, FL, GA, IA, IL, IN, KY, LA, MD, MI, MN, MO, MS, NC, NJ, NY, OH, PA, SC, TN, TX, VA, WI, WV
Note. This subspecies intergrades with the *shelfordi* form along the Mississippi River and with the *rhodensis* form in the southern Great Lakes region and at Long Island, New York (Graves et al. 1988: 658, 661, 663).

Cicindela hirticollis rhodensis Calder, 1916

Cicindela hirticollis var. *nigrita* C.A. Davis, 1903: 273 [primary homonym of *Cicindela nigrita* Dejean, 1825]. Type locality: «Warwick [Kent County], R[hode] I[sland]» (original citation). Syntype(s) location unknown.
Cicindela hirticollis var. *rhodensis* Calder, 1916 [12 April]: 93. Replacement name for *Cicindela hirticollis* var. *nigrita* Davis, 1903.
Cicindela shermani Casey, 1916 [29 November]: 30. Type locality: «Marquette [Marquette County], Michigan» (original citation). One syntype in USNM [# 45990]. Synonymy established by Horn (1930: 81).

Distribution. This subspecies, the "Rhode's Tiger Beetle," ranges from Newfoundland to the Lake Superior region in Ontario, south to southeastern Wisconsin (Messer 2010:

33), Michigan, Connecticut, and Rhode Island [see Graves et al. 1988: Fig. 6]. Numerous state and province records (e.g., MB, IA, IL, IN, MN, ND, NE, SD) listed by Erwin and Pearson (2008: 145) are reported here under other subspecies of *C. hirticollis*.
Records. FRA: PM **CAN**: LB, NB, NF, NS (CBI), ON, PE, QC **USA**: CT, MA, ME, MI, NH, NY, RI, VT

Cicindela hirticollis shelfordi Graves, 1988

Cicindela hirticollis shelfordi Graves [in Graves et al.], 1988: 664. Type locality: «banks of Cimarron R[iver] near Guthrie [Logan County], Okla[homa]» (original citation). Holotype (♂) in USNM [# 105095]. Etymology. The subspecific name was proposed in honor of Professor Victor Ernest Shelford [1877-1968], animal ecologist and pioneer of North American tiger beetle biology.

Distribution. This subspecies, the "Shelford's Tiger Beetle," inhabits the Great Plains from southern Manitoba to southern Alberta, south to New Mexico and eastern Texas (Graves et al. 1988: 665, Fig. 6). Numerous state records (e.g., AR, AZ, LA, MN, UT) listed by Erwin and Pearson (2008: 145) are reported here under other subspecies of *C. hirticollis*.
Records. CAN: AB, MB, SK **USA**: CO, IA, KS, MN, MO, MT, ND, NE, NM, OK, SD, TX, WY
Note. This subspecies intergrades with the nominate form over a large area west of the Mississippi river, from southern Manitoba to Louisiana (Graves et al. 1988: Fig. 6), and with the *corpuscula* form along the Green River in eastern Utah (Graves et al. 1988: 666).

Cicindela hirticollis siuslawensis Graves, 1988

Cicindela hirticollis siuslawensis Graves [in Graves et al.], 1988: 671. Type locality: «3 mi[les] n[orth] Florence, Lane Co[unty], Ore[gon]» (original citation). Holotype (♂) in AMNH [# 1542].

Distribution. This subspecies, the "Northwest Hairy-necked Tiger Beetle," is found along the Pacific Coast from northern Washington to northern California (Graves et al. 1988: 672). According to Pearson et al. (2006: 74), it is now extirpated from most historic sites.
Records. USA: CA, OR, WA

Cicindela limbata hyperborea LeConte, 1863

Cicindela hyperborea LeConte, 1863c: 1. Type locality: «Methy Portage [= Portage La Loche, northern Saskatchewan], Hudson's Bay Territory» (original citation). Syntype(s) in MCZ [# 16]. Note. Methy(e) Portage was the longest portage in the regular fur trade. It lies between Lac La Loche (the top of the Churchill River system) on the southeast and the Clearwater River, which flows into the Athabasca River, on the northwest.

Distribution. This subspecies, the "Hyperboreal Tiger Beetle," ranges from southern Northwest Territories to east-central Alberta, central Saskatchewan, west-central Manitoba [see Johnson 1991: Fig. 22] and northeastern Manitoba (Woodcock et al. 2011: 118).
Records. CAN: AB, MB, NT, SK
Note. This subspecies intergrades with the *nympha* form along a narrow zone in central Alberta (Pearson et al. 2006: 76).

Cicindela limbata labradorensis Johnson, 1991

Cicindela limbata labradorensis Johnson, 1991: 261. Type locality: «Goose Bay, Labrador, Newfoundland» (original citation). Holotype (♂) in CNC [# 20225].

Distribution. This subspecies, the "Labrador Tiger Beetle," is known only from southern Labrador (Johnson 1991: Fig. 22; Brzoska and Stamatov 2008: 50-51).
Records. CAN: LB

Cicindela limbata limbata Say, 1823

Cicindela limbata Say, 1823b: 141. Type locality: «on the Nebraska (Platte) and Arkansa Rivers» (original citation). Syntype(s) lost.
Cicindela limbigera Gemminger and Harold, 1868a: 20. Unnecessary replacement name for *Cicindela limbata* Say, 1823.

Distribution. This subspecies, also known as the "Sandy Tiger Beetle," is restricted to a small area enclosing southeastern Wyoming, southern South Dakota, Nebraska, and northeastern Colorado [see Johnson 1991: Fig. 22]. The record from "Kansas" (Boyd 1982: 7) needs confirmation.
Records. USA: CO, NE, SD, WY [KS]

Cicindela limbata nogahabarensis Knisley, 2008

Cicindela limbata nogahabarensis Knisley [in Knisley et al.], 2008: 280. Type locality: «Nogahabara Sand Dunes, Koyukuk National Wildlife Refuge, Alaska» (original citation). Holotype (♂) in CAS.

Distribution. This subspecies, the "Nogahabar Tiger Beetle," is known only from the type locality.
Records. USA: AK

Cicindela limbata nympha Casey, 1913

Cicindela limbigera nympha Casey, 1913: 20. Type locality: «Aweme, Manitoba» (original citation). Five syntypes in USNM [# 45928].

Distribution. This subspecies, also known as the "Nymphal Tiger Beetle," ranges from central Alberta to northwestern Minnesota, south to northern South Dakota (Spomer

et al. 2008a: 19) and northern Montana [see Johnson 1991: Fig. 22; Pearson et al. 2006: Map 21].
Records. CAN: AB, MB, SK **USA**: MN, MT, ND, SD

Cicindela oregona guttifera LeConte, 1856

Cicindela guttifera LeConte, 1856a: 42. Type locality: «Santa Fe [Santa Fe County], New Mexico» (original citation). Syntype(s) in MCZ [# 13].
Cicindela sterope Casey, 1913: 28. Type locality: «Kansas» (original citation). One syntype in USNM [# 45991]. Synonymy established by Horn (1915: 378).
Cicindela audax Casey, 1913: 29. Type locality: «Colorado» (original citation). One syntype in USNM [# 45980]. Synonymy established by Horn (1915: 378).
Cicindela oregona oregonella Casey, 1924: 16. Type locality: «Deer Creek, Provo Cañon, Utah» (original citation). Holotype [by monotypy] (♂) in USNM [# 45983]. Synonymy established by Freitag (1965: 111).

Distribution. This subspecies, the "Dappled Tiger Beetle," ranges from eastern Alaska to western Northwest Territories, north to above the Arctic Circle (Brzoska 2008: 65), south to the Queen Charlotte Islands and, along the Rocky Mountains, to central New Mexico [see Freitag 1965: Fig. 18]; also recorded from "Arizona" (Erwin and Pearson 2008: 163) and "Idaho" (Boyd 1982: 7).
Records. CAN: AB, BC (QCI), NT, YT **USA**: AK, CO, KS, MT, NM, UT, WY [AZ, ID]
Note. This subspecies intergrades with the nominate form in southern British Columbia south, along the crest of the Rocky Mountains, to central Utah, with the *navajoensis* form in western Colorado and New Mexico, and with the *maricopa* form in western Utah (Pearson et al. 2006: 68).

Cicindela oregona maricopa Leng, 1902

Cicindela oregona var. *maricopa* Leng, 1902: 150. Type locality: «Phoenix [Maricopa County], Arizona» (original citation). Lectotype (♂), designated by Dahl (1941: 189), in AMNH [# 1229].
Cicindela provensis Casey, 1924: 15. Type locality: «Parowan and Provo Cañons, Utah» (original citation). Five syntypes [5 originally cited] in USNM [# 45981]. Synonymy established by Horn (1926: 274).
Cicindela provensis mormonella Casey, 1924: 15. Type locality: «Eureka, Provo Cañon, Parowan and Vineyard, Utah» (original citation). Six syntypes [6 originally cited] in USNM [# 45982]. Synonymy established by Horn (1926: 274).
Cicindela provensis nephiana Casey, 1924: 16. Type locality: «Parowan [Iron County], Utah» (original citation). One syntype in USNM [# 45989]. Synonymy established by Horn (1926: 274).

Distribution. This subspecies, the "Maricopa Tiger Beetle," ranges from southern California to south-central New Mexico, north to southern Nevada [see Freitag 1965:

Fig. 18]. According to Pearson et al. (2006: 68), distinct individuals of this form are confined to southeastern and central Arizona. The record from "Texas" (Bousquet and Larochelle 1993: 58) is in error; that from "Utah" is apparently based on intergrades.
Records. USA: AZ, CA, NM, NV
Note. 1. According to Freitag (1965: 111), the type series of *C. provensis* Casey, *C. mormonella* Casey, and *C. nephiana* Casey are hybrid specimens of *C. o. guttifera* x *C. o. maricopa*. Boyd (1982: 7) and Freitag (1999: 37) listed these names as synonyms of *C. o. maricopa* Leng and I am following them. 2. Intergrade populations between this subspecies and the *navajoensis* form are known in southwestern New Mexico (Pearson et al. 2006: 69).

Cicindela oregona navajoensis Van Dyke, 1947

Cicindela oregona navajoensis Van Dyke, 1947: 155. Type locality: «15 miles W[est] N[orth] W[est] Kayenta [Navajo County], Arizona» (original citation). Holotype (♂) in CAS [# 5864].

Distribution. This subspecies, the "Navajo Tiger Beetle," inhabits a small area in the southern parts of the Rocky Mountains in Utah, southwestern Colorado, northern Arizona, and New Mexico [see Freitag 1965: Fig. 18; Pearson et al. 2006: Map 18].
Records. USA: AZ, CO, NM, UT

Cicindela oregona oregona LeConte, 1856

Cicindela oregona LeConte, 1856a: 41. Type locality: «Oregon Territory and northern California, as far as San Francisco» (original citation). Syntype(s) in MCZ [# 28].
Cicindela depressula scapularis Casey, 1909: 272. Type locality: «California» (original citation). One syntype in USNM [# 45988]. Synonymy established by Hatch (1953: 41).
Cicindela guttifera sonoma Casey, 1913: 29. Type locality: «maritime regions north of San Francisco, California» (original citation). Two syntypes in USNM [# 45984]. Synonymy established by Horn (1915: 378).
Cicindela quadripennis Casey, 1913: 30. Type locality: «Hawthorne [Mineral County], Nevada» (original citation). One syntype in USNM [# 45986]. Synonymy established by Horn (1915: 378).
Cicindela ovalipennis Casey, 1913: 30. Type locality: «Hawthorne [Mineral County], Nevada» (original citation). One syntype in USNM [# 45985]. Synonymy established by Horn (1915: 378).

Distribution. This subspecies, also known as the "Western Tiger Beetle," ranges from Vancouver Island to western Alberta, south to central Utah and southern California along the Mexican border [see Freitag 1965: Fig. 18]; also recorded from Baja California (Murray 1979: 50) and northern Sonora (Cazier 1954: 242). The records from New Mexico (Fall and Cockerell 1907: 155), "Arizona," and "New Mexico" (Boyd 1982: 6) probably refer to the *guttifera* form.

Records. CAN: AB, BC (VCI) **USA**: CA (CHI), ID, MT, NV, OR, UT, WA, WY – Mexico

Cicindela repanda novascotiae Vaurie, 1951

Cicindela repanda novascotiae Vaurie, 1951: 1. Type locality: «Truro, Nova Scotia» (original citation). Holotype (♂) in AMNH [# 1217].

Distribution. This subspecies, the "Nova Scotia Tiger Beetle," is known from Nova Scotia, including Cape Breton Island, Prince Edward Island, and the Magdalen Islands in Quebec (Leonard and Bell 1999: 101). The record from "New Brunswick" (Boyd 1982: 6) needs confirmation.
Records. CAN: NS (CBI), PE, QC [NB]

Cicindela repanda repanda Dejean, 1825

Cicindela repanda Dejean, 1825: 74. Type locality: «Amérique septentrionale» (original citation), herein restricted to Framingham, Middlesex County, Massachusetts (see Harris 1911: 9). Syntype(s) in MHNP.

Cicindela repanda unijuncta Casey, 1897: 299. Type locality: «El Paso [El Paso County], Texas» (original citation). Two syntypes in USNM [# 45977]. Synonymy established (as aberration) by Horn (1902a: 234).

Cicindela repanda hoosieri Mares, 1921: 310. Type locality: «Cedar Lake, Lake County, Indiana» (original citation). Holotype (♀) in INHS (Webb 1980: 78). Synonymy established by Horn (1926: 269).

Cicindela repanda-unijuncta form *duncani* Knaus, 1924: 126. Type locality: «near Phoenix, Ariz[ona]» (original citation). Holotype [by monotypy] probably in KSUC. Synonymy established, under the name *C. duodecimguttata repanda hoosieri* Mares, by Horn (1930: 81). Note. Even if this taxon was originally proposed at infrasubspecific rank, it is deemed to be subspecific from its original publication because it was adopted as the valid name of a subspecies (e.g., Leng and Mutchler 1927: 7) before 1985 (see ICZN 1999: Article 45.6.4.1).

Cicindela repanda var. *maehleri* Robinson, 1948: 27. Type locality: «Brazos County, Texas» (original citation). Holotype (♂) in AMNH [# 1207]. Synonymy established by Boyd (1982: 6). Etymology. The subspecific name was proposed for Kenneth Leforest Maehler [1912-1991] who worked as plant quarantine entomologist with the United States Department of Agriculture.

Distribution. This subspecies, also known as the "Bronze Tiger Beetle," ranges from Newfoundland to southwestern British Columbia, south to southern Oregon, northeastern Arizona, central Texas, and northern Florida (Choate 2003: Map 18) [see Pearson et al. 2006: Map 16]. The record from "Northwest Territories" (Boyd 1982: 6) needs confirmation.
Records. CAN: AB, BC, LB, MB, NB, NF, NS, ON, PE, QC, SK **USA**: AL, AR, AZ, CO, CT, DC, DE, FL, GA, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN,

MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY [NT]
Note. Intergrade populations between this subspecies and the *tanneri* form are known from northwestern Colorado (Kippenhan 1994: 29).

Cicindela repanda tanneri Knaus, 1929

Cicindela tanneri Knaus, 1929: 47. Type locality: «Green River [Emery County], Utah» (original citation). Holotype (♂) location unknown (possibly in KSUC). Etymology. The specific name honors Vasco Myron Tanner [1892-1989], naturalist and entomologist at Brigham Young University in Provo, Utah.

Distribution. This subspecies, the "Tanner's Tiger Beetle," is known only from the Green River Valley in eastern Utah (Pearson et al. 2006: 65).
Records. USA: UT

Cicindela theatina Rotger, 1944

Cicindela theatina Rotger, 1944: 76. Type locality: «edge of the Great Sand Dunes in the San Luis Valley (about 8,200 feet) [Alamosa County], Colorado» (original citation). Holotype (♂) in AMNH (Robert Acciavatti pers. comm. 2008).

Distribution. This species, also known as the "Colorado Dune Tiger Beetle," is restricted to the Great Sand Dunes National Monument and adjacent areas in Alamosa, Costilla, and Saguache Counties in south-central Colorado (Kippenhan 1990: 310; Pearson et al. 2006: 79). The record from "New Mexico" (Boyd 1982: 7) is in error.
Records. USA: CO

Cicindela waynei Leffler, 2001

Cicindela waynei Leffler, 2001: 20. Type locality: «Bruneau Dunes State Park (910m), Owyhee Co[unty], Idaho» (original citation). Holotype (♂) in CAS [# 12266].

Distribution. This species, also known as the "Bruneau Dune Tiger Beetle," has yet been found only at the type locality in southwestern Idaho [see Leffler 2001: Fig. 1].
Records. USA: ID

Subfamily LORICERINAE Bonelli, 1810

Loricerides Bonelli, 1810: Tabula Synoptica. Type genus: *Loricera* Latreille, 1802.

Diversity. This subfamily contains a single tribe.

Tribe Loricerini Bonelli, 1810

Loricerides Bonelli, 1810: Tabula Synoptica. Type genus: *Loricera* Latreille, 1802.

Diversity. This tribe includes a single genus.

Genus *Loricera* Latreille, 1802

Loricera Latreille, 1802: 88. Type species: *Carabus pilicornis* Fabricius, 1775 by monotypy. Etymology. Probably from the Greek *loron* (thong) and *ceras* (horn, by extension antenna) [feminine].
Lorocera Agassiz, 1846: 216. Unjustified emendation of *Loricera* Latreille, 1802.

Diversity. Thirteen species in the Nearctic (three species, one of them Holarctic), Neotropical (two species in mountains of Middle America), and Palaearctic (nine species) Regions arrayed in three subgenera: *Elliptosoma* Wollaston (one species from Madeira), *Loricera s.str.* (11 species), and *Plesioloricera* Sciaky and Facchini (one species from Szechwan, China).
Identification. Ball and Erwin (1969: 883) published a key to all species then known, including the three found in North America. Lindroth (1961a: 121-125) covered the Nearctic species.

Subgenus *Loricera* Latreille, 1802

Loricera Latreille, 1802: 88. Type species: *Carabus pilicornis* Fabricius, 1775 by monotypy.

Diversity. Eleven species in North America (three species), Middle America (two species), Asia (seven species), and Europe (one species which is also found in Asia and North America).

Loricera decempunctata Eschscholtz, 1833

Loricera decempunctata Eschscholtz, 1833: 25. Type locality: «Norfolksund [= Sitka Sound], Insel Sitcha [= Baranof Island, Alaska]» (original citation). Syntype(s) location unknown (possibly in ZMMU and collection LeConte in MCZ).

Distribution. This species ranges from Kodiak Island and the Kenai Peninsula in southern Alaska south to northern California (Lindroth 1961a: 122; Humboldt County, MCZ).
Records. CAN: BC (QCI, VCI) **USA**: AK, CA, OR, WA

Loricera foveata LeConte, 1851

Loricera foveata LeConte, 1851: 180. Type locality: «San Francisco [San Francisco County, California]» (original citation). Holotype [by monotypy] (♀) in MCZ [# 77].

Distribution. This species is found along the coastal region from Washington (Hatch 1953: 64) to at least the San Francisco Bay area (LeConte 1851: 180).
Records. USA: CA, OR, WA

Loricera pilicornis congesta Mannerheim, 1853

Loricera congesta Mannerheim, 1853: 121. Type locality: «peninsula Kenai [Alaska]» (original citation). Holotype [by monotypy] probably in ZILR.

Distribution. This Holarctic subspecies is found on the Kuril Islands and on the Aleutian Islands and Kenai Peninsula in Alaska (Lindroth 1961a: 125).
Records. USA: AK – **Holarctic**

Loricera pilicornis pilicornis (Fabricius, 1775)

Carabus pilicornis Fabricius, 1775: 243. Type locality: «Anglia [= England]» (original citation). One syntype in BMNH (collection Banks).

Carabus seticornis O.F. Müller, 1776: 79. Type locality: Denmark and Norway (inferred from title of the book). Syntype(s) probably lost. Synonymy established by Illiger (1798: 193).

Loricera semipunctata Eschscholtz, 1833: 25. Type locality: «bei St. Franzisco [San Francisco County], Californien» (original citation). Syntype(s) location unknown (possibly in ZMMU). Synonymy established, under the name *L. caerulescens* Linnaeus *sensu auctorum* (= *Carabus pilicornis* Fabricius), by Horn (1878c: 29).

Loricera rufilabris Motschulsky, 1845b: 340. Type locality: «Kamtschatka [Russia]» (original citation). Nine syntypes in ZMMU (Keleinikova 1976: 215). Synonymy established by Mannerheim (1846: 246).

Loricera californica LeConte, 1863c: 3. Type locality: «San Francisco [San Francisco County], California» (original citation). One syntype in MCZ [# 657]. Synonymy established by Lindroth (1961a: 123).

Loricera neoscotica LeConte, 1863c: 3. Type locality: «Nova Scotia» (original citation). Two syntypes in MCZ [# 5453]. Synonymy established, under the name *L. caerulescens* Linnaeus *sensu auctorum* (= *Carabus pilicornis* Fabricius), by Horn (1878c: 29), confirmed by Lindroth (1961a: 123).

Loricera uteana Casey, 1920: 147. Type locality: «Provo [Utah County], Utah» (original citation). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46835]. Synonymy established by Lindroth (1961a: 123).

Loricera pilicornis sierrae Van Dyke, 1925: 113. Type locality: «near Tallac, Lake Tahoe [Placer County], California» (original citation). Holotype (♂) in CAS [# 1618]. Synonymy established by Lindroth (1961a: 123).

Distribution. This Holarctic subspecies ranges over most of Europe and a large part of Asia (see Bousquet 2003a: 98) and from the west coast of Alaska above the arctic circle (Lindroth 1961a: 125) to Newfoundland (Lindroth 1955a: 33), south to northern West Virginia (Tucker and Preston Counties, CMNH), western Nebraska (Kimball County, USNM), northern New Mexico (Sandoval and San Miguel Counties, UASM), southern Arizona (Greenlee County, UASM), and the San Bernardino Mountains in southern California (Fall 1901a: 40, as *L. californica*).

Records. FRA: PM **CAN**: AB, BC, LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK, YT **USA**: AK, AZ, CA, CO, CT, IA, ID, IN, MA, ME, MI, MN, MT, ND, NE, NH, NJ, NM, NY, OH, OR, PA, SD, UT, VT, WA, WI, WV, WY – **Holarctic**

Subfamily ELAPHRINAE Latreille, 1802

Elaphrii Latreille, 1802: 81. Type genus: *Elaphrus* Fabricius, 1775.

Diversity. This subfamily includes a single tribe.

Tribe Elaphrini Latreille, 1802

Elaphrii Latreille, 1802: 81. Type genus: *Elaphrus* Fabricius, 1775.

Diversity. Northern Hemisphere, with about 50 species arrayed in three genera, all represented in North America.

Genus *Diacheila* Motschulsky, 1844

Diacheila Motschulsky, 1844: 74 (as *Diaheila*). Type species: *Harpalus arcticus* Gyllenhal, 1810 designated by Lacordaire (1854: 47). Etymology. Probably from the Greek *dia* (through, between, during) and *cheilos* (lip, by extension either labrum [upper lip] or labium [lower lip]) [feminine]. Note. Motschulsky (1844) originally used two different spellings for the name of this genus: *Diacheila* (pages 13, 76, v) and *Diaheila* (pages 15, 74). He subsequently used *Diachila* (Motschulsky 1850a: vi, 17; 1864: 195) and *Diaheila* (Motschulsky 1869: 10). Following article 24.2.4 (ICZN 1999), *Diaheila* should be the correct original spelling. *Diacheila* is an incorrect spelling but since it is in prevailing usage and attributed to the publication of the original spelling, it is deemed to be the correct original spelling (ICZN 1999: Article 33.3.1).

Arctobia C.G. Thomson, 1857: 16. Type species: *Harpalus arcticus* Gyllenhal, 1810 by monotypy. Etymology. From the Greek *arctos* (north) and *bios* (life) [feminine].

Diversity. Three species in the arctic and subarctic areas of the Nearctic (two Holarctic species) and Palaearctic (three species) Regions.

Identification. Lindroth (1954a) reviewed the species and provided a key for their identification. The two species found in North America were also covered in his monograph of the Carabidae of Canada and Alaska (Lindroth 1961a: 102-104).

Taxonomic Note. Goulet (1983: 447) regarded *Diacheila* as the sister-group to {*Blethisa* + *Elaphrus*}.

Diacheila arctica amoena (Faldermann, 1835)

Blethisa amoena Faldermann, 1835: 358. Type locality: «montibus Altaicis [Mongolia]» (original citation). Syntype(s) probably in ZILR.

Diachila subpolaris LeConte, 1863c: 2. Type locality: «Hudson's Bay» (original citation). One syntype in CMNH (Lindroth 1954b: 121). Synonymy established by Lindroth (1954b: 122).

Diachila americana Motschulsky, 1864: 195. Type locality: «Amér[ique] arctique. Hudson Bay» (original citation). Syntype(s) location unknown (possibly in ZMMU though not listed in Keleinikova 1976). Synonymy established with the name *D. subpolaris* LeConte by Horn (1870a: 70).

Distribution. This Holarctic subspecies is known in Asia from Kazakhstan, Mongolia, and eastern Siberia (Goulet 2003: 206) and in the Nearctic Region from a few localities in Alaska, Northwest Territories (Lindroth 1961a: 102), northern Alberta (Bourassa and Wood 2011: 144; Fort McMurray area, Gerald J. Hilchie pers. comm. 2009), and Labrador (Lindroth 1961a: 102). Fossil remnants, dated between 10,400 and 17,000 years B.P., have been unearthed in Cape Breton Island, Nova Scotia (Miller 1997: 250) and Iowa (Schwert 1992: 76).
Records. CAN: AB, LB, NT **USA**: AK – **Holarctic**
Note. The nominotypical subspecies is found in northern Europe and eastern Siberia.

Diacheila polita (Faldermann, 1835)

Blethisa polita Faldermann, 1835: 359. Type locality: «montes Altaici [Mongolia]» (original citation). Holotype [by monotypy] probably in ZILR.

Nebria xiaoxinganensis Li and Liang [in Li], 1992: 28. Type locality: «M[oun]t Xiaoxinganlieng, Yichun, Heilongjiang Province [China]» (original citation). Holotype (♂) location unknown. Synonymy established by Ledoux et al. (2003: 80).

Distribution. This Holarctic species is known from scattered localities in Norway, European Russia, Siberia, Mongolia (Goulet 2003: 206), and northeastern China (Li 1992: 30, as *Nebria xiaoxinganensis*) in the Palaearctic Region, and from Alaska to northwestern Northwest Territories [see Morgan and Morgan 1981: map 3] in the Nearctic Region. Fossil remnants of this species, believed to be 2.0-2.5 million years old, have been found in Greenland (Bennike and Böcher 1990: 336; Böcher 1995: 20); others, dated between about 12,000 and 21,500 years B.P., have been unearthed in Iowa and north-central Illinois (Baker et al. 1986: 96; Garry et al. 1990: 394; Schwert 1992: 76; Woodman et al. 1996: 17), northeastern Pennsylvania (Barnosky et al. 1988: 178), southern Ontario and southern Quebec (Morgan and Morgan 1981: 1107).
Records. CAN: NT, YT **USA**: AK – **Holarctic**

Genus *Blethisa* Bonelli, 1810

Blethisa Bonelli, 1810: 48, Tabula Synoptica. Type species: *Carabus multipunctatus* Linnaeus, 1758 designated by Dejean (1826: 266). Etymology. Unknown [feminine].

Helobium Leach, 1815: 83. Type species: *Carabus multipunctatus* Linnaeus, 1758 by monotypy. Etymology. From the Greek *helos* (marsh, meadow) and *bios* (life) [neuter].

Rhaphiona Fischer von Waldheim [in Zoubkoff], 1829: 155. Type species: *Blethisa eschscholtzii* Zoubkoff, 1829 by monotypy. Synonymy established by Lindroth (1954a: 13). Etymology (original). From the Greek *rhaphion* (awl), alluding to the shape of the palpi ("*palpes subuliformes*") of the adults [feminine].

Diversity. Eight species in the arctic, subarctic, boreal, and temperate areas of North America (six species) and Eurasia (four species). Two species-group taxa are Holarctic (*B. catenaria* and *B. multipunctata aurata*).

Identification. Lindroth (1954a) reviewed the species and subsequently treated all the North American species in his monograph of the Carabidae of Canada and Alaska (Lindroth 1961a: 104-108). Goulet and Smetana (1983) provided a key to all known species.

Faunistic Note. *Blethisa eschscholtzii* Zoubkoff has been recorded from North American on the basis of a single specimen in USNM labeled "5 mi. E Sanderson, Texas" (Lindroth 1954b: 157). Obviously the specimen is mislabeled. The species is restricted to the region north of the Caspian Sea and the area around Lake Balkhash in southeastern Kazakhstan.

Blethisa catenaria Brown, 1944

Blethisa catenaria Brown, 1944: 4. Type locality: «near Fort Prince of Wales, Churchill, Man[itoba]» (original citation). Holotype (♀) in CNC [# 5412].

Distribution. This species is found in northern European Russia and eastern Siberia in the Palaearctic Region (Goulet 2003: 206) and from western Alaska to the western shore of the Hudson Bay in northern Manitoba [see Nielsen et al. 1987: Fig. 17b; Morgan et al. 1986: Fig. 1]. Fossil remnants from the Pliocene or early Pleistocene have been unearthed in northwestern Greenland, Meighen Island, Ellesmere Island, and eastern Siberia (Böcher 1995: 20).

Records. CAN: MB, NT, NU, YT **USA**: AK – **Holarctic**

Blethisa hudsonica Casey, 1924

Blethisa hudsonica Casey, 1924: 18. Type locality: «Edmonton, Alberta» (original citation). Lectotype (♂), designated by Lindroth (1975: 113), in USNM [# 46834].

Distribution. This Nearctic species ranges from Newfoundland (Lindroth 1955a: 31) to westernmost Yukon Territory (Goulet et al. 2009: 33), south to southern British Columbia (Lindroth 1961a: 106), northwestern Montana (Russell 1968: 46; LaBonte and Johnson 1989: 170), northern Illinois (Blatchley 1910: 50), and Massachusetts (Middlesex County, MCZ, USNM) [see Morgan et al. 1986: Fig. 4]. The record from "Pennsylvania" (Bousquet and Larochelle 1993: 86, as *B. multipunctata aurata*), based on several specimens labeled from Erie County in CMNH, is doubtful (Robert L. Davidson pers. comm. 2008); that from Circle in Alaska (Lindroth 1961a: 106) needs confirmation.

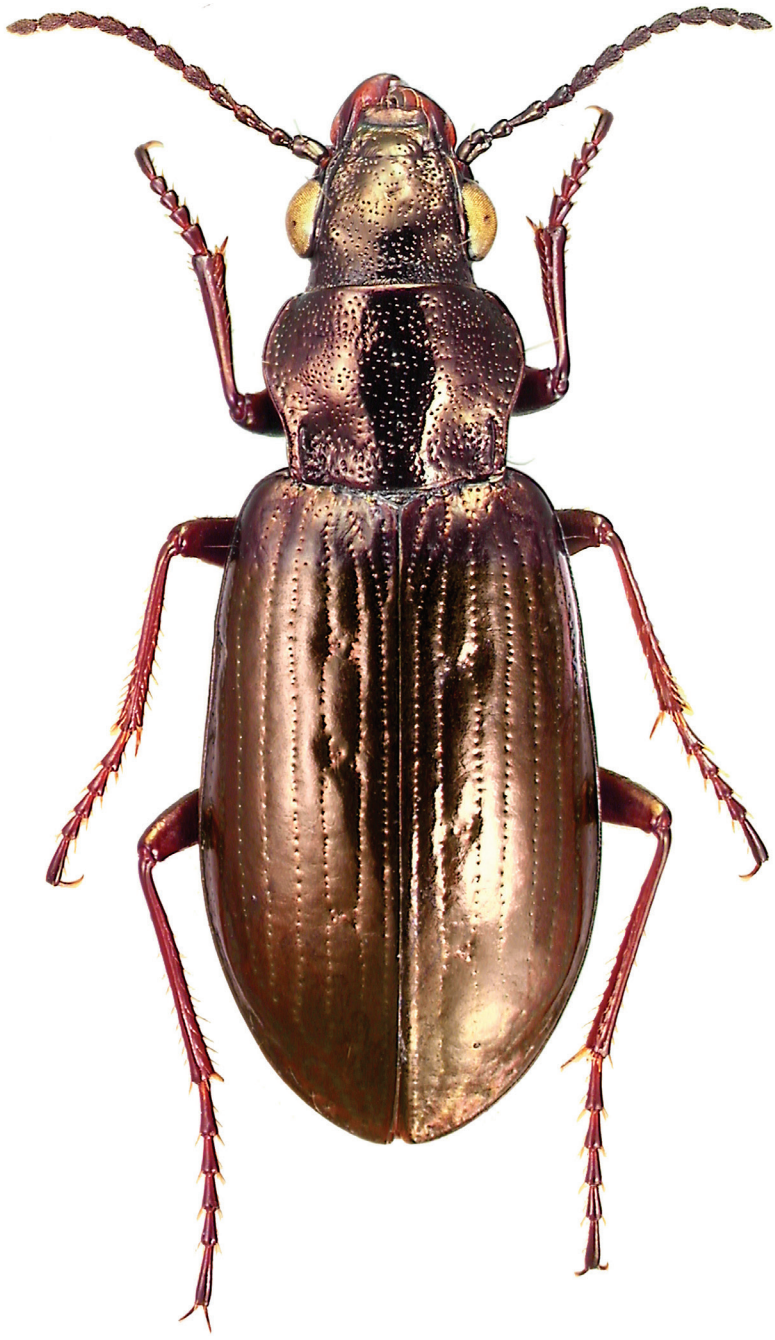

Figure 14. *Diacheila arctica amoena* (Faldermann). This subspecies is widely distributed over the arctic and subarctic regions of the Northern Hemisphere, ranging from Labrador to Kazakhstan, but populations seem to be highly localized. The German coleopterist Franz Faldermann found the adults of this taxon "pleasant" hence his scientific name *amoena*. The nominotypical subspecies ranges from the Nordic regions of Scandinavia to the Komi Republic in northern European Russia.

Records. FRA: PM **CAN**: AB, BC, LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK, YT **USA**: IL, MA, ME, MI, MT, ND, NH, NY, VT, WI [AK, PA]
Note. This species has passed under the name *B. multipunctata* (Linnaeus, 1758) or *B. multipunctata aurata* Fischer von Waldheim, 1828 in the North American literature.

Blethisa julii LeConte, 1863

Blethisa julii LeConte, 1863c: 2. Type locality: «Nova Scotia» (original citation), herein restricted to Cheticamp, Cape Breton Island (see Lindroth 1954c: 300). Syntype(s) in MCZ [# 5452]. Etymology. This species was named after Julius Ulke [1833-1910], brother of Henry Ulke (see *Bembidion ulkei*), a photographer and also a beetle collector. In the 1860s, Julius and Henry lived on Tenth Street in Washington across the Ford's Theater and had a portrait studio on Pennsylvania Avenue. Julius took the historic photograph of the room in which Abraham Lincoln died on 15 April 1865 a few minutes after the president's body was removed.

Distribution. The range of this species extends from Newfoundland (Lindroth 1955a: 30) to the foothills of the Rocky Mountains in Alberta (Lindroth 1961a: 107-108), south to northern New York and New England (Lindroth 1961a: 107) [see Morgan et al. 1986: Fig. 3]. The record from Michigan (Bousquet and Larochelle 1993: 86), based on a specimen labeled from Lake Superior in CMNH, needs confirmation.
Records. CAN: AB, MB, NB, NF, NS (CBI), NT, ON, QC, SK **USA**: ME, NH, NY, VT [MI]

Blethisa multipunctata aurata Fischer von Waldheim, 1828

Blethisa aurata Fischer von Waldheim, 1828: 262. Type locality: «Kamtschatka [Russia]» (original citation). Syntype(s) in ZMH (Lindroth 1961a: 106), MHNP (collection Dejean), and SMTD (Grämer 1960: 102).
Blethisa inexspectata Goulet and Smetana, 1983: 551. Type locality: «Prudhoe Bay R[oa]d, Bonanza Cr[eek] (900'), Alaska» (original citation). Holotype (♂) in CNC [# 15404]. Synonymy established by Goulet et al. (2009: 28).

Distribution. This Holarctic subspecies is known from Hokkaidō in Japan and the Russian Far Eastern Region, including Sakhalin and Kamchatka, in the Palaearctic Region and from Alaska, as far south as Anchorage, and northwestern Northwest Territories in the Nearctic Region (Goulet et al. 2009: 33).
Records. CAN: NT **USA**: AK – **Holarctic**
Note. The nominotypical subspecies ranges from the Atlantic Coast in Europe to the Lake Baikal region in Siberia (Goulet et al. 2009: 33).

Blethisa oregonensis LeConte, 1853

Blethisa oregonensis LeConte, 1853c: 401. Type locality: «Oregon» (original citation), herein restricted to 7.5 km NNW of Monroe, Finley National Wildlife Refuge,

Benton County (see LaBonte and Johnson 1989: 171). Holotype [by monotypy] (♀) in MCZ [# 641].

Blethisa acutangula Chaudoir, 1861b: 524. Type locality: «Orégon» (original citation). Holotype [by monotypy] (♂) in MHNP. Synonymy established by LeConte (1866: 78).

Blethisa columbica Casey, 1909: 277. Type locality: «British Columbia» (original citation). Lectotype (♂), designated by Lindroth (1975: 113), in USNM [# 46833]. Synonymy established by Hatch (1949b: 114), confirmed by Lindroth (1954b: 121).

Distribution. This species is found mainly west of the Cascade Range from southwestern British Columbia, including Vancouver Island, to south-central Oregon (LaBonte and Johnson 1989: 171).
Records. CAN: BC (VCI) **USA**: OR, WA

Blethisa quadricollis Haldeman, 1847

Blethisa quadricollis Haldeman, 1847: 149. Type locality: «southern shore of Lake Superior» (original citation), herein restricted to Marquette, Marquette County, Michigan (see Hubbard and Schwarz 1878: 627). Syntype(s) presumably lost.

Blethisa americana T.W. Harris [in Scudder], 1869: 211. Type locality not stated. Holotype [by monotypy] probably lost. Synonymy established by LeConte (in Scudder 1869: 212).

Distribution. The range of this species extends from Newfoundland (Lindroth 1955a: 31-32) to southern Alaska, south to central British Columbia (Lindroth 1961a: 106), northwestern Montana (LaBonte and Johnson 1989: 170), northern Indiana (Blatchley 1910: 50), and New Jersey (Smith 1890: 73) [see Morgan et al. 1986: Fig. 2; Ball and Currie 1997: Fig. 3].
Records. CAN: AB, BC, LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK, YT **USA**: AK, IL, IN, MA, ME, MI, MN, MT, NH, NJ, NY, OH, PA, RI, VT, WI

Genus *Elaphrus* Fabricius, 1775

Elaphrus Fabricius, 1775: 227. Type species: *Cicindela riparia* Linnaeus, 1758 designated by Latreille (1810: 425). Etymology. From the Greek *elaphros* (nimble), probably alluding to the agility of the adults in the field [masculine].

Diversity. Thirty-nine species in the arctic, subarctic, boreal, and temperate areas of North America (19 species) and Eurasia (24 species). These species are arrayed in five subgenera, all but *Sinoelaphrus* Shi and Liang (one species in northern China) represented in North America. Four species are Holarctic.
Identification. Goulet (1983) revised the species then known and provided a key for their identification.

Subgenus *Arctelaphrus* Semenov, 1926

Arctelaphrus Semenov, 1926: 39. Type species: *Elaphrus lapponicus* Gyllenhal, 1810 by original designation. Etymology. From the Greek *arctos* (north) and the generic name *Elaphrus* [*q.v.*] [masculine].

Diversity. One species in the subarctic regions of North America, Asia, and Europe.
Taxonomic Note. Goulet (1983) concluded from his phylogenetic analysis using adult and larval characters that this subgenus was the most basal lineage of *Elaphrus*.

Elaphrus lapponicus lapponicus Gyllenhal, 1810

Elaphrus lapponicus Gyllenhal, 1810: 8. Type locality: «Lapponia» (original citation), restricted to «Abisko, Swed[en]» by Lindroth (1961a: 111). Syntype(s) in GNM (Lindroth 1961a: 111).

Elaphrus elongatus Fischer von Waldheim, 1828: 266. Type locality: «Kamtschatka [Russia]» (original citation). Syntype(s) in ZMH (Lindroth 1961a: 111) and SMTD (Grämer 1960: 102). Synonymy established by Dejean (1831: 587), confirmed by Lindroth (1961a: 111).

Elaphrus obscurior Kirby, 1837: 63. Type locality: «Lat. 65° [= apparently region of Great Bear Lake, Northwest Territories]» (original citation). Holotype [by monotypy] in BMNH (Lindroth 1953b: 177). Synonymy established by Lindroth (1953b: 177).

Distribution. This Holarctic subspecies is widely distributed in the subarctic areas. In the Palaearctic Region, it ranges from the British Isles to the Kamchatka Peninsula, and in the Nearctic Region from Alaska to Labrador [see Goulet 1983: Fig. 157]. Fossil remnants of this species, dated between 10,100 and 20,700 years B.P., have been unearthed in southern Quebec (Mott et al. 1981: 146), southern Ontario (Morgan and Morgan 1981: 1107), Illinois (Schwert 1992: 76), and southeastern Iowa (Baker et al. 1986: 96); others, believed to be 2.0-2.5 million years old, have also been found in Greenland and Meighen Island (Bennike and Böcher 1990: 336; Böcher 1995: 22).
Records. CAN: AB, BC, LB, MB, NT, NU, ON, QC, SK, YT **USA**: AK – **Holarctic**

Elaphrus lapponicus obliteratus Mannerheim, 1853

Elaphrus obliteratus Mannerheim, 1853: 117. Type locality: «ad portum Pauli insulae Kadjak [= Port Harbour, Kodiak Island, Alaska]» (original citation). Lectotype (♂), designated by Lindroth (1961a: 111), in ZMH.

Distribution. This subspecies is known only from a few localities on Kodiak Island, Alaska (Goulet 1983: 244).
Records. USA: AK

Subgenus *Neoelaphrus* Hatch, 1951

Neoelaphrus Hatch, 1951: 113. Type species: *Elaphrus uliginosus* Fabricius, 1792 by original designation. Etymology. From the Greek prefix *neo-* (new) and the generic name *Elaphrus* [*q.v.*] [masculine].

Diversity. Fourteen species in the Nearctic (six species) and Palaearctic (eight species) Regions.

Taxonomic Note. Goulet's (1983) phylogenetic analysis based on adult and larval characters suggests that *Neoelaphrus* is the sister-group to {*Elaphrus s.str.* + *Elaphroterus*}.

Faunistic Note. Fossil remnants of *Elaphrus sibiricus* Motschulsky, probably about 2.0-2.5 million years B.P., have been unearthed from northwestern Yukon Territory (Elias and Matthews 2002: 914) and northwestern Greenland (Böcher 1995: 22). The species is currently found in Siberia, Japan, Mongolia, and Inner Mongolia in China (Goulet 2003: 207).

[**clairvillei group**]

Elaphrus clairvillei Kirby, 1837

Elaphrus clairvillei Kirby, 1837: 61 (as *clairvillii*). Type locality: «from New York to Cumberland-house» (original citation), restricted to «Nipigon, Ont[ario]» by Lindroth (1961a: 112). Holotype [by monotypy] in BMNH (Lindroth 1953b: 176). Etymology. The specific name honors the Swiss naturalist Joseph Phillippe de Clairville [1742-1830]. Born in France, Clairville studied medicine and natural history at Montpellier and in 1782 moved to Winterthur, near Zurich. During the French occupation he was forced to leave Switzerland and fled to Erlangen, Germany. His entomological interests were mainly in Odonata, Diptera, and Coleoptera and his collection of beetles is now at the Natural History Museum in Basel. Note. The incorrect subsequent spelling *clairvillei* is in prevailing usage and attributed to the publication of the original spelling; therefore it is deemed to be the correct original spelling (ICZN 1999: Article 33.3.1).

Elaphrus politus LeConte, 1850: 209. Type locality: «Maple Island [Ontario]» (original citation). Holotype [by monotypy] (♀) in MCZ [# 171]. Synonymy established by LeConte (1870: 396), confirmed by Goulet (1983: 271).

Elaphrus clairvillei frosti Hippisley, 1922: 64. Type locality: «some three and one-half miles southwest of Terrace as the crow flies, or six miles by the road [British Columbia]» (original citation). Holotype probably in MCZ (collection Frost). Synonymy established by Lindroth (1961a: 112).

Elaphrus torreyensis Tanner, 1942: 137. Type locality: «Torrey, Wayne County, Utah» (original citation). Holotype (♀) in BYUC (Shawn M. Clark pers. comm. 2007). Synonymy established by Lindroth (1961a: 112). Note. Tanner (1942: 138) listed the type locality as "Torrey, Wayne County, Utah" but mistakenly wrote a few lines below that the holotype and a paratype [of *E. torreyensis*] were "taken at Escalante, Garfield Co[unty]."

Distribution. This species extends throughout the temperate and boreal regions of North America from Newfoundland to Alaska, south to northern California along the west coast, to the White Mountains in eastern Arizona and to central New Mexico along the Rocky Mountains, to west-central Nebraska (Arthur County, Foster F. Purrington pers. comm. 2010), and to New Jersey along the east coast [see Goulet 1983: Fig. 160]. The record from east-central Missouri (Summers 1873: 132) needs confirmation.
Records. CAN: AB, BC (QCI, VCI), LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK, YT **USA**: AK, AZ, CA, CO, CT, ID, MA, ME, MI, MN, MT, NE, NH, NJ, NM, NV, NY, OH, OR, PA, RI, SD, UT, VT, WA, WI, WY [MO]

Elaphrus laevigatus LeConte, 1852

Elaphrus laevigatus LeConte, 1852a: 200. Type locality: «San Francisco [San Francisco County, California]» (original citation). Three syntypes in MCZ [# 660].
Elaphrus politus Casey, 1897: 345 [primary homonym of *Elaphrus politus* LeConte, 1850]. Type locality: «San Francisco [San Francisco County], California» (original citation). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46822]. Synonymy established by Van Dyke (1925: 113), confirmed by Goulet (1983: 280).
Elaphrus caseyi Leng, 1919b: 203. Replacement name for *Elaphrus politus* Casey, 1897.

Distribution. This species is known from western Nevada and California, from the Oregon border to the Los Angeles area [see Goulet 1983: Fig. 161].
Records. USA: CA, NV

Elaphrus olivaceus LeConte, 1863

Elaphrus olivaceus LeConte, 1863c: 1. Type locality: «Catskill Mountains, New York» (original citation). One syntype in CMNH (collection Ulke).

Distribution. This species ranges from the west coast of Newfoundland to southern British Columbia, south to southeastern Utah, central Colorado, central Illinois, and New Jersey [see Goulet 1983: Fig. 161]. The species is known from only one locality west of the Rocky Mountains, in southern British Columbia.
Records. CAN: AB, BC, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK **USA**: CO, CT, IL, IN, MA, ME, MI, MN, MT, ND, NE, NH, NJ, NY, RI, SD, UT, VT, WI, WY

[**fuliginosus group**]

Elaphrus cicatricosus LeConte, 1847

Elaphrus cicatricosus LeConte, 1847: 448. Type locality: «NovEboraci [= New York]» (original citation). Holotype [by monotypy] (♀) in MCZ [# 658].
Elaphrus rhodeanus Casey, 1924: 17. Type locality: «Boston Neck [Washington County], Rhode Island» (original citation). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46825]. Synonymy established by Lindroth (1961a: 114).

Distribution. This species ranges from Maine, southern Quebec, and Michigan south to northern Mississippi (Pontotoc County, Drew A. Hildebrandt pers. comm. 2009) and North Carolina (Northampton County, CNC) [see Goulet 1983: Fig. 159]. The record from Georgia (Fattig 1949: 11) needs confirmation; those from eastern Iowa (Wickham 1911b: 5; King 1914: 320) are probably in error.
Records. CAN: QC **USA**: CT, DE, MA, MD, ME, MI, MS, NC, NH, NJ, NY, OH, PA, RI, TN, VA, VT, WV [GA]

Elaphrus fuliginosus Say, 1830

Elaphrus fuliginosus Say, 1830b: (1) [3]. Type locality: «Rumney [Grafton County], N[ew] H[ampshire]» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 332), in MCZ [# 33086]. Note. «Pennsylvania» was the area originally cited by Say (1830b: (1) [3]).

Distribution. This species ranges from Quebec to southern Manitoba, south to Nebraska and Maryland [see Goulet 1983: Fig. 158]. It is also known from one unexpected locality in central Alberta (Bousquet 1987a: 112), which suggests that the species is more widely distributed at least in the northern part of its range.
Records. CAN: AB, MB, ON, QC **USA**: CT, IA, IL, IN, MA, MD, ME, MI, MN, ND, NE, NH, NJ, NY, PA, RI, SD, VT, WI

Elaphrus lindrothi Goulet, 1983

Elaphrus lindrothi Goulet, 1983: 264. Type locality: «3 mi[les] n[orth] Pomona, Jackson Co[unty], Ill[inois]» (original citation). Holotype (♂) in CNC [# 18010].

Distribution. This species is known from two areas, Maryland and southeastern Virginia (Surry County, CNC), and southern Indiana, southern Illinois, and southern Tennessee (Marion County, CMNH) [see Goulet 1983: Fig. 159]. The apparent gap is probably due to inadequate samplings.
Records. USA: IL, IN, MD, TN, VA

Subgenus *Elaphrus* Fabricius, 1775

Elaphrus Fabricius, 1775: 227. Type species: *Cicindela riparia* Linnaeus, 1758 designated by Latreille (1810: 425).

Trichelaphrus Semenov, 1926: 39. Type species: *Cicindela riparia* Linnaeus, 1758 by original designation. Etymology. From the Greek *trichos* (hair) and the generic name *Elaphrus* [*q.v.*], alluding to the accessory setae on the abdominal sterna ("*sterno semper plus minusve piloso*") of the adult [masculine].

Diversity. Eighteen species in North America (ten species) and Eurasia (ten species). Two species (*E. trossulus* and *E. tuberculatus*) are Holarctic.

Elaphrus americanus americanus Dejean, 1831

Elaphrus americanus Dejean, 1831: 588. Type locality: «Amérique septentrionale» (original citation), restricted to «Great Bear Lake, N[orth] W[est] Terr[itories]» by Lindroth (1961a: 115). Holotype [by monotypy] (♀) in MHNP (Lindroth 1955b: 12).

Elaphrus intermedius Kirby, 1837: 62. Type locality: «Gr[eat] Bear L[ake] [Northwest Territories]» (syntype label). Three syntypes in BMNH (Lindroth 1953b: 176). Synonymy established by Lindroth (1961a: 115).

Elaphrus punctatissimus LeConte, 1850: 210. Type locality: «Sault [= Sault Sainte Marie, Michigan according to Lindroth (1961a: 115)]» (original citation). Nine syntypes in MCZ [# 661]. Synonymy established by LeConte (1873b: 321), confirmed by Goulet (1983: 307).

Elaphrus sinuatus LeConte, 1850: 210. Type locality: «Pic [north shore of Lake Superior, Ontario]» (original citation). Two syntypes [2 originally cited] in MCZ [# 663]. Synonymy established, under the name *E. punctatissimus* LeConte, by LeConte (1853c: 402), confirmed by Goulet (1983: 307).

Elaphrus gratiosus Mannerheim, 1853: 118. Type locality: «as ostia fl[umen] Kaktnu [= Kenai River] peninsulae Kenai [Alaska]» (original citation). Lectotype (♂), designated by Lindroth (1961a: 115), in ZMH. Synonymy established, under the name *E. punctatissimus* LeConte, by Motschulsky (1855b: 79), confirmed by Lindroth (1961a: 115).

Elaphrus bituberosus Casey, 1924: 17. Type locality: «Terrace, British Columbia» (original citation). Lectotype (♂), designated by Lindroth (1975: 113), in USNM [# 46823]. Synonymy established by Lindroth (1961a: 115).

Distribution. This subspecies ranges from Newfoundland to southwestern Alaska, south to central British Columbia, southeastern Alberta, northern Minnesota, north-central Ohio (Purrington and Stanton 1996: 44), northern New York, and Maine [see Goulet and Baum 1982: Fig. 1]. The records from "California," "Wyoming," "South Dakota," "Iowa" (see Bousquet and Larochelle 1993: 87), and Missouri (Anonymous 2007) are likely based on mislabeled specimens or are in error.
Records. CAN: AB, BC, LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK, YT **USA**: AK, ME, MI, MN, NH, NY, OH, WI

Elaphrus americanus sylvanus Goulet, 1982

Elaphrus americanus sylvanus Goulet [in Goulet and Baum], 1982: 2271. Type locality: «16 mi[les] N[orth] of Powers, Coos Co[unty], Oregon» (original citation). Holotype (♂) in CNC [# 18011].

Distribution. This subspecies ranges from the Queen Charlotte Islands (Kavanaugh 1992: 58) to southwestern Alberta, south to central Colorado, central Idaho, and southern Oregon (Goulet and Baum 1982: 2272; Fig. 1).
Records. CAN: AB, BC (QCI, VCI) **USA**: CO, ID, OR, WA

Elaphrus californicus Mannerheim, 1843

Elaphrus californicus Mannerheim, 1843: 190. Type locality: «California» (original citation), herein restricted to Quincy, Plumas County (see Goulet 1983: 302). Lectotype (♀), designated by Lindroth (1961a: 118), in ZMH.

Elaphrus similis LeConte, 1847: 449. Type locality: «Long's Peak [Boulder County, Colorado]» (original citation). One syntype in MCZ [# 662]. Synonymy established by LeConte (1863b: 2), confirmed by Goulet (1983: 299).

Elaphrus hesperius Casey, 1920: 138. Type locality: «Cal. [with a red dot on the "a"] [= Gualala, Mendocino County, California]» (lectotype label). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46829]. Synonymy established by Lindroth (1961a: 118).

Distribution. This species is widely distributed from central Alaska to Nova Scotia, south to northern Virginia, central Missouri, northern New Mexico, and southern California near the Mexican border [see Goulet 1983: Fig. 172]. The records from "North Carolina," northeastern Florida, "Louisiana," and "Texas" [see Goulet 1983: Fig. 172] need confirmation.

Records. CAN: AB, BC (VCI), MB, NB, NS, NT, ON, PE, QC, SK **USA**: AK, CA, CO, CT, DC, IA, ID, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NJ, NM, NV, NY, OH, OR, PA, SD, UT, VA, VT, WA, WI, WV, WY [FL, LA, NC, TX]

Elaphrus finitimus Casey, 1920

Elaphrus finitimus Casey, 1920: 137. Type locality: «California» (original citation). One syntype in USNM [# 46827].

Distribution. This species extends from western Montana to southern Oregon, south to southernmost California, central Arizona, and southern Colorado [see Goulet 1983: Fig. 170].

Records. USA: AZ, CA, CO, ID, MT, NV, OR, UT

Elaphrus lecontei Crotch, 1876

Elaphrus lecontei Crotch [in Horn], 1876c: 246. Type locality: «Long's Peak [Boulder County, Colorado]» (original citation for *E. intermedius* Kirby *sensu* LeConte, 1847). Two syntypes in MCZ [# 170]. Note. This name was proposed for *Elaphrus intermedius* Kirby, 1837 *sensu* LeConte (1847: 449).

Elaphrus devinctus Casey, 1920: 139. Type locality: «Wray [Yuma County], Colorado» (original citation). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46826]. Synonymy established by Lindroth (1961a: 114).

Elaphrus spissicornis Casey, 1924: 18. Type locality: «Parowan (6000 ft.) [Iron County], Utah» (original citation). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46824]. Synonymy established by Lindroth (1961a: 114).

Distribution. This species ranges from northwestern Quebec along the James Bay (Chisasibi, Serge Laplante pers. comm. 2011) to central British Columbia, north to the Great Slave Lake in Northwest Territories, south to southern California, southern Arizona, and central Kansas [see Goulet 1983: Fig. 169]. Fossil remnants from a Plio-Pleistocene sequence have been unearthed in northwestern Greenland (Böcher 1995: 23).
Records. CAN: AB, BC, MB, NT, ON, QC, SK **USA**: AZ, CA, CO, ID, KS, MN, MT, ND, NE, NV, OR, SD, UT, WA, WY

Elaphrus marginicollis Goulet, 1983

Elaphrus marginicollis Goulet, 1983: 288. Type locality: «Jack's Gulch, Roosevelt N[ational] F[orest], Colorado» (original citation). Holotype (♂) in USNM.

Distribution. This species is known from a few localities in southeastern Washington, northern California, southeastern Wyoming, and Colorado [see Goulet 1983: Fig. 168].
Records. USA: CA, CO, WA, WY

Elaphrus mimus Goulet, 1983

Elaphrus mimus Goulet, 1983: 290. Type locality: «Angwin [Napa County], Cal[ifornia]» (original citation). Holotype (♂) in CAS [# 16493].

Distribution. This species is known only from the original two specimens collected at the type locality.
Records. USA: CA

Elaphrus ruscarius Say, 1830

Elaphrus ruscarius Say, 1830b: (1) [3]. Type locality: «Columbia [Lancaster County], P[ennsylvani]a» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 332), in MCZ [# 33085]. Note. «Pennsylvania, Mississippi, Arkansas, Missouri and the Rocky Mountains» were the areas originally cited by Say (1830b: (1) [3]).

Elaphrus texanus Casey, 1924: 17. Type locality: «Galveston [Galveston County], Texas» (original citation). Lectotype (♀), designated by Lindroth (1975: 113), in USNM [# 46828]. Synonymy established by Lindroth (1961a: 119).

Distribution. This species ranges from southern Quebec to northern Minnesota, south to eastern Texas (Casey, 1924: 17, as *E. texanus*), east-central Louisiana (Allen 1965: 61), southwestern Alabama (Löding 1945: 11), and northern Florida (Peck and Thomas 1998: 16) [see Goulet 1983: Fig. 168].
Records. CAN: ON, QC **USA**: AL, AR, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, NE, NH, NJ, NY, OH, OK, PA, RI, SC, TN, TX, VA, VT, WI, WV

Elaphrus trossulus Semenov, 1904

Elaphrus trossulus Semenov, 1904: 21. Type locality: «Mongoliâ occid[entalis]: inter Ulan-daban et opp. Kobdo; syst. fl. Kobdo; syst. fl. Sansai; ad lac. Shar-nur» (original citation). Syntype(s) probably in ZILR.

Elaphrus parviceps Van Dyke, 1925: 112. Type locality: «Teller, Seward Peninsula, Alaska» (original citation). Holotype (♀) in CAS [# 1617]. Synonymy established by Goulet and Smetana (1997: 204).

Distribution. This species is found in the montane regions of northern Mongolia and neighbouring Russia west and south of Lake Baikal, in northeastern Siberia, and in the arctic regions from the Commander Islands in the Bering Sea to the eastern shore of James Bay in Quebec (Morgan and Pilny 1997: 146) [see Goulet 1983: Fig. 171]. Fossil remnants of this species, dated between 10,100 and 11,050 years old, have been found in southern Quebec (Mott et al. 1981: 146); others, older than 33,000 years B.P., has been unearthed in southwestern Ontario (Warner et al. 1988: 37).

Records. CAN: MB, NT, NU, ON, QC, YT **USA**: AK – **Holarctic**

Note. According to Shilenkov (in Kryzhanovskij et al. 1995: 61), the type material of *E. trossulus* Semenov is conspecific with members of *E. tuberculatus* Mäklin. However, Goulet and Smetana (1997: 203) concluded that adults of *E. trossulus* and *E. parviceps* Van Dyke "cannot be separated." Lindroth (1961a: 116) regarded *E. parviceps* as a junior synonym of *E. riparius* (Linnaeus), a species restricted to the Palaearctic Region according to Goulet (1983: 313).

Elaphrus tuberculatus Mäklin, 1878

Elaphrus tuberculatus Mäklin, 1878: 16. Type locality: «Briochowska öarne (70°39' n. br.) [= Brochowsky Island] inom Jenisej floden [Russia]» (original citation). Holotype [by monotypy] location unknown (possibly in ZMH).

Elaphrus latipennis J.R. Sahlberg, 1880: 10. Type locality: «prope vicum Dudinka [Taimyr Autonomous Okrug, Russia]» (original citation). Holotype [by monotypy] location unknown (possibly in ZMH). Synonymy established by Semenov (1910: 433).

Elaphrus latipennis var. *orientalis* Semenov, 1904: 20. Type locality: «Bulun [Yakutia, Russia]» (original citation). Syntype(s) [2 originally cited] location unknown (possibly in ZILR). Synonymy established by Goulet (1983: 316).

Elaphrus tumidiceps Munster, 1924: 288. Type locality: «Lakselv in Porsanger Finmarkiae [Norway]» (original citation). Holotype (♂) in ZMUO (see Lindroth 1939a: 62). Synonymy established by Bänninger (1932: 184).

Distribution. This Holarctic species ranges from northern Scandinavia to eastern Siberia, and from Alaska to the Mackenzie River in the Northwest Territories [see Goulet 1983: Fig. 171]. Fossil remnants of this species, believed to be 2.0-2.5 million years old, have been found in Greenland (Bennike and Böcher 1990: 336; Böcher 1995: 23).

Records. CAN: NT, YT **USA**: AK – **Holarctic**

Elaphrus viridis Horn, 1878

Elaphrus viridis G.H. Horn, 1878b: 52 [primary homonym of *Elaphrus riparius viridis* Letzner, 1849] [potential *nomen protectum*]. Type locality: «California» (original citation), herein restricted to 9.5 miles south of Dixon, Solano County (see Goulet 1983: 292). Holotype [by monotypy] (♀) in MCZ [# 34043]. Note. Although it is obvious that infrasubspecific rank was meant for *Elaphrus riparius viridis* and many other names in Letzner's work (1849), the fact that Csiki (1927: 420) treated it as a senior homonym makes the name subspecific from the date of its establishment (ICZN 1999: Article 45.6.4.1). However since the reversal of precedence (ICZN 1999: Article 23.9) could probably be applied to this case, I believe it is essential to preserve the current name of this endangered species.

Elaphrus horni Csiki, 1927: 420. Replacement name for *Elaphrus viridis* Horn, 1878.

Distribution. This species is known from a small area in Solano County, California [see Goulet 1983: Fig. 168].

Records. USA: CA

Note. This species, also known under the vernacular name "Delta Green Ground Beetle," is considered an endangered species by the World Wildlife Fund and listed on the IUCN Red List of Threatened Species.

Subgenus *Elaphroterus* Semenov, 1896

Elaphroterus Semenov, 1896: 309. Type species: *Elaphrus aureus* Müller, 1821 designated by Semenov (1926: 39). Etymology. Unknown [masculine].

Elaphrotatus Semenov, 1896: 308. Type species: *Elaphrus punctatus* Motschulsky, 1844 designated by Semenov (1926: 39). Synonymy established by Goulet (1983: 322).

Diversity. Five species in northern North America (two species) and Eurasia (four species). One species (*E. angusticollis*) is Holarctic.

Elaphrus angusticollis angusticollis Sahlberg, 1844

Elaphrus angusticollis R.F. Sahlberg, 1844: 20. Type locality: «fluminis Ochotae [= River Ochota, near Okhotsk, Khabarovsk Kray, Siberia, Russia]» (original citation). One syntype in ZMH (Silfverberg 1987: 12).

Elaphrus angustus Chaudoir, 1850b: 161. Type locality: «Sibérie orientale» (original citation). Syntype(s) in MHNP. Synonymy established by Palmén (1944: 24).

Distribution. This Holarctic subspecies ranges from the Lena River in eastern Siberia to the Bering Sea Coast, and from Alaska to the Mackenzie River in Northwest Territories [see Goulet 1983: Fig. 173]. Fossil remnants from a Plio-Pleistocene sequence have been unearthed in northwestern Greenland (Böcher 1995: 23).

Records. CAN: NT, YT **USA**: AK – **Holarctic**

Note. The subspecies *E. angusticollis longicollis* Sahlberg occurs in the Palaearctic Region.

Elaphrus purpurans Hausen, 1891

Elaphrus pallipes G.H. Horn, 1878b: 51 [primary homonym of *Elaphrus pallipes* Duftschmid, 1812]. Type locality: «Oregon and British Columbia» (original citation), restricted to «Oregon» by Lindroth (1961a: 119). Syntype(s) in MCZ [# 8126]. Note. The specimen marked as type in MCZ is labeled «B[ritish] Col[umbia]».

Elaphrus pallipes var. *purpurans* Hausen, 1891a: 251. Type locality: «British Columbia» (original citation). Holotype in LMMC (Goulet and Smetana 1997: 218). Synonymy established (as aberration) by Csiki (1927: 424).

Distribution. This species ranges from central Alaska to the Mackenzie River in Northwest Territories, south to southeastern Alberta, central Idaho, and central California along the west coast [see Goulet 1983: Fig. 173].
Records. CAN: AB, BC, NT, YT **USA**: AK, CA, ID, MT, OR, WA

Subfamily OMOPHRONINAE Bonelli, 1810

Omophronii Bonelli, 1810: Tabula Synoptica. Type genus: *Omophron* Latreille, 1802.

Diversity. This subfamily includes a single tribe.

Tribe Omophronini Bonelli, 1810

Omophronii Bonelli, 1810: Tabula Synoptica. Type genus: *Omophron* Latreille, 1802.

Scolyti Motschulsky, 1850a: 91. Type genus: *Scolytus* Fabricius, 1790 (= *Omophron* Latreille, 1802).

Epactiini Fauvel, 1888: 1. Type genus: *Epactius* Schneider, 1791 (= *Omophron* Latreille, 1802).

Diversity. This tribe includes a single genus.

Genus *Omophron* Latreille, 1802

Scolytus Fabricius, 1790: 221 [junior homonym of *Scolytus* Geoffroy, 1762]. Type species: *Carabus limbatus* Fabricius, 1777 designated by Latreille (1810: 426). Etymology. Unknown [masculine]. Note. Latreille's designation was intended for *Omophron* Latreille but since *Omophron* is a replacement name for *Scolytus* Fabricius, both have the same type species and the type fixation for either applies also to the other (ICZN 1999: Article 67.8).

Omophron Latreille, 1802: 89. Replacement name for *Scolytus* Fabricius, 1790. Etymology. From the Greek *omophron* (merciless, savage) [neuter, see Allen and Duff (1992: 85)].

Diversity. About 70 species in the Nearctic (11 species), Neotropical (six species in Middle America), Oriental (16 species), Palaearctic (16 species), and Afrotropical (20

species) Regions. The species are arrayed in two subgenera: *Omophron s.str.* (about 60 species) and *Phrator* Semenov (eight species in the Mediterranean region and Africa).

Subgenus *Omophron* Latreille, 1802

Scolytus Fabricius, 1790: 221 [junior homonym of *Scolytus* Geoffroy, 1762]. Type species: *Carabus limbatus* Fabricius, 1777 designated by Latreille (1810: 426).

Epactius Schneider [in Fabricius], 1791: 23. Replacement name for *Scolytus* Fabricius, 1790. Etymology. From the Greek *epactios* (on the shore) [masculine].

Lithophilus Schneider [in Fabricius], 1791: 23. Replacement name for *Scolytus* Fabricius, 1790. Etymology. From the Greek *lithos* (stone) and *philos* (beloved) [masculine].

Omophron Latreille, 1802: 89. Replacement name for *Scolytus* Fabricius, 1790. Note. See Bousquet and Larochelle (1993: 89, footnote) for priority of *Omophron* over both Schneider's names.

Scolyttus Billberg, 1820: 24. Unjustified emendation of *Scolytus* Fabricius, 1790.

Homophron Fischer von Waldheim, 1828: 255. Unjustified emendation of *Omophron* Latreille, 1802.

Homophron Semenov, 1922: 41 [junior homonym of *Homophron* Fischer von Waldheim, 1828]. Type species: *Omophron tessellatum* Say, 1823 by original designation. Synonymy established by Csiki (1927: 405).

Istor Semenov, 1922: 43. Type species: *Omophron robustum* Horn, 1870 by original designation. Synonymy established by Csiki (1927: 405).

Paromophron Semenov, 1922: 40. Type species: *Omophron ovale* Horn, 1870 by original designation. Synonymy established by Csiki (1927: 405). Etymology. From the Greek *para* (near, next to) and the generic name *Omophron* [*q.v.*] [neuter].

Prosecon Semenov, 1922: 44. Type species: *Omophron gilae* LeConte, 1852 by original designation. Synonymy established by Csiki (1927: 406).

Stenomophron Semenov, 1922: 42. Type species: *Omophron baenningeri* Dupuis, 1912 by original designation. Synonymy established by Csiki (1927: 406). Etymology. From the Greek *stenos* (narrow) and the generic name *Omophron* [*q.v.*] [neuter].

Phromoon Lutshnik, 1933a: 132. Replacement name for *Homophron* Semenov, 1922. Etymology. Anagram of the generic name *Omophron* [*q.v.*] [neuter].

Diversity. About 60 species in the Nearctic (11 species), Neotropical (six species in Middle America), Oriental (16 species), Palaearctic (15 species), and Afrotropical (13 species) Regions.

Identification. Benschoter and Cook (1956) revised the North American species and provided a key for their identification. Lindroth's (1961a: 10) key covered seven species.

***Omophron americanum* Dejean, 1831**

Omophron americanum Dejean, 1831: 583. Type locality: «Amérique septentrionale» (original citation), restricted to «Montreal area, Queb[ec]» by Lindroth (1961a: 12). One syntype in MHNP (Lindroth 1955a: 31).

Omophron saii Kirby, 1837: 65. Type locality: «Canada» (original citation). One syntype in BMNH (Lindroth 1953b: 177). Synonymy established by LeConte (1847: 447), confirmed by Lindroth (1953b: 177).

Omophron lacustre Casey, 1897: 301. Type locality: «Bayfield [Bayfield County, Wisconsin], Lake Superior» (original citation). One syntype in USNM [# 48086]. Synonymy established by Benschoter and Cook (1956: 426).

Omophron texanum Casey, 1897: 302. Type locality: «Austin [Travis County], Texas» (original citation). Holotype [by monotypy] (♀) in USNM [# 48088]. Synonymy established, under the name *O. lacustre* Casey, by Bänninger (1921: 119).

Omophron fontinale Casey, 1913: 41. Type locality: «Jemez Springs [Sandoval County], New Mexico» (original citation). Two syntypes in USNM [# 48090]. Synonymy established, under the name *O. texanum* Casey, by Bänninger (1921: 118).

Omophron iridescens Casey, 1913: 41. Type locality: «Vicksburg [Warren County], Mississippi» (original citation). One syntype in USNM [# 48079]. Synonymy established by Benschoter and Cook (1956: 426).

Omophron lengi Casey, 1920: 135. Type locality: «South Carolina» (original citation). One syntype in USNM [# 48085]. Synonymy established by Benschoter and Cook (1956: 426).

Omophron illustre Casey, 1920: 136. Type locality: «Vineyard [Utah County], Utah» (original citation). One syntype in USNM [# 48094]. Synonymy established by Benschoter and Cook (1956: 426).

Homophron tanneri Chandler, 1941: 100. Type locality: «Moab, San Juan Co[unty], Utah» (original citation). Holotype (♀) in BYUC (Shawn M. Clark pers. comm. 2007). Synonymy established by Benschoter and Cook (1956: 426).

Homophron tanneri proximum Chandler, 1941: 102. Type locality: «Box Canyon near the junction of Calf Creek and the Escalante River in Garfield Co[unty], Utah» (original citation). Holotype in BYUC (Shawn M. Clark pers. comm. 2007). Synonymy established by Benschoter and Cook (1956: 426).

Distribution. This species ranges from Newfoundland (Lindroth 1955a: 150) to the foothills of the Rocky Mountains in Alberta (Lindroth 1961a: 12), south to northeastern Arizona, the state of Coahuila in Mexico (Benschoter and Cook 1956: 427), and the Florida Panhandle (Peck and Thomas 1998: 15). The record from "Vera Cruz" (Benschoter and Cook 1956: 428) needs confirmation.

Records. CAN: AB, MB, NB, NF, NS (CBI), ON, PE, QC, SK **USA**: AL, AR, AZ, CO, CT, DC, DE, FL, GA, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK, PA, RI, SC, SD, TN, TX, UT, VA, VT, WI, WV, WY – Mexico

Omophron dentatum LeConte, 1852

Omophron dentatum LeConte, 1852a: 200. Type locality: «San Diego [San Diego County, California]» (original citation). Syntype(s) in MCZ [# 130].

Distribution. This species seems to be confined to the southern half of California (Benschoter and Cook 1956: 422) and the Baja California Peninsula (Erwin 2007a: 64). Old specimens simply labeled from Arizona and Texas are known (Benschoter and Cook 1956: 422) but are probably mislabeled.
Records. USA: CA (CHI) – Mexico

Omophron gilae LeConte, 1852

Omophron gilae LeConte, 1852a: 201. Type locality: «ad fluminis Gilae ripas» (original citation). Syntype(s) in MCZ [# 129].
Omophron pallidum Casey, 1897: 305. Type locality: «southwestern Utah» (original citation). Two syntypes [2 originally cited] in USNM [# 48093]. Synonymy established by Benschoter and Cook (1956: 416).
Omophron gilae pimalis Casey, 1913: 44. Type locality: «Arizona» (original citation). One syntype in USNM [# 48092]. Synonymy established by Benschoter and Cook (1956: 416).

Distribution. This species ranges from southern California to western Colorado (Benschoter and Cook 1956: 416) and northern New Mexico (Taos County, UASM), south to Sonora, Mexico (Erwin 2007a: 65). Old specimens simply labeled from Texas are known (Benschoter and Cook 1956: 416).
Records. USA: AZ, CA, CO, NM, UT [TX] – Mexico

Omophron grossum Casey, 1909

Omophron grossum Casey, 1909: 275. Type locality: «Texas» (original citation). One syntype in USNM [# 48089].

Distribution. This species ranges from western Wisconsin (Messer 2010: 34) to southern Nebraska (Adams County, Foster F. Purrington pers. comm. 2010), south at least to northeastern Texas (Benschoter and Cook 1956: 425), east-central Louisiana (West Feliciana Parish, Igor M. Sokolov pers. comm. 2009), and southwestern Mississippi (Lago and Zucarro 1984: 118; Wilkinson County, UASM).
Records. USA: AR, IA, KS, LA, MO, MS, NE, OK, TX, WI

Omophron labiatum (Fabricius, 1801)

Scolytus labiatus Fabricius, 1801: 248. Type locality: «Carolina» (original citation). Lectotype, designated by Lindroth (1969a: 1108), in ZMUC.

Distribution. This species is found along the Atlantic and Gulf of Mexico coasts, from Sable Island off the coast of Nova Scotia (Lindroth 1969a: 1108) to southern Florida (Peck and Thomas 1998: 15), west to southeastern Texas (Benschoter and Cook 1956: 420).
Records. CAN: NS **USA**: AL, CT, DC, FL, GA, LA, MA, MD, ME, MS, NC, NJ, NY, PA, SC, TX, VA

Omophron nitidum LeConte, 1847

Omophron nitidum LeConte, 1847: 447. Type locality: «Territorio Missouriensi et provinciis occidentalibus» (original citation), herein restricted to Kansas City, Missouri (see Benschoter and Cook 1956: 420). Syntype(s) in MCZ [# 128].

Omophron nitens Chaudoir, 1868a: 60. Type locality: «Texas» (original citation). Syntype(s) probably in MHNP. Synonymy established by Horn (1870a: 72).

Distribution. This species ranges from northern Nebraska to northwestern Indiana, north to the Minneapolis region in western Minnesota, south to Alabama and southern Texas (Benschoter and Cook 1956: 420, 422). The records from Wisconsin (Rauterberg 1885: 11) and Charity Island in Michigan (Andrews 1916: 72) are probably based on misidentified *O. americanum*.

Records. USA: AL, AR, IA, IL, IN, KS, LA, MN, MO, MS, NE, OK, TN, TX

Omophron obliteratum Horn, 1870

Omophron obliteratum G.H. Horn, 1870a: 73. Type locality: «Camp Grant [Pinal County] on the San Pedro River, a tributary of the Gila, Arizona» (original citation). Holotype [by monotypy] (♀) in MCZ [# 33479].

Omophron sonorae Casey, 1897: 304. Type locality: «Sonora, probably near Hermosillo, Mexico» (original citation). Four syntypes [5 originally cited] in USNM [# 48091]. Synonymy established by Bänninger (1921: 116).

Omophron obliteratum utense Casey, 1913: 43. Type locality: «Leeds and S[ain]t George, Utah» (original citation). Three syntypes in USNM [# 48095]. Synonymy established by Benschoter and Cook (1956: 414).

Omophron obliteratum subimpressum Casey, 1913: 43. Type locality: «New Mexico» (original citation). One syntype in USNM [# 48096]. Synonymy established by Benschoter and Cook (1956: 414).

Distribution. This species ranges from southern California to western Texas, north to southern Utah (Benschoter and Cook 1956: 416), south to Zacatecas in Mexico (Erwin 2007a: 67). The record from "Montana" (Bousquet and Larochelle 1993: 90) is likely in error.

Records. USA: AZ, CA, NM, TX, UT – Mexico

Omophron ovale Horn, 1870

Omophron ovale G.H. Horn, 1870a: 75. Type locality: «Fort Crook [Shasta County], California» (original citation). Syntype(s) [2 originally cited] in MCZ [# 33478].

Omophron concinnum Casey, 1897: 302. Type locality: «Siskiyou Co[unty], California» (original citation). Holotype [by monotypy] (♂) in USNM [# 48084]. Synonymy established by Bänninger (1921: 114).

Omophron gemma Casey, 1897: 304. Type locality: «Eel river, near its entrance into Humboldt Bay, Humboldt Co[unty], California» (original citation). Six syntypes in USNM [# 48081]. Synonymy established by Bänninger (1921: 114).

Omophron frater Casey, 1913: 41. Type locality: «California» (original citation). One syntype in USNM [# 48082]. Synonymy established by Bänninger (1921: 114).

Distribution. The range of this species extends from southwestern Saskatchewan (Ronald R. Hooper pers. comm. 1990) to Vancouver Island (Lindroth 1961a: 13), south to northern California and southern Wyoming (Benschoter and Cook 1956: 426).
Records. CAN: AB, BC (VCI), SK **USA**: CA, ID, MT, NV, OR, UT, WA, WY

Omophron robustum Horn, 1870

Omophron robustum G.H. Horn, 1870a: 73. Type locality: «Nova Scotia region» (original citation), which is incorrect (Fall 1920: 211; Lindroth 1961a: 10); «Toronto [Ontario]» selected by Lindroth (1961a: 10). Holotype [by monotypy] (♂) in MCZ [# 131].

Omophron brevipenne Casey, 1909: 276. Type locality: «Ohio» (original citation). One syntype in USNM [# 48087]. Synonymy established by Fall (1920: 211).

Omophron decoloratum Fall, 1920: 211. Type locality: «Gray Co[unty], Kansas» (original citation). Holotype (♀) in MCZ [# 23883]. Synonymy established by Benschoter and Cook 1956: 416).

Distribution. This species ranges from the southern part of the Ontario Peninsula to south-central North Dakota (Benschoter and Cook 1956: 418), south to northwestern Texas (Hutchinson County, Robert L. Davidson pers. comm. 2012) and northwestern Tennessee (Lake County, CMNH); seemingly isolated in southeastern Alberta (Lindroth 1961a: 11).
Records. CAN: AB, ON **USA**: IA, IL, IN, KS, MI, MN, ND, NE, OH, OK, SD, TN, TX, WI

Omophron solidum Casey, 1897

Omophron solidum Casey, 1897: 303. Type locality: «Marin to Humboldt Co[untie]s, California» (original citation). Ten syntypes in USNM [# 48083].

Omophron lawrencei Hatch, 1953: 69. Type locality: «Medford [Jackson County], Or[egon]» (original citation). Holotype (♀) in USNM. Synonymy established by Benschoter and Cook (1956: 425).

Distribution. This species is known from southwestern Oregon and northern California (Benschoter and Cook 1956: 425).
Records. USA: CA, OR

Omophron tessellatum Say, 1823

Omophron tessellatus Say, 1823b: 152. Type locality: «K[ansa]s» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 356), in MCZ [# 32964]. Note. «Elk-horn Creek, Missouri [Territory]» was the area originally cited by Say

(1823b: 150). *Omophron tesselatum* is an incorrect subsequent spelling, introduced by LeConte (1847: 447), not currently in prevailing usage.

Omophron lecontei Dejean, 1831: 582. Type locality: «Amérique septentrionale» (original citation). One syntype in MHNP (Lindroth 1955b: 31). Synonymy established by LeConte (1847: 447), confirmed by Lindroth (1955b: 31).

Omophron [*tessellatum*] *ellipticum* Casey, 1909: 276. Type locality: «Rhode Island» (original citation). One syntype in USNM [# 48080]. Synonymy established by Bänninger (1921: 118).

Distribution. This species ranges from Cape Breton Island to southern Alberta, south to southwestern Arizona, northwestern Oklahoma (Cimarron County, CNC), southwestern Arkansas (Hempstead County, MCZ), and Virginia (Benschoter and Cook 1956: 424). One specimen labeled from Alameda County in western California, seen by Benschoter and Cook (1956: 424), is possibly mislabeled. The record from "Texas" (Bousquet and Larochelle 1993: 90) needs confirmation.

Records. CAN: AB, MB, NB, NS (CBI), ON, PE, QC, SK **USA**: AR, AZ, CO, CT, IA, IL, IN, KS, KY, MA, MD, ME, MI, MN, MO, MT, ND, NE, NH, NJ, NM, NY, OH, OK, PA, RI, SD, VA, VT, WI [CA, TX]

Subfamily SCARITINAE Bonelli, 1810

Scaritides Bonelli, 1810: Tabula Synoptica. Type genus: *Scarites* Fabricius, 1775.

Diversity. Worldwide, with about 1,870 species arrayed in eight tribes: Carenini (about 195 species), Clivinini (about 820 species), Dalyatini (one species), Dyschiriini (about 300 species), Pasimachini (35 species), Promecognathini (eight species), Salcediini (about 15 species), and Scaritini (about 495 species).

Tribe Pasimachini Putzeys, 1867

Pasimachides Putzeys, 1867b: 3. Type genus: *Pasimachus* Bonelli, 1813.

Diversity. Thirty-five species arrayed in two genera: *Mouhotia* Laporte (three Oriental species) and *Pasimachus*.

Genus *Pasimachus* Bonelli, 1813

Pasimachus Bonelli, 1813: 476. Type species: *Scarites depressus* Fabricius, 1787 designated by Hope (1838: 94). Etymology. Probably from the Greek *pasi* (the whole, all, very, by extension universal) and *machetes* (warrior, fighter) contracted [masculine].

Diversity. Western Hemisphere, with 32 species arrayed in two subgenera: *Emydopterus* Lacordaire (13 Middle American species) and *Pasimachus s.str.* (19 species).

Identification. Bänninger (1950) reviewed all the species and provided a key for their identification. Purrington and Drake (2005: 254-255) published a key to the North

American species. A modern taxonomic revision of the genus is needed as challenging problems remain to be resolved (Ball and Bousquet 2000: 76).

Subgenus *Pasimachus* Bonelli, 1813

Pasimachus Bonelli, 1813: 476. Type species: *Scarites depressus* Fabricius, 1787 designated by Hope (1838: 94).

Diversity. Nineteen species in the temperate, subtropical, and tropical areas of North America (11 species) and Middle America (13 species).
Faunistic Note. Snow (1907: 141) recorded *Pasimachus mexicanus* Gray from Pima County in Arizona. Because the presence of this species in United States has not been confirmed subsequently, *P. mexicanus* is not retained as a North American entity in this catalogue.

[**depressus group**]

Pasimachus californicus Chaudoir, 1850

Pasimachus californicus Chaudoir, 1850a: 437. Type locality: «Californie» (original citation), which is incorrect; El Paso, El Paso County, Texas, herein selected (see Casey 1913: 86, as *P. californicus transversus*). Syntype(s) in MHNP.
Pasimachus validus LeConte, 1858a: 14. Type locality: «Kansas, Texas, Arizona» (original citation). Syntype(s) in MCZ [# 5464]. Synonymy established by LeConte (1874a: 273).
Pasimachus corpulentus LeConte, 1858a: 15. Type locality: «Laredo to Ringgold Barracks, Texas; Sonora» (original citation). Syntype(s) in MCZ [# 5465]. Synonymy established by LeConte (1874a: 273).
Pasimachus californicus transversus Casey, 1913: 86. Type locality: «El Paso [El Paso County], Texas» (original citation). One syntype in USNM [# 46893]. Synonymy established by Leng (1920: 47).
Pasimachus cephalotes Casey, 1913: 87. Type locality: «Texas» (original citation). One syntype in USNM [# 46894]. Synonymy established by Leng (1920: 47).
Pasimachus acomanus Casey, 1913: 87. Type locality: «Jemez Springs [Sandoval County], New Mexico» (original citation). Holotype [by monotypy] (♀) in USNM [# 46895]. Synonymy established by Leng (1920: 47).
Pasimachus obesus Casey, 1913: 88. Type locality: «Arizona» (original citation). One syntype in USNM [# 46896]. Synonymy established by Leng (1920: 47).

Distribution. This species ranges from "Utah" (LeConte 1874a: 273) to southeastern Nebraska (Pawnee County, Peter W. Messer pers. comm. 2008), south at least to eastern Arkansas (Cook and Holt 2006: 2313) and Michoacán in Mexico (Ball and Shpeley 1992a: 46).
Records. USA: AR, AZ, CO, KS, NE, NM, OK, TX, UT – Mexico

Pasimachus depressus (Fabricius, 1787)

Scarites depressus Fabricius, 1787: 206. Type locality: «Cajennae [= Cayenne, French Guiana]» (original citation), which is incorrect; Southern Pines, Moore County, North Carolina, herein selected (see Casey, 1913: 82, as *P. depressus carolinensis*). Lectotype [as type], designated by Staig (1931: 21), in HMUG.

Tenebrio complanatus Gmelin, 1790: 1993. Type locality: «Cayenna [= Cayenne, French Guiana]» (original citation), which is incorrect. Syntype(s) location unknown. Synonymy established by Schönherr (1806: 126).

Pasimachus morio LeConte, 1846a: 145. Type locality: «Carolina» (original citation). Syntype(s) in MCZ [# 5458]. Synonymy established by Bänninger (1950: 510).

Pasimachus laevis LeConte, 1846a: 146. Type locality: «New Jersey» (original citation). Syntype(s) in MCZ [# 5459]. Synonymy established by Melsheimer (1853: 7).

Pasimachus limbatus Zimmermann [in LeConte], 1874a: 271. Type locality not stated. Syntype(s) probably lost. Synonymy established by Leng (1920: 47).

Pasimachus depressus carolinensis Casey, 1913: 82. Type locality: «Southern Pines [Moore County], North Carolina» (original citation). Four syntypes in USNM [# 46882]. Synonymy established by Leng (1920: 47).

Pasimachus champlaini Casey, 1913: 82. Type locality: «Carlisle Junction [Cumberland County], Pennsylvania» (original citation). Holotype [by monotypy] in USNM [# 46883]. Synonymy established by Leng (1920: 47).

Distribution. This species ranges from southeastern New York (Notman 1928: 211) and New Jersey (Bänninger 1950: 491) to Wisconsin (Messer 2010: 34), south to southeastern Texas (Galveston County, MCZ; Bänninger 1950: 491) and central Florida (Lake County, MCZ).

Records. USA: AL, AR, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MD, MO, MS, NC, NJ, NY, OH, OK, PA, SC, TN, TX, VA, WI, WV

Pasimachus duplicatus LeConte, 1853

Pasimachus duplicatus LeConte, 1853c: 395. Type locality: «Creek boundary [= boundary of the Creek Indian Reservation at that time, located near or in Oklahoma], Missouri Territory» (original citation). Two syntypes in MCZ [# 5460].

Pasimachus costifer LeConte, 1854c: 79. Type locality: «Laredo to Ringgold Barracks [Texas]» (original citation). Five syntypes in MCZ [# 5461]. Synonymy established by Erwin et al. (1977: 4.11).

Distribution. The range of this species extends from northern Arizona to "Missouri" (Bänninger 1950: 492), north to northern Nebraska (Cherry and Sheridan Counties, Peter W. Messer pers. comm. 2004), south to southern Texas (Johnson 1978: 67) and northeastern Mexico (Bänninger 1950: 492).

Records. USA: AZ, CO, KS, MO, NE, NM, OK, TX – Mexico

Note. Bänninger (1950: 510) retained *P. costifer* LeConte as a questionable subspecies of *P. duplicatus*.

Figure 15. *Elaphrus fuliginosus* Say. Why the great naturalist Thomas Say gave this eastern species the name *fuliginosus* (sooty) is not evident. It may refer to the mirrors on the elytra which gives the impression that the animals are dirty. Members of *Elaphrus* have the ability to produce stridulating chirps by rubbing rows of bristles on the dorsal surface of the abdomen against two areas of parallel ridges on the ventral surface of the elytra. The sound is produced when the beetle is under stress.

Pasimachus elongatus LeConte, 1846

Pasimachus elongatus LeConte, 1846a: 147. Type locality: «Territorio Missouriensi» (original citation). Syntype(s) in MCZ [# 5463].

Pasimachus pimalis Casey, 1913: 84. Type locality: «Arizona» (original citation). Holotype [by monotypy] (♀) in USNM [# 46885]. Synonymy established with doubt by Bänninger (1950: 501).

Pasimachus angustulus Casey, 1913: 84. Type locality: «Nebraska» (original citation). Holotype [by monotypy] (♂) in USNM [# 46890]. Synonymy established, under the name *P. pimalis* Casey, by Leng (1920: 47).

Pasimachus angustulus evanescens Casey, 1913: 84. Type locality: «probably Colorado» (original citation). Holotype [by monotypy] (♂) in USNM [# 46886]. Synonymy established, under the name *P. pimalis* Casey, by Leng (1920: 47).

Pasimachus vegasensis Casey, 1913: 85. Type locality: «Las Vegas [San Miguel County], New Mexico» (original citation). Holotype [by monotypy] (♂) in USNM [# 46887]. Synonymy established, under the name *P. pimalis* Casey, by Leng (1920: 47).

Pasimachus vernicatus Casey, 1913: 85. Type locality: «Kansas» (original citation). Holotype [by monotypy] (♂) in USNM [# 46888]. Synonymy established, under the name *P. pimalis* Casey, by Leng (1920: 47).

Distribution. This species ranges from the southern part of the Prairie Provinces (Lindroth 1961a: 131) south to northern Sonora (Bates 1884: 264), western and northern Texas (Wheeler, Grayson, Presidio, and Brewster Counties, MCZ, CMNH; Bänninger 1950: 490), and southeastern Louisiana (Summers 1874a: 79), east to Indiana (Blatchley 1910: 55; Bänninger 1950: 490) and southwestern Michigan (Dunn 1982a: 206). The record from southwestern Virginia (Horn 1869a: 123) is probably in error.

Records. CAN: AB, MB, SK **USA**: AR, AZ, CO, IA, ID, IL, IN, KS, LA, MI, MN, MO, MT, ND, NE, NM, OH, OK, SD, TX, WI, WY – Mexico

Pasimachus obsoletus LeConte, 1846

Pasimachus obsoletus LeConte, 1846a: 148. Type locality: «ad flumen Platte, prope Rocky Mountains» (original citation). Three syntypes in MCZ [# 5462].

Pasimachus acuminatus Casey, 1913: 88. Type locality: «probably Colorado» (original citation). Holotype [by monotypy] in USNM [# 46889]. Synonymy established by Leng (1920: 47).

Pasimachus vestigialis Casey, 1913: 89. Type locality: «New Mexico; El Paso and Marfa, Texas» (original citation). Three syntypes in USNM [# 46891]. Synonymy established by Leng (1920: 47).

Pasimachus atronitens Casey, 1913: 89. Type locality: «San Bernardino Ranch and Douglas, Cochise Co[unty], Arizona» (original citation). Six syntypes [6 originally cited] in USNM [# 46892]. Synonymy established by Leng (1920: 47).

Distribution. This species is found from "Iowa" (Bänninger 1950: 492) to southeastern Wyoming (Laramie County, CMNH), south to southeastern Arizona (Casey 1913: 89, as *P. atronitens*) and Chihuahua in northern Mexico (Bänninger 1950: 492).
Records. USA: AZ, CO, IA, KS, NE, NM, OK, SD, TX, WY – Mexico
Note. Bänninger (1950: 510) retained *P. atronitens* and *P. acuminatus* as questionable subspecies of *P. obsoletus*. Erwin (2011b: 51) treated *P. atronitens* as a valid species.

Pasimachus punctulatus Haldeman, 1843

Pasimachus punctulatus Haldeman, 1843b: 298. Type locality: «Alabama» (original citation). One possible syntype, labeled "[orange disc] / P. punctulatus !Hald. [handwritten]," in MCZ (collection LeConte).
Pasimachus missuricus Gistel, 1857: 27. Type locality: «Missuri» (original citation). Syntype(s) lost. Synonymy established by Bänninger (1950: 501).
Pasimachus sinuatus Casey, 1913: 83. Type locality: «S[ain]t Louis, Missouri» (original citation). Holotype [by monotypy] in USNM [# 46884]. Synonymy established by Leng (1920: 47).

Distribution. This species ranges from New Jersey (Smith 1890: 74; Smith 1910: 201) and north-central Virginia (Carrington 2002: 107) to west-central Kansas (Snow 1878: 63; Knaus 1907: 233), south to central Texas (LeConte 1846a: 146; Lee County, MCZ) and the Florida Panhandle (Peck and Thomas 1998: 16); also recorded from Durango in Mexico (García 2004: 289, as *P. punctatus* Haldeman). The record from Cochise County, Arizona (Snow 1906b: 161) is probably in error.
Records. USA: AL, AR, FL, IL, IN, KS, KY, LA, MO, MS, NC, NJ, OH, OK, PA, SC, TN, TX, VA, WV – Mexico

Pasimachus viridans LeConte, 1858

Pasimachus viridans LeConte, 1858b: 61. Type locality: «Sonora [Mexico]» (original citation). Holotype [by monotypy] in MCZ [# 5466].
Pasimachus ignicinctus Bates, 1891a: 230. Type locality: «Canelas, Sierra Madre of Durango [Mexico]» (original citation). Syntype(s) probably in BMNH. Synonymy established by Erwin et al. (1977: 4.11).
Pasimachus viridans ambiens Casey, 1913: 90. Type locality: «Arizona» (original citation). Four syntypes [4 originally cited] in USNM [# 46898]. Synonymy established by Leng (1920: 47).

Distribution. This species ranges from southern Arizona (Schaeffer 1905: 142) south at least to Durango in Mexico (Bänninger 1950: 493).
Records. USA: AZ – Mexico
Note. Bänninger (1950: 510) retained *P. ignicinctus* Bates as a valid subspecies of *P. viridans*.

[**marginatus group**]

***Pasimachus marginatus* (Fabricius, 1787)**

Scarites marginatus Fabricius, 1787: 206. Type locality: «Cajennae [= Cayenne, French Guiana]» (original citation), which is incorrect. Lectotype [as type], designated by Staig (1931: 23), in HMUG.

Pasimachus crassus Casey, 1913: 81. Type locality: «Southern Pines [Moore County], North Carolina» (original citation). Four syntypes in USNM [# 46881]. Synonymy established by Erwin et al. (1977: 4.11).

Distribution. This species ranges from southern Maryland (Peter W. Messer pers. comm. 2010) to the Florida Keys (Nichols 1988b: Fig. 5-4; Peck and Thomas 1998: 16), west to "Texas" (Leng 1915: 565; Bänninger 1950: 488), north along the Mississippi River drainage to southwestern Kentucky (Mammoth Cave National Park, CMNH).

Records. USA: AL, FL, GA, KY, LA, MD, MS, NC, SC, TN, TX

Note. Bänninger (1950: 509) retained *P. crassus* Casey as a questionable subspecies of *P. marginatus*.

***Pasimachus subsulcatus* Say, 1823**

Pasimachus subsulcatus Say, 1823a: 19. Type locality: «Georgia and Florida» (original citation), restricted to «Florida» by Lindroth and Freitag (1969: 333). Lectotype, designated by Lindroth and Freitag (1969: 333), in MHNP (collection Dejean).

Pasimachus floridanus Casey, 1913: 79. Type locality: «Palm Beach [Palm Beach County], Florida» (original citation). Six syntypes [6 originally cited] in USNM [# 46879]. Synonymy established by Erwin et al. (1977: 4.11).

Pasimachus subsulcatus subnitens Casey, 1913: 79. Type locality: «Florida» (original citation). Holotype [by monotypy] in USNM [# 46878]. Synonymy established by Leng (1915: 567).

Pasimachus opacipennis Casey, 1913: 80. Type locality: «Florida» (original citation). Holotype [by monotypy] in USNM [# 46880]. Synonymy established with doubt by Bänninger (1950: 509).

Distribution. This species is probably restricted to the Coastal Plain ranging from South Carolina (Kirk 1970: 9; Ciegler 2000: 38) to southern Florida including the Keys (Peck and Thomas 1998: 17), west to southeastern Louisiana (Allen 1965: 62).

Records. USA: AL, FL, GA, LA, SC

Note. Bänninger (1950: 510) retained *P. floridanus* Casey and *P. subnitens* Casey as questionable subspecies of *P. subsulcatus*. Nichols (1988a: 217) retained *P. floridanus* as a valid species but added that "further study is needed to determine ... whether it is a taxon worthy of distinction from *Pasimachus subsulcatus* Say."

[**strenuus group**]
***Pasimachus strenuus* LeConte, 1874**

Pasimachus strenuus LeConte, 1874a: 267. Type locality: «Florida» (original citation). Syntype(s) [2 originally cited] in MCZ [# 5455].
Pasimachus strenuus robustus Casey, 1913: 78. Type locality: «Florida» (original citation). Holotype [by monotypy] in USNM [# 46877]. Synonymy established by Leng (1915: 566).

Distribution. This species is known from southeastern Georgia (Fattig 1949: 12), the Florida Peninsula and Panhandle (Peck and Thomas 1998: 17), and southwestern Alabama (Löding 1945: 12).
Records. USA: AL, FL, GA

***Pasimachus sublaevis* (Palisot de Beauvois, 1811)**

Scarites sublaevis Palisot de Beauvois, 1811: 107. Type locality: «Caroline du sud» (original citation). Syntype(s) probably lost.
Pasimachus substriatus Haldeman, 1843c: 313. Type locality: «Long Island [New York]» (original citation). One possible syntype, labeled "[pink disc] / P. substriatus Lec. [handwritten] / sublaevis 15 [handwritten]," in MCZ (collection LeConte). Synonymy established by LeConte (1874a: 268).
Pasimachus assimilis LeConte, 1846a: 148. Type locality: «Georgia» (original citation). Syntype(s) in MCZ [# 5457]. Synonymy established by LeConte (1853c: 395).
Pasimachus rugosus LeConte, 1846a: 149. Type locality: «Nova Caesarea» [= New Jersey] (original citation). Syntype(s) in MCZ [# 5456]. Synonymy established by LeConte (1853c: 395).
Pasimachus brevitarsis Casey, 1913: 76. Type locality: «Pass Christian [Harrison County], Mississippi» (original citation). Two syntypes [2 originally cited] in USNM [# 46875]. Synonymy established with doubt by Bänninger (1950: 509).
Pasimachus oblongus Casey, 1913: 77. Type locality: «Southern Pines [Moore County], North Carolina» (original citation). Four syntypes [4 originally cited] in USNM [# 46876]. Synonymy established with doubt, under the name *P. substriatus* Haldeman, by Bänninger (1950: 509).

Distribution. The range of this species extends from Massachusetts (Miliotis 1974: 114) to central Iowa (Purrington and Drake 2005: 256), south to southeastern Mississippi (Casey 1913: 76, as *P. brevitarsis*) and southern Florida including the Keys (Nichols 1988b: Fig. 5-4; Peck and Thomas 1998: 17). The records from South Dakota (Kirk and Balsbaugh 1975: 15, as *S. substriatus*), "Kansas" (Bousquet and Larochelle 1993: 96), and southeastern Louisiana (Summers 1874a: 79) need confirmation.
Records. USA: AL, DC, FL, GA, IA, IL, IN, MA, MS, NC, NJ, NY, OH, SC, TN, VA [KS, LA, SD]

Note. Bänninger (1950: 510) retained *P. substriatus* Haldeman as a questionable subspecies of *P. sublaevis*. Nichols (1988a: 224-225) treated it as a junior synonym of *P. sublaevis*.

Tribe Scaritini Bonelli, 1810

Scaritides Bonelli, 1810: Tabula Synoptica. Type genus: *Scarites* Fabricius, 1775.

Diversity. Worldwide, with about 495 species (Lorenz 2005: 135-141 and the genus *Scaraphites* Westwood) placed in 42 genera arrayed in four subtribes: Acanthoscelitina (one species on the southwest coast of Africa), Oxylobina (29 Asian species in the genus *Oxylobus* Chaudoir), Scapterina (22 species in the Eastern Hemisphere except Europe), and Scaritina (about 445 species).

Subtribe Scaritina Bonelli, 1810

Scaritides Bonelli, 1810: Tabula Synoptica. Type genus: *Scarites* Fabricius, 1775.

Diversity. Worldwide, with about 445 species arrayed in 37 genera. The tribe is much more diversified in term of species (about 51% of the world fauna) in the Afrotropical (particularly on Madagascar) than anywhere else. The Western Hemisphere has only four endemic genus-group taxa: *Antilliscaris* Bänninger (four West Indian species), *Baenningeria* Reichardt (two species on the Galápagos), *Glyptogrus* Bates (seven Neotropical species), and *Taeniolobus* Chaudoir (about 40 Neotropical species). The Nearctic (with seven species) and Australian (with 12 species) Regions are underrepresented.

Genus *Scarites* Fabricius, 1775

Scarites Fabricius, 1775: 249. Type species: *Scarites subterraneus* Fabricius, 1775 designated by Andrewes (1929: 225). Etymology. From the Greek *scaritis* (gem of the color of the fish named *scaros*, probably a wrasse, in Pliny the Elder) [masculine].

Diversity. About 190 species (Lorenz 2005: 137-140) arrayed in four subgenera: *Orientolobus* Dostal (eight Indo-African species), *Parallelomorphus* Motschulsky (15 Old World species), *Scarites s.str.* (about 130 species), and *Taeniolobus* Chaudoir (about 40 Neotropical species). The genus is more diversified in term of species in the tropics of the Old World (about 60.5% of the world fauna) than anywhere else.

Identification. Bänninger (1938) reviewed the species and provided keys for their identification. Three new North American species were subsequently described. Bousquet and Skelley (2010) published a key to all Nearctic species except *S. lissopterus* Chaudoir.

Subgenus *Scarites* Fabricius, 1775

Scarites Fabricius, 1775: 249. Type species: *Scarites subterraneus* Fabricius, 1775 designated by Andrewes (1929: 225).

Scallophorites Motschulsky, 1857b: 95. Type species: *Scarites striatus* Dejean, 1825 by original designation. Synonymy established by Jeannel (1946: 240).

Scaritolius Fairmaire, 1905: 115. Type species: *Scaritolius politus* Fairmaire, 1905 (= *Scarites fairmairei* Bänninger, 1933) by monotypy. Synonymy established by Bänninger (1933: 104).

Diversity. About 130 species in the Nearctic (seven species), Neotropical (about 25 species), Oriental (about 45 species), Palaearctic (about 25 species, most of them in Asia), and Afrotropical (about 45 species) Regions. The bulk of the species (about 77% of the world fauna) are found in the tropics of the Old World.

Taxonomic Note. The taxonomy of the species of the *quadriceps* group is based on Stephen W. Nichols' unpublished manuscript entitled "A provisional key to the North American species of the *Scarites subterraneus* group" as well as his thesis (Nichols 1988a).

[**quadriceps group**]

***Scarites lissopterus* Chaudoir, 1881**

Scarites quadriceps var. *lissopterus* Chaudoir, 1881: 93. Type locality: «Dallas [Dallas County], Texas» (original citation). Syntype(s) probably in MHNP.

Distribution. This species inhabits the Great Plains from south-central Kansas (Sedgwick County, MCZ) to the Rio Grande in Texas (Hidalgo and Cameron Counties, MCZ, USNM), west to western Texas (El Paso County, USNM), including southeastern and central New Mexico (Chaves County, CMNH; Ellis et al. 2001: 16), east to northeastern Louisiana (Franklin and Tensas Parishes, Igor M. Sokolov pers. comm. 2009). The records from "Wisconsin" and "Iowa" (Bousquet and Larochelle 1993: 96) are likely in error.

Records. USA: KS, LA, NM, OK, TX

Note. Bänninger (1938: 152) regarded this taxon as a subspecies of *S. subterraneus* Fabricius.

***Scarites quadriceps* Chaudoir, 1843**

Scarites quadriceps Chaudoir, 1843b: 729. Type locality: «Amérique septentrionale» (original citation). Syntype(s) in MHNP.

Scarites substriatus Haldeman, 1844: 54. Type locality not stated. Syntype(s) possibly in MCZ. Synonymy established by LeConte (1846b: 210). Note. Two specimens in collection LeConte (MCZ), labeled "[orange disc] / Scarites substriatus Hald. quadriceps Chaud. distinctus Hald. [handwritten]" and "[orange disc] / substriatus 2 [handwritten]," could be syntypes of *S. substriatus* and / or *S. distinctus*.

Scarites distinctus Haldeman, 1844: 54. Type locality: «Georgia?» (original citation). Syntype(s) possibly in MCZ. Synonymy established by LeConte (1846b: 210).

Scarites intermedius LeConte, 1845a: 201. Type locality: «provinciis occidentalibus» (original citation). Syntype(s) in MCZ [# 675]. Synonymy established, under the name *S. distinctus* Haldeman, by LeConte (1863b: 3).

Scarites ephialtus LeConte, 1845a: 201. Type locality: «provinciis Australibus» (original citation). Syntype(s) in MCZ [# 676]. Synonymy established, under the name *S. intermedius* LeConte, by Melsheimer (1853: 7).

Scarites affinis LeConte, 1845a: 201. Type locality: United States of America (inferred from title of the paper). Syntype(s) in MCZ [# 674]. Synonymy established, under the name *S. vicinus* Chaudoir, by LeConte (1846b: 211).

Distribution. This species ranges along the Coastal Plain from New Jersey (Smith 1890: 74, as *S. subterraneus* var. *substriatus*; CNC) to southern Florida (Nichols 1988b: Fig. 5-7; Peck and Thomas 1998: 17), west to southeastern Texas (Jefferson County, USNM). Several records (i.e., AR, IA, IL, IN, KS, KY, MI, MN, MO, OH, OK, ON, PA, SD, TN, WI) listed in Bousquet and Larochelle (1993: 97) refer to other species, particularly *S. vicinus* Chaudoir.
Records. USA: AL, FL, GA, LA, MD, MS, NC, NJ, SC, TX

Scarites vicinus Chaudoir, 1843

Scarites vicinus Chaudoir, 1843b: 728. Type locality: «environs de la Nouvelle Orléans [Louisiana]» (original citation). Syntype(s) in MHNP.

Distribution. This species ranges from southern Ontario (CNC) to eastern North Dakota (Tinerella 2003: 635 as *S. quadriceps*), south to northeastern Texas (Cass County, USNM) and northern Alabama (Madison County, USNM).
Records. CAN: ON **USA**: AL, AR, IA, IL, IN, KS, KY, LA, MN, MO, MS, ND, NE, OH, OK, TN, TX, WI

[**subterraneus group**]

Scarites marinus Nichols, 1986

Scarites marinus Nichols, 1986: 258. Type locality: «Big Pine Key, Monroe Co[unty], Florida» (original citation). Holotype (♀) in CUIC [# 6891].

Distribution. This species is known from coastal Florida, including the Keys (Peck and Thomas 1998: 17), the Bahamas, Cuba, and the Yucatán Peninsula in southern Mexico [see Nichols 1986: Fig. 9]. One old specimen simply labeled from Louisiana is known (Nichols 1986: 261).
Records. USA: FL [LA] – Bahamas, Cuba, Mexico

Scarites ocalensis Nichols, 1986

Scarites ocalensis Nichols, 1986: 261. Type locality: «Jacksonville, Duval Co[unty], Florida» (original citation). Holotype (♂) in CUIC [# 6890].

Distribution. This species is endemic to the Florida Peninsula north of Lake Okeechobee [see Nichols 1986: Fig. 10].
Records. USA: FL

Scarites stenops Bousquet and Skelley, 2010

Scarites stenops Bousquet and Skelley, 2010: 46. Type locality: «4.0 mi[les] S[outh] W[est] Archer on Rt-24, Levy Co[unty], Florida» (original citation). Holotype (♂) in FSCA.

Distribution. This species is known only from the holotype.
Records. USA: FL

Scarites subterraneus Fabricius, 1775

Scarites subterraneus Fabricius, 1775: 249. Type locality: «P[oin]t Pelee, Ont[ario]» (neotype label). Neotype (♂), designated by Nichols (1985a: 1214), in CNC [# 20654]. Note. "America" was the area originally listed by Fabricius (1775: 249).

Carabus interruptus Herbst, 1784: 133. Type locality: «Ostindien» (original citation), which is incorrect. Syntype(s) location unknown (possibly in ZMHB). Synonymy established by Fabricius (1801: 124).

Scarites subterreus Bonelli, 1813: 466. Type locality: «Amérique septentrionale» (original citation). Syntype(s) location unknown. Synonymy established by Chaudoir (1881: 94).

Scarites beckwithii Stephens, 1827: 37. Type locality: «near Dover [and] Yorkshire coast [United Kingdom]» (original citation). Syntype(s) [3 originally cited] in BMNH. Synonymy established with doubt by Chaudoir (1855: 104), confirmed by Nichols (1988a: 48).

Scarites denticollis Chaudoir, 1843b: 729. Type locality: «Nouvelle Orléans [Orleans Parish, Louisiana]» (original citation). Syntype(s) in MHNP. Synonymy established by Chaudoir (1881: 94), confirmed by Nichols (1988a: 48).

Scarites patruelis LeConte, 1845a: 201. Type locality: «Georgia» (original citation). Syntype(s) in MCZ [# 673]. Synonymy established with doubt, under the name *S. denticollis* Chaudoir, by Chaudoir (1855: 104).

Scarites californicus LeConte, 1852a: 198. Type locality: «ad San Diego [San Diego County, California]» (original citation). Syntype(s) [2 originally cited] in MCZ [# 672]. Synonymy established by Bousquet and Larochelle (1993: 97) based on Nichols (1988a: 49) unpublished thesis.

Scarites texanus Chaudoir, 1881: 94. Type locality: «Texas et dans le Yucatan (?)» (original citation). Syntype(s) in MHNP (Nichols 1988a: 51). Synonymy established by Nichols (in Bousquet and Skelley 2010: 47).

Scarites durangoensis Bates, 1891a: 232. Type locality: «Villa Lerdo in Durango [Mexico]» (original citation). Syntype(s) probably in BMNH. Synonymy established, under the name *S. californicus* LeConte, by Bänninger (1933: 119).

Distribution. This species is found from southeastern New Hampshire (Rockingham and Strafford Counties, Donald S. Chandler pers. comm. 2008) to eastern North Dakota (Cass County, Donald P. Schwert pers. comm. 1989), including southern Ontario (Lindroth 1961a: 129), south to the Yucatán Peninsula (Nichols 1988a: 52), the

Florida Keys (Peck and Thomas 1998: 17), and Cuba (Darlington 1934: 67; Nichols 1988b: Fig. 5-8), west along the southwest to southwestern California (LeConte, 1852a: 198, as *S. californicus*) and Baja California (Horn 1894: 307).
Records. CAN: ON **USA**: AL, AR, AZ, CA, CT, CO, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NM, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, WV – Cuba, Mexico
Note. Bänninger (1938: 151) retained *S. patruelis* LeConte, *S. californicus* LeConte, and *S. texanus* Chaudoir as valid subspecies of *S. subterraneus*. All three names are listed in synonymy with *S. subterraneus* by Nichols (1988a: 49).

Tribe Clivinini Rafinesque, 1815

Clivinidia Rafinesque, 1815: 109. Type genus: *Clivina* Latreille, 1802.

Diversity. Worldwide, with about 820 species (Lorenz 2005: 141-150) arrayed provisionally in three subtribes, Forcipatorina (25 Neotropical species), Ardistomina (about 90 species), and Clivinina (about 705 species). The last two subtribes are represented in North America. The Nearctic fauna includes 57 species (about 7% of the world fauna).

Subtribe Clivinina Rafinesque, 1815

Clivinidia Rafinesque, 1815: 109. Type genus: *Clivina* Latreille, 1802.

Diversity. Worldwide, with about 705 species. The Northern Hemisphere is represented by about 170 species (roughly 24% of the world fauna) and North America by 52 species (about 7% of the world fauna).

Genus *Clivina* Latreille, 1802

Clivina Latreille, 1802: 96. Type species: *Scarites arenarius* Fabricius, 1775 (= *Tenebrio fossor* Linnaeus, 1758) by monotypy. Etymology. From the Greek *clivina* (kind of bird in Pliny the Elder) [feminine].

Diversity. Worldwide, with about 375 species described (Lorenz 2005: 141-145) arrayed in nine subgenera: *Antroforceps*, *Clivina s.str.*, *Cliviniella* Kult (four Afrotropical species), *Dacca* Putzeys (one Oriental species), *Eoclivina* Kult (eight Indo-African species), *Physoclivina* Kult (one Afrotropical species), *Reichardtula* Whitehead, *Leucocara*, and *Semiclivina*. Seventeen species, three of them adventive, are found in the boreal (marginal), temperate, and subtropical areas of North America.

Subgenus *Semiclivina* Kult, 1947

Semiclivina Kult, 1947: 31. Type species: *Clivina dentipes* Dejean, 1825 by original designation. Etymology. From the Latin prefix *semi-* (half) and the generic name *Clivina* [*q.v.*] [feminine].

Diversity. Western Hemisphere, with at least 30 species in the Nearctic (two species, one of them adventive) and Neotropical (at least 30 species) Regions. One species, possibly adventive, is known from the suburbs of Sydney, Australia (Baehr 2008: 23-25).
Identification. Nichols (1985b: 380) discussed the structural differences between the two species found in North America.
Taxonomic Note. This subgenus as defined by Kult (1947: 31) includes the species of groups 19 (mistakenly reported as group 29 by Kult) and 24 of Putzeys (1867b: 145, 166-178). Recently Dostal (2011) listed this taxon as a distinct genus and described a new subgenus, *Uroclivina* Dostal, for the species of *Semiclivina* with a peculiar tubercle behind the posterior edge of the eye.

Clivina dentipes Dejean, 1825

Clivina dentipes Dejean, 1825: 415. Type locality: «île de Cuba» (original citation). Holotype [by monotypy] location unknown (possibly lost according to Lindroth 1955b: 13 and Nichols 1988a: 160).

Clivina fissipes Putzeys, 1846: 89. Type locality: «Texas» (original citation). Holotype [by monotypy] in UMO (Nichols 1988a: 160). Synonymy established, under the name *C. corvina* Putzeys, by Melsheimer (1853: 8), confirmed by Nichols (1988a: 160).

Clivina corvina Putzeys, 1846: 92. Type locality: «Nouvelle Orléans [Orleans Parish, Louisiana]» (original citation). Syntype(s) [2 originally cited] probably in MHNP (collection Chaudoir). Synonymy established by LeConte (1879a: 33).

Clivina confusa LeConte, 1852a: 198. Type locality: «ad fluminis Colorado ripas» (original citation). Three syntypes in MCZ [# 5468]. Synonymy established, under the name *C. corvina* Putzeys, by Melsheimer (1853: 8).

Clivina georgiana LeConte, 1857b: 81. Type locality: Georgia (inferred from the species name). Syntype(s) location unknown (probably in MCZ). Synonymy established by Putzeys (1867b: 173).

Distribution. The range of this species extends from Connecticut (Krinsky and Oliver 2001: 44) to eastern South Dakota (Kirk and Balsbaugh 1975: 16), including southernmost Ontario (Bousquet 1987a: 119), south to southern Texas (Zapeta, Kleberg, and Gonzales Counties, CMNH; Leng 1915: 570) and southern Florida (Peck and Thomas 1998: 17), west along the south to the Colorado River drainage in San Bernardino County, California (Fall 1901a: 41); also recorded from Cuba (Dejean 1825: 415; Jacquelin du Val 1857: 15), Jamaica (Nichols 1988b: Fig. 5-14), and Mexico as far south as Oaxaca (Erwin 2011b: 169). One old specimen labeled "Mass" is known (MCZ).
Records. CAN: ON **USA**: AL, AR, AZ, CA, CO, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MD, MI, MO, MS, NC, NE, NJ, NM, NY, OH, OK, PA, SC, SD, TN, TX, VA, WI, WV [MA] – Cuba, Jamaica, Mexico

Clivina vespertina Putzeys, 1867

Clivina vespertina Putzeys, 1867b: 176. Type locality: «Montevideo [Uruguay]» (original citation). Lectotype, designated by Nichols (1985b: 380), in MHNP.

Distribution. This species is native to South America and is adventive in North America where it is known from southeastern United States (Nichols 1985b: 380). The first inventoried specimen collected on this continent was found in Mobile, Alabama in 1948 (Nichols 1985b: 380).
Records. USA: AL, LA, MS – **Adventive**

Subgenus *Clivina* Latreille, 1802

Clivina Latreille, 1802: 96. Type species: *Scarites arenarius* Fabricius, 1775 (= *Tenebrio fossor* Linnaeus, 1758) by monotypy.

Diversity. Worldwide, with over 250 species described. The number of species cannot be assessed at this time since many species included by Lorenz (2005: 141-145) in this subgenus belong to *Semiclivina*, *Reichardtula*, and *Leucocara*. The Nearctic Region has only ten described species and two of them are adventive.
Identification. Bousquet (1997c: 347-348) published a key to all North American species and two unnamed ones. One species (*C. choatei*) was described subsequently.

Clivina choatei Bousquet and Skelley, 2012

Clivina choatei Bousquet and Skelley, 2012: 44. Type locality: «4.0 mi SW Archer, Levy Co[unty], Florida» (original citation). Holotype (♂) in FSCA.

Distribution. This species is known from Levy and Gilchrist Counties in northern Florida.
Records. USA: FL

Clivina collaris (Herbst, 1784)

Carabus collaris Herbst, 1784: 141. Type locality: «Berlin [Germany]» (original citation). Syntype(s) location unknown (possibly in ZMHB).
Clivina elongata Randall, 1838b: 34 [primary homonym of *Clivina elongata* Ahrens, 1830]. Type locality: «Boston [Suffolk County], Mass[achusetts]» (original citation). Syntype(s) lost. Synonymy established by LeConte (1879a: 34).
Clivina randalli LeConte, 1857b: 82. Replacement name for *Clivina elongata* Randall, 1838.

Distribution. This European species is adventive in North America where is it known from southern Quebec (Larochelle 1975: 78) to southwestern Ohio (Dury 1879: 162) and Connecticut (Krinsky and Oliver 2001: 44), from southern Manitoba (Pollock 1991b: 298), from British Columbia (Lindroth 1961a: 162), and from Washington (Hatch 1953: 66). The first inventoried specimen collected on this continent was

found prior to 1838 (Randall 1838b: 34, as *C. elongata*) in Massachusetts. The record from northeastern Kansas (Popenoe 1877: 22, as *C. elongata*) is probably in error.
Records. CAN: BC, MB, ON, QC **USA**: CT, MA, ME, NH, OH, WA – **Adventive**

Clivina fossor fossor (Linnaeus, 1758)

Tenebrio fossor Linnaeus, 1758: 417. Type locality: «Upsalia [= Uppsala, Sweden]» (original citation). One possible syntype in LSL (Lindroth 1957b: 338).

Distribution. This Palaearctic subspecies is adventive in North America where it is found in the east from Newfoundland (Lindroth 1955a: 45) to northern Minnesota (Petrice et al. 2002: 9), south to northern Pennsylvania (Bradford County, CMNH) and in the west from southwestern British Columbia (Bousquet 1987a: 119) to south-central Saskatchewan (Ronald R. Hooper pers. comm. 2002), south to northwestern Wyoming (Teton County, Foster F. Purrington pers. comm. 2010) and southern Oregon (Nelson and Reynolds 1987: 12). The first inventoried specimen collected in the east was found in 1915 in the Montreal region (Lindroth 1961a: 161) and in the west in 1937 in western Washington (Hatch 1949b: 118). The records from Georgia (Fattig 1949: 14) and Alabama (Löding 1945: 12) are probably in error; those from "Ohio" (Hamilton 1889b: 93), "Illinois," "Indiana," and "Idaho" (Bousquet and Larochelle 1993: 102) need confirmation.
Records. FRA: PM **CAN**: AB, BC, NB, NF, NS (CBI), ON, PE, QC, SK **USA**: CT, MA, ME, MI, MN, NH, NY, OR, PA, VT, WA, WI, WY [ID, IL, IN, OH] – **Adventive**
Note. The subspecies *C. fossor sachalinica* Nakane is found in the Far East and Japan.

Clivina impressefrons LeConte, 1844

Clivina impressefrons LeConte, 1844: 50. Type locality: «New York» (original citation), herein restricted to Olivebridge, Ulster County (CMNH). Two syntypes in MCZ [# 5469]. Note. The specimen with the type label in the LeConte collection is not a syntype because it bears an orange disc (= southern states). Two specimens with pink discs (= middle states) are possible syntypes. The spelling *impressifrons* is an incorrect subsequent spelling, introduced by LeConte (1846b: 213), not currently in prevailing usage.

Distribution. The range of this species, also known under the vernacular name "slender seed-corn beetle," extends from the Saint Lawrence Plain in southern Quebec (Lindroth 1961a: 164) to northern Utah (Knowlton and Wood 1947: 94; Davis and Utah Counties, USNM), south to southern Texas (Hlavac 1967: 31; Johnson 1978: 67) and northern Georgia (Fattig 1949: 14; Hlavac 1967: 30). At least one specimen simply labeled from Florida is known (Hlavac 1967: 30). The record from Idaho (Anonymous 1960: 642) needs confirmation.
Records. CAN: ON, QC **USA**: AL, AR, CO, CT, DC, DE, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, NE, NH, NJ, NM, NY, OH, OK, PA, RI, SC, SD, TN, TX, UT, VA, VT, WI, WV [FL, ID]

Clivina myops Bousquet, 1997

Clivina myops Bousquet, 1997c: 343. Type locality: «Raleigh [Wake County], N[orth] C[arolina]» (original citation). Holotype (♂) in CNC [# 22215].

Distribution. This species is known from the holotype collected in east-central North Carolina and six old specimens labeled "D C," "Md," and "Ill." (CMNH).
Records. USA: DC, IL, MD, NC

Clivina oregona Fall, 1922

Clivina oregona Fall, 1922b: 164. Type locality: «Corvallis [Benton County], Oregon» (original citation). Holotype in MCZ [# 23857].

Distribution. This species occurs from southern British Columbia (Lindroth 1961a: 163) and northern Idaho (Hatch 1953: 66) south to central Oregon (Fall 1922b: 164; Benton County, MCZ).
Records. CAN: BC **USA**: ID, OR, WA
Note. Hlavac (1967: 27) believed this species was morphologically distinct enough to propose a new subgenus, *Betaclivina*, for it. His thesis being unpublished, the name is unavailable.

Clivina pallida Say, 1823

Clivina pallida Say, 1823a: 22. Type locality: «S[outh] C[arolina]» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 334), in MCZ [# 33076]. Note. «Chinquoteage island, coast of Virginia» was the area originally cited by Say (1823a: 22).

Clivina rufescens Dejean, 1831: 504. Type locality: «Amérique septentrionale» (original citation). Syntype(s) location unknown (see Lindroth 1955b: 13 and Lindroth and Freitag 1969: 334). Synonymy established by LeConte (1846b: 214).

Distribution. This species ranges from southern Maine (Nelson 1995: 71) to "Illinois" (Hlavac 1967: 23), including southeastern Michigan (Saint Clair and Wayne Counties, CMNH) and west-central Indiana (Montgomery County, R. Michael Brattain collection), south to north-central Texas (Knaus 1905b: 348), southeastern Louisiana (Tangipahoa Parish, USNM) and the Florida Panhandle (Peck and Thomas 1998: 17).
Records. USA: AL, AR, DC, FL, GA, IL, IN, LA, MD, ME, MI, MS, NC, NJ, NY, OH, PA, SC, TN, TX, VA

Clivina planicollis LeConte, 1857

Clivina planicollis LeConte, 1857b: 81. Type locality: «South Carolina» (original citation). Lectotype (♂), designated by Whitehead (1974: 454), in MCZ [# 5471]. Note. LeConte (1857b: 81, 82) originally used two spellings for the name of this species, *planicollis* (page 81) and *planicolis* (page 82). Because LeConte (1863b: 4)

subsequently used the spelling *planicollis*, this spelling is the correct original spelling (ICZN 1999: Article 24.2.4).

Clivina texana LeConte, 1863c: 4. Type locality: «Texas» (original citation), restricted to «Bentsen State Park, Mission, Hidalgo County» by Whitehead (1974: 454). Lectotype (♂), designated by Whitehead (1974: 454), in MCZ [# 5470]. Synonymy established by Whitehead (1974: 454).

Distribution. This species ranges from South Carolina (LeConte 1857b: 82; Ciegler 2000: 42) and northern Georgia (Fattig 1949: 14; Floyd County, MCZ) west to southwestern Texas (Dajoz 2004: 117; El Paso County, MCZ), north along the Mississippi River drainage to west-central Indiana (Tippecanoe County, CMNH) and east-central Kansas (Dickinson and Douglas Counties, MCZ); also recorded from Jalisco, Nayarit, Tamaulipas (Erwin 2011b: 183) and Veracruz in Mexico (Bates 1881: 32). The record from the District of Columbia (Ulke 1902: 6) needs confirmation.
Records. USA: AL, AR, GA, IN, KS, LA, MS, OK, SC, TX [DC] – Mexico
Note. Hlavac (1967: 19) believed this species was morphologically distinct enough to propose a new subgenus, *Alphaclivina*, for it. His thesis being unpublished, the name is unavailable.

Clivina punctigera LeConte, 1857

Clivina punctigera LeConte, 1857b: 81. Type locality: «South Carolina» (original citation). One syntype in MCZ [# 5473].

Distribution. This species ranges from southern Missouri (Hlavac 1967: 32; Ripley County, CMNH) to central Virginia (Nelson County, USNM) and the District of Columbia (Ulke 1902: 37), including southern Ohio (Washington County, UASM; Wright and Whitehouse 1941: 70), south to the Florida Panhandle (Jackson County, CNC), southwestern Mississippi (Copiah County, MCZ), and southern Texas (Zapata, San Patricio and Dimmit Counties, CMNH, UASM).
Records. USA: AL, AR, DC, IL, IN, FL, GA, LA, MO, MS, OH, OK, SC, TN, TX, VA, WV

Clivina punctulata LeConte, 1852

Clivina punctulata LeConte, 1852a: 198. Type locality: «San Jose [Santa Clara County, California]» (original citation). Two syntypes in MCZ [# 5472].

Distribution. This species is found in California from Siskiyou County (CAS) to San Diego County (Moore 1937: 5).
Records. USA: CA

Subgenus *Antroforceps* Barr, 1967

Antroforceps Barr, 1967a: 66. Type species: *Antroforceps bolivari* Barr, 1967 by original designation. Etymology. Probably from the Greek *antron* (cave) and part of the

name Forcipatorina, a scaritine subtribe in which Barr placed his new taxon [masculine].

Diversity. Four species in the temperate regions of eastern North America (three species) and caves in the Sierra de Guatemala mountains in northeastern Mexico (one species, *C. bolivari* Barr).
Identification. Ball (2001) revised the species and provided a key for their identification. One species (*C. alabama*) was described subsequently.
Taxonomic Note. In a cladistic analysis of the Western Hemisphere subgenera proposed by Ball (2001: Fig. 9), this taxon turn out as the sister-group to {*Semiclivina* + *Leucocara* (under the name *Reichardtula*)}.

Clivina alabama Bousquet, 2012

Clivina alabama Bousquet [in Bousquet and Skelley], 2012: 47. Type locality: «0.5 mi S[outh] Highland Lake, Blount Co[unty], Al[abama]» (original citation). Holotype in CNC [# 24034].

Distribution. This species is known only from two specimens collected in Blount County, north-central Alabama.
Records. USA: AL

Clivina rubicunda LeConte, 1857

Clivina rubicunda LeConte, 1857b: 81. Type locality: «Louisiana» (original citation). Two syntypes in MCZ [# 5474].

Distribution. This species is confined to eastern United States ranging from Connecticut (Krinsky and Oliver 2001: 46) to southeastern Kansas (Knaus 1885: 57), including eastern Iowa (Ball 2001: 147), south to “Louisiana” (LeConte 1857b: 81) and central Florida (Peck and Thomas 1998: 17).
Records. USA: AL, CT, DC, FL, GA, IA, IL, IN, KS, LA, MD, MI, MS, NJ, NY, OH, PA, SC, VA

Clivina sasajii Ball, 2001

Clivina sasajii Ball, 2001: 147. Type locality: «Latimer County, Oklahoma» (original citation). Holotype (♂) in TAMU.

Distribution. This species is known only from eastern Oklahoma (Ball 2001: 147).
Records. USA: OK

Subgenus *Leucocara* Bousquet, 2009

Leucocara Bousquet, 2009: 43. Type species: *Clivina americana* Dejean, 1831 by original designation. Etymology (original). From the Greek *leukos* (white) and *kara*

(head) [feminine]. The name was proposed in honor of Donald Robert Whitehead [1938-1990], taxonomist at the United States Department of Agriculture who had an interest in Clivinini in general.

Diversity. This subgenus includes 72 species in the Nearctic (5 species), Palaearctic (6 species), Oriental (18 species) and Afrotropical (43 species) Regions (see Bousquet 2009: Table 2).

Identification. There is no key for the identification of the North American species of this subgenus. Nichols (1988a: 147-153) covered two species (*C. acuducta* and *C. americana*) in his thesis. A revision of the group is needed.

Taxonomic Note. Until recently, the species of this subgenus were included in the subgenus *Reichardtula* Whitehead, a replacement name for *Eupalamus* Schmidt-Göbel.

Clivina acuducta Haldeman, 1843

Clivina acuducta Haldeman, 1843b: 299. Type locality: «P[ennsylvani]a and Ala[bama]» (original citation), restricted to «S[outh]E[astern] Penns[ylvania]» by Lindroth (1961a: 160). One possible syntype, labeled "[orange disc] / C. americana Dej. acuducta Hald. [handwritten]," in MCZ (collection LeConte).

Clivina cordata Putzeys, 1846: 86. Type locality: «Nouvelle Orléans [Orleans Parish, Louisiana]» (original citation). Holotype [by monotypy] in MHNP (collection Chaudoir). **New synonymy** based on Nichols (1988a: 148) unpublished thesis.

Clivina ludoviciana Putzeys, 1867b: 138. Type locality: «Louisiane» (original citation). Syntype(s) [5 originally cited] in MHNP (collection Chaudoir). Synonymy established by LeConte (1879a: 34).

Distribution. This species ranges from Massachusetts (Norfolk County, CMNH) to southwestern Wisconsin (Grant County, CMNH), south to eastern Texas (Riley 2011; San Augustine County, CMNH) and southern Florida (Nichols 1988a: 150).

Records. USA: AL, AR, FL, GA, IL, IN, KY, LA, MA, MD, MO, MS, NC, NJ, NY, OH, PA, SC, TN, TX, VA, WI, WV

Note. *Clivina acuducta* has been listed in synonymy with *C. americana* in most catalogues (Leng 1920: 48; Erwin et al. 1977: 4.12; Bousquet and Larochelle 1993: 103) but Nichols (1988a: 148) treated it as a valid species.

Clivina americana Dejean, 1831

Clivina americana Dejean, 1831: 503. Type locality: «Amérique septentrionale» (original citation), restricted to «Boston [Suffolk County], Mass[achusetts]» by Lindroth (1961a: 160). Seven possible syntypes in MHNP (Lindroth 1955b: 13).

Clivina analis Putzeys, 1846: 81. Type locality: «Texas (original citation). Holotype [by monotypy] in MHNP (collection Chaudoir). Synonymy established by Putzeys (1867b: 138), confirmed by Nichols (1988a: 151).

Clivina morula LeConte, 1857b: 81. Type locality: United States of America (inferred from title of the paper). Syntype(s) in MCZ [# 5476]. Synonymy established by Nichols (in Bousquet 2009: 44). Note. This name has been recorded by mistake as *Clivina merula* LeConte by Putzeys (1867b: 192).

Distribution. This species ranges from Nova Scotia (Lindroth 1954c: 301) to southeastern North Dakota (Tinerella 2003: 635), south to western (Dajoz 2007: 23) and southern (Gonzales County, MCZ) Texas, southern Louisiana (Hine 1906: 76, as *C. analis*; Calcasieu and Orleans Parishes, MCZ), and southern Florida including the Keys (Peck and Thomas 1998: 17); also recorded from the Bahamas (Nichols 1988a: 153).
Records. CAN: NB, NS, ON, QC **USA**: AL, AR, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, WV – Bahamas

Clivina californica Van Dyke, 1925

Clivina californica Van Dyke, 1925: 124. Type locality: «shores of Clear Lake, Lake County, California» (original citation). Holotype in CAS [# 1631].

Distribution. This species is known only from the type locality.
Records. USA: CA

Clivina morio Dejean, 1831

Clivina morio Dejean, 1831: 506. Type locality: «Amérique septentrionale» (original citation), herein restricted to 4.2 miles northeast of Abita Springs, Saint Tammany Parish, Louisiana (LSAM). Holotype [by monotypy] in MHNP.

Distribution. This species is known from Harrison County in southeastern Mississippi (Drew A. Hildebrandt pers. comm. 2010), Saint Tammany Parish in southeastern Louisiana, Trinity County in eastern Texas (Bousquet 2009: 44), and LeFlore County in eastern Oklahoma (Matthew Gimmel collection). The records from southeastern New York (Leng and Beutenmüller 1893: 135), Lancaster County in Pennsylvania (Rathvon 1869: 524), northwestern Georgia (Fattig 1949: 15), and southwestern Florida (Leng 1915: 571) are in error (see Bousquet 2006c: 3).
Records. USA: LA, MS, OK, TX

Clivina rufa LeConte, 1857

Clivina rufa LeConte, 1857b: 81. Type locality: «Illinois» (original citation). One syntype in MCZ [# 5475].

Distribution. This species ranges from southeastern New York (Notman 1928: 213) to eastern South Dakota (Kirk and Balsbaugh 1975: 17), south to eastern Oklahoma (Latimer County, UASM), “Louisiana” (LeConte 1879a: 34), and southern Florida

(Peck and Thomas 1998: 17). The record from the lower peninsula of Michigan (Hubbard and Schwarz 1878: 644) needs confirmation.
Records. USA: AL, AR, DC, DE, FL, GA, IA, IL, IN, KS, LA, NC, NJ, NY, OK, SD [MI]

Genus *Paraclivina* Kult, 1947

Paraclivina Kult, 1947: 31. Type species: *Clivina burmeisteri* Putzeys, 1866 by original designation. Etymology. From the Greek *para* (near, next to) and the generic name *Clivina* [*q.v.*] [feminine].

Diversity. At least 33 species (see Bousquet 2009: table 1) in temperate, subtropical, and tropical areas of the Nearctic (nine species) and Neotropical (29 species) Regions. Kult's (1947: 31) statement that *Paraclivina* is represented by two species in Australia is apparently erroneous (see Baehr 2008: 23).
Identification. There is no revision of the North American species of this genus. The last key published, that of LeConte (1879a), included seven of the eight species recorded at the time (*P. sulcipennis* was omitted). Since then, one tropical species (*Paraclivina fasciata*) has been recovered in Florida but it is unclear if it is established in the area. Putzeys (1846 and 1867b) included descriptions of all the North American species currently recognized. In his 1867 work, these species were listed in groups 21 (most species) and 22 (*P. fasciata* and *P. ferrea*) of the genus *Clivina*. A revision of the genus is needed.
Taxonomic Note. This taxon is very likely monophyletic, characterized by the synapomorphic condition of the lateral bead of the pronotum uninterrupted and removed from the base. The genus *Clivina* is markedly speciose and inadequately understood both taxonomically and phylogenetically. In these circumstances, I believe it is more convenient to isolate this taxon as a distinct genus even if eventually it may prove to be nested within *Clivina*. In a cladistic analysis of the five Western Hemisphere subgenera of *Clivina* (*sensu auctorum*) conducted by Ball (2001: Fig. 9), this taxon turn out as the sister-group to the remaining subgenera.

Paraclivina bipustulata (Fabricius, 1798)

Scarites 2pustulatus Fabricius, 1798: 44. Type locality: «America boreali» (original citation). Three syntypes in ZMUC (Zimsen 1964: 41).
Scarites quadrimaculatus Palisot de Beauvois, 1811: 107. Type locality: «Caroline du sud» (original citation). Syntype(s) probably lost. Synonymy established by Say (1823a: 21).

Distribution. The range of this species extends from Massachusetts (Purrington 1997: 96) to eastern South Dakota (Kirk and Balsbaugh 1975: 17; French et al. 2004: 557), south to southeastern Texas (Snow 1906a: 141; Cameron County, MCZ) and southern Florida including the Keys (Peck and Thomas 1998: 17), west along the southwest to southern Arizona (Dajoz 2004: 116; Cochise and Pima Counties, UASM); also

recorded from several islands of the West Indies, Mexico, Honduras, and Nicaragua (Erwin 2011b: 162). The record from "New Hampshire" (Bousquet and Larochelle 1993: 103) needs confirmation.
Records. CAN: ON **USA**: AL, AR, AZ, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, NC, NE, NJ, NM, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, WI, WV [NH] – Cayman Islands, Cuba, Dominican Republic, Haiti, Jamaica, Mexico

Paraclivina convexa (LeConte, 1844)

Clivina convexus LeConte, 1844: 50. Type locality: «Georgia» (original citation). Two syntypes in MCZ [# 5478].
Clivina bisignata Putzeys, 1846: 102. Type locality: «Amérique boréale» (original citation). Holotype [by monotypy] probably in MHNP (collection Chaudoir). Synonymy established with doubt by LeConte (1857b: 82), accepted by Putzeys (1867b: 156).

Distribution. This species is known from Long Island, New York (Cooper 1935: 144) to east-central South Carolina (Ciegler 2000: 41) and "Georgia" (LeConte 1844: 50) and from "Louisiana" (LeConte 1879a: 34) and Cuba (Chevrolat 1863: 193, as *C. bisignata*). The records from "Arkansas" (Bousquet and Larochelle 1993: 103) and "Texas" (Leng and Beutenmüller 1893: 96) need confirmation.
Records. USA: GA, LA, NC, NJ, NY, SC, VA [AR, TX] – Cuba

Paraclivina fasciata (Putzeys, 1846)

Clivina fasciata Putzeys, 1846: 106. Type locality: «Merida, Yucatan» (original citation). Syntype(s) [5 originally cited] in UMO (Nichols 1988a: 135) and probably also MHNP.
Clivina klugii Putzeys, 1846: 106. Type locality: «Colombie; Cumana [Venezuela]» (original citation). Syntype(s) [2 originally cited] in MHNP (Nichols 1988a: 136). Synonymy established by Nichols (in Bousquet 2009: 38). Etymology. The specific name honors the German entomologist Johann Christoph Friedrich Klug [1775-1856], professor and eventually director of the Zoological Museum at the University in Berlin.
Clivina sculptifrons Putzeys, 1846: 107. Type locality: «Colombie» (original citation). Syntype(s) [3 originally cited] in MHNP (Nichols 1988a: 136). Synonymy established by Nichols (in Bousquet 2009: 38).
Dyschirius insularis Jacquelin du Val, 1857: 13. Type locality: Cuba (inferred from title of the book). Holotype [by monotypy] in MHNP. Synonymy established by Nichols (in Bousquet 2009: 38).
Clivina dilutipennis Putzeys, 1867b: 162. Type locality: «San Andres Tuxtla, Mexique» (original citation). Syntype(s) [4 originally cited] in MHNP (collection Chaudoir). Synonymy established by Nichols (in Bousquet 2009: 38).

Clivina dissimilis Blatchley, 1923: 15 [primary homonym of *Clivina dissimilis* Putzeys, 1846]. Type locality: «Dunedin [Pinellas County, Florida]» (original citation). Holotype [by monotypy] (♂) in PURC. Synonymy established by Erwin (2011b: 171).

Clivina floridae Csiki, 1927: 503. Replacement name for *Clivina dissimilis* Blatchley, 1923.

Distribution. This species has been reported from several islands of the West Indies and several countries from southern Mexico to South America (Erwin 2011b: 171). It is also known from one specimen, the holotype of *C. dissimilis* Blatchley, collected in Pinellas County, central Florida. The species is apparently adventive in the Philippines and the Marianas (Darlington 1970: 12).

Records. USA: FL – Bahamas, Brazil, Cayman Islands, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Honduras, Jamaica, Mexico, Panama, Puerto Rico, Saint Croix, Saint Thomas, Venezuela, Virgin Islands

Paraclivina ferrea (LeConte, 1857)

Clivina ferrea LeConte, 1857b: 81. Type locality: «Illinois; Catskill [New York]» (original citation). Two syntypes in MCZ [# 5477].

Distribution. This species occurs from southeastern New York (LeConte 1857b: 82) to southeastern South Dakota (Kirk and Balsbaugh 1975: 17), south to southern Texas (Wickham 1897: 103; Johnson 1978: 67) and northern Florida (Leon County, USNM), west along southern United States to southern California (Imperial, Riverside, and Kern Counties, CAS, USNM) and the Baja California Peninsula (Horn 1894: 307).

Records. USA: AL, AR, AZ, CA, CO, DC, FL, GA, IA, IL, IN, KS, LA, MD, MO, MS, NC, NJ, NM, NY, OH, OK, PA, SC, SD, TN, TX, VA, WI – Mexico

Note. This species has been recorded by mistake as *Clivina ferruginea* LeConte by Horn (1872c: 384).

Paraclivina marginipennis (Putzeys, 1846)

Clivina marginipennis Putzeys, 1846: 101. Type locality: «Nouvelle Orléans [Orleans Parish, Louisiana] et Yucatan [Mexico]; Guadeloupe» (original citation), restricted to «Louisiane» by Putzeys (1867b: 149). Syntype(s) [4 originally cited but restricted to one by Putzeys (1867b: 149)] in MHNP (collection Chaudoir).

Distribution. This species is known from northeastern Mississippi (Tishomingo County, Drew A. Hildebrandt pers. comm. 2009), southeastern Louisiana (Putzeys 1867b: 149), and some islands of the West Indies (Nichols 1988a: 143; Peck 2009b: 5).

Records. USA: LA, MS – Dominica, Dominican Republic, Guadeloupe, Puerto Rico, Saint Lucia

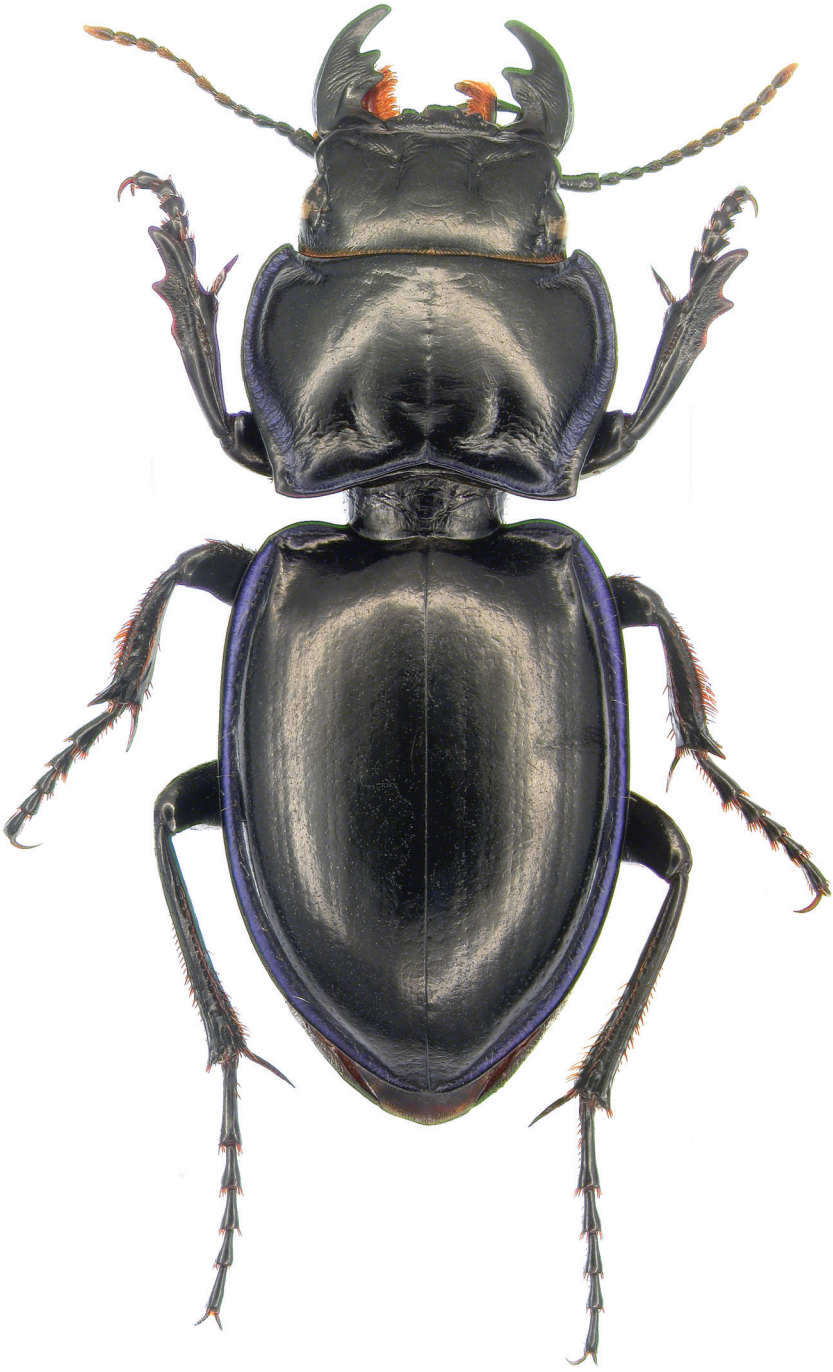

Figure 16. *Pasimachus elongatus* LeConte. Because of its large size and robust shape, this species is one of the most conspicuous carabid elements of the grassland regions of North America. It belongs to a genus which is endemic to North and Middle America. Although not firmly established, the sister taxon to *Pasimachus* could be *Mouhotia*, a genus of massive and handsome species endemic to southeast Asia.

***Paraclivina postica* (LeConte, 1846)**

Clivina postica LeConte, 1846b: 213. Type locality: «ad Rocky Mountains» (original citation). Syntype(s) in MCZ [# 5479].

Distribution. This species ranges from southwestern Ohio (Dury 1882: 218) to southeastern South Dakota (Kirk and Balsbaugh 1975: 17), including southern Wisconsin (Messer 2010: 35), south to east-central Texas (Riley 2011), southeastern Louisiana (Jefferson Parish, MCZ; Allen 1965: 62; LeConte 1879a: 34), southern Mississippi (Hancock County, Drew A. Hildebrandt pers. comm. 2008), central Alabama (Shelby County, CMNH), and southwestern South Carolina (Ciegler 2000: 42).
Records. USA: AR, AL, GA, IA, IL, IN, KS, LA, MO, MS, NE, OH, OK, SC, SD, TN, TX, WI

***Paraclivina stigmula* (Putzeys, 1846)**

Clivina stigmula Putzeys, 1846: 104. Type locality: «Texas» (original citation). Syntype(s) [2 originally cited] in MHNP (collection Chaudoir).

Distribution. This species is known for sure only from "Texas" (Putzeys 1846: 104; MCZ). The record from "Kansas" (Bousquet and Larochelle 1993: 104) needs confirmation.
Records. USA: TX [KS]

***Paraclivina striatopunctata* (Dejean, 1831)**

Clivina striatopunctata Dejean, 1831: 505. Type locality: «Amérique septentrionale» (original citation). Four possible syntypes in MHNP (Lindroth 1955b: 13).
Clivina picea Putzeys, 1846: 103. Type locality: «Louisiane» (original citation). Holotype [by monotypy] location unknown (possibly in UMO, collection Chevrolat). Synonymy established by Putzeys (1867b: 155).

Distribution. This species may be restricted to the Coastal Plain and Piedmont Plateau. It is known from Staten Island, New York (Leng 1915: 569) and New Jersey (Hamilton 1889a: 30; Leng and Beutenmüller 1893: 96) south to southern Florida (Peck and Thomas 1998: 17), west to south-central Texas (Bexar County, CMNH, USNM). The record from eastern Iowa (Wickham 1911b: 5) is probably in error. One specimen simply labeled from Tennessee (CMNH) is also known.
Records. USA: AL, DE, FL, GA, LA, MS, NJ, NY, SC, TX [TN]

***Paraclivina sulcipennis* (Putzeys, 1867)**

Clivina sulcipennis Putzeys, 1867b: 156. Type locality: «États-Unis du Sud» (original citation). Holotype [by monotypy] probably in IRSN.

Distribution. This species is known only from the Atlantic shore of Virginia (Hoffman et al. 2006: 18), southern North Carolina (Brunswick County, Ken Karns pers.

comm. 2009), southeastern South Carolina (Charleston County, USNM), Florida as far south as Collier County (USNM), and southwestern Alabama (Van Dyke 1925: 125; Baldwin County, MCZ).
Records. USA: AL, FL, NC, SC, VA

Genus *Schizogenius* Putzeys, 1846

Schizogenius Putzeys, 1846: 131. Type species: *Schizogenius strigicollis* Putzeys, 1846 designated by Desmarest (1851: 102). Etymology. From the Greek *schizo* (cleave, split) and *geneion* (chin, by extension mentum), alluding to the indented shape of the lateral lobes of the mentum ("*lobes lateraux* [du menton] *profondément échancrés, tellement que chacun d'eux semble partagé en deux ailes*") of the adult [masculine].

Diversity. Western Hemisphere, with 75 species in temperate, subtropical, and tropical areas of the Nearctic (24 species) and Neotropical (about 60 species) Regions arrayed in three subgenera: *Genioschizus* (10 species), *Listropus* Putzeys (eight Neotropical species), and *Schizogenius s.str.* (57 species). One species has been described by Baehr (1983) from the Fiji Islands in the Central Pacific Ocean based upon a single specimen. In my opinion, the specimen could be mislabeled and confirmation is needed.
Identification. Whitehead (1972) revised all the North American and some of the Neotropical species.

Subgenus *Genioschizus* Whitehead, 1972

Genioschizus Whitehead, 1972: 144. Type species: *Schizogenius crenulatus* LeConte, 1849 by original designation. Etymology (original). From the Greek *geneion* (chin, by extension mentum) and *schizo* (cleave, split); also an anagram of *Schizogenius* [*q.v.*] [masculine].

Diversity. Ten species in North America (one species) and Middle and South America (ten species).

Schizogenius crenulatus crenulatus LeConte, 1852

Schizogenius crenulatus LeConte, 1852a: 197. Type locality: «ad flumen Colorado» (original citation), restricted to «Colorado River opposite Yuma, Yuma County, Arizona» by Whitehead (1972: 150). Lectotype, designated by Whitehead (1972: 150), in MCZ [# 5480].

Distribution. This subspecies is found in southeastern California and Arizona south to southern Sinaloa and northern Nayarit [see Whitehead 1972: Fig. 74].
Records. USA: AZ, CA – Mexico
Note. The subspecies *S. crenulatus chiapatecus* Whitehead is found in Mexico and Honduras.

Subgenus *Schizogenius* Putzeys, 1846

Schizogenius Putzeys, 1846: 131. Type species: *Schizogenius strigicollis* Putzeys, 1846 designated by Desmarest (1851: 102).

Diversity. Fifty-seven species in the Nearctic (23 species) and Neotropical (45 species) Regions.

[**brevisetosus group**]

***Schizogenius brevisetosus* Whitehead, 1972**

Schizogenius brevisetosus Whitehead, 1972: 206. Type locality: «Sanderson [Terrell County], Tex[as]» (original citation). Holotype (♂) in CNC [# 12868].

Distribution. This species is found along the Colorado River in eastern New Mexico to the Rio Grande drainage system in central Texas and Coahuila [see Whitehead 1972: Fig. 146]; it is also recorded from southwestern Oklahoma (Kondratieff et al. 2005: 173).
Records. USA: NM, OK, TX – Mexico

[**depressus group**]

***Schizogenius depressus* LeConte, 1852**

Schizogenius depressus LeConte, 1852a: 197. Type locality: «ad flumen Colorado» (original citation). Lectotype (♂), designated by Whitehead (1972: 287), in MCZ [# 5843].

Distribution. This species ranges from the Okanagan Valley in southern British Columbia to northwestern South Dakota, south to the state of Mexico and southern California [see Whitehead 1972: Fig. 241].
Records. CAN: BC **USA**: AZ, CA (CHI), CO, ID, MT, NM, OR, SD, TX, UT, WA, WY – Mexico

***Schizogenius falli* Whitehead, 1972**

Schizogenius falli Whitehead, 1972: 281. Type locality: «4.8 mi[les] e[ast] Sabinas Hidalgo (800'), Rio Sabinas Hidalgo, Nuevo Leon, Mex[ico]» (original citation). Holotype (♂) in MCZ [# 31981]. Etymology. The specific name honors Henry Clinton Fall [1862-1939], a high school teacher in Chicago, Pomona, and Pasadena, and reputed coleopterist.

Distribution. The known range of this species extends from southern Illinois to southern California, south to Baja California Sur and Colima in Mexico [see Whitehead 1972: Fig. 240].
Records. USA: AR, AZ, CA, CO, IL, MO, NE, NM, OK, TX, UT – Mexico

Schizogenius litigiosus Fall, 1901

Schizogenius litigiosus Fall, 1901a: 210. Type locality: «middle and northern California» (original citation), restricted to «Sylvania [Sonoma County]» by Whitehead (1972: 268). Syntype(s) in MCZ [# 23858].

Distribution. This species ranges west of the Rocky Mountains from Vancouver Island to western Idaho, south to southern California [see Whitehead 1972: Fig. 237].
Records. CAN: BC (VCI) **USA**: CA, ID, NV, OR, WA

Schizogenius ochthocephalus Whitehead, 1972

Schizogenius ochthocephalus Whitehead, 1972: 285. Type locality: «Davis [Yolo County], Cal[ifornia]» (original citation). Holotype (♂) in UCD.

Distribution. This species is known only from a few localities in northern and central California [see Whitehead 1972: Fig. 240] and from San Bernardino County in the southeast (Dajoz 2007: 20).
Records. USA: CA

Schizogenius pygmaeus Van Dyke, 1925

Schizogenius pygmaeus Van Dyke, 1925: 125. Type locality: «shores of Clear Lake, Lake County, California» (original citation). Holotype in CAS [# 1632].

Schizogenius championi Kult, 1950a: 142. Type locality: «Pantaleon (700 ft.), Guatemala» (original citation). Holotype in BMNH. Synonymy established by Whitehead (1972: 270). Etymology. The specific name was proposed in honor of the British coleopterist George Charles Champion [1851-1927] who is best known for his contribution to the *Biologia Centrali-Americana.* Engaged by Godman and Salvin, the editors and publishers of the series, Champion collected in Guatemala, Panama, and Colombia between 1879 and 1883. He served as Secretary and Chief Assistant to the editors and contributed major sections to nine volumes of the series on the Heteroptera and Coleoptera.

Distribution. This widely distributed species ranges from northern California south through Arizona and western New Mexico to Colombia, including Baja California [see Whitehead 1972: Fig. 239].
Records. USA: AZ, CA, NM – Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama

Schizogenius scopaeus Whitehead, 1972

Schizogenius scopaeus Whitehead, 1972: 278. Type locality: «Limpia Canyon, 2 mi[les] n[orth] w[est] Fort Davis [Jeff Davis County], Texas» (original citation). Holotype (♂) in MCZ [# 31980].

Distribution. This species ranges from southern Missouri to southeastern Colorado south to Nuevo León and Tamaulipas [see Whitehead 1972: Fig. 238].
Records. USA: AR, CO, MO, OK, TX – Mexico

Schizogenius sulcifrons **Putzeys, 1846**

Schizogenius sulcifrons Putzeys, 1846: 134. Type locality: «Amérique boréale» (original citation), restricted to «Rumney [Grafton County], N[ew] H[ampshire]» by Lindroth (1961a: 167). Lectotype (♀), designated by Lindroth (1961a: 167), in UMO.

Distribution. This species is widely distributed east of the Mississippi River from New Brunswick (Lindroth 1961a: 167) to eastern Illinois, south to east-central Louisiana (West Feliciana Parish, Igor M. Sokolov pers. comm. 2009), southern Mississippi (Clairborne, Covington, Pearl River, Stone, and Wilkinson Counties, Drew A. Hildebrandt pers. comm. 2008), and western North Carolina (Whitehead 1972: 267, Fig. 236). Old specimens simply labeled from "Georgia," "South Carolina," and "Wisconsin" are known (Whitehead 1972: 267). The record from "Alabama" (Bousquet and Larochelle 1993: 106) needs confirmation.
Records. CAN: NB, ON, QC **USA**: DC, IL, IN, KY, LA, MA, MD, ME, MS, NC, NH, NJ, NY, OH, PA, TN, VA, VT, WV [AL, GA, SC, WI]

[**ferrugineus group**]

Schizogenius auripennis **Bates, 1881**

Schizogenius auripennis Bates, 1881: 38. Type locality: «Teleman, Guatemala» (original citation). Lectotype, designated by Whitehead (1972: 182), in BMNH.
Schizogenius peninsularis Van Dyke, 1949a: 50. Type locality: «5 miles south of Miraflores, Lower California» (original citation). Holotype in CAS [# 6010]. Synonymy established by Whitehead (1972: 182).

Distribution. This species ranges from southern Arizona south to Costa Rica in Pacific drainage areas [see Whitehead 1972: Fig. 101].
Records. USA: AZ – Belize, Costa Rica, Guatemala, Honduras, Mexico

Schizogenius ferrugineus **Putzeys, 1846**

Schizogenius ferrugineus Putzeys, 1846 [January]: 135. Type locality: «Galveston [Galveston County], Texas» (original citation). Holotype [by monotypy] probably in MHNP (collection Chaudoir).
Clivina sulcata LeConte, 1846b [August]: 214. Type locality: «NovEboraci [= New York]» (original citation). Two syntypes in MCZ [# 31157]. Synonymy established by LeConte (1853c: 396), confirmed by Lindroth (1961a: 168).

Distribution. This species ranges from southern Quebec (Larochelle 1975: 106) to South Dakota (Kirk and Balsbaugh 1975: 16), north to southwestern Saskatchewan (CNC), south to central Texas and northern Florida, west along southern United

States to southeastern Arizona [see Whitehead 1972: Fig. 100]. Also recorded from the Bahamas (Erwin 2011b: 215).
Records. CAN: ON, QC, SK **USA**: AL, AR, AZ, CO, CT, DC, DE, FL, GA, IA, IL, IN, KS, KY, LA, MA, ME, MD, MI, MN, MO, MS, NC, NE, NH, NJ, NM, NY, OH, OK, PA, SC, SD, TX, VA, VT, WI – Bahamas

[**lindrothi group**]
***Schizogenius lindrothi* Whitehead, 1972**

Schizogenius lindrothi Whitehead, 1972: 199. Type locality: «7 mi[les] n[orth] Southport, Bay Co[unty], Florida» (original citation). Holotype (♂) in MCZ [# 31970]. Etymology. The specific name honors Carl Hildebrand Lindroth [1905-1979], Swedish naturalist and carabid taxonomist. His systematic treatment of the carabid fauna of Canada and Alaska, achieved after 20 years, was the main catalyzer behind the interest for carabid taxonomy in North America that arose in the 1960s.

Distribution. This species is currently known only from a few specimens collected in Florida, Guatemala, and Costa Rica (Whitehead 1972: 201). Also recorded from Honduras and Panama (Erwin 2011b: 218).
Records. USA: FL – Costa Rica, Guatemala, Honduras, Panama
Note. Whitehead (1972: 201) stated that he was uncertain if the two Central American specimens he saw were conclusively conspecific with those from Florida.

[**lineolatus group**]
***Schizogenius lineolatus* (Say, 1823)**

Clivina lineolata Say, 1823a: 22. Type locality: «Allegheny [Allegheny County], P[ennsylvani]a» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 334), in MCZ [# 33078].

Distribution. This species is distributed from New Brunswick (Webster and Bousquet 2008: 16) to northeastern Montana, south to the Rio Grande Valley in south-central Texas, Tamaulipas in Mexico, and central Alabama [see Whitehead 1972: Fig. 206]. One old specimen simply labeled from "South Carolina" is known (Whitehead 1972: 251). Except for four apparently mislabeled "Florida" specimens, the species is unknown south of New Jersey along the Atlantic Coast.
Records. CAN: NB, ON, QC **USA**: AL, AR, CT, DC, IA, IL, IN, KS, KY, MA, MD, ME, MN, MO, MS, MT, NC, NE, NH, NJ, NY, OH, OK, PA, RI, SD, TN, TX, VA, VT, WI, WV, WY [SC] – Mexico

[**longipennis group**]
***Schizogenius chiricahuanus* Whitehead, 1972**

Schizogenius chiricahuanus Whitehead, 1972: 257. Type locality: «Cave C[ree]k (ca. 6000'), Chiricahua M[oun]t[ain]s, Cochise Co[unty], Ariz[ona]» (original citation). Holotype (♂) in MCZ [# 31968].

Distribution. This species is known only from a few localities in southern Arizona [see Whitehead 1972: Fig. 209].
Records. USA: AZ

***Schizogenius longipennis* Putzeys, 1867**

Schizogenius tristriatus var. *longipennis* Putzeys, 1867b: 227. Type locality: «Mexique» (original citation), restricted to «Fortin de las Flores, Veracruz» by Whitehead (1972: 254). Lectotype (♀), designated by Whitehead (1972: 254), in IRSN.
Schizogenius validus Fall, 1901a: 210. Type locality: «Rio Verdi [= Verde River] in central Arizona» (original citation). Lectotype (♂), designated by Whitehead (1972: 254), in MCZ [# 23860]. Synonymy established by Whitehead (1972: 254).

Distribution. The range of this species extends from southern Arizona to Tamaulipas, south to Costa Rica [see Whitehead 1972: Fig. 208].
Records. USA: AZ – Belize, Costa Rica, Guatemala, Honduras, Mexico

***Schizogenius neovalidus* Whitehead, 1972**

Schizogenius neovalidus Whitehead, 1972: 252. Type locality: «Gila River, n[ea]r Cliff, Grant Co[unty], New Mexico» (original citation). Holotype (♂) in MCZ [# 31967].

Distribution. This species is known from eastern Arizona and southwestern New Mexico [see Whitehead 1972: Fig. 207].
Records. USA: AZ, NM

[**pluripunctatus group**]
***Schizogenius pluripunctatus* LeConte, 1852**

Schizogenius pluripunctatus LeConte, 1852a: 197. Type locality: «ad flumen Colorado» (original citation). Lectotype, designated by Whitehead (1972: 221), in MCZ [# 5484].
Schizogenius simplex LeConte, 1852a: 197. Type locality: «Colorado [River]» (original citation). Lectotype, designated by Whitehead (1972: 221), in MCZ [# 5485]. Synonymy established by LeConte (1857b: 83), confirmed by Whitehead (1972: 221).

Distribution. This species ranges from Arizona and western New Mexico, south to Nayarit [see Whitehead 1972: Fig. 147].
Records. USA: AZ, NM – Mexico

***Schizogenius seticollis seticollis* Fall, 1901**

Schizogenius seticollis Fall, 1901a: 209. Type locality: «Pomona [Los Angeles County], Cal[ifornia]» (lectotype label). Lectotype, designated by Whitehead (1972: 209), in MCZ [# 23859].

Distribution. This subspecies is restricted to central and western California, from Shasta County in the north to San Diego County in the south [see Whitehead 1972: Fig. 147].
Records. USA: CA
Note. The subspecies *S. seticollis vandykei* Whitehead is known only from a few localities in Baja California Sur (Whitehead 1972: 213).

[**sallei group**]
***Schizogenius sallei* Putzeys, 1867**

Schizogenius sallei Putzeys, 1867b: 228. Type locality: «Texas» (original citation), herein restricted to Garner State Park, Uvalde County (see Whitehead 1972: 230). Lectotype (♂), designated by Whitehead (1972: 229), in IRSN. Etymology. The specific name was proposed for Auguste Sallé [1820-1896], a naturalist traveller and later insect dealer in Paris. Sallé, accompanied by his mother, lived most of the time between 1832 and 1860 in Mexico and Venezuela and travelled also to southern United States, the West Indies, and Central America where he collected insects. Most of these specimens were sent to Louis Alexandre August Chevrolat who divided them in lots and sold them. In 1839, these lots were offered at 30 francs for 100 specimens plus 3 francs 40 centimes for the transport from America to Paris. His Central American collections were purchased by Godman and Salvin for the *Biologia Centrali-Americana* (Papavero 1971: 178-179).

Distribution. This species ranges from Kansas south to the Rio Grande Valley in southern Texas [see Whitehead 1972: Fig. 185]. One specimen simply labeled from "Ohio" (Whitehead 1972: 229) could be mislabeled. The record from south-central Colorado (Wickham 1902: 232) is probably in error.
Records. USA: KS, OK, TX [OH]

[**tristriatus group**]
***Schizogenius amphibius* (Haldeman, 1843)**

Clivina amphibia Haldeman, 1843b: 299. Type locality: southeastern Pennsylvania (Haldeman 1843a: 295). Lectotype, designated by Whitehead (1972: 236), in MCZ (collection LeConte).
Clivina frontalis LeConte, 1846b: 215. Type locality: «Westchester Co[unty], N[ew] Y[ork]» (original citation). Lectotype (♂), designated by Whitehead (1972: 236), in MCZ [# 5482]. Synonymy established by Melsheimer (1853: 8), confirmed by Whitehead (1972: 236).

Distribution. This species ranges from Maine, southern Quebec, and Michigan south to Tennessee and North Carolina [see Whitehead 1972: Fig. 190]; also seen from eastern Oklahoma (Le Flore County, FFPC). The records from eastern Iowa (Wickham 1911b: 6) and Missouri (Summers 1873: 133) need confirmation; that from southwestern Colorado (Wickham 1902: 232) must be in error.

Records. CAN: QC **USA**: CT, DC, IL, IN, KY, MA, MD, ME, MI, NC, NH, NJ, NY, OH, OK, PA, RI, TN, VA, VT, WV [IA, MO, TX]
Note. Whitehead (1972: 237) noted that four specimens from Texas, without definite locality data, may represent an isolated form of this species.

Schizogenius ozarkensis Whitehead, 1972

Schizogenius ozarkensis Whitehead, 1972: 240. Type locality: «5 mi[les] n[orth] Stringtown, Atoka Co[unty], Oklahoma» (original citation). Holotype (♂) in MCZ [# 31978].

Distribution. This species is known only from a few specimens collected in or near the Ozark Mountains in southern Missouri, western Arkansas, and eastern Oklahoma [see Whitehead 1972: Fig. 189].
Records. USA: AR, MO, OK

Schizogenius planulatus LeConte, 1863

Schizogenius planulatus LeConte, 1863c: 5. Type locality: «New York» (original citation), herein restricted to Ithaca, Tompkins County (see Whitehead 1972: 240). Lectotype (♀), designated by Whitehead (1972: 238), in MCZ [# 5481].

Distribution. This species is known for sure only from a few specimens collected in New York, West Virginia, and Kentucky [see Whitehead 1972: Fig. 189]; it was also reported from southwestern Ohio (Dury 1910: 66) and northeastern Georgia (Fattig 1949: 15).
Records. USA: KY, NY, WV [GA, OH]

Schizogenius planuloides Whitehead, 1972

Schizogenius planuloides Whitehead, 1972: 241. Type locality: «Cypress Mills [Blanco County], Texas» (original citation). Holotype (♂) in USNM [# 74164].

Distribution. This species is known from a few localities throughout much of Texas [see Whitehead 1972: Fig. 189].
Records. USA: TX

Schizogenius tibialis Whitehead, 1972

Schizogenius tibialis Whitehead, 1972: 234. Type locality: «19.3 mi[les] n[orth]w[est] Tamazunchale (500'), S[an] L[uis] P[otosí], Mexico» (original citation). Holotype (♂) in MCZ [# 31979].

Distribution. This species occurs from southern Texas south to southeastern Oaxaca and northern Chiapas [see Whitehead 1972: Fig. 188].
Records. USA: TX – Mexico

Genus *Halocoryza* Alluaud, 1919

Halocoryza Alluaud, 1919: 100. Type species: *Halocoryza maindroni* Alluaud, 1919 by monotypy. Etymology. From the Greek *halos* (sea) and generic name *Coryza*, alluding to the presence along the sea (under "*de grosses pierres le long de la jetée ... ces pierres sont vraisemblablement submergées à marée haute*") of adults of these *Coryza*-like species [feminine].

Diversity. Four species are placed in this genus: one (*H. acapulcana* Whitehead) is found on the Pacific Coast of Mexico and on the Galápagos Islands, one (*H. arenaria*) in southeastern North America, the West Indies, Brazil, and the west coast of Africa, another one (*H. maindroni* Alluaud) on the east coast of Africa and several islands along the western part of the Indian Ocean, including Madagascar, and the southern part of the Red Sea, and the last one (*H. whiteheadiana* Erwin) on Baja California Sur.
Identification. Whitehead (1967) and Erwin (2011a) reviewed the species and provided keys for their identification.

Halocoryza arenaria (Darlington, 1939)

Schizogenius arenarius Darlington, 1939: 84. Type locality: «near Barahona, Dominican Republic» (original citation). Holotype in MCZ [# 23505].

Distribution. This species is known from southern Florida, the Yucatán Peninsula, Jamaica (Nichols 1988b: Fig. 5-12), Puerto Rico, the Dominican Republic (Whitehead 1969: 36), the Bahamas, Cuba, Cayman Islands (Peck 2005: 29) and several islands of the Lesser Antilles (Peck 2009a: 12). The species has been recorded also from the Gulf of Biafra in Africa (Bruneau de Miré 1979) and the state of Pernambuco, Brazil (Nichols 1988b: 89).
Records. USA: FL – Bahamas, Barbados, Brazil, Cayman Islands, Cuba, Dominica, Dominican Republic, Jamaica, Martinique, Mexico, Puerto Rico, Saint Lucia, Saint Vincent, Virgin Islands

Genus *Oxydrepanus* Putzeys, 1867

Oxydrepanus Putzeys, 1867b: 103. Type species: *Dyschirius rufus* Putzeys, 1846 designated by Bousquet and Larochelle (1993: 107). Etymology. From the Greek *oxys* (acute) and *drepanos* (sickle), probably alluding to the acute, sickle-shaped mandibles ("*mandibules ... très arquées, très aigües à l'extrémité*") of the adult [masculine].

Diversity. Thirteen species in the subtropical and tropical regions of the Western Hemisphere, including the West Indies, with one species reaching southeastern North America.
Identification. Nichols (1988a: 172-182) covered the four species found in the West Indies in his thesis and provided a key for their identification.

***Oxydrepanus rufus* (Putzeys, 1846)**

Dyschirius rufus Putzeys, 1846: 44. Type locality: «Havane, Cuba» (original citation). Holotype [by monotypy] in UMO (Nichols 1988a: 180).
Dyschirius brevicarinatus Putzeys, 1846: 53. Type locality: «Cuba» (original citation). Syntype(s) [2 originally cited] probably in IRSN. Synonymy established by Putzeys (1861: 70).

Distribution. This species has been reported from southeastern Louisiana (Colby 2002: 37), southern Florida (Darlington 1935a: 161), the Bahamas (Peck and Thomas 1998: 18), Cuba (Darlington 1934: 70), Cayman Islands and Puerto Rico (Peck 2005: 29), Dominican Republic (Erwin 2011b: 204), Jamaica, and eastern Mexico in Veracruz and Campeche (Nichols 1988a: 181).
Records. USA: FL, LA – Bahamas, Cayman Islands, Cuba, Dominican Republic, Jamaica, Mexico, Puerto Rico

Subtribe Ardistomina Putzeys, 1867

Ardistomides Putzeys, 1867b: 4, 200. Type genus: *Ardistomis* Putzeys, 1846.

Diversity. Western Hemisphere, with about 90 species, arrayed in three genera. All but five species are found in the Neotropical Region. One of the North American species has been collected in Japan.
Identification. Bousquet (2006c) revised the North American species and provided a key for their identification.

Genus *Ardistomis* Putzeys, 1846

Ardistomis Putzeys, 1846: 118. Type species: *Ardistomis fasciolata* Putzeys, 1846 designated by Desmarest (1851: 102). Etymology. From the Greek *ardis* (point of an arrow) and *stoma* (mouth), probably alluding to the apex of the glossal sclerite which is membranous and markedly projected forward ("*la languette ... se rétrécit de la base à l'apex qui se termine en une longue pointe membraneuse*"), one of the main characteristics of adults of this genus according to Putzeys [feminine]. Note. Lorenz (1998: 48) treated *Ardistomis* as masculine. However, the ending *-is* in Latin is of variable gender (masculine or feminine) and in such case the Commission (ICZN 1999: Article 30.1.4.2) rules that the name is to be treated as masculine unless its author, when establishing the name treated it as feminine in combination with an adjectival species-group name. Putzeys (1846) treated *Ardistomis* as feminine and so the name is feminine.
Ardistomus Csiki, 1927: 547. Unjustified emendation of *Ardistomis* Putzeys, 1846.

Diversity. This genus contains 44 species (Valdés 2009: 70) restricted to the temperate, subtropical, and tropical regions of the Nearctic (two species) and Neotropical (42 species) Regions, including the West Indies.

Ardistomis obliquata Putzeys, 1846

Ardistomis obliquata Putzeys, 1846: 120. Type locality: «Amérique boréale» (original citation), restricted to «Saint Catherines Island [Liberty County], Georgia» by Bousquet (2006c: 19). Holotype [by monotypy] in MHNP (Nichols 1988a: 94).

Distribution. This species ranges along the Coastal Plain and Piedmont Plateau from New Jersey (Smith 1890: 76; Smith 1910: 202) and southeastern Pennsylvania (Rath-von 1969: 524) to southern Florida, west to central Louisiana [see Bousquet 2006c: Fig. 35].
Records. USA: AL, DC, FL, GA, LA, MS, NC, NJ, NY, PA, SC, TN, VA

Ardistomis schaumii LeConte, 1857

Ardistomis schaumii LeConte, 1857b: 80. Type locality: «Louisiana» (original citation), restricted to «Alexandria, Rapides Parish» by Bousquet (2006c: 18). Lectotype, designated by Bousquet (2006c: 12), in MCZ [# 5486]. Etymology. The specific name honors Hermann Rudolphe Schaum [1819-1865], a German physician who eventually turned entomologist and worked primarily on Coleoptera. Schaum made a trip to eastern United States from 1847 to 1849 and stayed for some time with LeConte. In 1857 he became professor at the Royal University in Berlin.

Distribution. This species is found from South Carolina (Ciegler 2000: 43) to southern Florida, west to the Rio Grande in south-central Texas, north along the Mississippi River drainage to southern Illinois [see Bousquet 2006c: Fig. 34].
Records. USA: AL, AR, FL, GA, IL, LA, MS, OK, SC, TN, TX, VA

Genus *Semiardistomis* Kult, 1950

Semiardistomis Kult, 1950b: 301. Type species: *Clivina labialis* Chaudoir, 1837 by original designation. Etymology. From the Latin prefix *semi-* (half) and the generic name *Ardistomis* [*q.v.*] [masculine]. Note. As for *Ardistomis*, this name could be masculine or feminine because of its ending *-is*. In such case, the Commission (ICZN 1999: Article 30.1.4.2) rules that the name is to be treated as masculine unless its author, when establishing the name treated it as feminine in combination with an adjectival species-group name. Kult (1950: 301) proposed *Semiardistomis* as a subgenus and so did not combine it with a species-group name. However, he treated *Ardistomis* as masculine and *Semiardistomis*, contrary to *Ardistomis*, is masculine.

Ardistomiellus Kult, 1950b: 303. Type species: *Clivina viridis* Say, 1823 by original designation. Synonymy established by Whitehead (in Reichardt 1977: 392). Etymology. From the generic name *Ardistomis* [*q.v.*] and the suffix *-ellus* (small, little) [masculine].

Diversity. Twenty species (Valdés 2012) restricted to the temperate, subtropical, and tropical regions of the Western Hemisphere, including the West Indies.

***Semiardistomis puncticollis* (Dejean, 1831)**

Clivina puncticollis Dejean, 1831: 508. Type locality: «Amérique septentrionale» (original citation), restricted to «Highlands Hammock State Park, Hardee Co[unty], Florida» by Bousquet (2006c: 12). Lectotype (♀), designated by Bousquet (2006c: 15), in MHNP.

Distribution. This species ranges from southeastern Iowa (Wickham 1911b: 6; King 1914: 321) to western Kentucky, south to the Rio Grande in southeastern Texas, east to southern Florida, north along the coast to southern Virginia [see Bousquet 2006c: Fig. 33]. The record from southeastern Pennsylvania (Rathvon 1869: 524) is probably in error.
Records. USA: AL, AR, FL, GA, IA, IL, IN, KS, KY, LA, MO, MS, NC, OK, SC, TX, VA

***Semiardistomis viridis* (Say, 1823)**

Clivina viridis Say, 1823a: 21. Type locality: «Phila[delphia] Neck, P[ennsylvani]a» (neotype label). Neotype (♂), designated by Lindroth and Freitag (1969: 334), in MCZ [# 33077].
Clivina rostrata Dejean, 1825: 419. Type locality: «Géorgie» (original citation). Lectotype, designated by Bousquet (2006c: 12), in MHNP. Synonymy established by Dejean (1826: 478), confirmed by Nichols (1988a: 195).
Ardistomis vicina Putzeys, 1846: 129. Type locality: «Amérique boréale» (original citation). Lectotype, designated by Bousquet (2006c: 12), in MHNP. Synonymy established by LeConte (1857b: 80), confirmed by Nichols (1988a: 195).

Distribution. The range of this species extends from Long Island, New York to southwestern Wisconsin (Messer 2010: 35), south to the Rio Grande in south-central Texas and southern Florida [see Bousquet 2006c: Fig. 32]; also recorded from the Bahamas (Turnbow and Thomas 2008: 15).
Records. USA: AL, AR, CT, DC, DE, FL, GA, IL, IN, KS, KY, LA, MD, MO, MS, NC, NJ, NY, OH, OK, PA, SC, TN, TX, VA, WI, WV – Bahamas

Genus *Aspidoglossa* Putzeys, 1846

Aspidoglossa Putzeys, 1846: 108. Type species: *Aspidoglossa submetallica* Putzeys, 1846 designated by Desmarest (1851: 102). Etymology. From the Greek *aspidos* (shield) and *glossa* (tongue), probably alluding to the shape of the glossal sclerite [feminine].

Diversity. Twenty-six species (Lorenz 2005: 146-147) in the temperate, subtropical, and tropical regions of the Western Hemisphere, including the West Indies. One species only is found in North America.

Aspidoglossa subangulata (Chaudoir, 1843)

Dyschirius subangulatus Chaudoir, 1843b: 738. Type locality: «Nouvelle-Orléans [Orleans Parish, Louisiana]» (original citation). Lectotype, designated by Bousquet (2006c: 10), in MHNP.

Dyschirius humeralis Chaudoir, 1843b: 737. Type locality: «Nouvelle-Orléans [Orleans Parish, Louisiana]» (original citation). Syntype(s) in MHNP. Synonymy established by Melsheimer (1853: 9).

Aspidoglossa fraterna Putzeys, 1846: 114. Type locality: «Amérique boréale» (original citation). Syntype(s) [7 originally cited] in MHNP (collection Chaudoir) and UMO. Synonymy established by Melsheimer (1853: 9).

Aspidoglossa vicina Putzeys, 1846: 114. Type locality: «Caroline» (original citation). Syntype(s) [2 ♂ originally cited] location unknown (possibly in UMO in collection Chevrolat). Synonymy established by Melsheimer (1853: 9).

Distribution. This species ranges over eastern United States from Washington D.C. to northeastern Kansas, including southeastern Iowa (Wickham 1911b: 6; King 1914: 323), south to the big bend along the Rio Grande in Texas and northeastern Mexico (Bousquet 2006c: 9) and southern Florida; also known from southeastern Arizona [see Bousquet 2006c: Fig. 31]. Two specimens labeled from Klamath County, Oregon (AMNH) and Gallatin County, Montana (CAS) are known (Bousquet 2006c: 9). The species has been recorded also from Japan (Habu 1963: 19).
Records. USA: AL, AR, AZ, DC, FL, GA, IA, IL, IN, KS, KY, LA, MD, MI, MO, MS, NC, NM, OH, OK, PA, SC, TN, TX, VA [MT, OR] – Mexico

Tribe Dyschiriini Kolbe, 1880

Dyschiriini Kolbe, 1880: 266. Type genus: *Dyschirius* Bonelli, 1810.

Diversity. Worldwide, with about 300 species arrayed in nine genera: *Akephorus* (two species), *Clivinopsis* Bedel (three species in northern Africa, Kazakhstan, and Turkmenistan), *Cribrodyschirius* Bruneau de Miré (seven species in Africa, Madagascar, and Asia), *Dyschirius* (about 255 species), *Neodyschirius* Kult (one Afrotropical species), *Reicheiodes* Ganglbauer (16 Palaearctic species, including the Himalayas), *Setodyschirius* Fedorenko (13 species from Australia), *Torretassoa* Schatzmayr (one species in Egypt and Yemen), and *Caledyschirius* Bulirsch (five species in New Caledonia). The Northern Hemisphere is well represented with about 220 species (73.5% of the world fauna).

Genus *Akephorus* LeConte, 1852

Akephorus LeConte, 1852a: 194. Type species: *Akephorus marinus* LeConte, 1852 by monotypy. Etymology. From the Greek *ake* (point) and *phoro* (to bear, carry), possibly alluding to the acute apical spur of the protibia of the adult ("*tibiae anticae spinis terminalibus longissimis*") [masculine]. Note. *Acephorus* is an incorrect subsequent spelling for *Akephorus*, first used by LeConte (1853c: 396), not in prevailing usage.

Diversity. Two species restricted to the seashore of the Pacific in North America.
Identification. The two species can be differentiated using Lindroth's (1961a) and Bousquet's (1988a) keys to *Dyschirius*.
Taxonomic Note. This taxon has been considered a subgenus of *Dyschirius* by Lindroth (1961a) and a distinct genus by Fedorenko (1996). The phylogenetic analysis of Fedorenko (1996) did not yield clear evidence as to the position of the group. Furthermore there are little structural characteristics for members of *Akephorus*. The presence of conspicuous microsculpture on the body is also found in a few *Dyschirius* groups, such as the *exochus* group, phenetically similar to the remaining *Dyschirius*. The body shape, however, is distinctive. With the current phylogenetic knowledge of the tribe, I see no harm in retaining this taxon as a distinct genus.

Akephorus marinus LeConte, 1852

Akephorus marinus LeConte, 1852a: 195. Type locality: «circa San Diego [San Diego County, California]» (original citation). Three syntypes in MCZ [# 685].

Distribution. This species is confined to the seashore of the Pacific Coast of California, as far north as San Mateo County (CAS), and of the Baja California Peninsula (CNC).
Records. USA: CA (CHI) – Mexico

Akephorus obesus (LeConte, 1863)

Dyschirius obesus LeConte, 1863b: 50. Type locality: «San Francisco [San Francisco County], Cal[ifornia]» (original citation). One syntype in MCZ [# 679].

Distribution. This species ranges along the seashore of the Pacific from Kunghit Island in the Queen Charlotte Islands (James C. Bergdahl pers. comm. 2009) south at least to central California (LeConte 1867b: 363; San Mateo County, CAS).
Records. CAN: BC (QCI, VCI) **USA**: CA, OR, WA

Genus *Dyschirius* Bonelli, 1810

Dyschirius Bonelli, 1810: Tabula Synoptica. Type species: *Scarites thoracicus* Rossi, 1790 designated by Curtis (1831: plate 354). Etymology. Possibly from the Greek *dis* (twice, double) and *cheiros* (hand), alluding to the presence of a curved spine laterally and a movable spur medially on the protibia of the adult [masculine].
Dischirius Duponchel, 1844: 151. Unjustified emendation of *Dyschirius* Bonelli, 1810.
Dyschiridius Jeannel, 1941b: 260. Type species: *Dyschirius arenosus* Stephens, 1827 (= *Scarites thoracicus* Rossi, 1790) by original designation.

Diversity. About 245 species (Lorenz 2005: 151-154) in the Nearctic (about 60 species, one of them adventive), Neotropical (about 20 species, five shared with North America), Oriental (about 25 species), Palaearctic (about 140 species, many shared with the Oriental and Afrotropical Regions), and Afrotropical (about 30 species) Regions.

Identification. The North American species have never been revised. Bousquet (1988a) published a key to all species found in the area and briefly discussed each species-group. Subsequently five new species have been described by Bousquet (1997a) and Dajoz (2004), an adventive species has been detected (*D. globosus*) in North America, two species have been treated as junior synonyms (*D. filiformis* with *D. sublaevis* and *D. integer* with *D. dejeanii*), and two species had their names changed (*D. nigricornis* for *D. melancholicus* and *D. integer* for *D. dejeanii*).

Taxonomic Note. Fedorenko (1996) recognized two genera within *Dyschirius* (minus *Akephorus*): *Dyschirius* with about 20 Palaearctic species and *Dyschiriodes* for the remaining species. However, there seems to be no consistent character state that separates the two "genera" except possibly for the basal sclerite of the endophallus which is "strongly sclerotized" in *Dyschirius* and "poorly sclerotized" in *Dyschiriodes*. In addition there is no solid evidence presented suggesting that the genus *Dyschirius* of authors is polyphyletic or that *Dyschirius sensu* Fedorenko and *Dyschiriodes* are sister-taxa. The genus *Dyschirius sensu auctorum* (prior to Fedorenko 1996) is a well-defined taxon and I see no reason to recognize *Dyschiriodes* as generically distinct. A similar approach was adopted by Balkenohl (2003: 223-230) in the *Catalogue of Palaearctic Coleoptera*, Lorenz (2005: 151-154), and Erwin (2011b: 97-128).

Fedorenko (1996) recognized five subgenera within "*Dyschiriodes*:" *Antidyschirius* Fedorenko, 1996 [type species: *Dyschirius laevifasciatus* Horn, 1878], *Eudyschirius* Fedorenko, 1996 [type species: *Dyschirius lafertei* Putzeys, 1846], *Chiridysus* Fedorenko, 1996 [type species: *Dyschirius strumosus* Erichson, 1837], *Dyschiriodes* Jeannel, 1941 [type species: *Clivina punctata* Dejean *sensu* Jeannel, 1941 (= *Clivina minuta* Dejean, 1825)], and *Paradyschirius* Fedorenko, 1996 [type species: *Dyschirius parallelus* Motschulsky, 1844]. In my opinion there are several other species groups actually recognized within *Dyschirius* that deserve a subgeneric name. For that reason I have listed the North American species under species-group names and did not retain Fedorenko's subgenera until further studies are done on the North American fauna. For information, the species of the *laevifasciatus* group belong to *Antidyschirius*; those of the *tridentatus*, *ferrugineus*, and *brevispinus* groups, as well as *D. globosus* (classified here in the *dejeanii* group), *D. comatus* (placed here in the *pilosus* group), *D. criddlei* and *D. edentulus* (both included here in the *politus* group) belong to *Eudyschirius*; those of the *analis* and *quadrimaculatus* groups to *Paradyschirius*; and those of all remaining North American groups to *Dyschiriodes sensu stricto*.

[**analis group**]

***Dyschirius affinis* Fall, 1901**

Dyschirius affinis Fall, 1901a: 209. Type locality: «Massachusetts, eastern New York» (original citation). Syntype(s) in MCZ [# 23848].

Dyschirius duplicatus Fall, 1901a: 209. Type locality: «Luling and El Paso, Texas» (original citation). Syntype(s) in MCZ [# 23851]. Synonymy established by Bousquet (1988a: 372).

Distribution. This species ranges from Maine (Larochelle and Larivière 1990a: 28; Androscoggin County, CNC) to southeastern Montana (Herman 1986: 62), south to westernmost (Fall 1901a: 209, as *D. duplicatus*) and southern Texas (Cameron, San Patricio, and Zapata Counties, CMNH, MCZ) and Maryland (Erwin 1981b: 140). The record from "Arizona" (Bousquet and Larochelle 1993: 98) needs confirmation.
Records. CAN: ON, QC **USA**: AR, CO, CT, DC, IA, IL, IN, KS, MA, MD, ME, MT, ND, NE, NH, NM, NY, OH, OK, PA, TN, TX, VA, VT, WI, WY [AZ]

Dyschirius analis LeConte, 1852

Dyschirius analis LeConte, 1852a: 196. Type locality: «ad fluminis Colorado ripas» (original citation). Four syntypes in MCZ [# 684].

Dyschirius hintoni Kult, 1950a: 137. Type locality: «Jalapa, Veracruz, Mexico» (original citation). Holotype location unknown (originally in Kult's collection). Synonymy established by Fedorenko (1996: 200). Etymology. The specific name was proposed for the British entomologist Howard Everest Hinton [1912-1977] who worked at the British Museum of Natural History and later at Bristol University. Hinton published mainly on insect anatomy, physiology, biochemistry, and behavior.

Distribution. The range of this species extends from eastern Washington (Hatch 1953: 67) to southern California (Fall 1901a: 41; Moore 1937: 5), east to southwestern Louisiana (Cameron Parish, LSAM), south to Veracruz in Mexico (Kult 1950a: 138, as *D. hintoni*). The records from southeastern British Columbia (Hatch 1953: 67) and "Idaho" (Bousquet and Larochelle 1993: 98) need confirmation; that from "Nebraska" (Bousquet and Larochelle 1993: 98) is probably in error.
Records. USA: AZ, CA, LA, NM, NV, OR, TX, WA [BC, ID] – Mexico

Dyschirius haemorrhoidalis (Dejean, 1831)

Clivina haemorrhoidalis Dejean, 1831: 511. Type locality: «Amérique septentrionale» (original citation), herein restricted to Bent Creek, Appomattox County, Virginia (CNC). Four possible syntypes in MHNP (Lindroth 1955b: 13).

Distribution. This species is found from southern New Hampshire (Hillsborough County, Ross T. Bell pers. comm. 2008) to "North Dakota" (Donald P. Schwert pers. comm. 1989), south to eastern Texas (San Augustine and Wood Counties, CMNH; Bousquet 1988a: 373; Riley 2011) and southern Florida (Peck and Thomas 1998: 17). The record from "New Mexico" (Bousquet and Larochelle 1993: 99) needs confirmation.
Records. CAN: ON **USA**: AL, AR, CT, DC, FL, GA, IA, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, WI, WV [NM]

Dyschirius terminatus LeConte, 1846

Dyschirius terminatus LeConte, 1846b: 212. Type locality: «NovEboraci [= New York]» (original citation). Two syntypes in MCZ [# 5467].

Distribution. This species ranges from Massachusetts (Hampshire County, CNC) to northeastern Kansas (Douglas County, MCZ), including central Wisconsin (Messer 2010: 34) and southeastern Iowa (Des Moines County, MCZ), south to San Luis Potosí in Mexico (Bousquet 1988a: 373) and the Florida Panhandle (Peck and Thomas 1998: 17), west along southern United States to southeastern California (Imperial County, CAS; Dajoz 2007: 16). One old specimen simply labeled "Neb" is known (MCZ).
Records. USA: AL, AR, AZ, CA, CT, DE, FL, IA, IL, IN, KS, LA, MA, MD, MI, MO, MS, NC, NJ, NM, NY, OH, OK, PA, SC, TN, TX, VA, WI [NE] – Mexico

[**brevispinus group**]

Dyschirius brevispinus LeConte, 1878

Dyschirius brevispinus LeConte, 1878c: 593. Type locality: «Detroit [Wayne County, Michigan]» (original citation). Holotype [by monotypy] (♀) in MCZ [# 678].

Distribution. This species is known from scattered localities from the Saint Lawrence Plain in southern Quebec (Larochelle 1975: 81; Bousquet 1987a: 112) to southeastern Michigan (LeConte 1878c: 593), south to southeastern Pennsylvania (Dauphin County, MCZ; Lindroth 1961a: 139); also known from northeastern Nebraska (Clopton 1991: 61).
Records. CAN: ON, QC **USA**: MI, NE, OH, PA, VT

Dyschirius tenuispinus Lindroth, 1961

Dyschirius tenuispinus Lindroth, 1961a: 139. Type locality: «Medicine Hat, Al[ber]ta» (original citation). Holotype (♂) in CNC [# 7753].

Distribution. This species is known only from a few specimens collected in southern Alberta (Lindroth 1961a: 139; Bousquet 1987a: 113), northeastern Colorado (Bell 1971: 56; Lavigne 1978: 104), and northeastern Arizona (Apache County, UASM).
Records. CAN: AB **USA**: AZ, CO

[**carrorum group**]

Dyschirius carrorum Bousquet, 1997

Dyschirius carrorum Bousquet, 1997a: 92 (as *carri*). Type locality: «Tp. 8 Rge. 14 W.1 Mer. [= about 8 km north of Glenboro], Manitoba» (original citation). Holotype (♂) in CNC [# 22220]. Etymology. This specific name was proposed for John Lawrence Carr [1922-2006] and Bertha Carr of Calgary, Alberta, who collected the holotype. Over several decades of collecting in western North America, the couple assembled a large and extremely valuable collection of beetles which they gave to the

Canadian National Collection of Insects in 2000. Note. By a lapsus, *carri* was the original spelling of the specific name despite having been proposed for a man and a woman together. Because there is a clear evidence of an inadvertent error in the original publication, the spelling must be corrected (ICZN 1999: Article 32.5.1) and the original spelling is deemed to be *carrorum* (see ICZN 1999: Article 31.1.2).

Distribution. This species is known only from the holotype collected in south-central Manitoba.
Records. CAN: MB

[**exochus group**]
***Dyschirius exochus* Whitehead, 1970**

Dyschirius exochus Whitehead, 1970: 183. Type locality: «Cedar Lane [Matagorda County], Tex[as]» (original citation). Holotype (♂) in SMEK.

Distribution. This species is known from the type locality in southeastern Texas, from Jackson County in southeastern Mississippi (CMNH), and from two localities in the Florida Panhandle (Frank 1985: 481; Herman 1986: 63).
Records. USA: FL, MS, TX

***Dyschirius sculptus* Bousquet, 1988**

Dyschirius sculptus Bousquet, 1988a: 370. Type locality: «Pass-a-Grille Beach [Pinellas County], Fl[orida]» (original citation). Holotype (♂) in CUIC [# 6456].

Distribution. This species is known only from the holotype collected along the Gulf Coast of Florida.
Records. USA: FL

[**ferrugineus group**]
***Dyschirius ferrugineus* Bousquet, 1988**

Dyschirius ferrugineus Bousquet, 1988a: 371. Type locality: «Goose Isl[and] St[ate] P[ar]k, Aransas County, Texas» (original citation). Holotype (♂) in USNM.

Distribution. This species is known only from a few localities along the Gulf Coast in southern Texas (Bousquet 1988a: 371; FMNH).
Records. USA: TX

[**globulosus group**]
***Dyschirius aeneolus* LeConte, 1850**

Dyschirius aeneolus LeConte, 1850: 204. Type locality: Lake Superior (inferred from title of the paper), herein restricted to Marquette, Marquette County, Michigan (see Hubbard and Schwarz 1878: 627). Two syntypes [2 originally cited] in MCZ [# 692].

Dyschirius frigidus Mannerheim, 1853: 123. Type locality: «ad fl. Tchunitén peninsulae Kenai [Alaska]» (original citation). Holotype [by monotypy] location unknown. Synonymy established by Lindroth (1961a: 152).

Distribution. This species ranges from southern Labrador to the Kenai Peninsula in Alaska (Lindroth 1961a: 152, as *D. frigidus*), south to northern Idaho (Hatch 1953: 67), northeastern Minnesota (Gandhi et al. 2005: 923), northeastern Illinois (Peter W. Messer pers. comm. 2008), and the upper and lower peninsulas of Michigan (Hubbard and Schwarz 1878: 627, 644). The records from Colorado (LeConte 1879d: 500; Wickham 1902: 232), Washington and southwestern Oregon (Herman 1986: 60, as *D. frigidus*; Hatch 1953: 67), and "California" (Leng and Beutenmüller 1894: 184) need confirmation; that from Iowa (Wickham 1911b: 5) is probably in error.
Records. CAN: AB, BC, LB, NT, ON, QC, SK, YT **USA**: AK, ID, IL, MI, MN, WI [CA, CO, OR, WA]

Dyschirius alticola Lindroth, 1961

Dyschirius alticola Lindroth, 1961a: 152. Type locality: «Rossland Trail, B[ritish] C[olumbia]» (original citation). Holotype in CNC [#7607].

Distribution. This species is known from a few montane locations in south-central British Columbia (Lindroth 1961a: 152; Bousquet 1987a: 116), Idaho (Bear Lake County, CNC), and the Sierra Nevada of California (Papp 1978: 165; Mono and Placer Counties, USNM). The record from "Wyoming" (Bousquet and Larochelle 1993: 101) needs confirmation.
Records. CAN: BC **USA**: CA, ID [WY]

Dyschirius chiricahuae (Dajoz, 2004)

Dyschiriodes chiricahuae Dajoz, 2004: 117. Type locality: «en haut du Pinery Canyon (vers 2000 mètres), monts Chiricahua, à 20 km environ à l'ouest de la localité de Portal, Cochise County, Arizona» (original citation). Holotype in Dajoz's collection (Paris, France).

Distribution. This species is known only from two specimens collected at the type locality in southeastern Arizona.
Records. USA: AZ

Dyschirius compactus Lindroth, 1961

Dyschirius compactus Lindroth, 1961a: 152. Type locality: «Stanley, B[ritish] C[olumbia]» (original citation). Holotype (♂) in CAS [# 8161].

Distribution. This species is known from a few montane locations from southwestern Alberta to south-central British Columbia (Lindroth 1961a: 152; Bousquet 1987a: 116).
Records. CAN: AB, BC

Figure 17. *Clivina fossor* (Linnaeus). This *Clivina* is one of the 62 carabid species accidentally introduced and established in North America and one of 18 that have been introduced independently on the Atlantic and Pacific Coasts. Many of the adventive species reached our borders in ballast used by Europeans to improve the stability of their trade ships on their way to America. Ballast consisted of stones, broken slates, mortar, bricks, rubbish, soil, and sand that were usually dumped along the shore at ports of entry and certainly constituted a good environment for the survival of carabids during ocean voyages.

Dyschirius consobrinus LeConte, 1852

Dyschirius consobrinus LeConte, 1852a: 196. Type locality: «San Francisco [San Francisco County, California]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 690].

Distribution. This species ranges from southwestern Washington (Herman 1986: 60) to Riverside County (CAS) in southeastern California and "the middle Sierras" (Fall 1901a: 41). The records from southeastern British Columbia and northern Idaho (Hatch 1953: 67) are probably in error.
Records. USA: CA, OR, WA

Dyschirius dejeanii Putzeys, 1846

Dyschirius dejeanii Putzeys, 1846: 25. Type locality: «Amérique boréale» (original citation). Holotype [by monotypy] in MHNP (collection Chaudoir).

Dyschirius apicalis LeConte, 1850: 204 [primary homonym of *Dyschirius apicalis* Putzeys, 1846]. Type locality: Lake Superior (inferred from title of the paper). Syntype(s) in MCZ [# 691]. Synonymy established implicitly by Bousquet (2008a: 517).

Dyschirius integer LeConte, 1852a: 196. Type locality: «ad flumen Colorado» (original citation). Three syntypes in MCZ [# 689]. Synonymy established with the name *D. apicalis* LeConte by Lindroth (1961a: 149), confirmed by Bousquet (2008a: 517).

Dyschirius nigripes LeConte, 1853c: 396. Replacement name for *Dyschirius apicalis* LeConte, 1850.

Dyschirius transmarinus Mannerheim, 1853: 122 [*nomen dubium*]. Type locality: «insula Sitkha [= Baranof Island, Alaska]» (original citation). Syntype(s) location unknown (possibly in ZILR). Synonymy established with doubt, under the name *D. integer* LeConte, by Bousquet (1988a: 379).

Dyschirius basalis LeConte, 1857b: 77. Type locality: «Fort Yuma, Colorado River [Imperial County], California» (original citation). Four syntypes in MCZ [# 7401]. Synonymy established, under the name *D. integer* LeConte, by Bousquet (1988a: 379). Note. Fort Yuma was located on the California side of the Colorado River, opposite Yuma, on a bluff one hundred feet above the river and at an altitude of 260 feet.

Dyschirius sulcatus LeConte, 1859c: 34. Replacement name for *Dyschirius apicalis* LeConte, 1850.

Distribution. This species ranges from Newfoundland (Lindroth 1955a: 42, as *D. nigripes*) to east-central Alaska (Lindroth 1961a: 150), south to southern California (Fall 1901a: 41, as *D. basalis*), central New Mexico (Socorro County, CNC), Kansas (Popenoe 1877: 22; Horn 1872c: 384, as *D. sulcatus*), central Pennsylvania (Northumberland County, CMNH), and northeastern New Jersey (Smith 1910: 201, as *D. nigripes*; Bergen County, MCZ).

Records. CAN: AB, BC, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK, YT **USA**: AK, AZ, CA, CO, CT, IA, ID, IL, IN, KS, MA, ME, MI, MN, MT, ND, NE, NH, NJ, NM, NV, NY, OH, OR, PA, RI, SD, UT, VT, WA, WI, WY

Dyschirius gibbipennis LeConte, 1857

Dyschirius gibbipennis LeConte, 1857b: 77. Type locality: «San Diego [San Diego County], California» (original citation). Holotype [by monotypy] (♀) in MCZ [# 682].

Distribution. This species ranges from southwestern Oregon (Herman 1986: 60) to southern California (Fall 1901a: 41; San Diego County, CAS). The record from "Arizona" (Bousquet and Larochelle 1993: 101) needs confirmation.
Records. USA: CA (CHI), OR [AZ]

Dyschirius globosus (Herbst, 1784)

Carabus globosus Herbst, 1784: 142. Type locality: «Berlin [Germany]» (original citation). Syntype(s) location unknown (possibly in ZMHB).

Scarites gibbus Fabricius, 1792: 96. Type locality: «Germania» (original citation). Two syntypes in ZMUC (Zimsen 1964: 42). Synonymy established by Fuessly (1794: 160).

Dyschirius glomerosus Bousquet, 1997a: 94. Type locality: «Lulu Island, B[ritish] C[olumbia]» (original citation). Holotype (♂) in CNC [# 22221]. Synonymy established by Bousquet (2002a: 84).

Distribution. This European species is adventive in North America where it is known only from the Vancouver area in southwestern British Columbia (Bousquet 1997a: 94, as *D. glomerosus*). The first inventoried specimen collected on this continent was found in 1978.
Records. CAN: BC – **Adventive**

Dyschirius globulosus (Say, 1823)

Clivina globulosa Say, 1823a: 23. Type locality: «Arlington [Middlesex County], Mass[achusetts]» (neotype label). Neotype (♀), designated by Lindroth and Freitag (1969: 333), in MCZ [# 33081].

Dyschirius parvus LeConte, 1850: 204. Type locality: Lake Superior (inferred from title of the paper). Syntype(s) in MCZ [# 683]. Synonymy established by LeConte (1879a: 31), confirmed by Lindroth (1961a: 154).

Distribution. The range of this species extends from Newfoundland to central Alaska, south to southern British Columbia (Lindroth 1961a: 155), northern Arizona (Coconino County, CMNH), southern New Mexico (Otero County, CNC), east-central Texas (Riley 2011), southeastern Louisiana (Summers 1874a: 79), northern Mississip-

pi (Drew A. Hildebrandt pers. comm. 2007), and southern Florida (Peck and Thomas 1998: 17).
Records. CAN: AB, BC, MB, NB, NF, NS (CBI), ON, PE, QC, SK, YT **USA**: AK, AL, AZ, CO, CT, DC, DE, FL, GA, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NM, NY, OH, OK, PA, RI, SC, SD, TX, VA, VT, WI, WV, WY

Dyschirius hiemalis Bousquet, 1987

Dyschirius hiemalis Bousquet, 1987a: 116. Type locality: «R.B. Miller Res[earch] St[atio]n, 17 mi[les] w[est] Turner Valley (4,900'), Alberta» (original citation). Holotype (♂) in CNC [# 19238].

Distribution. This species ranges from Labrador and the Ungava Bay area to Alaska, south to south-central British Columbia; isolated on the Shickshock Mountains in Gaspé Peninsula, Quebec [see Bousquet 1987a: map 1]. Fossil remnants, dated between 10,400 and 12,600 years B.P., have been unearthed in Cape Breton Island, Nova Scotia (Miller 1997: 250).
Records. CAN: AB, BC, LB, MB, NT, ON, QC, SK, YT **USA**: AK
Note. This taxon has been treated as a subspecies of *D. melancholicus* Putzeys by Fedorenko (1996: 149) but retained as a distinct species by Bousquet (1987a: 116) and Balkenohl and Lompe (2003: 99).

Dyschirius longulus LeConte, 1850

Dyschirius longulus LeConte, 1850: 204. Type locality: Lake Superior (inferred from title of the paper). Three syntypes in MCZ [# 693].

Distribution. This species is found from Newfoundland (Lindroth 1955a: 43) to south-central British Columbia (Lindroth 1961a: 156), south to northwestern Minnesota (Gandhi et al. 2005: 924). The records from South Dakota (Kirk and Balsbaugh 1975: 16), Indiana (Blatchley 1910: 57), the upper and lower peninsulas of Michigan (Hubbard and Schwarz 1878: 627, 644; Hatch 1925: 548; Silvey 1936: 657), Ohio (Leng and Beutenmüller 1893: 91; Dury 1902: 110), and "Pennsylvania" (Bousquet and Larochelle 1993: 101) are in error.
Records. CAN: AB, BC, MB, NF, QC, SK **USA**: MN

Dyschirius melancholicus Putzeys, 1867

Dyschirius melancholicus Putzeys, 1867b: 41. Type locality: «Daourie» (original citation). Holotype [by monotypy] probably in IRSN.
Dyschirius helleni J. Müller, 1923: 78. Type locality: «Dudinka [Taimyr Autonomous Okrug, Russia]» (original citation). Lectotype, designated by Fedorenko (1996: 148), in MSNT. Synonymy established by Fedorenko (1990: 37). Etymology. The specific name was proposed for Wolter Hellén [1890-1979], curator at the Zoo-

logical Museum of the University of Helsinki, excellent collector, and specialist on parasitic Hymenoptera of the Finnish fauna.

Dyschirius norvegicus Munster, 1923b: 249. Type locality: «Sørum i Våge (antagelig i Tromsdalen) ved Tromsø og Gorzzejok i Karasjok» (original citation), restricted to «Sörum, Vågå, Norway» by Lindroth (1961a: 153). Syntype(s) [4 originally cited] location unknown (possibly in ZMUO). Synonymy established, under the name *D. helleni* Müller, by Hellén (1934: 52), confirmed by Fedorenko (1990: 37).

Dyschirius secretus Fall, 1926a: 130. Type locality: «Anchorage, Alaska» (original citation). Holotype (♀) in MCZ [# 23854]. Synonymy established, under the name *D. helleni* Müller, by Lindroth (1954b: 122).

Distribution. This Holarctic species ranges from Scandinavia (Balkenohl 2003: 226) to the Hudson Bay in northeastern Manitoba (Garry 1993: 94, as *D. nigricornis*). Fossil remnants, dated between 10,800 and 20,530 years B.P., have been unearthed in central North Dakota (Ashworth and Schwert 1992: 260), northeastern Iowa (Schwert 1992: 76; Woodman et al. 1996: 17), and southeastern Iowa (Baker et al. 1986: 96).
Records. CAN: MB, NT, NU, YT **USA**: AK – **Holarctic**
Note. This species has long been known under the name *D. nigricornis* Motschulsky, 1844 in the North American literature.

Dyschirius planatus Lindroth, 1961

Dyschirius planatus Lindroth, 1961a: 155. Type locality: «Waterton Park, Al[ber]ta» (original citation). Holotype (♂) in CNC [# 7603].

Distribution. This species is known from the southern part of the Prairie Provinces (Lindroth 1961a: 155; Bousquet 1987a: 118) and from northwestern Montana (Teton County, CNC). The records from British Columbia (Jarrett and Scudder 2001: 382), "Wyoming," and "Minnesota" (Bousquet and Larochelle 1993: 101) need confirmation.
Records. CAN: AB, MB, SK **USA**: MT [BC, MN, WY]

Dyschirius subarcticus subarcticus Lindroth, 1961

Dyschirius subarcticus Lindroth, 1961a: 151. Type locality: «Circle, Alaska» (original citation). Holotype in MCZ [# 30423].

Distribution. This subspecies is found from Alaska to the Great Slave Lake area in Northwest Territories (Lindroth 1961a: 151).
Records. CAN: NT, YT **USA**: AK
Note. The subspecies *D. subarcticus altaicus* Fedorenko occurs in the eastern part of the Palaearctic Region.

Dyschirius timidus Lindroth, 1961

Dyschirius timidus Lindroth, 1961a: 154. Type locality: «Onah, Manit[oba]» (original citation). Holotype (♂) in CNC [# 7605].

Distribution. This species is known only from southern Manitoba (Lindroth 1961a: 154) and Alberta (Langor et al. 2006: 13).
Records. CAN: AB, MB

***Dyschirius wayah* (Dajoz, 2005)**

Dyschiriodes wayah Dajoz, 2005: 208. Type locality: «Wayah Bald, dans la Nantahala National Forest, Macon County, Caroline du Nord» (original citation). Holotype in Dajoz's collection (Paris, France).

Distribution. This species is known only from the type locality in southwestern North Carolina.
Records. USA: NC

[**laevifasciatus group**]
***Dyschirius laevifasciatus* Horn, 1878**

Dyschirius laevifasciatus G.H. Horn, 1878b: 52. Type locality: «Oregon» (original citation), herein restricted to Blodgett, Benton County (CNC). Syntype(s) [3 originally cited] in MCZ [# 8181] and CMNH (collection Ulke).

Distribution. This species is found from the foothills of the Rocky Mountains in southern Alberta to south-central British Columbia (Lindroth 1961a: 140), south at least to central Oregon (Benton and Lincoln Counties, CNC, MCZ, USNM). One old specimen labeled "Cal" is known (MCZ).
Records. CAN: AB, BC **USA**: OR, WA [CA]

[**pilosus group**]
***Dyschirius comatus* Bousquet, 1988**

Dyschirius comatus Bousquet, 1988a: 378. Type locality: «Highland Hammock, Highland[s] Co[unty], Fl[orid]a» (original citation). Holotype (♂) in USNM.

Distribution. This species is confined to the Coastal Plain ranging from North Carolina to central Florida, west to southeastern Louisiana (Tangipahoa and Saint Tammany Parishes, LSAM) [see Bousquet 1988a: Fig. 38]. One specimen simply labeled from Texas (CMNH) is known.
Records. USA: AL, FL, LA, MS, NC, SC [TX]

***Dyschirius pilosus* LeConte, 1857**

Dyschirius pilosus LeConte, 1857b: 80. Type locality: «New Orleans [Orleans Parish, Louisiana]» (original citation). Lectotype, designated by Bousquet (1988a: 377), in MCZ [# 697].
Dyschirius hispidus LeConte, 1863c: 4. Type locality: «western states» (original citation). Lectotype (♀), designated by Bousquet (1988a: 377), in MCZ [# 34045]. Synonymy established by Lindroth (1961a: 156).

Distribution. This species ranges from southern New Brunswick (Webster and Bousquet 2008: 16) to southern Manitoba, south to eastern Texas, southeastern Louisiana (LeConte 1857b: 80; East Baton Rouge Parish, LSAM), Mississippi (Bolivar and Issaquena Counties, Drew A. Hildebrandt pers. comm. 2009), and northeastern North Carolina [see Bousquet 1988a: Fig. 38]. The records from southwestern Georgia (Fattig 1949: 13) and southwestern Alabama (Löding 1945: 12) probably refer to *D. comatus*; that from "Montana" (Bousquet and Larochelle 1993: 100) is probably in error.
Records. CAN: MB, NB, ON, QC **USA**: CT, DC, IA, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, ND, NE, NH, NJ, NY, OH, OK, PA, TN, TX, VA, VT, WI, WV

Dyschirius setosus LeConte, 1857

Dyschirius setosus LeConte, 1857b: 79. Type locality: «Massachusetts and New York» (original citation), restricted to «Mass[achusetts]» by Lindroth (1961a: 157). Three syntypes in MCZ [# 696].
Dyschirius alternatus Hatch, 1949b: 117. Type locality: «Grand Coulee [Grant County], Washington» (original citation). Holotype in USNM. Synonymy established by Lindroth (1961a: 157).

Distribution. This species is found from Prince Edward Island (Larochelle and Larivière 1990a: 27) to south-central British Columbia (Lindroth 1961a: 157), south to eastern Washington (Hatch 1953: 68, as *D. alternatus*), northern Utah (Utah County, USNM), Oklahoma (Custer and Latimer Counties, CMNH, UASM), and Long Island in New York (MCZ). Seemingly isolated at Fairbanks, Alaska (Lindroth 1961a: 157). The records from "New Jersey," "Maryland" (Bousquet and Larochelle 1993: 100), and "Colorado" (Wickham 1902: 232) need confirmation.
Records. CAN: AB, BC, MB, NB, NS, ON, PE, QC, SK **USA**: AK, IA, ID, IL, MA, ME, MI, MN, MT, ND, NE, NH, NY, OK, PA, RI, SD, UT, VT, WA, WI, WY [CO, MD, NJ]

[**politus group**]

Dyschirius cerberus Larson, 1968

Dyschirius cerberus Larson, 1968: 1108. Type locality: «Atchison [Atchison County], Kansas» (original citation). Holotype (♀) in USNM [# 69973].

Distribution. This species is known only from the holotype collected in northeastern Kansas.
Records. USA: KS

Dyschirius criddlei Fall, 1925

Dyschirius criddlei Fall, 1925: 309. Type locality: «Baldur, Manitoba» (original citation). Holotype (♂) in MCZ [# 23849]. Etymology. This specific name honors

Norman Criddle [1875-1933], a naturalist and entomologist established in Manitoba who collected extensively in his province.

Distribution. This species is known from southern Manitoba (Lindroth 1961a: 148), North Dakota (Grand Forks County, CNC, UASM), southeastern Nebraska (Foster F. Purrington pers. comm. 2010), Kansas (Stafford County, CNC, UASM), New Mexico (Chaves County, CNC, UASM), northwestern Texas (Hutchinson County, Darren A. Pollock pers. comm. 2011), and southern Florida (Monroe County, FFPC, UASM).
Records. CAN: MB **USA**: FL, KS, ND, NE, NM, TX

Dyschirius edentulus Putzeys, 1846

Dyschirius edentulus Putzeys, 1846: 51. Type locality: «Galveston [Galveston County], Texas» (original citation). Holotype [by monotypy] in MHNP (collection Chaudoir).

Dyschirius colossus Larson, 1968: 1110. Type locality: «Goose Island State Park, 9 mi[les] north of Rockport [Aransas County], Texas» (original citation). Holotype (♂) in USNM [# 69974]. Synonymy established by Whitehead (1970: 182).

Distribution. This species is known only from north-central Oklahoma (Herman 1986: 61), southeastern Texas (Putzeys 1846: 52; Larson 1968: 1110, as *D. colossus*; Cameron and Aransas Counties, MCZ, UASM), and Florida (Dixie County, CMNH; Monroe County, FFPC). The record from the lower peninsula of Michigan (Hubbard and Schwarz 1878: 644) is in error.
Records. USA: FL, OK, TX

Dyschirius erythrocerus LeConte, 1857

Dyschirius erythrocerus LeConte, 1857b: 78. Type locality: «Ohio; Pennsylvania» (original citation). Lectotype (♀), designated by Bousquet (1988a: 375), in MCZ [# 680].

Distribution. This species ranges from southern New Brunswick (Webster and Bousquet 2008: 16) to southeastern South Dakota (Kirk and Balsbaugh 1975: 16), south to southwestern Oklahoma (Kondratieff et al. 2005: 172), southern Louisiana (Saint Martin Parish, LSAM), northern Mississippi (Bolivar, Marshall, and Warren Counties, Peter W. Messer pers. comm. 2009), and Delaware [see Bousquet 1988a: Fig. 37]. The records from the Bahamas (Turnbow and Thomas 2008: 12) and Horn Island, Mississippi (Richmond 1968: 233) refer to *D. larochellei* Bousquet; that from Colorado (Wickham 1902: 232) is in error.
Records. CAN: NB, ON, QC **USA**: AR, CT, DE, IA, IL, IN, KS, KY, LA, MA, ME, MI, MN, MS, NE, NH, NJ, NY, OH, OK, PA, SD, TN, VT, WI
Note. Bulirsch (2009: 19) reported that *D. weyrauchi* Kult, described from one specimen collected in Peru in 1900, is a junior synonym of *D. erythrocerus*. If this synonymy is correct, then the specimen from Peru is probably mislabeled.

***Dyschirius larochellei* Bousquet, 1988**

Dyschirius larochellei Bousquet, 1988a: 374. Type locality: «6 mi[les] s[outh] L[ake] Placid, Archb[old] B[iological] St[ation], Florida» (original citation). Holotype (♂) in CNC [# 19659].

Distribution. This species is found along the Atlantic Coast from western Newfoundland (Lindroth 1955a: 45, as *D. erythrocerus*) to southern Florida, including the Keys (Peck and Thomas 1998: 17), the Bahamas, Cuba, and Hispaniola (Nichols 1988b: Fig. 5-6, as *D.* nr. *erythrocerus*), west along the Gulf Coast to southern Texas; also known from Yucatán in southern Mexico (Whitehead 1970: 181, as *D. erythrocerus*) [see Bousquet 1988a: Fig. 37].
Records. CAN: NB, NF, NS **USA**: CT, FL, LA, MA, MS, NH, NJ, NY, SC, VA, TX – Bahamas, Cuba, Hispaniola, Mexico

***Dyschirius pacificus* Lindroth, 1961**

Dyschirius pacificus Lindroth, 1961a: 144. Type locality: «Tofino, Vanc[ouver] Isl[and], B[ritish] C[olumbia]» (original citation). Holotype in CNC [# 7609].

Distribution. This species is confined to the Pacific Coast ranging from the Queen Charlotte Islands (Kavanaugh 1992: 59) south at least to northern California (Mendocino County, CNC).
Records. CAN: BC (QCI, VCI) **USA**: CA, OR, WA

***Dyschirius perversus* Fall, 1922**

Dyschirius perversus Fall, 1922c: 172. Type locality: «Miami, Manitoba» (original citation). Holotype in MCZ [# 23853].
Dyschirius desertus Fall, 1925: 310. Type locality: «Olancha (Owen's Lake) [Inyo County], California» (original citation). Holotype (♀) in MCZ [# 23850]. Synonymy established by Bousquet (1988a: 374).

Distribution. This rarely collected species is known from scattered localities in the southern parts of the Prairie Provinces (Lindroth 1961a: 147; Bousquet 1988a: 373), southeastern Oregon (Harney County, CNC), northwestern (Pershing County, MCZ) and west-central (Bechtel et al. 1983: 474) Nevada, north-central Utah (Utah County, USNM), and eastern California (Fall 1925: 310, as *D. desertus*; Inyo and Plumas Counties, CAS).
Records. CAN: AB, MB **USA**: CA, NV, OR, UT

***Dyschirius politus politus* (Dejean, 1825)**

Clivina polita Dejean, 1825: 422. Type locality: «environs de Paris; aussi en Allemagne» (original citation). Syntype(s) in MHNP.
Dyschirius irkutensis Fleischer, 1899: 11, 23. Type locality: «Quellgebiet des Irkut [= Irkutsk, Russia]» (original citation). At least one syntype in NMP (Fedorenko 1996: 160). Synonymy established by Ganglbauer (1906 : 266).

Dyschirius aureolus Notman, 1920b: 26. Type locality: «Schoharie [Schoharie County], N[ew] Y[ork]» (original citation). Two syntypes [2 ♂ originally cited] in SIM (Hennessey 1990: 466). Synonymy established by Lindroth (1954b: 122).

Dyschirius politus jenisseiensis G. Müller, 1924: 68. Type locality: «Dudinka, nella regione del fiume Jenissei [Taymyr Autonomous Okrug, northern Russia]» (original citation). Holotype [by monotypy] location unknown. Synonymy established by Fedorenko (1992: 102).

Distribution. This Holarctic subspecies is known from the British Islands to eastern Siberia, as far south as Italy, Bulgaria, Iran, Turkmenistan, Kyrgyzstan, and Mongolia (Balkenohl 2003: 226), and in the Nearctic Region from Alaska (Lindroth 1961a: 146) to Newfoundland (Lindroth 1955a: 36), south to southwestern Pennsylvania (Allegheny County, CMNH), eastern South Dakota (Kirk and Balsbaugh 1975: 16), northern New Mexico (Rio Arriba County, USNM), northeastern Nevada (Elko County, MCZ), and southwestern California (Los Angeles County, CAS).

Records. CAN: AB, BC, MB, NB, NF, NT, ON, QC, SK, YT **USA**: AK, CA, CO, ID, MA, ME, MI, MT, NH, NM, NV, NY, OH, OR, PA, SD, UT, VT, WA, WI, WY – **Holarctic**

Note. The subspecies *D. politus chamunensis* Fedorenko and *D. politus meridianus* Fedorenko occur in Asia.

Dyschirius sphaericollis (Say, 1823)

Clivina sphaericollis Say, 1823a: 23. Type locality: «Rumney [Grafton County], N[ew] H[ampshire]» (neotype label). Neotype (♀), designated by Lindroth and Freitag (1969: 334), in MCZ [# 33080].

Dyschirius subpunctatus Hatch, 1949b: 116. Type locality: «Vantage [Kittitas County], Washington» (original citation). Holotype (♂) in USNM. Synonymy established by Bousquet (1988a: 374).

Distribution. The range of this species extends from Newfoundland (Lindroth 1955a: 44) to south-central British Columbia, south to eastern Oregon (Baker County, MCZ), southeastern Arizona (Greenlee and Graham Counties, CMNH), central New Mexico (Socorro County, CNC), southern Texas (Herman 1986: 61; Dajoz 2004: 117), eastern Tennessee (Knox County, MCZ), and North Carolina (Herman 1986: 63). The records from "Georgia" (J.E. LeConte 1849: 25), Florida (Leng 1915: 568), and San Bernardino County in southwestern California (Riley 1893: 239) need confirmation.

Records. CAN: AB, BC, MB, NB, NF, NS (CBI), ON, PE, QC, SK **USA**: AR, AZ, CO, CT, DC, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NY, OH, OK, OR, PA, RI, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY [CA, FL, GA]

***Dyschirius truncatus* LeConte, 1857**

Dyschirius truncatus LeConte, 1857b: 78. Type locality: «Illinois» (original citation). Holotype [by monotypy] (♀) in MCZ [# 681].

Distribution. This species ranges from southern Manitoba to south-central British Columbia, north to east-central Alaska (Lindroth 1961a: 147), south to southern California (Fall 1901a: 41), central Arizona (Griffith 1900: 565), and southern Colorado (LeConte 1879d: 500; Wickham 1902: 232; Douglas County, CNC); also recorded from Baja California Sur (Horn 1895: 225). One old specimen labeled "Pittsburg VI Pa" (CMNH) is known.
Records. CAN: AB, BC, MB, NT, SK **USA**: AK, AZ, CA, CO, IA, ID, IL, IN, MO, ND, NE, NV, SD, UT, WA, WI [PA] – Mexico

[**pumilus group**]
***Dyschirius abbreviatus* Putzeys, 1846**

Dyschirius abbreviatus Putzeys, 1846 [January]: 12. Type locality: «Texas» (Putzeys 1861: 71), restricted to «Galveston [Galveston County]» by Putzeys (1867b: 51). Holotype [by monotypy] in MHNP (collection Chaudoir). Note. Putzeys (1846: 13) originally gave «Yucatan» as type locality but changed it to «Texas» later (Putzeys 1861: 71). This species is a senior primary homonym of *Dyschirius abbreviatus* Chaudoir, 1846 [June].

Distribution. This species inhabits the Coastal Plain ranging from the coast of southern North Carolina (Brunswick County, Ken Karns pers. comm. 2009) to southern Florida (Nichols 1988b: Fig. 5-5; Peck and Thomas 1998: 17), west to southeastern Texas (Putzeys 1867b: 51).
Records. USA: AL, FL, GA, LA, MS, NC, TX
Note. According to Whitehead (1970: 185), members of *D. darlingtoni* Kult, 1950 from Mexico are probably conspecific with those of *D. abbreviatus*.

***Dyschirius aratus* LeConte, 1852**

Dyschirius aratus LeConte, 1852a: 196. Type locality: «ad flumis Gilae ripas» (original citation). Two syntypes in MCZ [# 701].

Distribution. This species ranges from west-central Wisconsin (Messer 2010: 34) and southern Manitoba (Lindroth 1961a: 142, as *D. dentiger*) to the Okanagan Valley in south-central British Columbia (Bousquet 1987a: 115), south to southeastern California (Whitehead 1970: 186), Sonora (CNC), Chihuahua (CNC), southeastern Texas (Galveston County, CNC), and southeastern Mississippi (Jackson County, Drew A. Hildebrandt pers. comm. 2007).
Records. CAN: AB, BC, MB **USA**: AZ, CA, CO, ID, KS, MS, MT, NE, NM, NV, OK, OR, TX, UT, WA, WI, WY – Mexico

Dyschirius curvispinus Putzeys, 1846

Dyschirius curvispinus Putzeys, 1846: 41. Type locality: «Galveston [Galveston County], Texas» (original citation). Holotype [by monotypy] in MHNP (collection Chaudoir).

Distribution. This species is known from southern Maine (Kennebec County, Robert E. Nelson pers. comm. 1989), Connecticut (Litchfield County, CMNH) and "Rhode Island" (Sikes 2003: 7) in the northeast and from the Florida Panhandle (Peter W. Messer pers. comm. 2008) to southeastern Texas (Putzeys 1846: 42; Whitehead 1970: 186; Herman 1986: 61) in the southeast.
Records. USA: CT, FL, LA, ME, MS, RI, TX

Dyschirius montanus LeConte, 1879

Dyschirius montanus LeConte, 1879d: 507. Type locality: «[Fort] Garland [Costilla County], Colo[rado]» (original citation). Two syntypes in MCZ [# 699].
Dyschirius thompsoni Hatch, 1949b: 117. Type locality: «Condon [Gilliam County], Oregon» (original citation). Holotype (♀) in USNM. Synonymy established by Hatch (1953: 68), confirmed by Lindroth (1961a: 141).

Distribution. This species ranges from southern Quebec (Larochelle 1975: 82) to south-central British Columbia (Lindroth 1961a: 141), south to the Sierra Nevada in California (Dajoz 2004: 119), southeastern Arizona (Graham County, CNC), south-central Colorado (Wickham 1902: 232), Nebraska (Clopton 1991: 61), Wisconsin (Messer 2010: 34), and "Michigan" (Garry A. Dunn pers. comm. 1986). One old specimen simply labeled from New Mexico is known (Fall and Cockerell 1907: 156).
Records. CAN: AB, BC, MB, ON, QC, SK **USA**: AZ, CA, CO, MI, MN, NE, NV, OR, SD, WA, WI, WY [NM]

Dyschirius owen (Dajoz, 2004)

Dyschiriodes owen Dajoz, 2004: 118. Type locality: «Lieu dit Fish Slough, 25 km au nord de Bishop, Inyo County, Californie» (original citation). Holotype in Dajoz's collection (Paris, France).

Distribution. This species is known only from the two specimens collected at the type locality in eastern California.
Records. USA: CA

Dyschirius pumilus (Dejean, 1825)

Clivina pumila Dejean, 1825: 425. Type locality: «Amérique septentrionale» (original citation). One syntype in MHNP (Nichols 1988a: 209).
Dyschirius dentiger LeConte, 1857b: 79. Type locality: «New York and Pennsylvania» (original citation). Two syntypes in MCZ [# 695]. Synonymy established by Putzeys (1867b: 55), confirmed by Bousquet (1988a: 373).

Dyschirius rufiventris LeConte, 1857b: 79. Type locality: «Louisiana» (original citation). Holotype [by monotypy] (♂) in MCZ [# 698]. Synonymy established by Leng (1920: 48), confirmed by Bousquet (1988a: 373).

Dyschirius falciger LeConte, 1878b: 373. Type locality: «Tampa and Lake Harney [Florida]» (original citation). At least two syntypes, possibly four, in MCZ. Synonymy established by LeConte (1879a: 31).

Distribution. This species is known along the Coastal Plain and Piedmont Plateau from southeastern New York (Notman 1928: 212) to southern Florida including the Keys (Peck and Thomas 1998: 17), west to southern Texas (Aransas and Brooks Counties, CNC), and also from Minnesota (Gandhi et al. 2005: 924) and west-central Wisconsin (Messer 2010: 34). The record from southern Arizona (Wickham 1898: 300) is probably in error (Nichols 1988a: 209).
Records. USA: AL, DC, FL, GA, LA, MD, MN, MS, NC, NJ, NY, PA, SC, TX, VA, WI

Dyschirius sextoni Bousquet, 1987

Dyschirius sextoni Bousquet, 1987a: 113. Type locality: «Belleville, Ont[ario]» (original citation). Holotype (♂) in CNC [# 19237]. Etymology. The specific name was proposed for Richard Sexton [1930-2003], a friend of the author and a beetle collector in Quebec.

Distribution. This species is known only from the type locality in southern Ontario, from Monroe and Sheboygan Counties in Wisconsin (Purrington and Maxwell 1998: 190; Messer 2010: 35), and from Highlands County in central Florida (Vince Golia collection).
Records. CAN: ON **USA**: FL, WI

Dyschirius soda (Dajoz, 2004)

Dyschiriodes soda Dajoz, 2004: 119. Type locality: «Soda Lake près de Baker, San Bernardino County, Californie» (original citation). Holotype in Dajoz's collection (Paris, France).

Distribution. This species is known only from eight specimens collected at the type locality in southeastern California.
Records. USA: CA

Dyschirius sublaevis Putzeys, 1846

Dyschirius sublaevis Putzeys, 1846: 42. Type locality: «Galveston [Galveston County], Texas» (original citation). Syntype(s) [2 originally cited] in MHNP (collection Chaudoir).

Dyschirius filiformis LeConte, 1857b: 78. Type locality: «Coney Island [Kings County], near New York [New York]» (original citation). Three syntypes in MCZ [#

694]. Synonymy established by Erwin (2011b: 124) based on Nichols' (1988) unpublished thesis.

Distribution. This species is found along the Atlantic and Gulf of Mexico coasts from Maine (Larochelle and Larivière 1990a: 27, as *D. filiformis*; York County, CNC) and New Hampshire (Rockingham County, CNC) to southern Florida including the Keys (Nichols 1988b: Fig. 5-6; Peck and Thomas 1998: 17), west to southeastern Texas (Putzeys 1846: 43; Wickham 1897: 103); also recorded from the Bahamas (Turnbow and Thomas 2008: 12), Cuba (Nichols 1988b: Fig. 5-4), Cayman Islands (Erwin 2011b: 124), and Yucatán, Mexico (Peck 2005: 28). The record from northeastern Kansas (Popenoe 1878: 78, as *D. filiformis*) needs confirmation; one old specimen labeled "Milwaukee WIS" is also known (MCZ).
Records. USA: AL, CT, DE, FL, GA, LA, MA, MD, ME, MS, NC, NH, NJ, NY, RI, TX, VA [KS, WI] – Bahamas, Cayman Islands, Cuba, Mexico

[**quadrimaculatus group**]

***Dyschirius quadrimaculatus* Lindroth, 1961**

Dyschirius quadrimaculatus Lindroth, 1961a: 148. Type locality: «Irvine, Al[ber]ta» (original citation). Holotype (♂) in CNC [# 7606].

Distribution. This species is known from the Prairie Provinces (Lindroth 1961a: 148), "Montana" (Bousquet 1988a: 372), Wyoming (Park County, CNC), and "North Dakota" (Bousquet 1988a: 372). The record from "Idaho" (Bousquet and Larochelle 1993: 98) needs confirmation.
Records. CAN: AB, MB, SK **USA**: MT, ND, WY [ID]

[**sellatus group**]

***Dyschirius campicola* Lindroth, 1961**

Dyschirius campicola Lindroth, 1961a: 143. Type locality: «Del Rio [Val Verde County], Tex[as]» (original citation). Holotype (♂) in MCZ [# 30422].

Distribution. This species ranges from the southern part of the Prairie Provinces (Lindroth 1961a: 143; Bousquet 1987a: 115) to southern Arizona (Bousquet 1987a: 115; Dajoz 2007: 21), southern Texas, and central Arkansas, east to northeastern Ohio [see Davidson and Lee 1990: Fig. 1)].
Records. CAN: AB, MB **USA**: AR, AZ, CO, ID, IL, KS, ND, NE, NM, OH, OK, SD, TX, UT, WY

***Dyschirius pallipennis* (Say, 1823)**

Clivina pallipennis Say, 1823a: 24. Type locality: «Angl[e]sea [Cape May County], N[ew] J[ersey]» (neotype label). Neotype (♀), designated by Lindroth and Freitag (1969: 334), in MCZ [# 33079]. Note. «Egg-harbour [New Jersey], coast of Virginia and Florida» were the areas originally cited by Say (1823a: 24).

Distribution. The range of this species extends from southern Quebec (Larochelle 1975: 82) to southern Alberta (Bousquet 1987a: 115), south to northern Texas (Bowie and Winkler Counties, CMNH, USNM), southeastern Louisiana (West Baton Rouge Parish, LSAM), and southern Florida (Herman 1986: 63).
Records. CAN: AB, ON, QC, SK **USA**: AR, FL, GA, IL, KS, LA, MI, MO, MS, MT, ND, NE, NJ, NY, OK, PA, SD, TX, VA

Dyschirius salivagans **LeConte, 1875**

Dyschirius salivagans LeConte, 1875c: 169. Type locality: «Great Salt Lake [Davis County], Utah» (original citation). Holotype [by monotypy] (♀) in MCZ [# 700].

Distribution. This species has been reported from southern Oregon (Herman 1986: 60), western Nevada (Bousquet 1988a: 376), and Utah (Knowlton 1939: 2; Lindroth 1961a: 144; Herman 1986: 61). The records from South Dakota (Kirk and Balsbaugh 1975: 16) and Albuquerque in New Mexico (Fall and Cockerell 1907: 156) need confirmation.
Records. USA: NV, OR, UT [NM, SD]

Dyschirius sellatus **LeConte, 1857**

Dyschirius sellatus LeConte, 1857b: 78. Type locality: «Atlantic City [Atlantic County], on the coast of New Jersey» (original citation). Three syntypes in MCZ [# 677].

Distribution. This species ranges from Newfoundland (Lindroth 1955a: 45) to central Florida (Peck and Thomas 1998: 17), west to northeastern Texas (Lindroth 1961a: 143), including southeastern Mississippi (George and Greene Counties, Drew A. Hildebrandt pers. comm. 2008), and north to southern North Dakota (Burleigh County, Donald P. Schwert pers. comm. 1989) and eastern Minnesota (Gandhi et al. 2005: 924). The record from "Pennsylvania" (Bousquet and Larochelle 1993: 100) needs confirmation.
Records. CAN: NB, NF, NS, PE, QC **USA**: FL, GA, IL, LA, MD, MN, MO, MS, NC, ND, NE, NJ, NY, OK, SD, TX [PA]

[**tridentatus group**]

Dyschirius interior **Fall, 1922**

Dyschirius interior Fall, 1922c: 172. Type locality: «Baldur, Manitoba» (original citation). Holotype in MCZ [# 23852].
Dyschirius arizonicus Van Dyke, 1943: 22. Type locality: «Holbrook [Navajo County], Arizona» (original citation). Holotype in CAS [# 5303]. Synonymy established by Bousquet (1988a: 371).

Distribution. This species ranges from the southern part of the Prairie Provinces (Lindroth 1961a: 139) south to east-central California (Dajoz 2004: 119), northern Arizona (Van Dyke 1943: 22, as *D. arizonicus*; Mojave and Navajo Counties, MCZ,

USNM), and western Texas (Randall and Ward Counties, CMNH, USNM); also known from southwestern Oregon (Curry County, DAPC).
Records. CAN: AB, MB, SK **USA**: AZ, CA, CO, ID, NE, NM, NV, OR, TX, UT, WY

Dyschirius patruelis LeConte, 1852

Dyschirius patruelis LeConte, 1852a: 196. Type locality: «San Diego [San Diego County, California]» (original citation). Three syntypes in MCZ [# 686].

Distribution. This species is found along the Pacific Coast in southern California (LeConte 1852a: 196). The record from "Oregon" (Leng 1920: 47) needs confirmation; that from southwestern British Columbia (Hatch 1953: 67) is in error.
Records. USA: CA [OR]

Dyschirius tridentatus LeConte, 1852

Dyschirius tridentatus LeConte, 1852a: 195. Type locality: «ad San Diego [San Diego County, California]» (original citation). Holotype [by monotypy] (♀) in MCZ [# 688].

Dyschirius convexus LeConte, 1852a: 195. Type locality: «San Diego [San Diego County, California]» (original citation). Syntype(s) in MCZ [# 687]. Synonymy established by LeConte (1858a: 29), confirmed by Lindroth (1961a: 138).

Dyschirius quadridens Motschulsky, 1859a: 133. Type locality: California (inferred from title of the paper). One syntype, listed as "corruptum," in ZMMU (Keleinikova 1976: 213). Synonymy established by LeConte (1863b: 3).

Distribution. This species is found from northern Washington (Lindroth 1961a: 138) to western Montana (Russell 1968: 47), south to southwestern New Mexico (Sierra County, CMNH) and southwestern California (LeConte 1852a: 195; Moore 1937: 5). The records from "Nebraska" (Bousquet and Larochelle 1993: 98) and northwestern British Columbia (Hatch 1953: 67) are probably in error. One old specimen simply labeled "Van" is known (MCZ).
Records. USA: AZ, CA, ID, MT, NM, NV, OR, WA [BC]

Dyschirius unipunctatus Fall, 1901

Dyschirius unipunctatus Fall, 1901a: 207. «Pomona, San Bernardino, Riverside [California]» (original citation). Syntype(s) in MCZ [# 23855].

Distribution. This species is found in southern California (Fall 1901a: 207).
Records. USA: CA

Dyschirius varidens Fall, 1910

Dyschirius varidens Fall, 1910: 93. Type locality: «Los Angeles [Los Angeles County], California» (original citation). Holotype in MCZ [# 23856].

Distribution. This species ranges from "Washington" (Hatch 1953: 67) to western Montana (Jefferson County, CNC), south to northeastern Nevada (Elko County, CNC) and southern California (Fall 1910: 93; San Diego County, CAS, UASM). The record from "Wyoming" (Bousquet and Larochelle 1993: 98) needs confirmation.
Records. USA: CA, ID, MT, NV, OR, WA [WY]

Tribe Promecognathini LeConte, 1853

Promecognathi LeConte, 1853c: 371, 394. Type genus: *Promecognathus* Chaudoir, 1846.
Axinidiini Basilewsky, 1963a: 307. Type genus: *Axinidium* Sturm, 1843.

Diversity. Eight species in North America (two species) and South Africa (six species) arrayed in five genera: *Axinidium* Sturm (two species), *Holaxinidium* Basilewsky (one species), *Metaxinidium* Basilewsky (two species), *Paraxinidium* Basilewsky (one species), and *Promecognathus* (two species).

Genus *Promecognathus* Chaudoir, 1846

Promecognathus Chaudoir, 1846: 524. Type species: *Eripus laevissimus* Dejean, 1829 by monotypy. Etymology (original). From the Greek *promeces* (advanced, in front of, by extension elongate) and *gnathos* (jaw), alluding to the elongate mandibles ("*mandibulae longissimae*") of the adults [masculine].

Diversity. Two species restricted to western North America.
Identification. Lindroth (1961a: 125-128) commented on the structural differences between the two species.
Taxonomic Note. The status of the two forms as distinct species is questionable in my opinion. Van Dyke (1925: 123) considered the two forms as conspecific.

Promecognathus crassus LeConte, 1868

Promecognathus crassus LeConte, 1868b: 62. Type locality: «California» (original citation), herein restricted to Monterey, Monterey County (see Casey 1913: 94, as *P. corpulentus*). Three syntypes in MCZ [# 640].
Promecognathus contractus Casey, 1913: 94. Type locality: «Napa Co[unty], Cal[ifornia]» (syntype label). One syntype in USNM [# 46872]. Synonymy established by Lindroth (1961a: 127). Note. Casey (1913: 94) cited, probably by error, the type locality as "Lake Co[unty], California."
Promecognathus corpulentus Casey, 1913: 94. Type locality: «Monterey [Monterey County], California» (original citation). Lectotype, designated by Lindroth (1975: 113), in USNM [# 46873]. Synonymy established by Lindroth (1961a: 127).
Promecognathus grandiceps Casey, 1913: 94. Type locality: «California» (original citation). Lectotype, designated by Lindroth (1975: 113), in USNM [# 46874]. Synonymy established by Lindroth (1961a: 127).

Distribution. This species is found along the Pacific Coast from southwestern British Columbia, including Vancouver Island (Lindroth 1961a: 128), to central California (Casey 1913: 94, as *P. corpulentus*).
Records. CAN: BC (VCI) **USA**: CA, OR, WA

***Promecognathus laevissimus* (Dejean, 1829)**

Eripus laevissimus Dejean, 1829: 11. Type locality: «Californie» (original citation), restricted to «San Francisco [San Francisco County]» by Lindroth (1961a: 127). Holotype [by monotypy (see Dejean 1829: 9)] in MHNP (Lindroth 1955b: 13).
Promecognathus debilis Casey, 1897: 346. Type locality: «S[an]ta Cruz [Santa Cruz County], California» (original citation). Holotype [by monotypy] in USNM [# 46871]. Synonymy established by Lindroth (1961a: 127).

Distribution. This species is known from "Oregon" south at least to central California (Lindroth 1961a: 127; Fresno County, CAS), east to Washoe County in northwestern Nevada (La Rivers 1947: 139; Lindroth 1961a: 127).
Records. USA: CA, NV, OR

Subfamily BROSCINAE Hope, 1838

Broschidae Hope, 1838: 80. Type genus: *Broscus* Panzer, 1813.

Diversity. One tribe is included in this subfamily.

Tribe Broscini Hope, 1838

Broschidae Hope, 1838: 80. Type genus: *Broscus* Panzer, 1813.

Diversity. About 290 species (Häckel et al. 2010) in the Nearctic (four species, one of them adventive), Neotropical (about 30 species, one in Mexico, the other ones in South America), Australian (about 180 species), Oriental (five species), and Palaearctic (about 70 species) Regions placed in 34 genera. The genera are arrayed in five subtribes (Roig-Juñent 2000): Broscina (about 75 species), Creobiina (about 95 species in South America and the Australian Region), Anoxyina (five species in Mexico, Iran, and the Oriental Region), Baripodina (about 25 South American species), and Nothobroscina (about 90 species in the Australian Region and one in Chile). The group is better represented in the New World with about 215 species (74% of the world fauna) than in the Old World.

Subtribe Broscina Hope, 1838

Broschidae Hope, 1838: 80. Type genus: *Broscus* Panzer, 1813.
Cephalotida Heer, 1838: 7. Type genus: *Cephalotes* Bonelli, 1810 (= *Broscus* Panzer, 1813). Note. This family-group name is permanently invalid, being based on a preoccupied type genus (ICZN 1999: Article 39).

Zacotini G.H. Horn, 1881: 165, 169. Type genus: *Zacotus* LeConte, 1869.

Diversity. About 75 species in the Nearctic (four species), Oriental (four species), and Palaearctic (about 65 species) Regions. One species (*Miscodera arctica*) is Holarctic and one is adventive (*Broscus cephalotes*) in North America.

Genus *Miscodera* Eschscholtz, 1830

Miscodera Eschscholtz, 1830: 63. Type species: *Scarites arcticus* Paykull, 1798 by monotypy. Etymology (original). From the Greek *mischos* (peduncle) and *dere* (neck, by extension pronotum), alluding to the pedunculate body shape of the adults [feminine].

Leiochiton Curtis, 1831: plate 346. Type species: *Scarites arcticus* Paykull, 1798 by original designation. Etymology. From the Greek *leios* (smooth) and *chiton* (tunic, by extension cuticle), alluding to the smooth body ("very smooth and highly polished") of the adults [masculine].

Liochiton Agassiz, 1846: 203, 212. Unjustified emendation of *Leiochiton* Curtis, 1831.

Diversity. One Holarctic species in the subarctic and boreal regions.
Identification. Lindroth (1961a: 170-171) covered the species.
Taxonomic Note. Cladistic analysis of broscine genera performed by Roig-Juñent (2000) placed this genus as the sister-group of the Holarctic genus *Broscodera* Lindroth.

Miscodera arctica (Paykull, 1798)

Scarites arcticus Paykull, 1798: 85. Type locality: «Botnia occidentali & orientali [= Gulf of Bothnia, Sweden]» (original citation). Syntype(s) probably in NRSS.

Leiochiton readii Curtis, 1831: plate 346. Type locality: «on Cold-edge [Road], the moor due north of Halifax [West Yorkshire, United Kingdom]» (original citation). Syntype(s) location unknown. Synonymy established by Ganglbauer (1891a: 145).

Miscodera erythropus Motschulsky, 1844: 76. Type locality: «montagnes du Hamar-Daban près de la station Chybet [Irkutsk Oblast, Russia]» (original citation). Three syntypes in ZMMU (Keleinikova 1976: 196). Synonymy established by Horn (1881: 168).

Miscodera americana Mannerheim, 1853: 134. Type locality: «ad fl[umen] Skeljanktnu peninsulae Kenai [Alaska]» (original citation). Holotype [by monotypy] location unknown. Synonymy established by Horn (1881: 168).

Miscodera hardyi Chaudoir, 1861b: 525. Type locality: «S[ain]t Pierre [et] Miquelon» (original citation). Syntype(s) [2 originally cited] in MHNP. Synonymy established by Horn (1881: 168).

Distribution. This circumpolar species ranges from Ireland to the Bering Sea coast (Bousquet 2003b: 237) and from Alaska (Lindroth 1961a: 171) to Newfoundland (Lindroth 1955a: 133), south to northeastern New York (Notman 1928: 241), the upper peninsula of Michigan (Chippewa County, MCZ), northern Wisconsin (Bayfield County, MCZ), northern Colorado (Dajoz 1989: 337; Gilpin County, CMNH),

southern Montana, and northern Washington (Hatch 1933b: 7). Fossil remnants of this species, believed to be 2.0-2.5 million years old, have been found in Greenland (Bennike and Böcher 1990: 336; Böcher 1995: 23); others, about 20,530 years B.P., have been unearthen in northeastern Iowa (Woodman et al. 1996: 17).
Records. FRA: PM **CAN**: AB, BC, LB, MB, NB, NF, NS (CBI), NT, ON, QC, SK, YT **USA**: AK, CO, ME, MI, MT, NH, NY, VT, WA, WI, WY – **Holarctic**

Genus *Broscodera* Lindroth, 1961

Broscodera Lindroth, 1961b: 150. Type species: *Miscodera insignis* Mannerheim, 1852 by original designation. Etymology. From the generic name *Broscus* [*q.v.*] and the Greek *dere* (neck, by extension pronotum) [feminine].

Diversity. Northern Hemisphere, with four species in the Nearctic (one species) and Palaearctic (three species) Regions arrayed in two subgenera: *Broscodera s.str.* (one species) and *Sinobrosculus* Deuve (three species in Nepal, Gansu, and Sichuan).
Taxonomic Note. Cladistic analysis of broscine genera performed by Roig-Juñent (2000) placed this genus as the sister-group of the Holarctic genus *Miscodera* Eschscholtz.

Subgenus *Broscodera* Lindroth, 1961

Broscodera Lindroth, 1961b: 150. Type species: *Miscodera insignis* Mannerheim, 1852 by original designation.

Diversity. One species in the temperate regions of western North America.
Identification. Lindroth (1961a: 171-172) treated the species.

Broscodera insignis (Mannerheim, 1852)

Miscodera insignis Mannerheim, 1852: 296. Type locality: «insula Sitkha [= Baranof Island, Alaska]» (original citation). Holotype [by monotypy; designated lectotype by Lindroth (1969a: 1111)] (♂) in ZMH.

Distribution. This species is confined to the Pacific Coast and adjacent Coast Ranges, ranging from the Alexander Archipelago in southeastern Alaska to western Oregon (Lindroth 1961a: 172). The record from southeastern Wyoming (Lavigne 1977: 45) must be based on a mislabeled specimen.
Records. CAN: BC (QCI) **USA**: AK, OR, WA

Genus *Zacotus* LeConte, 1869

Zacotus LeConte, 1869c: 373. Type species: *Zacotus matthewsii* LeConte, 1869 by monotypy. Etymology. From the Greek *zacotos* (very angry) [masculine].

Diversity. One species in temperate western North America.
Identification. The species is covered in Lindroth's (1961a: 172-173) monograph.

Taxonomic Note. Cladistic analysis of broscine genera performed by Roig-Juñent (2000) placed this genus as the sister-group of the Asian genus *Eobroscus* Kryzhanovskij.

Zacotus matthewsii LeConte, 1869

Zacotus matthewsii LeConte, 1869c: 373. Type locality: Vancouver Island, British Columbia (inferred from title of the paper), herein restricted to Tofino (see Lindroth 1961a: 173). Holotype [by monotypy] (♀) in MCZ [# 5854]. Etymology. The specific name was proposed for Henry and Joseph Matthews, brothers of the British Coleopterist Reverend Andrew Matthews [1815-1897] who specialized in small beetles. Henry and Joseph Matthews collected in British Columbia, including Vancouver Island. Note. There is a clear evidence of an inadvertent error in the original publication of the name *matthewsii*. It should have been spelled *matthewsiorum* since the species was proposed for two men together (see ICZN 1999: Article 31.1.2). However, the spelling *matthewsii* has been in used since LeConte proposed the name and I believe it should be preserved. The case should be submitted to the Commission for a ruling.

Zacotus angustus Casey, 1920: 290. Type locality: «Josephine Co[unty], Oregon» (original citation). Lectotype (♂), designated by Lindroth (1975: 113), in USNM [47697]. Synonymy established by Hatch and Fender (1944: 188).

Zacotus subopacus Hopping, 1925: 206. Type locality: «Princeton, B[ritish] C[olumbia]» (original citation). Holotype (♀) in CNC [# 1380]. Synonymy established by Hatch and Fender (1944: 188).

Zacotus fredericki Nunenmacher, 1944: 12. Type locality: «Lincoln County, Oregon» (original citation). Holotype (♂) in FMNH (Goldman 2006). Synonymy established by Hatch and Fender (1944: 188).

Distribution. This species ranges from the southern part of the Alexander Archipelago to northwestern California, east to the Bitter Root Mountains in southwestern Montana (Ball 1956b: 34, Fig. 1).

Records. CAN: BC (QCI, VCI) **USA**: AK, CA, ID, MT, OR, WA

Note. Based on variation in color, lustre, and surface sculpture in adults, Ball (1956b) recognized a western and eastern "races" for this species.

Genus *Broscus* Panzer, 1813

Cephalotes Bonelli, 1810: Tabula Synoptica [junior homonym of *Cephalotes* Latreille, 1802]. Type species: *Carabus cephalotes* Linnaeus, 1758 by subsequent monotypy in Panzer (1813: 62). Etymology. From the Greek *cephalotos* (headed) [masculine].

Broscus Panzer, 1813: 62. Replacement name for *Cephalotes* Bonelli, 1810. Etymology. Uncertain, possibly a contracted form of the Greek *bibrosco* (eat, gnaw, consume) [masculine].

Diversity. Twenty-three species in the Palaearctic Region, one of them adventive in eastern North America.

Figure 18. *Schizogenius amphibius* (Haldeman). This small clivinine belongs to a genus endemic to the Western Hemisphere and is closely related to *Halocoryza* which is represented, besides North America, along the east and west coast of Africa and on many islands in the eastern parts of the Indian Ocean. The adults usually live along river banks near the water and this ecological preference was hinted at by Samuel Haldeman through the species' epithet.

Identification. Larochelle and Larivière (1989a) provided a description of the external structures as well as the male and female genitalia of the species found in North America.
Taxonomic Note. Cladistic analysis of broscine genera performed by Roig-Juñent (2000) placed this genus as the sister-group of the temperate Asian genus *Craspedonotus* Schaum.

Broscus cephalotes (Linnaeus, 1758)

Carabus cephalotes Linnaeus, 1758: 414. Type locality: «Europa» (original citation), restricted to «Suecia [Sweden]» by Lindroth (1957b: 339). Three possible syntypes in LSL (Lindroth 1957b: 330).

Distribution. This Palaearctic species is adventive in North America where it is known from Cape Breton Island and eastern Prince Edward Island (Larochelle and Larivière 1989a: Fig. 4). The first inventoried specimen found on this continent was caught in 1987.
Records. CAN: NS (CBI), PE – **Adventive**

Subfamily GEHRINGIINAE Darlington, 1933

Gehringiini Darlington, 1933b: 110. Type genus: *Gehringia* Darlington, 1933.

Diversity. Five species placed in two subtribes: Gehringiina (one species) and Helenaeina (three rarely collected species in the genus *Helenaea* Schatzmayr and Koch from Egypt, Turkey, and Yemen and one species in the genus *Afrogehringia* Baehr, Schüle and Lorenz from Namibia).
Identification. Baehr et al. (2009: 106) provided a key to all species of this subfamily.

Tribe Gehringiini Darlington, 1933

Gehringiini Darlington, 1933b: 110. Type genus: *Gehringia* Darlington, 1933.

Diversity. Three genera and five species are placed in this tribe.

Subtribe Gehringiina Darlington, 1933

Gehringiini Darlington, 1933b: 110. Type genus: *Gehringia* Darlington, 1933.

Diversity. One North American species belongs to this subtribe.

Genus *Gehringia* Darlington, 1933

Gehringia Darlington, 1933b: 110. Type species: *Gehringia olympica* Darlington, 1933 by original designation. Etymology. From the surname of Dr. John George Gehring [1857-1932] of Bethel, Maine, from whom Darlington was collecting "on shares" when he secured his specimens on Olympic Mountains. Born in Cleveland, Ohio, Gehring came to Bethel at 30 and eventually opened a clinic for the treatment of persons with nervous disorders. Dr. Gehring and his "inn" were the prototype and scene of Novelist Robert Herrick's The Master of the Inn. The name is feminine.

Diversity. One species in western North America.
Identification. The species was covered in Lindroth's (1961a: 4-5) monograph on the carabids of Canada and Alaska.

Gehringia olympica Darlington, 1933

Gehringia olympica Darlington, 1933b: 111. Type locality: «near Sol Duc Hot Springs [Clallam County], Olympic M[oun]t[ain]s, Washington» (original citation). Holotype (♀) in MCZ [# 17243].

Distribution. This minute species ranges from central Alaska (66.79376°N, 150.73164°W, Derek S. Sikes pers. comm. 2008) to southern Northwest Territories (CNC), south to northwestern Montana (Edwards 1975: 48), southeastern Idaho (Caribou County, CNC), and northeastern Oregon (Lindroth 1961a: 5).
Records. CAN: AB, BC, NT, YT **USA**: AK, ID, MT, OR, WA

Subfamily TRECHINAE Bonelli, 1810

Trechii Bonelli, 1810: Tabula Synoptica. Type genus: *Trechus* Clairville, 1806.

Diversity. Worldwide, with about 5,410 species arrayed in four tribes: Bembidiini (about 2,630 species), Pogonini (about 80 species), Trechini (about 2,650 species), and Zolini (about 50 species). The North American fauna is represented by about 615 species (roughly 11.3% of the world fauna).

Tribe Trechini Bonelli, 1810

Trechii Bonelli, 1810: Tabula Synoptica. Type genus: *Trechus* Clairville, 1806.

Diversity. Worldwide, with about 2,650 species arrayed in two subtribes: Trechina (about 2,470 species) and Trechodina (about 180 species). Only the subtribe Trechina is represented in North America.

Subtribe Trechina Bonelli, 1810

Trechii Bonelli, 1810: Tabula Synoptica. Type genus: *Trechus* Clairville, 1806.

Diversity. Worldwide, with about 2,470 species (Lorenz 2005: 168-200). The North American fauna is represented by about 225 species (roughly 9% of the world fauna) arrayed in nine genera.

Genus *Trechoblemus* Ganglbauer, 1891

Trechoblemus Ganglbauer, 1891a: 187. Type species: *Carabus micros* Herbst, 1784 by monotypy. Etymology. From the generic names *Trechus* [*q.v.*] and *Blemus* [*q.v.*] [masculine].

Diversity. Northern Hemisphere, with six species in temperate areas of the Nearctic (one western species) and Palaearctic (five species) Regions.
Identification. Barr (1972) provided a description of the external structures and male genitalia of the North American species.

Trechoblemus westcotti Barr, 1972

Trechoblemus westcotti Barr, 1972: 142. Type locality: «Hillsboro, Washington County, Oregon» (original citation). Holotype (♂) in ODAC.

Distribution. This species is known only from a few localities in the Willamette Valley in northwestern Oregon.
Records. USA: OR

Genus *Pseudanophthalmus* Jeannel, 1920

Pseudanophthalmus Jeannel, 1920b: 154. Type species: *Anophthalmus menetriesi* Motschulsky, 1862 by original designation. Etymology. From the Greek *pseudos* (fallacy, lie) and the generic name *Anophthalmus* [masculine].
Aphanotrechus Barr, 1960c: 65. Type species: *Aphanotrechus virginicus* Barr, 1960 by original designation. Synonymy established by Barr and Krekeler (1967: 1322). Etymology. From the Greek *aphanes* (invisible, obscure) and the generic name *Trechus* [*q.v.*] [masculine].

Diversity. About 145 described species, though more than 220 are known (Barr 2004: 1), restricted to eastern North America south of the last glaciation.
Identification. Barr (2004: 11-16) provided a key for the identification of the 26 species groups currently recognized. Barr (1959) revised the species of the *robustus* group (four species). Krekeler (1973) revised the species of the *barri* (two species), *horni* (13 species), *inexpectatus* (six species), and *rittmani* (three species) groups and provided keys for the identification of the species of the *horni* and *inexpectatus* groups. Barr (1981) revised the species of the *alabamae* (two species), *hirsutus* (seven species), *hubrichti* (six species), *hypolithos* (five species), *jonesi* (eight species), and *tennesseensis* (four species) groups but did not provide keys for their identification. He also treated the *engelhardti* group but many species were added subsequently.
Taxonomic Note. *Duvaliopsis* Jeannel, with six species in Carpathian and Transylvanian Alps of eastern Europe, is listed as a synonym of *Pseudanophthalmus* by Barr (2004: 7). Most other trechine students treat *Duvaliopsis* as a distinct genus.
Tennessarius Valentine (1952: 15), listed as a junior synonym of *Pseudanophthalmus* Jeannel by Barr (1962b: 111), is an unavailable name since the original description was not accompanied by the fixation of a type species (ICZN 1999: Article 13.3). Barr (2004: 7) provided a type species for *Tennessarius* along with a bibliographic reference to a previously published description but since he listed *Tennessarius* in synonymy with *Pseudanophthalmus*, the name is still unavailable (ICZN 1999: Article 11.6).

[**alabamae group**]

***Pseudanophthalmus alabamae* Valentine, 1932**

Pseudanophthalmus alabamae Valentine, 1932a: 273. Type locality: «Manitou Cave, 1.5 miles southwest of F[or]t Payne, at the foot of Lookout M[oun]t[ain] [DeKalb County], Ala[bama]» (original citation). Holotype (♂) in USNM [# 44279].

Distribution. This species is known from a number of caves in DeKalb County, northeastern Alabama (Barr 2004: 40).
Records. USA: AL

***Pseudanophthalmus georgiae* Barr, 1981**

Pseudanophthalmus georgiae Barr, 1981: 90. Type locality: «Blowing Spring Cave, 4 km N[orth]E[ast] Cloudland and 1.6 km N[orth]W[est] Chelsea at the east base of Lookout Mountain, Chattooga Co[unty], Georgia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from a few caves in Chattooga and Walker Counties, northwestern Georgia (Barr 2004: 40).
Records. USA: GA

[**audax group**]

***Pseudanophthalmus audax* (Horn, 1883)**

Anophthalmus audax G.H. Horn, 1883b: 272. Type locality: «Ronald's cave [Hart County, Kentucky]» (original citation). Holotype [by monotypy] (♂) in MCZ [# 8229].

Distribution. This species is known only from two caves in Hart and Edmonson Counties, Kentucky (Barr 2004: 24).
Records. USA: KY

***Pseudanophthalmus emersoni* Krekeler, 1958**

Pseudanophthalmus emersoni Krekeler, 1958: 176. Type locality: «Donnehue's Cave, one mile southwest of Bedford, Lawrence Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH. Etymology. The specific name honors Professor Alfred Edward Emerson [1896-1976] of the University of Chicago who worked on the systematics, phylogeny, distribution, and natural history of termites. His collection of more than one million specimens was given to the American Museum of Natural History.

Distribution. This species is known only from two caves in Lawrence County, southern Indiana (Barr 2004: 24).
Records. USA: IN

***Pseudanophthalmus packardi* Barr, 1959**

Pseudanophthalmus packardi Barr, 1959: 22. Type locality: «Bat Cave, Carter Caves State Park, Carter Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH. Etymology. The specific name was proposed for Alpheus Spring Packard, Jr. [1839-1905], American geologist and entomologist, professor of zoology and geology at Brown University, who collected the first specimen of this species.

Distribution. This species is known from several caves in Carter and Elliott Counties, northeastern Kentucky (Barr 2004: 24).
Records. USA: KY

[**barri group**]
***Pseudanophthalmus barri* Krekeler, 1973**

Pseudanophthalmus barri Krekeler, 1973: 64. Type locality: «Indian Cave, 0.5 mile southwest of Charlestown, Clark Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from several caves in southern Clark County, southern Indiana (Barr 2004: 24).
Records. USA: IN

***Pseudanophthalmus troglodytes* Krekeler, 1973**

Pseudanophthalmus troglodytes Krekeler, 1973: 65. Type locality: «Highbaugh Cave, 4.5 miles northwest of Jeffersontown, Jefferson Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from two nearby caves in Jefferson County, north-central Kentucky (Barr 2004: 24).
Records. USA: KY

[**cumberlandus group**]
***Pseudanophthalmus acherontis* Barr, 1959**

Pseudanophthalmus tiresias acherontis Barr, 1959: 20. Type locality: «Echo Cave, 2 miles northeast of Rockvale, Rutherford Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from several caves in Rutherford and Wilson Counties, Tennessee (Barr 2004: 33).
Records. USA: TN

***Pseudanophthalmus bendermani* Barr, 1959**

Pseudanophthalmus tiresias bendermani Barr, 1959: 21. Type locality: «Benderman Cave, Maury Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave located two miles west of Southport in west-central Tennessee (Barr 2004: 34).
Records. USA: TN

Pseudanophthalmus catherinae Barr, 1959

Pseudanophthalmus tiresias catherinae Barr, 1959: 17. Type locality: «Petty Cave, Marshall Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in south-central Tennessee (Barr 2004: 33).
Records. USA: TN

Pseudanophthalmus cumberlandus Valentine, 1937

Pseudanophthalmus cumberlandus Valentine, 1937: 96. Type locality: «Piper Cave, Monoville [Smith County], Tennessee» (original citation). Holotype (♂) in USNM [# 56124].

Distribution. This species is known from a few caves in Smith and Macon Counties, northern Tennessee (Barr 1980: 91; Barr 2004: 33).
Records. USA: TN

Pseudanophthalmus inquisitor Barr, 1980

Pseudanophthalmus inquisitor Barr, 1980: 94. Type locality: «Sheals Cave, Clay Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in northern Tennessee (Barr 2004: 34).
Records. USA: TN

Pseudanophthalmus insularis Barr, 1959

Pseudanophthalmus tiresias insularis Barr, 1959: 18. Type locality: «Baker Station Cave, in northern Davidson Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in north-central Tennessee (Barr 2004: 33).
Records. USA: TN

Pseudanophthalmus occidentalis Barr, 1959

Pseudanophthalmus tiresias occidentalis Barr, 1959: 18. Type locality: «De Priest Branch Cave, Lewis Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from two nearby caves in Lewis and Hickman Counties, western Tennessee (Barr 1980: 93; Barr 2004: 33).

Records. USA: TN

***Pseudanophthalmus productus* Barr, 1980**

Pseudanophthalmus productus Barr, 1980: 91. Type locality: «Neil Fisher Cave (= Rip Van Winkle Cave), Smith Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from several caves in Smith, Putnam, and Jackson Counties, northern Tennessee (Barr 1980: 92; Barr 2004: 33).
Records. USA: TN

***Pseudanophthalmus tiresias* Barr, 1959**

Pseudanophthalmus tiresias tiresias Barr, 1959: 16. Type locality: «Indian Grave Point Cave, 6 miles southwest of Smithville, DeKalb Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is still known only from two nearby caves in central Tennessee (Barr 1980: 92; Barr 2004: 33).
Records. USA: TN

***Pseudanophthalmus tullahoma* Barr, 1959**

Pseudanophthalmus tiresias tullahoma Barr, 1959: 20. Type locality: «Carroll Cave, Coffee Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from Carroll and Riley Creek caves, Coffee County, south-central Tennessee (Barr 1980: 93; Barr 2004: 33).
Records. USA: TN

[**engelhardti group**]
***Pseudanophthalmus aladdini* Valentine, 1945**

Pseudanophthalmus lodingi aladdini Valentine, 1945: 637. Type locality: «Aladdin Cave, upper end of Sharp Cove, Madison Co[unty], Ala[bama]» (original citation). Holotype (♂) in USNM [# 57049].

Distribution. This species is known from a few caves in Madison County, northern Alabama (Barr 2004: 35).
Records. USA: AL

***Pseudanophthalmus deceptivus* Barr, 1981**

Pseudanophthalmus deceptivus Barr, 1981: 43. Type locality: «Fisher Cave, near the top of Newmans Ridge, between Blackwater and Kyles Ford, Lee Co[unty], Virginia» (original citation). Holotype (♀) in AMNH.

Distribution. This species is known only from the type-locality cave in southwestern Virginia (Barr 2004: 34).
Records. USA: VA

Pseudanophthalmus distinguens Valentine, 1948

Pseudanophthalmus lodingi distinguens Valentine, 1948: 12. Type locality: «Inge Cave, 5½ miles south of Trinity, Morgan County, Ala[bama]» (original citation). Holotype (♂) probably in ALM.

Distribution. This species is known from a few caves in Morgan County, northern Alabama (Barr 2004: 36).
Records. USA: AL

Pseudanophthalmus engelhardti (Barber, 1928)

Anophthalmus engelhardti Barber, 1928: 195. Type locality: «English Cave [Claiborne County], Powell River, six miles south of Cumberland Gap, Tennessee» (original citation). Holotype (♂) in USNM [# 40824]. Etymology. The specific name honors George Paul Engelhardt [1871-1942], curator of natural history at the Brooklyn Museum and an authority on clear-wing moths.

Distribution. This species is known only from the type-locality cave in northeastern Tennessee (Barr 2004: 34).
Records. USA: TN

Pseudanophthalmus fastigatus Barr, 1981

Pseudanophthalmus fastigatus Barr, 1981: 50. Type locality: «Horseshoe Cave, 7 km S[outh]W[est] Chickamauga, Walker Co[unty], Georgia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in northwestern Georgia (Barr 2004: 35).
Records. USA: GA

Pseudanophthalmus fluviatilis Valentine, 1948

Pseudanophthalmus lodingi fluviatilis Valentine, 1948: 12. Type locality: «Rock House Cave, 1 mile south of Oleander, Marshall County, Ala[bama]» (original citation). Holotype (♂) probably in ALM.

Distribution. This species is known from several caves in Marshall and Morgan Counties, northern Alabama (Barr 2004: 36).
Records. USA: AL

Pseudanophthalmus fulleri Valentine, 1932

Pseudanophthalmus fulleri Valentine, 1932a: 272. Type locality: «Tennessee Cave [= 41 Crystal Caves], [near] Chattanooga [Hamilton County], Tenn[essee]» (original citation). Holotype (♀) in USNM [# 44277].

Distribution. This species is known only from a number of caves in Hamilton County, southeastern Tennessee, and Dade County, northwestern Georgia (Barr 1981: 49; Barr 2004: 35).
Records. USA: GA, TN

Pseudanophthalmus hesperus Barr, 1959

Pseudanophthalmus hesperus Barr, 1959: 15. Type locality: «Bethel Cave, Perry Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from a few caves in Perry and Wayne Counties, Tennessee (Barr 2004: 36).
Records. USA: TN

Pseudanophthalmus holsingeri Barr, 1965

Pseudanophthalmus holsingeri Barr, 1965a: 63. Type locality: «Fugates Cave, at Gibson Station, Lee Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 75261].

Distribution. This species has been found yet only at the type-locality cave in southwestern Virginia (Barr 2004: 35).
Records. USA: VA

Pseudanophthalmus humeralis Valentine, 1931

Pseudanophthalmus humeralis Valentine, 1931: 253. Type locality: «Crystal Cave, Monteagle [Grundy County], Tenn[essee]» (original citation). Holotype (♂) in USNM [# 44262].

Pseudanophthalmus humeralis brevis Valentine, 1932a: 273. Type locality: «Wonder Cave, Monteagle [Grundy County], Tenn[essee]» (original citation). Holotype (♂) in USNM [# 44278]. Synonymy established by Jeannel (1949b: 84).

Distribution. This species is known from a few caves in Grundy and Franklin Counties, southern Tennessee (Barr 2004: 35).
Records. USA: TN

Pseudanophthalmus lodingi Valentine, 1931

Pseudanophthalmus lödingi Valentine, 1931: 252. Type locality: «Shelta Cave, Huntsville [Madison County], Ala[bama]» (original citation). Holotype (♂) in USNM [# 44261].

Distribution. This species is known from several caves in Madison County, northern Alabama (Barr 2004: 35).
Records. USA: AL

Pseudanophthalmus meridionalis Valentine, 1945

Pseudanophthalmus lodingi meridionalis Valentine, 1945: 639. Type locality: «Saltpeter or Nyman Cave, ten miles southwest of Guntersville, Marshall Co[unty], Ala[bama]» (original citation). Holotype (♂) in USNM [# 57051].

Distribution. This species is known from a few caves in northern Alabama (Barr 2004: 36).
Records. USA: AL

Pseudanophthalmus nickajackensis Barr, 1981

Pseudanophthalmus nickajackensis Barr, 1981: 51. Type locality: «Nickajack Cave, 1.0 km S[outh] Shellmound Station near the mouth of Nickajack Cove, Marion Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in southern Tennessee (Barr 2004: 35).
Records. USA: TN

Pseudanophthalmus nortoni Barr, 1981

Pseudanophthalmus nortoni Barr, 1981: 48. Type locality: «Grassy Creek Cave, 0.7 km S[outh] Washington, Rhea Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in east-central Tennessee (Barr 2004: 35).
Records. USA: TN

Pseudanophthalmus profundus Valentine, 1945

Pseudanophthalmus lodingi profundus Valentine, 1945: 637. Type locality: «Natural Well, Monte Sano, Madison Co[unty], Ala[bama]» (original citation). Holotype (♂) in USNM [# 57048].

Pseudanophthalmus lodingi aquaticus Valentine, 1945: 638. Type locality: «Cave Spring Cave, between Troy and Keels M[oun]t[ain]s, near Berkley, Madison Co[unty], Ala[bama]» (original citation). Holotype (♂) in USNM [# 57050]. Synonymy established by Barr (2004: 35).

Distribution. This species is known from a few caves in northern Alabama (Barr 2004: 35).
Records. USA: AL

***Pseudanophthalmus rotundatus* Valentine, 1932**

Pseudanophthalmus rotundatus Valentine, 1932a: 271. Type locality: «English Cave [Claiborne County], Tenn[essee]» (original citation). Holotype (♂) in USNM [# 44276].

Distribution. This species has been reported from a number of caves in Claiborne and Hancock Counties in northeastern Tennessee and Lee County in southwestern Virginia (Barr 2004: 35).
Records. USA: TN, VA

***Pseudanophthalmus sequoyah* Barr, 1981**

Pseudanophthalmus sequoyah Barr, 1981: 52. Type locality: «Ellis (= Sequoyah) Cave, 3.3 km S[outh]W[est] Sulphur Springs, Dekalb Co[unty], Alabama» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in northeastern Alabama (Barr 2004: 35).
Records. USA: AL

***Pseudanophthalmus sidus* Barr, 1965**

Pseudanophthalmus sidus Barr, 1965a: 64. Type locality: «Meredith Saltpeter Cave, Shanghai Boat Dock, 6 miles southeast of LaFollette, Campbell Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH (Barr 1981: 48).

Distribution. This species is known only from the type-locality cave in northern Tennessee (Barr 2004: 35).
Records. USA: TN

***Pseudanophthalmus steevesi* Barr, 1981**

Pseudanophthalmus steevesi Barr, 1981: 53. Type locality: «Randolph Cave, 1.7 km S[outh]W[est] Blount Springs, Blount Co[unty], Alabama» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from a few caves in Blount County, north-central Alabama (Barr 2004: 35).
Records. USA: AL

***Pseudanophthalmus wallacei* Barr, 1981**

Pseudanophthalmus wallacei Barr, 1981: 46. Type locality: «Weaver Cave, 3.0 km N[orth] Clinton, Anderson Co[unty], Tennessee on the southeast (left) side of Clinch River» (original citation). Holotype (♀) in AMNH.

Distribution. This species is known only from the type-locality cave in eastern Tennessee (Barr 2004: 34).
Records. USA: TN

[**eremita group**]

***Pseudanophthalmus conditus* Krekeler, 1973**

Pseudanophthalmus conditus Krekeler, 1973: 73. Type locality: «Lawrence Cave, 0.5 mile south-southwest of Perryville, Boyle Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from two caves in central Kentucky (Barr 2004: 27).
Records. USA: KY

***Pseudanophthalmus eremita* (Horn, 1871)**

Anophthalmus eremita G.H. Horn, 1871: 328. Type locality: «Wyandotte Cave [Crawford County, Indiana]» (original citation). Holotype [by monotypy] in MCZ [# 34553].

Distribution. This species is known from two caves in Crawford and Harrison Counties, southern Indiana (Barr 2004: 27).
Records. USA: IN

[**gracilis group**]

***Pseudanophthalmus gracilis* Valentine, 1931**

Pseudanophthalmus gracilis Valentine, 1931: 253. Type locality: «Tommie's Cave [= Tawneys Cave], Newport [Giles County], V[irgini]a» (original citation). Holotype (♀) in USNM [# 44263].

Distribution. This species is known from a few caves in Giles and Craig Counties, western Virginia (Barr 2004: 21).
Records. USA: VA

***Pseudanophthalmus hadenoecus* Barr, 1965**

Pseudanophthalmus hadenoecus Barr, 1965a: 53. Type locality: «Mystic Cave, Pendleton Co[unty], West Virginia» (original citation). Holotype (♂) in USNM [# 75266].

Distribution. This species is known only from the type-locality cave, near Onego, in eastern West Virginia (Barr 2004: 21).
Records. USA: WV

[**grandis group**]

***Pseudanophthalmus fuscus constrictus* Valentine, 1932**

Pseudanophthalmus fuscus constrictus Valentine, 1932a: 267. Type locality: «Organ Cave, 2 miles southeast of Ronceverte, east of the Greenbrier River [Greenbrier County], W[est] V[irgini]a» (original citation). Holotype (♂) in USNM [# 44272].

Distribution. This subspecies is known only from a few caves in Greenbrier and Monroe Counties, southeastern West Virginia (Barr 2004: 17).
Records. USA: WV

***Pseudanophthalmus fuscus fuscus* Valentine, 1931**

Pseudanophthalmus fuscus Valentine, 1931: 254. Type locality: «Kaufman's Cave [= Coffman Cave], Frankford [Greenbrier County], W[est] V[irgini]a» (original citation). Holotype (♀) in USNM [# 44266].

Pseudanophthalmus subaequalis Valentine, 1931: 255. Type locality: «Kaufman's Cave [= Coffman Cave], Frankford [Greenbrier County], W[est] V[irginia]» (original citation). Holotype (♂) in USNM [# 44265]. Synonymy established by Valentine (1932a: 267).

Distribution. This subspecies is known from several caves in Greenbrier County, southeastern West Virginia (Barr 2004: 17).
Records. USA: WV

***Pseudanophthalmus grandis elevatus* Valentine, 1932**

Pseudanophthalmus grandis elevatus Valentine, 1932a: 265. Type locality: «Organ Cave, 2 miles southeast of Ronceverte, east of the Greenbrier River [Greenbrier County], W[est] V[irgini]a» (original citation). Holotype (♂) in USNM [# 44269].

Distribution. This subspecies is known only from a few caves in Greenbrier and Monroe Counties, southeastern West Virginia (Barr 2004: 17).
Records. USA: WV

***Pseudanophthalmus grandis grandis* Valentine, 1931**

Pseudanophthalmus grandis Valentine, 1931: 254. Type locality: «Higginbotham's large cave, Frankford [Greenbrier County], W[est] V[irgini]a» (original citation). Holotype (♂) in USNM [# 44264].

Distribution. This subspecies is known from several caves in Greenbrier County, southeastern West Virginia (Barr 2004: 17).
Records. USA: WV

Pseudanophthalmus henroti Jeannel, 1949

Pseudanophthalmus henroti Jeannel, 1949b: 69. Type locality: «Arbuckle's cave, près de Lewisburg, rive droite de Greenbrier river, Greenbrier County, West Virginia» (original citation). Holotype (♂) probably in MHNP. Etymology. The specific name was proposed for Henri Henrot [1913-1973], physician in Paris and specialist of the cave fauna, particularly the catopids. His collection was offered to the Muséum d'Histoire Naturelle, Paris, in 1973.

Distribution. This species is known from a few caves in southern Greenbrier County, West Virginia (Barr 2004: 17).
Records. USA: WV

Pseudanophthalmus hypertrichosis Valentine, 1932

Pseudanophthalmus hypertrichosis Valentine, 1932a: 266. Type locality: «Martha Clarke Cave, 2 miles southwest of Hillsboro [Pocahontas County], W[est] V[irgini]a» (original citation). Holotype (♂) in USNM [# 44271].

Distribution. This species is known only from a few caves in southern Pocahontas County, east-central West Virginia (Barr 2004: 17).
Records. USA: WV

Pseudanophthalmus krekeleri Barr, 1965

Pseudanophthalmus krekeleri Barr, 1965a: 52. Type locality: «Rich Mountain Cave, Randolph Co[unty], West Virginia» (original citation). Holotype (♂) in USNM [# 75264]. Etymology. This species is named after Carl Herman Krekeler [1920-2012], professor of biology at Valparaiso University in Indiana. Krekeler published three papers on cave carabids.

Distribution. This species is known only from a few specimens collected at the type-locality cave in northeastern West Virginia (Barr 2004: 18).
Records. USA: WV

Pseudanophthalmus montanus Barr, 1965

Pseudanophthalmus montanus Barr, 1965a: 52. Type locality: «Bennett Cave, Tucker Co[unty], West Virginia» (original citation). Holotype (♂) in USNM [# 75265].

Distribution. This species is known only from two caves in Tucker County, northeastern West Virginia (Barr 2004: 18).
Records. USA: WV

Pseudanophthalmus orthosulcatus Valentine, 1932

Pseudanophthalmus grandis orthosulcatus Valentine, 1932a: 265. Type locality: «cave opening about 800 ft. north of the village Greenville [= Greenville Saltpeter Cave]

[Monroe County], W[est] V[irgini]a» (original citation). Holotype (♀) in USNM [# 44270].

Distribution. This species is known only from a few caves in Monroe County, southeastern West Virginia (Barr 2004: 17).
Records. USA: WV

***Pseudanophthalmus sylvaticus* Barr, 1967**

Pseudanophthalmus sylvaticus Barr, 1967b: 167. Type locality: «east base of Kennison Mountain near the Cranberry Glades (1000 m), Pocahontas Co[unty], West Virginia» (original citation). Holotype (♂) in USNM [# 75271].

Distribution. This species is known only from two nearby places in the Yew Mountains, east-central West Virginia (Barr 2004: 17).
Records. USA: WV

***Pseudanophthalmus virginicus* (Barr, 1960)**

Aphanotrechus virginicus Barr, 1960c: 66. Type locality: «Hugh Young Cave, 0.5 mile southeast of Maiden Spring, Tazewell Co[unty], Virginia» (original citation). Holotype (♀) in AMNH [# 1046].

Distribution. This species is still known only from the type-locality cave in southwestern Virginia (Barr 2004: 18).
Records. USA: VA

[**hirsutus group**]

***Pseudanophthalmus assimilis* Barr, 1981**

Pseudanophthalmus assimilis Barr, 1981: 65. Type locality: «Ellis (= Sequoyah) Cave, 3.3 km S[outh]W[est] Sulphur Springs, DeKalb Co[unty], Alabama» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from two caves in DeKalb County, northeastern Alabama (Barr 2004: 37).
Records. USA: AL

***Pseudanophthalmus delicatus* Valentine, 1932**

Pseudanophthalmus hirsutus delicatus Valentine, 1932a: 270. Type locality: «Gilly's cave, 1 mile south of Pennington Gap [Lee County], V[irgini]a» (original citation). Holotype (♂) in USNM [# 44274].

Distribution. This species is known from several caves in Lee County, southwestern Virginia (Barr 1981: 60; Barr 2004: 37).
Records. USA: VA

Pseudanophthalmus digitus Valentine, 1932

Pseudanophthalmus digitus Valentine, 1932a: 270. Type locality: «[Tennessee Caverns] on the south side of the Tennessee River about 5 miles west of Chattanoogan [Hamilton County], Raccoon M[oun]t[ain], Tenn[essee]» (original citation). Holotype (♀) in USNM [# 44275].

Distribution. This species is known from caves in Hamilton County, Tennessee, and Dade County, Georgia (Barr 1981: 64; Barr 2004: 37).
Records. USA: GA, TN

Pseudanophthalmus hirsutus Valentine, 1931

Pseudanophthalmus hirsutus Valentine, 1931: 252. Type locality: «King Solomon's Cave [= Cudjos Cave], Cumberland Gap [Lee County, Virginia], Tenn[essee]» (original citation). Holotype (♂) in USNM [# 44260].

Distribution. This species is known from two nearby caves in Cumberland Gap National Park, Lee County, southwestern Virginia (Barr 1981: 60; Barr 2004: 37).
Records. USA: VA

Pseudanophthalmus paulus Barr, 1981

Pseudanophthalmus paulus Barr, 1981: 63. Type locality: «Nobletts Cave, 4.8 km W[est] Sweetwater on the west side of Watson Ridge, Monroe Co[unty], Tennessee» (original citation). Holotype (♀) in AMNH.

Distribution. This species is known only from the type-locality cave in southeastern Tennessee (Barr 2004: 37).
Records. USA: TN

Pseudanophthalmus sericus Barr, 1981

Pseudanophthalmus sericus Barr, 1981: 62. Type locality: «Lane Cave, in the valley of Moccasin Creek, Scott Co[unty], Virginia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in southwestern Virginia (Barr 2004: 37).
Records. USA: VA

Pseudanophthalmus ventus Barr, 1981

Pseudanophthalmus ventus Barr, 1981: 64. Type locality: «Blowing Cave, in town of Sequatchie, Marion Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in southern Tennessee (Barr 2004: 37).
Records. USA: TN

[**horni group**]

***Pseudanophthalmus abditus* Krekeler, 1973**

Pseudanophthalmus horni abditus Krekeler, 1973: 44. Type locality: «Swope Cave, 4.5 miles north of Versailles, Woodford Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from a few caves in Woodford and Jessamine Counties, Kentucky (Barr 2004: 22).
Records. USA: KY

***Pseudanophthalmus caecus* Krekeler, 1973**

Pseudanophthalmus horni caecus Krekeler, 1973: 43. Type locality: «Clifton Cave, 0.6 mile east-southeast of Clifton, Woodford Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the type-locality cave in east-central Kentucky (Barr 2004: 22).
Records. USA: KY

***Pseudanophthalmus chthonius* Krekeler, 1973**

Pseudanophthalmus chthonius Krekeler, 1973: 50. Type locality: «Wilson Cave, 1.5 miles northwest of Kent, Jefferson Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from a few caves in Jefferson, Jennings, and Clark Counties, southern Indiana (Krekeler 1973: 51; Barr 2004: 23).
Records. USA: IN

***Pseudanophthalmus desertus* Krekeler, 1973**

Pseudanophthalmus desertus desertus Krekeler, 1973: 49. Type locality: «Jones Cave, 0.8 mile northeast of Locust Grove, Clark Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from a few widely scattered caves in Clark, Henry, Scott, and Owen Counties, Kentucky (Krekeler 1973: 49; Barr 2004: 22).
Records. USA: KY
Note. According to Barr (2004: 22), the Henry and Owen County populations possibly represent a distinct species.

***Pseudanophthalmus elongatus* Krekeler, 1973**

Pseudanophthalmus elongatus Krekeler, 1973: 46. Type locality: «Old Fort Cave, 1.2 miles northeast of Harrodsburg, Mercer Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from a few caves in Mercer and Garrard Counties, central Kentucky (Barr 2004: 22).
Records. USA: KY

Pseudanophthalmus exoticus Krekeler, 1973

Pseudanophthalmus exoticus Krekeler, 1973: 53. Type locality: «Townsend Cave, 4 miles west-northwest of Zachariah, [Lee County] Estill Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the holotype collected in Lee County, not Estill County as reported by Krekeler (1973: 53), in eastern Kentucky (Barr 2004: 23).
Records. USA: KY

Pseudanophthalmus horni (Garman, 1892)

Anophthalmus horni Garman, 1892: 241. Type locality: «within the corporate limits of Lexington [Fayette County, Kentucky]» (original citation), restricted to «Reid (= Picadome) Cave, at Picadome School» by Barr (2004: 22). Syntype(s) location unknown (probably in USNM). Note. Barber (1928: 196) stated that Garman sent six specimens of this species, labeled "Lexington, Ky. 10.9.92," to the USNM. These specimens are probably syntypes.

Pseudanophthalmus horni garmani Jeannel, 1949b: 49. Type locality: «Reid's cave, à 2 km W[est] de Lexington, Fayette County, Kentucky» (original citation). Holotype in MHNP. Synonymy established by Krekeler (1973: 41). Etymology. The subspecific name was proposed for Harrison Garman [1856-1944], professor at the University of Illinois, later at the University of Kentucky, and state entomologist at the Kentucky Agricultural Experiment Station. Garman was an outstanding entomologist but not a specialist on any groups or subjects.

Pseudanophthalmus horni minor Jeannel, 1949b: 49. Type locality: «Phelp's cave, à 5 miles S[outh]-W[est] de Lexington, Fayette County, Kentucky» (original citation). Holotype probably in MHNP. Synonymy established by Krekeler (1973: 42).

Distribution. This species is known from several caves in Fayette County, north-central Kentucky (Barr 2004: 22).
Records. USA: KY

Pseudanophthalmus krameri Krekeler, 1973

Pseudanophthalmus krameri Krekeler, 1973: 54. Type locality: «Cave Hill Cave, 5 miles northwest of West Union, Adams Co[unty], Ohio» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the type-locality cave in southern Ohio (Barr 2004: 23).
Records. USA: OH

***Pseudanophthalmus major* Krekeler, 1973**

Pseudanophthalmus desertus major Krekeler, 1973: 50. Type locality: «Beaver Cave, 3 miles northeast of Oddville, Harrison Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the type-locality cave, 35 miles northeast of Lexington, northern Kentucky (Barr 2004: 22).
Records. USA: KY

***Pseudanophthalmus ohioensis* Krekeler, 1973**

Pseudanophthalmus ohioensis Krekeler, 1973: 52. Type locality: «Freeland Cave, 6 miles southeast of Peebles, Adams Co[unty], Ohio» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the type-locality cave in southern Ohio (Barr 2004: 23).
Records. USA: OH

***Pseudanophthalmus pholeter* Krekeler, 1973**

Pseudanophthalmus pholeter Krekeler, 1973: 55. Type locality: «Adams Cave, 5 miles south-southwest of Richmond, Madison Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the type-locality cave in east-central Kentucky (Barr 2004: 23).
Records. USA: KY

***Pseudanophthalmus solivagus* Krekeler, 1973**

Pseudanophthalmus solivagus Krekeler, 1973: 44. Type locality: «Weber Cave, 2 miles northwest of Nonesuch, Woodford Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from a few caves in Woodford and Jessamine Counties, Kentucky (Barr 2004: 22).
Records. USA: KY

***Pseudanophthalmus tenebrosus* Krekeler, 1973**

Pseudanophthalmus tenebrosus Krekeler, 1973: 48. Type locality: «Stevens Creek Cave, 0.85 mile east-southeast of Orville, Henry Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the type-locality cave in northern Kentucky (Barr 2004: 22).
Records. USA: KY

[**hubbardi group**]

***Pseudanophthalmus avernus* Valentine, 1945**

Pseudanophthalmus hubbardi avernus Valentine, 1945: 648. Type locality: «Endless Caverns, Rockingham Co[unty], V[irgini]a» (original citation). Holotype (♂) in USNM [# 57053].

Distribution. This species is known only from the type-locality cave in west-central Virginia (Barr 2004: 18).
Records. USA: VA

***Pseudanophthalmus hubbardi* (Barber, 1928)**

Anophthalmus hubbardi Barber, 1928: 196. Type locality: «Luray Cave, Page County, Virginia» (original citation). Holotype (♀) in USNM [# 40823].

Distribution. This species is known only from the type-locality cave in northern Virginia (Barr 2004: 18).
Records. USA: VA

***Pseudanophthalmus intersectus* Barr, 1965**

Pseudanophthalmus intersectus Barr, 1965a: 57. Type locality: «Crossroads Cave, near Millboro Springs, Bath Co[unty], Virginia» (original citation). Holotype (♂) location unknown (originally in T.C. Barr's collection).

Distribution. This species is known only from the type-locality cave in western Virginia (Barr 2004: 18).
Records. USA: VA

***Pseudanophthalmus limicola* Jeannel, 1931**

Pseudanophthalmus hubbardi limicola Jeannel, 1931: 450. Type locality: «Maddens cave, à 4 milles de New-Market, Shenandoah Co[unty], Virginia» (original citation). Holotype in MHNP.

Distribution. This species is known from a few nearby caves in Shenandoah County, northern Virginia (Barr 2004: 18).
Records. USA: VA

***Pseudanophthalmus parvicollis* Jeannel, 1931**

Pseudanophthalmus hubbardi parvicollis Jeannel, 1931: 450. Type locality: «Battlefield Crystal cave, située à un mille au nord de Strasburg [Rockingham County], Virginia» (original citation). Holotype (♀) in USNM [# 43665].

Distribution. This species is known only from the type-locality cave in northern Virginia (Barr 2004: 18).
Records. USA: VA

Figure 19. *Promecognathus crassus* LeConte. This species, along with its close relative *P. laevissimus*, are western coastal elements that feed on polydesmid millipedes. The adults straddle their prey, moving quickly toward the head to pierce the neck and sever the ventral nerve cord with their long mandibles, thereby preventing the millipedes from using their cyanide defense spray. Promecognathines represent a very old, relic lineage, likely originating from Pangea, represented today only in western North America and the Cape Province in South Africa.

Pseudanophthalmus potomaca Valentine, 1932

Pseudanophthalmus potomaca Valentine, 1932a: 262. Type locality: «[Kenny] Simmons' Cave, on South Branch Potomac River, 10 miles south of Franklin [Pendleton County], W[est] V[irgini]a» (original citation). Holotype (♂) in USNM [# 44267].

Distribution. This species is known from two nearby caves in Pendleton County, eastern West Virginia, and Highland County, western Virginia (Barr 2004: 18).
Records. USA: VA, WV

Pseudanophthalmus senecae Valentine, 1932

Pseudanophthalmus potomaca senecae Valentine, 1932a: 263. Type locality: «Seneca Caves [= Stratosphere Balloon Cave; see Barr 1965a: 58], on the North Fork Potomac River, 4 miles northeast of Riverton [Pendleton County], W[est] V[irgini]a» (original citation). Holotype (♂) in USNM [# 44268].

Distribution. This species is known from a few nearby caves in eastern West Virginia (Barr 2004: 19).
Records. USA: WV

[**hubrichti group**]

Pseudanophthalmus egberti Barr, 1965

Pseudanophthalmus egberti Barr, 1965a: 49. Type locality: «Starnes Cave, Giles Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 75268].

Distribution. This species is known from two caves in Giles County, western Virginia (Barr 1981: 69; Barr 2004: 38).
Records. USA: VA

Pseudanophthalmus hubrichti Valentine, 1948

Pseudanophthalmus hubrichti Valentine, 1948: 13. Type locality: «Dougherty's Cave, 4½ miles north of Lebanon, Russell Co[unty], V[irgini]a» (original citation). Holotype (♂) probably in ALM. Etymology. The specific name was given in honor of Leslie Raymond Hubricht [1908-2005], world authority on the land snails of eastern United States, author of numerous articles on North American land and freshwater mollusks, and prolific collector.

Distribution. This species is known only from the type-locality cave in southwestern Virginia (Barr 2004: 38).
Records. USA: VA

***Pseudanophthalmus paradoxus* Barr, 1981**

Pseudanophthalmus paradoxus Barr, 1981: 70. Type locality: «Sensabaugh Saltpeter Cave, about 8 km W[est] Kingsport, Hawkins Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in northeastern Tennessee (Barr 2004: 38).
Records. USA: TN

***Pseudanophthalmus quadratus* Barr, 1965**

Pseudanophthalmus quadratus Barr, 1965a: 60. Type locality: «Straleys Cave, Giles Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 75262].

Distribution. This species is known only from two nearby caves near Eggleston, western Virginia (Barr 2004: 38).
Records. USA: VA

***Pseudanophthalmus sanctipauli* Barr, 1981**

Pseudanophthalmus sanctipauli Barr, 1981: 67. Type locality: «Banners Corner Cave, near S[ain]t Paul, Russell Co[unty], Virginia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from two caves in Russell and Scott Counties, southwestern Virginia (Barr 2004: 38).
Records. USA: VA

***Pseudanophthalmus vicarius* Barr, 1965**

Pseudanophthalmus vicarius Barr, 1965a: 48. Type locality: «Hugh Young Cave, near Maiden Spring, Tazewell Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 75267].

Distribution. This species is known from a number of caves in Tazewell County, southwestern Virginia (Barr 1981: 70; Barr 2004: 38).
Records. USA: VA

[**hypolithos group**]
***Pseudanophthalmus calcareus* Barr, 1981**

Pseudanophthalmus calcareus Barr, 1981: 85. Type locality: «Limestone Cave, on the northwest slope of Pine Mountain, 2.5 km N[orth]N[orth]W[est] of the common corner of Whitley Co[unty], Kentucky, and Campbell and Claiborne Co[untie]s, Tennessee, in Whitley Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in Whitley County, southeastern Kentucky (Barr 2004: 40).
Records. USA: KY

Pseudanophthalmus frigidus Barr, 1981

Pseudanophthalmus frigidus Barr, 1981: 86. Type locality: «Icebox Cave, 25 m above L & N railroad tracks on north side of Cumberland River in the town of Pineville, 1.0 km S[outh]E[ast] of the courthouse, Bell Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in southeastern Kentucky (Barr 2004: 40).
Records. USA: KY

Pseudanophthalmus hypolithos Barr, 1981

Pseudanophthalmus hypolithos Barr, 1981: 83. Type locality: «Old Quarry Cave, 1.8 km S[outh]S[outh]E[ast] Ashcamp, Pike Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from the type-locality cave in Pike County and two abandoned coal mines in Floyd County, eastern Kentucky (Barr 2004: 40).
Records. USA: KY

Pseudanophthalmus praetermissus Barr, 1981

Pseudanophthalmus praetermissus Barr, 1981: 87. Type locality: «Kern's Cave No. 1, Scott Co[unty], Virginia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in southwestern Virginia (Barr 2004: 40).
Records. USA: VA

Pseudanophthalmus scholasticus Barr, 1981

Pseudanophthalmus scholasticus Barr, 1981: 84. Type locality: «Sawmill Hollow Cave, 2 km N[orth]N[orth]W[est] Nolansburg and 600 m E[ast]S[outh]E[ast] Pine Mountain Settlement School on the northwest side of Pine Mountain, Harlan Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in southeastern Kentucky (Barr 2004: 40).
Records. USA: KY

[**inexpectatus group**]

***Pseudanophthalmus cnephosus* Krekeler, 1973**

Pseudanophthalmus cnephosus Krekeler, 1973: 61. Type locality: «Eli Reed Cave, 6.5 miles east-southeast of Hodgenville, Larue Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from two caves in Larue and Nelson Counties, central Kentucky (Barr 2004: 21).
Records. USA: KY

***Pseudanophthalmus inexpectatus* Barr, 1959**

Pseudanophthalmus inexpectatus Barr, 1959: 10. Type locality: «White Cave, Mammoth Cave National Park, Edmonson Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from a few caves located in Mammoth Cave National Park, Kentucky (Barr 2004: 21).
Records. USA: KY

***Pseudanophthalmus orientalis* Krekeler, 1973**

Pseudanophthalmus inexpectatus orientalis Krekeler, 1973: 59. Type locality: «Wilson Cave, 1 mile southeast of Black Gnat, Green Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from several caves in Green, Hart, and Taylor Counties, central Kentucky (Barr 2004: 21).
Records. USA: KY

***Pseudanophthalmus parvus* Krekeler, 1973**

Pseudanophthalmus parvus Krekeler, 1973: 62. Type locality: «Tatum Cave, 1.8 miles west-southwest of Riley, Marion Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the type-locality cave in central Kentucky (Barr 2004: 21).
Records. USA: KY

***Pseudanophthalmus puteanus* Krekeler, 1973**

Pseudanophthalmus puteanus Krekeler, 1973: 60. Type locality: «Old Well Cave, 0.6 mile southeast of Nevada, Mercer Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from two nearby caves in Mercer and Boyle Counties, Kentucky (Barr 2004: 21).
Records. USA: KY

Pseudanophthalmus umbratilis Krekeler, 1973

Pseudanophthalmus umbratilis Krekeler, 1973: 62. Type locality: «Robinson Cave, 4.5 miles west-northwest of Lancaster, Garrard Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from several caves in Garrard, Fayette, Woodford, and Owen Counties, Kentucky (Barr 2004: 21).
Records. USA: KY

[**intermedius group**]

Pseudanophthalmus intermedius (Valentine, 1931)

Neaphaenops intermedius Valentine, 1931: 249. Type locality: «Wonder Cave, Monteagle [Grundy County], Tenn[essee]» (original citation). Holotype [designated lectotype by Erwin and House (1978: 244)] (♂) in USNM [# 44256].

Distribution. This species is known from several caves in Grundy and Franklin Counties, southern Tennessee (Barr 2004: 29).
Records. USA: TN

Pseudanophthalmus macradyi Valentine, 1948

Pseudanophthalmus macradyi Valentine, 1948: 9 (as *macradei*). Type locality: «Higginbotham's Cave, McMinnville, Warren Co[unty], Tenn[essee]» (original citation). Holotype (♂) probably in ALM. Etymology. The specific name was proposed for Edward McCrady [1906-1981], American teacher, research scientist, practicing portrait painter, and popular speaker. McCrady also played the violin, composed one symphony, published translations of Greek and Latin classics, explored caves in Tennessee, was president of the University of the South in Sewanee, Tennessee, and was *de facto* mayor of the city. Note. The spelling *macradyi*, introduced by Barr (2004: 29), is a justified emendation of *macradei* in my opinion, and the original name must be corrected (see ICZN 1999: Article 32.5.1).

Distribution. This species is known only from several caves in Warren and Grundy Counties, Tennessee (Barr 2004: 29).
Records. USA: TN

***Pseudanophthalmus templetoni* Valentine, 1948**

Pseudanophthalmus intermedius templetoni Valentine, 1948: 7. Type locality: «Higginbotham's Cave, McMinnville, Warren Co[unty], Tenn[essee]» (original citation). Holotype (♂) probably in ALM.

Distribution. This species is known from several caves in Warren and Grundy Counties, Tennessee (Barr 2004: 29).
Records. USA: TN

***Pseudanophthalmus vanburenensis* Barr, 1959**

Pseudanophthalmus templetoni vanburenensis Barr, 1959: 15. Type locality: «McElroy Cave, 1.5 miles northeast of Bone Cave P.O., Van Buren Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from caves in Van Buren County, central Tennessee (Barr 2004: 29).
Records. USA: TN

[**jonesi group**]
***Pseudanophthalmus cordicollis* Barr, 1981**

Pseudanophthalmus cordicollis Barr, 1981: 82. Type locality: «Little Kennedy Cave, Wise Co[unty], Virginia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from a few caves in Wise County, southwestern Virginia (Barr 2004: 39).
Records. USA: VA

***Pseudanophthalmus jonesi* Valentine, 1945**

Pseudanophthalmus jonesi Valentine, 1945: 645. Type locality: «Saltpeter or Brady Cave, southeast slope of Walden Ridge, Grassy Cove, Cumberland Co[unty], Tenn[essee]» (original citation). Holotype (♂) in USNM [# 57052]. Etymology. This species was proposed for the American geologist and archaeologist Walter Bryan Jones [1895-1977] of the University of Alabama. Jones was the founder and director of the Alabama Museum of Natural History.

Distribution. This species is known only from three caves in Grassy Cove, Cumberland County, in east-central Tennessee (Barr 1981: 73; Barr 2004: 39).
Records. USA: TN

***Pseudanophthalmus longiceps* Barr, 1981**

Pseudanophthalmus longiceps Barr, 1981: 79. Type locality: «Fisher Cave, near the top of Newmans Ridge, between Blackwater and Kyles Ford, Lee Co[unty], Virginia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from two caves in Lee County, southwestern Virginia, and Hancock County, northeastern Tennessee (Barr 1981: 80; Barr 2004: 39).
Records. USA: TN, VA

Pseudanophthalmus pallidus Barr, 1981

Pseudanophthalmus pallidus Barr, 1981: 78. Type locality: «Chadwell Cave, 6 km N[orth]E[ast] Tazewell, 425 m S[outh] of Cedar Fork Road, and 1000 m N[orth] of Henderson Knob (400 m) [Claiborne County, Tennessee]» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from a few caves in Claiborne County, northeastern Tennessee (Barr 2004: 39). The record from "Virginia" (Bousquet and Larochelle 1993: 114) is in error (see Hoffman et al. 2006: 19).
Records. USA: TN

Pseudanophthalmus rogersae Barr, 1981

Pseudanophthalmus rogersae Barr, 1981: 75. Type locality: «Sawmill Hollow Cave, 2.0 km N[oth]N[orth]W[est] Nolansburg and 600 m E[ast]S[outh]E[ast] Pine Mountain Settlement School on the northwest slope of Pine Mountain (700 m) [Harlan County, Kentucky]» (original citation). Holotype (♀) in AMNH.

Distribution. This species is known only from the type-locality cave in southeastern Kentucky (Barr 2004: 39). The record from "Virginia" (Bousquet and Larochelle 1993: 115) is in error (see Hoffman et al. 2006: 19).
Records. USA: KY

Pseudanophthalmus scutilus Barr, 1981

Pseudanophthalmus scutilus Barr, 1981: 73. Type locality: «New Mammoth Cave, 1.5 km E[ast] Elk Valley on the north side of Pine Mountain, Campbell Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in northern Tennessee (Barr 2004: 39).
Records. USA: TN

Pseudanophthalmus seclusus Barr, 1981

Pseudanophthalmus seclusus Barr, 1981: 76. Type locality: «Flannery Cave, Scott Co[unty], Virginia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from several caves in the Rye Cove karst near Clinchport in southwestern Virginia (Barr 1981: 77).
Records. USA: VA

***Pseudanophthalmus thomasi* Barr, 1981**

Pseudanophthalmus thomasi Barr, 1981: 80. Type locality: «Blair-Collins Cave (490 m), Scott Co[unty], Virginia» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from two caves in Scott County, southwestern Virginia (Barr 2004: 39).
Records. USA: VA

[**leonae group**]
***Pseudanophthalmus leonae* Barr, 1960**

Pseudanophthalmus leonae Barr, 1960a: 310. Type locality: «Hert Hollow Cave, two miles S[outh]W[est] of Springville, Lawrence Co[unty], Indiana» (original citation). Holotype (♂) in AMNH [# 1047].

Distribution. This species is known only from the type-locality cave, located two miles southwest of Springville, southern Indiana (Barr 2004: 27).
Records. USA: IN

[**menetriesii group**]
***Pseudanophthalmus cerberus cerberus* Barr, 1985**

Pseudanophthalmus cerberus cerberus Barr, 1985b: 123. Type locality: «Rhoton Cave, 3.3 km S[outh]W[est] Hestand on N[orth] side valley of Sweetwater Creek, Monroe Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This subspecies is known from several caves in Monroe, Barren, Metcalfe, Adair, Cumberland, and Clay Counties in southern Kentucky and Jackson County in northern Tennessee (Barr 1985b: 124).
Records. USA: KY, TN

***Pseudanophthalmus cerberus completus* Barr, 1985**

Pseudanophthalmus cerberus completus Barr, 1985b: 124. Type locality: «Cole Cave, 1.8 km N Austin, Barren Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This subspecies is known from a number of caves in central Barren County, southern Kentucky (Barr 2004: 32).
Records. USA: KY
Note. According to Barr (2004: 32), intergrades between this subspecies and the nominotypical subspecies occur in Bowles Branch Cave in Barren County.

***Pseudanophthalmus darlingtoni darlingtoni* Barr, 1985**

Pseudanophthalmus darlingtoni darlingtoni Barr, 1985b: 125. Type locality: «Jones Cave, 4.3 km N[orth]N[orth]E[ast] Columbia on E[ast] side valley of Butler Branch, Adair Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This subspecies is known from several caves in northeastern Metcalfe, northern Adair, and southern Green Counties, southern Kentucky (Barr 1985b: 126; Barr 2004: 32).
Records. USA: KY

Pseudanophthalmus darlingtoni persimilis Barr, 1985

Pseudanophthalmus darlingtoni persimilis Barr, 1985b: 126. Type locality: «Woodard Cave, 5.0 km N[orth]W[est] Donansburg near Little Barren River, Green Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This subspecies is known from several caves in central Green and eastern Hart Counties, Kentucky (Barr 2004: 32).
Records. USA: KY

Pseudanophthalmus globiceps Barr, 1985

Pseudanophthalmus globiceps Barr, 1985b: 122. Type locality: «Barnes Smith Cave, 5.7 km N[orth] Hinesdale, Hart Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in central Kentucky (Barr 2004: 31).
Records. USA: KY

Pseudanophthalmus menetriesii campestris Barr, 1985

Pseudanophthalmus menetriesi campestris Barr, 1985b: 119. Type locality: «Walnut Hill Cave, 3.3 km S[outh] Park City, Barren Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This subspecies is found in several caves in Barren and Warren Counties, southern Kentucky (Barr 2004: 31).
Records. USA: KY
Note. According to Barr (2004: 31), intergrades between this subspecies and the nominotypical subspecies occur in caves in Warren County.

Pseudanophthalmus menetriesii menetriesii (Motschulsky, 1862)

Anophthalmus ménétriesii Motschulsky, 1862b: 41. Type locality: «caverne des Mammouths [Edmonson County, Kentucky]» (original citation). One syntype in ZMMU (Keleinikova 1976: 205).

Anophthalmus ventricosus Motschulsky, 1862b: 42. Type locality: «caverne des Mammouths [Edmonson County, Kentucky]» (original citation). One syntype in ZMMU (Keleinikova 1976: 222). Synonymy established by Jeannel (1928: 121).

Anophthalmus angulatus LeConte, 1863c: 18. Type locality: «Mammoth Cave [Edmonson County], Kentucky» (original citation). One syntype in MCZ [# 5598]. Synonymy established by Horn (1869a: 127).

Distribution. This subspecies is known from several caves in Hart, Edmonson, Barren, and Warren Counties in Kentucky (Barr 2004: 31).
Records. USA: KY

Pseudanophthalmus pilosus Barr, 1985

Pseudanophthalmus pilosus Barr, 1985b: 120. Type locality: «Bland Cave, 1.8 km N[orth]W[est] Spurrier on N[orth] side Akers Valley, Hardin Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from caves in Hardin and Hart Counties, central Kentucky (Barr 2004: 31).
Records. USA: KY

Pseudanophthalmus simulans Barr, 1985

Pseudanophthalmus simulans Barr, 1985b: 120. Type locality: «Cub Run Cave, at Cub Run, Hart Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in central Kentucky (Barr 2004: 31).
Records. USA: KY

Pseudanophthalmus striatus (Motschulsky, 1862)

Anophthalmus striatus Motschulsky, 1862b: 41. Type locality: «caverne des Mammouths [Edmonson County, Kentucky]» (original citation). One syntype in ZMMU (Keleinikova 1976: 218).

Anophthalmus interstitialis Hubbard, 1880: 52. Type locality: «Washington's Hall in the Mammoth Cave [Edmonson County, Kentucky]» (original citation). Holotype [by monotypy] (♀) in USNM [# 23860]. Synonymy established with doubt by Horn (1883b: 272), confirmed by Jeannel (1928: 124).

Distribution. This species is known from several caves in Hart, Edmonson, Metcalf, and Warren Counties, southern Kentucky (Barr 2004: 32).
Records. USA: KY
Note. The MCZ holds a specimen [# 7397], incorrectly labeled lectotype, of *P. interstitialis* Hubbard from Cave City, Kentucky.

***Pseudanophthalmus transfluvialis* Barr, 1985**

Pseudanophthalmus transfluvialis Barr, 1985b: 123. Type locality: «McGinnis Cave, 4.2 km S[outh]W[est] Bowling Green, Warren Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from a few caves in Warren and Logan Counties, southern Kentucky (Barr 1985b: 123; Barr 2004: 31).
Records. USA: KY

[**petrunkevitchi group**]

***Pseudanophthalmus hoffmani* Barr, 1965**

Pseudanophthalmus hoffmani Barr, 1965a: 58. Type locality: «Buchanan Saltpeter Cave, at Ellendale, 6 miles northeast of Saltville, Smyth Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 75260].

Distribution. This species is known from a few caves in Smyth and Bland Counties, Virginia (Barr 2004: 19).
Records. USA: VA

***Pseudanophthalmus hortulanus* Barr, 1965**

Pseudanophthalmus hortulanus Barr, 1965a: 59. Type locality: «Cassells Cave, at the northwest end of Burkes Garden, Tazewell Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 75263].

Distribution. This species is known only from the type-locality cave in southwestern Virginia (Barr 2004: 19).
Records. USA: VA

***Pseudanophthalmus petrunkevitchi* Valentine, 1945**

Pseudanophthalmus petrunkevitchi Valentine, 1945: 652. Type locality: «Skyline Cavern, two miles southwest of Front Royal, Warren Co[unty], V[irgini]a» (original citation). Holotype (♂) in USNM [# 57054]. Etymology. The specific name was proposed in honor of the eminent arachnologist Alexander Ivanovitch Petrunkevitch [1875-1964]. Born in Ukraine, Petrunkevitch settled in New Haven, Connecticut, where he taught from 1910 to 1944 at Yale University. He published extensively on spiders and scorpions and wrote two volumes of poetry under the pseudonym of Alexandr Jan-Ruban.

Distribution. This species, the only one of the genus *Pseudanophthalmus* with pigmented eyespots, is known from a few specimens collected at two nearby caves in Warren and Pages Counties, northern Virginia (Barr 2004: 19).
Records. USA: VA

[**pubescens group**]

***Pseudanophthalmus ciliaris ciliaris* Valentine, 1937**

Pseudanophthalmus ciliaris Valentine, 1937: 95. Type locality: «Dunbar's Cave, Clarksville [Montgomery County], Tennessee» (original citation). Holotype (♂) in USNM [# 56125].

Distribution. This subspecies occurs in several caves in Montgomery, Cheatham, and Robertson Counties in northern Tennessee and Christian and Logan Counties in southern Kentucky (Barr 2004: 30).
Records. USA: KY, TN

***Pseudanophthalmus ciliaris orlindae* Barr, 1959**

Pseudanophthalmus orlindae Barr, 1959: 7. Type locality: «Jesse James Cave, 1.5 miles southeast of Orlinda, Robertson Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This subspecies is known from a few caves in Logan and Simpson Counties, southern Kentucky, and Robertson County, northern Tennessee (Barr 2004: 30).
Records. USA: KY, TN
Note. According to Barr (2004: 30), intergrades between this subspecies and the nominotypical subspecies occur in one cave in Robertson County, Tennessee.

***Pseudanophthalmus colemanensis* Barr, 1959**

Pseudanophthalmus ciliaris colemanensis Barr, 1959: 6. Type locality: «Coleman Cave, 8 miles west of Clarksville, Montgomery Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from several caves in Montgomery County, northern Tennessee (Barr 2004: 31).
Records. USA: TN

***Pseudanophthalmus loganensis* Barr, 1959**

Pseudanophthalmus ciliaris loganensis Barr, 1959: 7. Type locality: «Cook Cave, 1 mile east of Adairville, Logan Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from several caves in Warren, Simpson, and Logan Counties, southern Kentucky, and Robertson and Sumner Counties, northern Tennessee (Barr 2004: 30).
Records. USA: KY, TN

Pseudanophthalmus princeps Barr, 1979

Pseudanophthalmus princeps Barr, 1979a: 17. Type locality: «Hoy Cave, 1.9 miles north of county courthouse in Franklin under US 31W, Simpson County, Kentucky» (original citation). Holotype (♂) in AMNH [# 1418].

Distribution. This species is known from a few caves in Simpson and Warren Counties in southern Kentucky and Sumner County in northern Tennessee (Barr 2004: 30).
Records. USA: KY, TN

Pseudanophthalmus pubescens intrepidus Barr, 1985

Pseudanophthalmus pubescens intrepidus Barr, 1985b: 127. Type locality: «Buchanan Cave, 1.3 km W[est] Gainesville and 30 m E[ast] KY Rt. 101, at head of hollow tributary to Difficult Creek, Allen Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This subspecies is known two caves in Allen and Barren Counties, southern Kentucky (Barr 1985b: 128).
Records. USA: KY

Pseudanophthalmus pubescens pubescens (Horn, 1869)

Anophthalmus pubescens G.H. Horn, 1869a: 126. Type locality: «Cave City cave [Barren County, Kentucky]» (original citation). Holotype [by monotypy] in MCZ [# 8230].

Distribution. This subspecies is known from several caves from Hart and Metcalfe Counties westwards to eastern Warren County, Kentucky (Barr 2004: 30).
Records. USA: KY
Note. According to Barr (2004: 30), intergrades between the two subspecies of *P. pubescens* are found in Beckton Cave, Barren County.

[**pusio group**]

Pseudanophthalmus higginbothami Valentine, 1931

Pseudanophthalmus higginbothami Valentine, 1931: 251. Type locality: «Higginbotham's large cave, within the radius of a mile at Frankford [Greenbrier County], W[est] V[irgini]a» (original citation). Holotype (♂) in USNM [# 44259].

Distribution. This species is known only from a few caves in Greenbrier and Pocahontas Counties, eastern West Virginia (Jeannel 1949b: 75; Barr 2004: 20).
Records. USA: WV

Pseudanophthalmus lallemanti Jeannel, 1949

Pseudanophthalmus lallemanti Jeannel, 1949b: 74. Type locality: «Davis cave [= General Davis Cave], à 5 à 6 miles W[est] de Ronceverte et à 10 miles S[outh]W[est]

de Lewisburg, Greenbrier County, West Virginia» (original citation). Holotype probably in MHNP.

Distribution. This species is known only from the type-locality cave in southeastern West Virginia (Barr 2004: 20).
Records. USA: WV

Pseudanophthalmus nelsoni Barr, 1965

Pseudanophthalmus nelsoni Barr, 1965a: 44. Type locality: «Old Tunnel Cave, Alleghany Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 75270]. Etymology. The specific name honors Gayle H. Nelson [1926-2005], professor of human anatomy for almost 60 years and entomologist with an interest in Buprestidae and Schizopodiae (Coleoptera) and Pentatomidae (Hemiptera).

Distribution. This species is known only from two caves in Allegheny County, western Virginia (Barr 2004: 20).
Records. USA: VA

Pseudanophthalmus pontis Barr, 1965

Pseudanophthalmus pontis Barr, 1965a: 45. Type locality: «Buck Hill Cave, at Natural Bridge, Rockbridge Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 75269].

Distribution. This species is still known only from the type-locality cave in northern Virginia (Barr 2004: 20).
Records. USA: VA

Pseudanophthalmus punctatus Valentine, 1931

Pseudanophthalmus pusio var. *punctatus* Valentine, 1931: 250. Type locality: «Tommie's Cave [= Tawneys Cave], Newport [Giles County], V[irgini]a» (original citation). Holotype (♂) in USNM [# 44258].

Distribution. This species is known from a few caves in Giles County, western Virginia (Barr 2004: 20).
Records. USA: VA

Pseudanophthalmus pusio (Horn, 1869)

Anophthalmus pusio G.H. Horn, 1869a: 125. Type locality: «Erhart's cave, Montgomery County, Virginia» (original citation). One syntype in MCZ.
Pseudanophthalmus pusio bathycola Valentine, 1932a: 268. Type locality: «Aunt Nellie's Cave, on tributary of the North Fork Roanoke River, 3 miles southeast of

Blacksburg [Montgomery County], V[irgini]a» (original citation). Holotype (♂) in USNM [# 44273]. Synonymy established by Barr (1965a: 43).

Distribution. This species is found in several caves in Montgomery and Roanoke Counties, western Virginia (Barr 2004: 20).
Records. USA: VA

[**rittmani group**]
***Pseudanophthalmus catoryctos* Krekeler, 1973**

Pseudanophthalmus catoryctos Krekeler, 1973: 72. Type locality: «Adams Cave, 5 miles south-southwest of Richmond, Madison Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known only from the type-locality cave in east-central Kentucky (Barr 2004: 23).
Records. USA: KY

***Pseudanophthalmus exiguus* Krekeler, 1973**

Pseudanophthalmus exiguus exiguus Krekeler, 1973: 70. Type locality: «Watson Cave, 0.8 mile north-northeast of Cobhill, Estill Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.
Pseudanophthalmus exiguus furtivus Krekeler, 1973: 71. Type locality: «California Cave, 1.5 miles north-northeast of Ravenna, Estill Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH. Synonymy established by Barr (2004: 23).

Distribution. This species is known from several caves in Estill, Powell, and Lee Counties, eastern Kentucky (Barr 2004: 23).
Records. USA: KY

***Pseudanophthalmus rittmani* Krekeler, 1973**

Pseudanophthalmus rittmani Krekeler, 1973: 68. Type locality: «Baker Cave, 1.7 miles east of Cobhill, Estill Co[unty], K[entuck]y» (original citation). Holotype (♂) in FMNH.

Distribution. This species is known from several caves in Estill and Powell Counties, eastern Kentucky (Barr 2004: 23).
Records. USA: KY

[**robustus group**]
***Pseudanophthalmus beakleyi* Valentine, 1937**

Pseudanophthalmus robustus beakleyi Valentine, 1937: 97 (as *beaklei*). Type locality: «Bunkum Cave, Byrdstown [Pickett County], Tennessee» (original citation). Holotype (♂)

in USNM [# 56123]. Note. This species was named after John C. Beakley. The spelling *beakleyi*, introduced by Barr (2004: 28), is a justified emendation of *beaklei* in my opinion, and the original name must be corrected (see ICZN 1999: Article 32.5.1).

Pseudanophthalmus robustus lupus Barr, 1959: 14. Type locality: «Wolf River Cave, Fentress Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH. Synonymy established by Barr (1962b: 114).

Distribution. This species is known from several caves in Fentress, Overton, and Pickett Counties, northern Tennessee, and in McCreary and Wayne Counties, southern Kentucky (Barr 2004: 28).
Records. USA: KY, TN

Pseudanophthalmus farrelli Barr, 1959

Pseudanophthalmus robustus farrelli Barr, 1959: 12. Type locality: «Indian Grave Point Cave, in Dry Creek Valley, DeKalb Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species occurs in several caves in DeKalb and Smith Counties, Tennessee (Barr 2004: 28).
Records. USA: TN

Pseudanophthalmus robustus Valentine, 1931

Pseudanophthalmus robustus Valentine, 1931: 250. Type locality: «Johnson's Cave, Monterey [Putnam County], Tenn[essee]» (original citation). Holotype (♂) in USNM [# 44257].

Pseudanophthalmus robustus neglectus Jeannel, 1949b: 50. Type locality: «Higginbotham's caves, à 6 miles S[outh]E[ast] de Mc Minville, Warren County, Tennessee» (original citation). Holotype in MHNP. Synonymy established by Barr (1962b: 112).

Pseudanophthalmus robustus megosteus Barr, 1959: 12. Type locality: «Big Bone Cave, Van Buren Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH. Synonymy established by Barr (1962b: 112).

Distribution. This species is known from a several caves in DeKalb, Overtone, Putnam, Warren, White, Van Buren, and Grundy Counties, Tennessee (Barr 2004: 28).
Records. USA: TN

Pseudanophthalmus valentinei Jeannel, 1949

Pseudanophthalmus valentinei Jeannel, 1949b: 51. Type locality: «Johnson's cave, à 7 miles S[outh]W[est] de Monterey, sur la route de Sparta, Putnam County, Tennessee» (original citation). Holotype probably in MHNP. Etymology. The specific name was proposed for Joseph Manson Valentine [1902-1994] who was associated for a time with the University of Alabama at Tuscaloosa and had an interest in cave

carabids. In the 1950s Valentine became interested in archaeology, particularly the association between caves and the Mayas (Stuart B. Peck pers. comm. 2008).

Distribution. This species is found in caves in Putnam and Overton Counties, northern Tennessee (Barr 2004: 28).
Records. USA: TN

[**simplex group**]
***Pseudanophthalmus fowlerae* Barr, 1980**

Pseudanophthalmus fowlerae Barr, 1980: 88. Type locality: «Sheals Cave, 0.8 km e[ast] of Celina, Clay Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH [# 1505].

Distribution. This species is known only from the type-locality cave in northern Tennessee (Barr 2004: 32).
Records. USA: TN

***Pseudanophthalmus simplex* Barr, 1980**

Pseudanophthalmus simplex Barr, 1980: 86. Type locality: «Carter Cave, 5.5 km s[outh] s[outh]w[est] of Flynns Lick, Jackson Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH [# 1506].

Distribution. This species is known from a few caves in Jackson County, northern Tennessee (Barr 2004: 32).
Records. USA: TN

[**tennesseensis group**]
***Pseudanophthalmus paynei* Barr, 1981**

Pseudanophthalmus paynei Barr, 1981: 56. Type locality: «Moores Bridge Cave, 1.3 km N[orth] Clinton on east (left) side of Clinch River, Anderson Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from a few caves in Anderson County, eastern Tennessee (Barr 2004: 37).
Records. USA: TN

***Pseudanophthalmus pusillus* Barr, 1981**

Pseudanophthalmus pusillus Barr, 1981: 56. Type locality: «Martin Cave, 7.2 km S[outh] W[est] Clinton beside Southern Railroad tracks, Anderson Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type-locality cave in eastern Tennessee (Barr 2004: 36).

Records. USA: TN

***Pseudanophthalmus tennesseensis* Valentine, 1937**

Pseudanophthalmus tennesseensis Valentine, 1937: 98 (as *tenesensis*). Type locality: «Grand Caverns [= Atomic Caverns], Byington [Knox County], Tennessee» (original citation). Holotype (♂) in USNM [# 56126]. Note. The spelling *tennesseensis* is an incorrect subsequent spelling, introduced by Barr (1981: 55), in prevailing usage and attributed to the publication of the original spelling; therefore it is deemed to be the correct original spelling (ICZN 1999: Article 33.3.1).

Distribution. This species is known from a few caves in Knox and Roane Counties, eastern Tennessee (Barr 1981: 55; Barr 2004: 36).
Records. USA: TN

***Pseudanophthalmus unionis* Barr, 1981**

Pseudanophthalmus unionis Barr, 1981: 57. Type locality: «Wright Cave, Union Co[unty], Tennessee» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known from two caves in Union County, northeastern Tennessee (Barr 2004: 37).
Records. USA: TN

[**tenuis group**]
***Pseudanophthalmus barberi* Jeannel, 1928**

Pseudanophthalmus barberi Jeannel, 1928: 133. Type locality: «Rockhaven cave, aux environs de Brandenburg, Meade Co[unty], Kentucky» (original citation). Holotype (♀) in USNM [# 75689]. Etymology. The specific name was proposed for Herbert Spencer Barber [1882-1950], protégé of Eugene Schwarz, who worked at the United State Department of Agriculture and at the USNM. Barber published mainly on chrysomelids, bruchids, and lampyrids.

Distribution. This species is known from several caves in Meade, Breckinridge, Hardin, Hart, and Larue Counties, Kentucky (Barr 2004: 26).
Records. USA: KY

***Pseudanophthalmus illinoisensis* Barr and Peck, 1966**

Pseudanophthalmus illinoisensis Barr and Peck, 1966: 520. Type locality: «Cave Spring Cave, Hardin Co[unty], Illinois» (original citation). Holotype (♂) in USNM [# 75259].

Distribution. This species is known only from the type-locality cave (Barr 2004: 26).
Records. USA: IL

Pseudanophthalmus shilohensis mayfieldensis Krekeler, 1958

Pseudanophthalmus mayfieldensis Krekeler, 1958: 178. Type locality: «Mayfield's Cave, five miles west-by-northwest of Bloomington, Monroe Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH.

Pseudanophthalmus boonensis Krekeler, 1958: 180. Type locality: «Boone Cave, one mile north of Freeman, Owen Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH. Synonymy established by Barr (2004: 26).

Distribution. This subspecies is known from several caves in Monroe, Lawrence, and Owen Counties, southern Indiana (Barr 2004: 26).

Records. USA: IN

Note. Barr (2004: 26) noted that intergrades between this subspecies and *P. shilohensis shilohensis* occur in some caves in Lawrence County.

Pseudanophthalmus shilohensis shilohensis Krekeler, 1958

Pseudanophthalmus shilohensis Krekeler, 1958: 178. Type locality: «Shiloh Cave, six miles west-by-northwest of Bedford, Lawrence Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH.

Distribution. This subspecies is known from a few caves in central Lawrence County, southern Indiana (Barr 2004: 26).

Records. USA: IN

Pseudanophthalmus stricticollis Jeannel, 1931

Pseudanophthalmus eremita stricticollis Jeannel, 1931: 451. Type locality: «Marengo cave, Crawford Co[unty], Indiana» (original citation). Holotype in MHNP.

Pseudanophthalmus eremita morrisoni Jeannel, 1931: 451. Type locality: «Donnelson's [= Donaldson] cave, à Mitchell, près de Bedford, Lawrence Co[unty], Indiana» (original citation). Holotype in MHNP. Synonymy established by Barr (2004: 25).

Pseudanophthalmus jeanneli Krekeler, 1958: 171. Type locality: «Elrod's Cave, two miles east of Orangeville, Orange Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH. Synonymy established by Barr (2004: 25).

Pseudanophthalmus tenuis blatchleyi Barr, 1960a: 316. Type locality: «Truitt's Cave, near Bloomington, Monroe Co[unty], Indiana» (original citation). Holotype (♂) in USNM [# 75258]. Synonymy established by Barr (2004: 26).

Distribution. This species is known from several caves in Crawford, Washington, Orange, Lawrence, and Monroe Counties, southern Indiana (Barr 2004: 25).

Records. USA: IN

Pseudanophthalmus tenuis (Horn, 1871)

Anophthalmus tenuis G.H. Horn, 1871: 327. Type locality: «Wyandotte Cave [Crawford County], southern Indiana» (original citation). Syntype(s) [3 originally cited] in MCZ [# 34325].

Pseudanophthalmus eremita longicollis Jeannel, 1949b: 57. Type locality: «Bradford cave, à 5 à 6 miles au N[orth]E[ast] de Salisbury, et à 16 miles de New Albany [Harrison County], Crawford County, Indiana» (original citation). Holotype in MHNP. Synonymy established by Barr (1960a: 312).

Pseudanophthalmus bloomi Krekeler, 1958: 172. Type locality: «Langdon Cave, three miles southwest of White Cloud, Harrison Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH. Synonymy established by Barr (1960a: 312).

Distribution. This species is known from several caves in Crawford, Harrison, and Washington Counties, southern Indiana (Barr 2004: 25).
Records. USA: IN

Pseudanophthalmus youngi Krekeler, 1958

Pseudanophthalmus youngi Krekeler, 1958: 175. Type locality: «Clifty Caves, four miles north of Campbellsburg, Washington Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH. Etymology. The specific name was proposed in honor of Frank Nelson Young, Jr. [1915-1998], professor at the University of Indiana. Young published on many subjects, including herpetology, malacology, and medical entomology, but he is best known for his work on water beetles and periodical cicadas.

Pseudanophthalmus donaldsoni Krekeler, 1958: 175. Type locality: «Donaldson Cave complex (Donaldson's Cave, Twin Caves, Bronson's Cave), four miles east of Mitchell, Lawrence Co[unty], Ind[iana]» (original citation). Holotype (♂) in FMNH. Synonymy established by Barr (2004: 26).

Distribution. This species is known from several caves in Crawford, Orange, Lawrence, and Washington Counties, southern Indiana (Barr 2004: 26).
Records. USA: IN

Genus *Nelsonites* Valentine, 1952

Nelsonites Valentine, 1952: 13. Type species: *Nelsonites jonesei* Valentine, 1952 by original designation. Etymology (original). From the first name of Nelson Bolling Jones, a cave explorer, kill in action in Germany on April 2, 1945 [masculine].

Diversity. Two cave-inhabiting Appalachian species.
Identification. Valentine (1952) discussed the structural differences between the two species.

Figure 20. *Broscus cephalotes* (Linnaeus). This relatively large Palaearctic carabid is one of the most recently established species in North America. The first recorded specimen was found in the late 1980s and, considering the species' size, it is doubtful that it would have escaped notice for a long period. On this continent, the species has been found only on bare, fine sand along coastal beaches in Prince Edward Island and Cape Breton in company with amphipods of the genus *Gammarus* which probably make up part of their diet. The pathway of introduction of this broscine on American soil is uncertain.

Nelsonites jonesei Valentine, 1952

Nelsonites jonesei Valentine, 1952: 16. Type locality: «Richardson's Cave, 2.5 miles east of Somerset, Pulaski County, K[entuck]y» (original citation). Holotype (♂) probably in ALM.

Distribution. This species is known from a few caves in Pulaski County, southeastern Kentucky.
Records. USA: KY

Nelsonites walteri Valentine, 1952

Nelsonites walteri Valentine, 1952: 18. Type locality: «Johnson's Cave, 7 miles southwest of Monterey, Putnam County, Tenn[essee]» (original citation). Holotype (♂) probably in ALM. Etymology. The specific name is based on the first name of the American geologist and archaeologist Walter Bryan Jones [1895-1977] of the University of Alabama (see *Pseudanophthalmus jonesi*).

Distribution. This species is known from two nearby caves in Putnam and Van Buren Counties, Tennessee.
Records. USA: TN

Genus *Neaphaenops* Jeannel, 1920

Neaphaenops Jeannel, 1920b: 154. Type species: *Anophthalmus tellkampfii* Erichson, 1844 by original designation. Etymology. From the Greek *neo* (new) and the generic name *Aphaenops* [masculine].

Diversity. One polymorphic cave-inhabiting species in the Appalachians.
Identification. Barr (1979a) revised the species and provided a key for the identification of its subspecies.

Neaphaenops tellkampfii henroti Jeannel, 1949

Neaphaenops tellkampfi henroti Jeannel, 1949b: 90. Type locality: «Sig Shacklett's cave, à 5 miles S[outh]W[est] de Garrett, sur le territoire de Guston, Meade County, Kentucky» (original citation). Holotype in MHNP.

Distribution. This subspecies is known from several caves in Breckinridge, Hardin, Hart, and Meade Counties in northwest and central Kentucky (Barr 1979a: 8).
Records. USA: KY

Neaphaenops tellkampfii meridionalis Barr, 1959

Neaphaenops tellkampfi meridionalis Barr, 1959: 23. Type locality: «Hoy Cave, 2 miles north of Franklin, Simpson Co[unty], Kentucky» (original citation). Holotype (♂) in AMNH.

Distribution. This subspecies has been found in several caves in Allen, Simpson, Warren, and Logan Counties in southern Kentucky (Barr 1979a: 9).
Records. USA: KY

Neaphaenops tellkampfii tellkampfii (Erichson, 1844)

Anophthalmus tellkampfii Erichson [in Tellkampf], 1844: 384. Type locality: Mammoth Cave, Edmonson County, Kentucky (inferred from title of the paper). One syntype (with prothorax missing) in ZMHB (Bernd Jaeger pers. comm. 2007). Etymology. The specific name honors August Otto Theodor Tellkampf [1812-1883]. Born in German, Tellkampf immigrated to the United States at the age of 27 where he practiced medicine in Cleveland and New York. He was interested in speleology and visited Mammoth Cave in October 1842. He was a member of the Lyceum of Natural History of New York.

Distribution. This subspecies has been collected in several caves in Allen, Barren, Edmonson, Hart, and Warren Counties in central and southern Kentucky (Barr 1979a: 6).
Records. USA: KY
Note. Intergrades between this subspecies and the *meridionalis* form occur in a narrow zone in Warren and Allen Counties (Barr 1979a: 10) and between this subspecies and the *viator* form in eastern Hart County (Barr 1979a: 8).

Neaphaenops tellkampfii viator Barr, 1979

Neaphaenops tellkampfi viator Barr, 1979a: 7. Type locality: «Brush Creek Cave, 0.8 mile east and slightly north of Lobb on the west side of Brush Creek, in western Green County, Kentucky» (original citation). Holotype (♂) in AMNH [# 1417].

Distribution. This subspecies is known from several caves in Green, Hart, and Metcalfe Counties in central and southern Kentucky (Barr 1979a: 8).
Records. USA: KY

Genus *Blemus* Dejean, 1821

Blemus Dejean, 1821: 16. Type species: *Carabus discus* Fabricius, 1792 designated by Westwood (1838: 5). Etymology. Uncertain, possibly from the Greek *blema* (a throw, cast; a shot, wound; a coverlet) [masculine]. The name was proposed by Franz Anton Ziegler and made available by Dejean.

Lasiotrechus Ganglbauer, 1891a: 187, 191. Type species: *Carabus discus* Fabricius, 1792 by monotypy. Etymology. From the Greek *lasios* (hairy) and the generic name *Trechus* [*q.v.*], alluding to the densely pubescent elytra ("*Nur die Flügeldecken pubescent*") of the adult [masculine].

Diversity. Two Palaearctic species, one of them adventive in North America.
Identification. The species found in North America was covered in Lindroth's (1961a: 194) monograph.

***Blemus discus discus* (Fabricius, 1792)**

Carabus discus Fabricius, 1792: 164. Type locality: «Germania» (original citation). Lectotype (♀), designated by Uéno (1974: 269), in ZMUC.

Carabus unifasciatus Panzer, 1796b: no 7. Type locality: Germany (inferred from title of the book). Syntype(s) location unknown (possibly in ZMHB). Synonymy established by Illiger (1798: 187).

Distribution. This Palaearctic subspecies is adventive in North America where it is known from Nova Scotia (NSMC) to Wisconsin (Messer 2010: 35), south to southern Pennsylvania (Bradford and Allegheny Counties, CMNH). The first inventoried specimen collected on this continent was found in the Montreal area in 1933 (Brown 1940a: 69).

Records. CAN: NB, NS, ON, PE, QC **USA**: CT, MA, ME, MI, NH, NY, OH, PA, VT, WI – **Adventive**

Note. The subspecies *B. discus orientalis* Jeannel is known from Yunnan, China.

Genus *Xenotrechus* Barr and Krekeler, 1967

Xenotrechus Barr and Krekeler, 1967: 1322. Type species: *Xenotrechus denticollis* Barr and Krekeler, 1967 by original designation. Etymology. From the Greek *xenos* (stranger, guest) and the generic name *Trechus* [*q.v.*] [masculine].

Diversity. Two troglobitic species restricted to southeastern Missouri.

Identification. Barr and Krekeler (1967) provided a description of the external structures and male genitalia of both species.

***Xenotrechus condei* Barr and Krekeler, 1967**

Xenotrechus condei Barr and Krekeler, 1967: 1323. Type locality: «Friedman's Cave, 5 miles west-southwest of Imperial, Jefferson Co[unty], Missouri» (original citation). Holotype (♂) in USNM.

Distribution. This species is known from two nearby caves, Friedman's and Pleasant Valley Caves, in eastern Missouri.

Records. USA: MO

***Xenotrechus denticollis* Barr and Krekeler, 1967**

Xenotrechus denticollis Barr and Krekeler, 1967: 1323. Type locality: «Kohm's Cave, 1.9 miles south-south-west of (the cathedral in) S[ain]te Genevieve, S[ain]te Genevieve Co[unty], Missouri» (original citation). Holotype (♂) in USNM.

Distribution. This species is known from two nearby caves, Kohm's and Sims Caves, in eastern Missouri.

Records. USA: MO

Genus *Darlingtonea* Valentine, 1952

Darlingtonea Valentine, 1952: 19. Type species: *Darlingtonea kentuckensis* Valentine, 1952 by monotypy. Etymology (original). From the surname of Philip J. Darlington, Jr. (see *Agonum darlingtoni* Lindroth). The name is feminine.

Diversity. One cave-inhabiting species in Kentucky.
Identification. Valentine (1952) lengthy described, neatly illustrated, and discussed the structural differences between members of *Darlingtonea* and those of the other troglobitic genera of the Appalachian region.

Darlingtonea kentuckensis Valentine, 1952

Darlingtonea kentuckensis Valentine, 1952: 22. Type locality: «Richardson's Cave, 2.5 miles east of Somerset, Pulaski County, K[entuck]y» (original citation). Holotype (♂) probably in ALM.

Darlingtonea kentuckensis lexingtoni Valentine, 1952: 24. Type locality: «Big Saltpeter Cave, 8 miles north of Livingston, Rockcastle County, K[entuck]y» (original citation). Holotype (♂) probably in ALM. **New synonymy**. Note. This synonymy is based on the following unpublished comment (dated March 1969) by Thomas Barr: "specimens [of *D. kentuckensis*] from the southwestern part of the range are darker and more robust than those from the northeastern part of the range. The variation is probably clinal, however; there are no distinct separations that would warrant the naming of geographical races."

Distribution. This species is known from several caves in Kentucky located as far north as Estill County and as far south as Fentress County [see Marsh 1969: Fig. 5].
Records. USA: KY

Genus *Ameroduvalius* Valentine, 1952

Ameroduvalius Valentine, 1952: 24. Type species: *Ameroduvalius jeanneli* Valentine, 1952 by original designation. Etymology (original). From the English adjective American (of America) and the generic name *Duvalius*, alluding to the presence of members of the *Duvalius* line in the New World [masculine].

Diversity. One cave-inhabiting species in Kentucky.
Identification. Valentine (1952: 24-29) described, illustrated, and discussed the status of the species.

Ameroduvalius jeanneli jeanneli Valentine, 1952

Ameroduvalius jeanneli Valentine, 1952: 27. Type locality: «Sloan's Valley (Cassidy) Cave, 6 miles southeast of Burnside, Pulaski County, K[entuck]y» (original citation). Holotype (♂) probably in ALM. Etymology. The specific name honors René Jeannel [1879-1965], a French biogeographer and taxonomist of worldwide

reputation. Jeannel, who held the entomology chair at the Muséum d'Histoire Naturelle in Paris from 1932 to 1950, published on many groups of insects but is better known for his work on cave beetles and Carabidae. Cambefort (2006: 198) qualified Jeannel of the most important French entomologist of the xx Century.

Distribution. This subspecies is known from several caves in the Somerset area, southeastern Kentucky.
Records. USA: KY

Ameroduvalius jeanneli rockcastlei Valentine, 1952

Ameroduvalius jeanneli rockcastlei Valentine, 1952: 29. Type locality: «Big Saltpeter Cave, Rockcastle County [Kentucky]» (original citation). Holotype (♂) probably in ALM.

Distribution. This subspecies is known only from the type-locality cave in southeastern Kentucky.
Records. USA: KY

Genus *Trechus* Clairville, 1806

Trechus Clairville, 1806: 22. Type species: *Carabus rubens* Fabricius, 1801 designated by Blanchard [in Audouin et al. 1841: plate 25]. Etymology. From the Greek *trechis* (runner), probably alluding to the quickness of the adults in the field [masculine]. Note. As stated by Andrewes (1939: 157), the first valid type species designation for *Trechus* Clairville, 1806 is that of Latreille (1810: 426) who designated *Carabus meridianus* Linnaeus, 1760. This species is also the type species of *Acupalpus* Latreille, 1829. Acceptance of Latreille's designation would require nomenclatural changes for two extensive, well-known genera. A request should be addressed to the International Commission on Zoological Nomenclature to suppress Latreille's designation. A first request was postponed (ICZN 1950).

Diversity. About 870 species arrayed in eight subgenera: *Arabotrechus* Mateu (one Yemenite species), *Atlantotrechus* Lompe (one species in the Madeira Islands), *Elgonophyes* Jeannel (one Afrotropical species), *Elgonotrechus* Jeannel (14 Afrotropical species), *Meruitrechus* Jeannel (two Afrotropical species), *Microtrechus* (41 species), *Minitrechus* Vigna Taglianti and Magrini (one species in Ethiopia), and *Trechus s.str.* (about 775 species). More than 92% of the species are found in the Palaearctic Region.

Subgenus *Trechus* Clairville, 1806

Trechus Clairville, 1806: 22. Type species: *Carabus rubens* Fabricius, 1801 designated by Blanchard [in Audouin et al. 1841: plate 25].
Calotrechus Wollaston, 1854: 64. Type species: *Trechus nigrocruciatus* Wollaston, 1854 designated by Jeannel (1927: 114). Synonymy established by Casale and Laneyrie

(1982: 124). Etymology. From the Greek *calos* (beautiful) and the generic name *Trechus* [*q.v.*] [masculine].

Antoinella Jeannel, 1937c: 83. Type species: *Duvalius groubei* Antoine, 1935 by original designation. Synonymy established by Casale (2011: 14). Etymology. This name was proposed in honor of Maurice Antoine (1886-1962). Born in Caen in Normandy, France, Antoine moved to Morocco in his 30s where he taught natural science at a secondary school in Casablanca from 1919 to 1948. He is well-known for his monographic treatment (1955-1962) of the carabid fauna of Morocco.

Altaiotrechus Iablokoff-Khnzorian, 1971: 155. Type species: *Altaiotrechus alticola* Iablokoff-Khnzorian, 1971 (= *Trechus kuraicus* Shilenkov, 1995) by monotypy. Synonymy established by Shilenkov (in Kryzhanovskij et al. 1995: 69). Etymology. From the geographical name *altai* (mountain system in Asia) and the generic name *Trechus* [*q.v.*] [masculine].

Hydrotrechus Carabajal, García and Rodríguez, 2000: 123. Type species: *Hydrotrechus cantabricus* Carabajal, García and Rodríguez, 2000 by original designation. Synonymy established by Ortuño and Jiménez-Valverde (2011: 28).

Diversity. About 775 species in North America (23 species, of which three are adventive), mountains in Mexico (about five species), Oriental (two species in the Philippines), Palaearctic (about 725 species), and Afrotropical (about 25 species on Mont Elgon, Mont Meru, and Ethiopia) Regions. More than 95% of the species inhabit the Northern Hemisphere.

Identification. There is no published key for the identification of the species of this subgenus.

[**chalybeus group**]

***Trechus apicalis* Motschulsky, 1845**

Trechus apicalis Motschulsky, 1845b: 347. Type locality: «Kamtschatka [Siberia, Russia]» (original citation). Six syntypes in ZMMU (Keleinikova 1976: 187).

Trechus kamtschatkensis Putzeys, 1847: 308. Type locality: «Kamtschatka [Siberia, Russia]» (original citation). Syntype(s) location unknown (possibly in IRSN). Synonymy established by Putzeys (1870: 166).

Epaphius micans LeConte, 1847: 414. Type locality: «Lapointe [Madeline Island, Wisconsin], Lacus Superioris» (original citation). Syntype(s) in MCZ [# 5596]. Synonymy established by Lindroth (1963b: 202).

Epaphius fulvus LeConte, 1847: 415 [secondary homonym of *Trechus fulvus* Dejean, 1831]. Type locality: «Lapointe [Madeline Island, Wisconsin], Lacus Superioris» (original citation). Syntype(s) in MCZ. Synonymy established, under the name *T. apicalis micans* (LeConte), by Jeannel (1927: 172), confirmed by Lindroth (1963b: 202).

Trechus canadensis Putzeys, 1870: 160. Type locality: «Terre neuve (S[ain]t Pierre [et] Miquelon); Toronto» (original citation). Syntype(s) [5 originally cited] in MHNP (collection Chaudoir). Synonymy established by Jeannel (1931: 428).

Trechus borealis Schaeffer, 1915a: 47. Type locality: «Battle Harbor, Labrador; Bay S[ain]t George, Newfoundland; New Jersey; Bellport, L[on]g Island [New York]» (original citation), restricted to «Battle Harbor, Labr[ador]» by Lindroth (1963b: 202). Syntype(s) in USNM (Lindroth 1963b: 202, though not listed by Erwin and House 1978). Synonymy established, under the name *T. apicalis micans* (LeConte), by Jeannel (1927: 172), confirmed by Lindroth (1963b: 202).

Trechus pallescens Casey, 1918: 407. Replacement name for *Trechus fulvus* (LeConte 1847).

Trechus puritanus Casey, 1918: 407. Type locality: «Fall River [Bristol County], Massachusetts» (original citation). Lectotype (♂), designated by Lindroth (1975: 114), in USNM [# 46077]. Synonymy established, under the name *T. apicalis micans* (LeConte), by Jeannel (1927: 172), confirmed by Lindroth (1963b: 202).

Trechus rhodensis Casey, 1918: 408. Type locality: «Boston Neck [Washington County], Rhode Island» (original citation). Lectotype (♂), designated by Lindroth (1975: 114), in USNM [# 46078]. Synonymy established, under the name *T. apicalis micans* (LeConte), by Jeannel (1927: 172), confirmed by Lindroth (1963b: 202).

Trechus brumalis Casey, 1918: 408. Type locality: «W[est] S[ain]t Modest[e], Labrador» (original citation). Lectotype (♂), designated by Lindroth (1975: 114), in USNM [# 46079]. Synonymy established, under the name *T. apicalis micans* (LeConte), by Jeannel (1927: 172), confirmed by Lindroth (1963b: 202).

Distribution. This species ranges from Newfoundland (Lindroth 1955a: 78-79, as *T. apicalis micans*) to Alaska, south to southeastern British Columbia (Lindroth 1963b: 202), southern Colorado (Elias 1987: 632; Mineral County, UASM) along the Rocky Mountains, and northeastern West Virginia (Tucker County, CMNH). Also found in the Far East and on Hokkaidō, Japan (Moravec et al. 2003: 326).

Records. FRA: PM **CAN**: AB, BC, LB, MB, NB, NF, NS (CBI), NT, ON, PE, QC, SK, YT **USA**: AK, CO, CT, IN, MA, ME, MI, MN, MT, NH, NJ, NY, OH, PA, RI, VT, WI, WV – **Holarctic**

Trechus chalybeus Dejean, 1831

Trechus chalybeus Dejean, 1831: 17. Type locality: «île d'Ounalaschka, l'une des îles Aleutiennes [Alaska]» (original citation). One syntype in MHNP (Lindroth 1955b: 14).

Trechus californicus Motschulsky, 1845b: 347. Type locality: «île Sitka [= Baranof Island, Alaska]» (original citation). Four syntypes in ZMMU (Keleinikova 1976: 190). Synonymy established by Horn (1875: 131).

Trechus tahoensis Casey, 1918: 407. Type locality: «Lake Tahoe [Placer County], California» (original citation). Lectotype (♀), designated by Lindroth (1975: 114), in USNM [# 46076]. Synonymy established by Jeannel (1927: 169), confirmed by Lindroth (1961a: 197).

Trechus chalybaeus brachyderus Jeannel, 1931: 422. Type locality: «Bears Paw Mountains, Montana» (original citation). Holotype (♂) in USNM [# 43660]. Synonymy established by Lindroth (1961a: 197).

Distribution. This species ranges from the Aleutian Islands in Alaska (Lindroth 1961a: 198) south to the Sierra Nevada in eastern California (Inyo and Tulare Counties, CAS; Casey 1918: 407, as *T. tahoensis*; Dajoz 1990: 158) and to New Mexico along the Rocky Mountains (Snow 1885: 67; Fall and Cockerell 1907: 158).
Records. CAN: AB, BC (QCI, VCI) **USA**: AK, CA, CO, ID, MT, NM, NV, OR, WA, WY

Trechus coloradensis Schaeffer, 1915

Trechus chalybaeus var. *coloradensis* Schaeffer, 1915a: 48. Type locality: «Colorado» (original citation). Syntype(s) in USNM [# 42515].

Trechus chalybaeus var. *utahensis* Schaeffer, 1915a: 48 [*nomen dubium*]. Type locality: «southwest Utah» (original citation). Lectotype (♂), designated by Lindroth (1963b: 201) and described as "severely mutilated," in USNM [# 75690]. Synonymy established with doubt by Lindroth (1963b: 201).

Trechus saxatilis Casey, 1918: 408. Type locality: «Colorado» (original citation). Lectotype (♀), designated by Lindroth (1975: 114), in USNM [# 46080]. Synonymy established with doubt by Jeannel (1927: 171), confirmed by Lindroth (1963b: 201).

Trechus coloradensis arcticollis Jeannel, 1931: 419. Type locality: « Moscow, Cedar mountains, Idaho [see page 430]» (original citation). Holotype (♂) in USNM [# 43662]. Synonymy established by Lindroth (1963b: 201). Note. The "Cedar Mountain" referred to is probably that in Latah County, which is also the type locality of *Scaphinotus merkelii*.

Trechus coloradensis gravidulus Jeannel, 1931: 419. Type locality: «New Mexico» (original citation). Holotype (♂) in USNM [# 43661]. Synonymy established by Lindroth (1963b: 201).

Trechus pugetensis Hatch, 1951: 113. Type locality: «Seattle [King County], Wash[ington]» (original citation). Holotype (♂) in USNM. Synonymy established by Lindroth (1963b: 201).

Distribution. This species ranges from northwestern Washington (Hatch 1951: 113, as *T. pugetensis*) and northern Idaho (Lindroth 1963b: 201) south to northern New Mexico (Dajoz 1990: 158; Santa Fe County, CMNH), northeastern Arizona (Donabauer 2010a: 41), and northwestern California (Humboldt County, James R. LaBonte pers. comm. 2008).
Records. USA: AZ, CA, CO, ID, NM, UT, WA

Trechus crassiscapus Lindroth, 1955

Trechus chalybaeus crassiscapus Lindroth, 1955a: 80. Type locality: «Cow Head, N[ew] f[ound]l[an]d» (original citation). Holotype (♂) in CNC [# 6571].

Distribution. This species ranges from Newfoundland and the coast of Labrador to northeastern Minnesota (Gandhi et al. 2005: 924), south to mountains in northern

New York and New England [see Lindroth 1963a: Fig. 69]. The record from "Massachusetts" (Bousquet and Larochelle 1993: 120) is in error.
Records. CAN: LB, NB, NF, NS (CBI), ON, QC **USA**: ME, MN, NH, NY, VT, WI

***Trechus oregonensis* Hatch, 1951**

Trechus oregonensis Hatch, 1951: 114. Type locality: «Hood R[i]v[er] Rapids, Parkdale [Hood River County], Ore[gon]» (original citation). Holotype (♂) in USNM.

Distribution. This species inhabits the North American Cordilleras ranging from British Columbia and southwestern Alberta (Lindroth 1963b: 201) south to western Montana (Russell 1968: 48) and the Sierra Nevada in California (Lindroth 1963b: 201). The record from "Colorado" (Bousquet and Larochelle 1993: 121) needs confirmation.
Records. CAN: AB, BC **USA**: CA, ID, MT, OR, WA [CO]

***Trechus tenuiscapus* Lindroth, 1961**

Trechus tenuiscapus Lindroth, 1961a: 198. Type locality: «Cameron L[ake], Waterton Park, Al[ber]ta» (original citation). Holotype (♂) in CNC [# 11722].

Distribution. This species ranges from southern Yukon Territory (Lindroth 1961a: 200) south to mountains in northwestern Montana (Edwards 1975: 51), west-central Idaho (Boise County, CMNH), and western Oregon (Lane County, Foster F. Purrington pers. comm. 2009). The record from "Northwestern Territories" (Bousquet and Larochelle 1993: 121) needs confirmation.
Records. CAN: AB, BC (VCI), YT **USA**: ID, MT, OR, WA [NT]

***Trechus yvesbousqueti* Donabauer, 2010**

Trechus yvesbousqueti Donabauer, 2010a: 41. Type locality: «Escudilla M[oun]t[ain] (2730 m), Apache N[ational] F[orest], 8 mi[les] N[orth]E[ast] Alpine [Apache County], Ariz[ona]» (original citation). Holotype (♂) in CNC [# 23928].

Distribution. This species is known only from Apache County (Donabauer 2010a: 41) in northeastern Arizona.
Records. USA: AZ

[**hydropicus group**]
***Trechus caliginis* Barr, 1985**

Trechus caliginis Barr, 1985b: 128. Type locality: «Camp Creek Bald, just below summit (about 1460 m), Greene Co[unty], Tennessee/Madison Co[unty], North Carolina» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type locality in the Bald Mountains between Greeneville, Tennessee and Asheville, North Carolina (Barr 1985b: 128).
Records. USA: TN/NC

Trechus carolinae Schaeffer, 1901

Trechus carolinae Schaeffer, 1901: 212. Type locality: «M[oun]t Mitchell [Yancey County], North Carolina» (original citation). Holotype [by monotypy] in AMNH [# 404] (Grossbeck 1912: 361).

Distribution. This species is known only from the type locality, at the summit of Mount Mitchell where it is found in deep spruce and fir needle duff.
Records. USA: NC

Trechus cumberlandus Barr, 1962

Trechus cumberlandus Barr, 1962a: 76. Type locality: «Elisha Steele Cave, 3 miles east of Monticello, Wayne Co[unty], Kentucky» (original citation). Holotype (♂) in USNM [# 65975].

Distribution. This species is found in caves in the Cumberland Plateau, from Rockcastle County in southeastern Kentucky southwest to Grundy County in southern Tennessee (Barr 1979b: 37).
Records. USA: KY, TN

Trechus hydropicus avus Barr, 1962

Trechus beutenmulleri avus Barr, 1962a: 72. Type locality: «Grandfather Mountain, Avery Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65973].

Distribution. This subspecies is known from Grandfather Mountain in Avery County and Three Top Mountain in Ashe County in western North Carolina (Barr 1979b: 43).
Records. USA: NC
Note. This subspecies intergrades with the *beutenmuelleri* form on Beech Mountain, Avery County, North Carolina (Barr 1979b: 43).

Trechus hydropicus beutenmuelleri Jeannel, 1931

Trechus beutenmülleri Jeannel, 1931: 436. Type locality: «mount Mitchell [Yancey County], North Carolina» (original citation). Holotype probably in MHNP. Etymology. The species was proposed for William Beutenmüller [1864-1934], curator of insects at the American Museum of Natural History. Beutenmüller collected extensively in the vicinity of New York and at Black Mountain in North Carolina and published mainly on Lepidoptera.

Distribution. This subspecies ranges southwestwards from the Roan Mountain in Tennessee to the Black and Great Craggy Mountains at the edge of the Blue Ridge in western North Carolina (Barr 1979b: 44).
Records. USA: NC, TN

***Trechus hydropicus canus* Barr, 1962**

Trechus beutenmulleri canus Barr, 1962a: 73. Type locality: «White Top Mountain, Grayson Co[unty], Virginia» (original citation). Holotype (♂) in USNM [# 65974].

Distribution. This subspecies is known from Grayson, Washington, and Lee Counties, southwestern Virginia, and Harlan and Letcher Counties, southeastern Kentucky (Barr 1979b: 36).
Records. USA: KY, VA

***Trechus hydropicus hydropicus* Horn, 1883**

Trechus hydropicus G.H. Horn, 1883b: 273. Type locality: «Virginia» (original citation), restricted to «Bald Knob, Mountain Lake, Giles County» by Barr (1979b: 42). Syntype(s) in MCZ [# 8231].

Distribution. This subspecies is known from western Maryland, Virginia, and eastern West Virginia (Barr 1979b: 36). The record from Sassafras Mountain in northwestern South Carolina (Ciegler 2000: 44) is apparently in error (see Ciegler 2003: [1]) as well as the state record of "South Carolina" by Bousquet and Larochelle (1993: 121).
Records. USA: MD, VA, WV

***Trechus mitchellensis* Barr, 1962**

Trechus mitchellensis Barr, 1962a: 75. Type locality: «Celo Mountain, Yancey Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65976].

Distribution. This species is found in the Black Mountains in Yancey, Buncombe, and McDowell Counties, North Carolina (Barr 1979b: 37).
Records. USA: NC

***Trechus roanicus* Barr, 1962**

Trechus roanicus Barr, 1962a: 73. Type locality: «Roan Mountain, Carter Co[unty], Tennessee» (original citation). Holotype (♂) in USNM [# 65977].

Distribution. This species is known from Carter County in northeastern Tennessee and from Mitchell County in western North Carolina (Barr 1979b: 37).
Records. USA: NC, TN

***Trechus schwarzi saludae* Barr, 1979**

Trechus schwarzi saludae Barr, 1979b: 46. Type locality: «one mile east of Melrose, on the south side of the gorge of the North Pacolet River (1300 feet), Polk County, North Carolina» (original citation). Holotype (♂) in AMNH [# 1503].

Distribution. This subspecies is known from several specimens collected at the type locality in southwestern North Carolina.
Records. USA: NC

Trechus schwarzi schwarzi Jeannel, 1931

Trechus schwarzi Jeannel, 1931: 437. Type locality: «Roan High Knob [Carter County], North Carolina» (original citation), which is probably incorrect (Barr 1962a: 75); «Retreat, Haywood Co[unty], N[orth] C[arolina]» selected by Barr (1962a: 74). Holotype (♀) in USNM [# 43663].

Distribution. This subspecies is restricted to the Pishah Ledge, which is the eastern arm of the Great Balsam Mountains, in western North Carolina (Barr 1979b: 45).
Records. USA: NC

Trechus schwarzi scopulosus Barr, 1979

Trechus schwarzi scopulosus Barr, 1979b: 46. Type locality: «below summit of Craggy Dome (5600 feet), Buncombe County, North Carolina» (original citation). Holotype (♂) in AMNH [# 1504].

Distribution. This subspecies is known from the Black and Great Craggy mountains and adjacent Blue Ridge, in Buncombe, McDowell, and Yancey Counties, western North Carolina (Barr 1979b: 46).
Records. USA: NC

[**ovipennis group**]

Trechus alinae Dajoz, 1990

Trechus alinae Dajoz, 1990: 156. Type locality: «Mont San Jacinto State Park (2600 m), Riverside County, Californie» (original citation). Holotype (♂) in Dajoz's collection (Paris, France).

Distribution. This species is known only from the San Jacinto Mountains in southeastern California.
Records. USA: CA

Trechus apache Dajoz, 1990

Trechus apache Dajoz, 1990: 153. Type locality: «Apache au lieu-dit Skeleton Canyon, Cochise County, Arizona» (original citation). Holotype (♂) in Dajoz's collection (Paris, France).

Distribution. This species is known only from the holotype.
Records. USA: AZ

Trechus arizonae Casey, 1918

Trechus arizonae Casey, 1918: 409. Type locality: «Arizona» (original citation). One syntype in USNM [# 46081].

Distribution. This species is endemic to the Pinaleno Mountains in Graham County, southeastern Arizona (Donabauer 2010a: 39).
Records. USA: AZ

Trechus conformis Jeannel, 1927

Trechus conformis Jeannel, 1927: 188. Type locality: «Lagunitas, sur la côte de Tomales bay, Marin County, Californie» (original citation). Holotype (♂) in MHNP.

Distribution. This species is known only from the holotype.
Records. USA: CA

Trechus humboldti Van Dyke, 1945

Trechus humboldti Van Dyke, 1945b: 101. Type locality: «near Orick, Humboldt County, California» (original citation). Holotype (♂) in CAS [# 5434].

Distribution. This species is known from northwestern California (Van Dyke 1945b: 101) and southern Oregon (Lane County, CMNH).
Records. USA: CA, OR

Trechus ovipennis Motschulsky, 1845

Trechus ovipennis Motschulsky, 1845b: 348. Type locality: «Californie» (original citation), which was regarded as incorrect by Jeannel (1931: 433); «Sithka [Baranof Island], Alaska» selected by Lindroth (1961a: 195). Syntype(s) in MCZ and probably also in ZMMU. Note. Keleinikova (1976: 210) reported the presence of two syntypes in ZMMU, one labeled "Am.b.occ. Sitka," the second "California."

Distribution. This species ranges along the Pacific Coast from southeastern Alaska (Lindroth 1961a: 196) to at least Marin County, central California (Kavanaugh and Erwin 1985: 177).
Records. CAN: BC (QCI, VCI) **USA**: AK, CA, OR, WA

Trechus pomonae Fall, 1901

Trechus pomonae Fall, 1901a: 211. Type locality: «Pomona and Pasadena [California]» (original citation). Syntype(s) [3 originally cited] in MCZ [# 23872].

Distribution. This species is known only from southwestern California (Jeannel 1927: 189; Donabauer 2010a: 39).
Records. USA: CA

[**quadristriatus group**]
***Trechus obtusus* Erichson, 1837**

Trechus laevis Stephens, 1835: 384 [potential *nomen oblitum*]. Type locality: «near London [United Kingdom]» (original citation). Syntype(s) location unknown (possibly in BMNH).

Trechus obtusus Erichson, 1837 [15 September]: 122 [potential *nomen protectum*]. Type locality: Mark Brandenburg [Prussia] (inferred from title of the book). Syntype(s) location unknown (possibly in ZMHB). Synonymy established by Waterhouse (1863: 148).

Trechus castanopterus Heer, 1837 [after 10 December]: 46 [second section]. Type locality: Matt; Andermatt [Switzerland] (Heer 1837: 73 [first section]). Syntype(s) location unknown (possibly in ETHZ). Synonymy established by Schaum (1860: 641).

Distribution. This European species is adventive in North America where it is known from the Queen Charlotte Islands (Kavanaugh 1992: 61) to north-central Idaho (LaBonte 1989: 17; Hatten et al. 2007: 359), south to northern Utah (Davis and Salt Lake Counties, CMNH) and west-central California [see Kavanaugh and Erwin 1985: Fig. 1]. The first inventoried specimen collected on this continent was found in North Creek, King County, Washington in 1925 (Kavanaugh and Erwin 1985: 171). The species is also adventive in Hawaii since 1998 (Liebherr and Takumi 2003).
Records. CAN: BC (QCI, VCI) **USA**: CA, ID, OR, UT, WA – **Adventive**

***Trechus quadristriatus* (Schrank, 1781)**

Carabus quadristriatus Schrank, 1781: 218. Type locality: Austria (inferred from title of the book). Syntype(s) probably lost.

Carabus minutus Fabricius, 1792: 167 [primary homonym of *Carabus minutus* Rossi, 1790]. Type locality: «Germania» (original citation). One syntype in ZMUC (Zimsen 1964: 60). Synonymy established by Dawson (1854: 169).

Carabus tempestivus Panzer, 1799: no 6. Type locality: «Dresdae [Germany]» (original citation). Syntype(s) location unknown (possibly in ZMHB). Synonymy established, under the name *T. minutus* (Fabricius), by Erichson (1837: 121).

Distribution. This European species is adventive in North America where it is known from Nova Scotia (Majka et al. 2006: 603) to northern Wisconsin (Iron County, CMNH; Messer 2010: 35), as far north as the Abitibi region in Quebec (Paquin and Dupérré 2002: 87), south to northeastern West Virginia (Hampshire County, CMNH) and eastern Maryland (Queen Annes County, Foster F. Purrington pers. comm. 2009). The first inventoried specimen collected on this continent was found at Port Credit, southern Ontario, in 1965 (Bousquet et al. 1984: 215).
Records. CAN: NS, ON, QC **USA**: MD, MI, NY, PA, WI, WV – **Adventive**

[**rubens group**]
***Trechus rubens* (Fabricius, 1792)**

Carabus rubens Fabricius, 1792: 140. Type locality: «Kiliae [= Kiel, Germany]» (original citation). Syntype(s) location unknown.
Bembidium paludosum Gyllenhal, 1810: 34. Type locality: Sweden (inferred from title of the book). Syntype(s) location unknown (possibly in UZIU). Synonymy established by Schiødte (1841: 327).
Carabus palpalis Duftschmid, 1812: 183. Type locality: «um Linz [Austria]» (original citation). Holotype [by monotypy] probably lost. Synonymy established, under the name *T. paludosus* (Gyllenhal), by Redtenbacher (1856: 68).

Distribution. This European species is adventive in North America where it is known from Newfoundland (Lindroth 1955a: 82; Larson and Langor 1982: 593) to western Quebec (Larochelle 1975: 112), and from the New England area (Bousquet and Larochelle 1993: 121). The first inventoried specimen collected on this continent was found prior to 1863 (LeConte 1863b: 14) probably in Nova Scotia as recorded by Horn (1875: 131). The record from eastern Ontario (Hamilton 1889b: 94) is probably in error.
Records. FRA: PM **CAN**: NB, NF, NS (CBI), PE, QC **USA**: ME, NH, VT – **Adventive**

Subgenus *Microtrechus* Jeannel, 1927

Microtrechus Jeannel, 1927: 585. Type species: *Microtrechus vandykei* Jeannel, 1927 by original designation. Etymology. From the Greek *micros* (small, little) and the generic name *Trechus* [*q.v.*], alluding to the small size of adults of these *Trechus* species [masculine].

Diversity. Forty-one species (46 species-group taxa) restricted to the Appalachian Mountains in North Carolina, Tennessee, South Carolina, and Georgia and currently placed in three species groups.
Identification. Barr (1979b) revised and provided a key to the species of this subgenus (22 species, 29 species-group taxa). Subsequently, 15 new species and two subspecies have been described by Barr (1985b), Dajoz (2005), and Donabauer (2005a, *b*).

[**nebulosus group**]
***Trechus balsamensis* Barr, 1962**

Trechus balsamensis Barr, 1962a: 87. Type locality: «Water Rock Knob, Haywood-Jackson Counties, North Carolina» (original citation). Holotype (♂) in USNM [# 65979].

Distribution. This species is known only from the Plott Balsam Mountains, western North Carolina.
Records. USA: NC

Trechus cheoahensis Donabauer, 2005

Trechus cheoahensis Donabauer, 2005b: 90. Type locality: «Cheoah Bald, Graham/Swain Co[unty], N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality.
Records. USA: NC

Trechus clingmanensis Donabauer, 2005

Trechus clingmanensis Donabauer, 2005b: 72. Type locality: «Clingmans Dome, G[reat] S[moky]M[ountains], Servier/Swain Co[unty], T[en]n[essee]/N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality.
Records. USA: NC/TN

Trechus haoeleadensis Donabauer, 2005

Trechus haoeleadensis Donabauer, 2005b: 85. Type locality: «Haoe Lead, Unicoi M[oun] t[ai]ns, Graham/Monroe Co[unty], N[orth]C[arolina]/T[en]n[essee]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality.
Records. USA: NC/TN

Trechus luculentus cheoahbaldensis Donabauer, 2005

Trechus luculentus cheoahbaldensis Donabauer, 2005b: 89. Type locality: «Cheoah Bald, Graham/Swain Co[unty], N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This subspecies is known only from the type locality.
Records. USA: NC

Trechus luculentus joannabaldensis Donabauer, 2005

Trechus luculentus joannabaldensis Donabauer, 2005b: 89. Type locality: «Joanna Bald, Snowbird Mountains, Graham/Cherokee Co[unty], N[orth]C[arolina]/T[en]n[essee]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This subspecies is known only from the type locality.
Records. USA: NC/TN

***Trechus luculentus luculentus* Barr, 1962**

Trechus luculentus Barr, 1962a: 88. Type locality: «Clingmans Dome, Swain Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65981].

Distribution. This subspecies is known from the central Great Smoky Mountains in North Carolina and Tennessee (Barr 1979b: 40).
Records. USA: NC, TN

***Trechus luculentus wayahensis* Barr, 1979**

Trechus luculentus wayahensis Barr, 1979b: 70. Type locality: «head of Dirty John Creek, southwest slope of Winespring Bald (near Wayah Bald) (4900 feet), Macon County, North Carolina» (original citation). Holotype (♂) in AMNH [# 1497].

Distribution. This subspecies is endemic to the Nantahala Mountains in southwestern North Carolina (Donabauer 2005b: 88).
Records. USA: NC

***Trechus nantahalae* Barr, 1979**

Trechus nantahalae Barr, 1979b: 72. Type locality: «0.4 mile northwest of Burningtown Gap on the southwest slope of Burningtown Bald, at a seep along the Appalachian Trail (4300 feet), Macon County, North Carolina» (original citation). Holotype (♂) in AMNH [# 1498].

Distribution. This species is known only from the type locality in the northern Nantahala Mountains, southwestern North Carolina.
Records. USA: NC

***Trechus nebulosus* Barr, 1962**

Trechus nebulosus Barr, 1962a: 86. Type locality: «M[oun]t Kephart, Sevier Co[unty], Tennessee» (original citation). Holotype (♂) in USNM [# 65982].

Distribution. This species is found in central and eastern Great Smoky Mountains in North Carolina and Tennessee (Barr 1979b: 40).
Records. USA: NC, TN

***Trechus novaculosus* Barr, 1962**

Trechus novaculosus Barr, 1962a: 89. Type locality: «Clingmans Dome, Swain Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65983].

Distribution. This species is found in central Great Smoky Mountains in North Carolina and Tennessee (Barr 1979b: 40).
Records. USA: NC, TN

Trechus pseudonovaculosus Donabauer, 2005

Trechus pseudonovaculosus Donabauer, 2005b: 80. Type locality: «Clingmans Dome, G[reat]S[moky]M[ountains], Servier [sic!]/Swain Co[unty], T[en]n[essee]/N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality.
Records. USA: NC/TN

Trechus ramseyensis Donabauer, 2005

Trechus ramseyensis Donabauer, 2005b: 74. Type locality: «Ramsey Cascade, G[reat] S[moky]M[ountains], Servier [sic!] Co[unty], T[en]n[essee]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality.
Records. USA: TN

Trechus rosenbergi Barr, 1962

Trechus rosenbergi Barr, 1962a: 89. Type locality: «Water Rock Knob, Haywood-Jackson Counties, North Carolina» (original citation). Holotype (♂) in USNM [# 65984].

Distribution. This species is known from the Plott Balsam Mountains and Great Balsam Mountains in western North Carolina (Barr 1979b: 40).
Records. USA: NC

Trechus snowbirdensis Donabauer, 2005

Trechus snowbirdensis Donabauer, 2005b: 78. Type locality: «Joanna Bald, Snowbird M[oun]t[ain]s, Graham Co[unty], N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality.
Records. USA: NC

Trechus stefanschoedli Donabauer, 2005

Trechus stefanschoedli Donabauer, 2005b: 87. Type locality: «Thunderhead M[oun]t[ai]n, G[reat]S[moky]M[ountains], Blount/Swain Co[unty], T[en]n[essee]/N[orth] C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality.
Records. USA: NC/TN

Trechus stupkai Barr, 1979

Trechus stupkai Barr, 1979b: 65. Type locality: «edge of Ramsay Prong, about 150 yards above Ramsay Cascades (4600 feet), Great Smoky Mountains National Park, Sevier County, Tennessee» (original citation). Holotype (♂) in AMNH [# 1499]. Etymology. The specific name was proposed in honor of Arthur Stupka [1907-1999], head naturalist of the Great Smoky Mountains National Park for 30 years. He also worked before as naturalist and ranger in Yosemite and Acadia National Parks.

Distribution. This species is known only from the holotype collected in eastern Tennessee.
Records. USA: TN

Trechus tennesseensis tauricus Barr, 1962

Trechus tennesseensis tauricus Barr, 1962a: 87. Type locality: «Bull Cave Sinkhole, Blount Co[unty], Tennessee» (original citation). Holotype (♂) in USNM [# 65988].

Distribution. This subspecies is known only from Bull Cave in the Cades Cove Mountains, Great Smoky Mountains, in eastern Tennessee (Barr 1979b: 40).
Records. USA: TN

Trechus tennesseensis tennesseensis Barr, 1962

Trechus tennesseensis tennesseensis Barr, 1962a: 87. Type locality: «Berry Cave, Roane Co[unty], Tennessee» (original citation). Holotype (♂) in USNM [# 65989].

Distribution. This subspecies is known only from the original 28 specimens collected in a cave in the Appalachian Valley, 8 miles south of Kingston and ¼ mile west of the Tennessee River on the southeast side of a valley east of Huckleberry Ridge (Barr 1962a: 87).
Records. USA: TN

Trechus thomasbarri Donabauer, 2005

Trechus thomasbarri Donabauer, 2005b: 75. Type locality: «Haoe Lead, Unicoi M[oun]t[ain]s, Graham/Monroe Co[unty], N[orth]C[arolina]/T[en]n[essee]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria). Etymology. This species was proposed for Thomas Calhoun Barr, Jr. [1931-2011], an expert on North American cave Carabidae. Barr taught at the Zoology Department, University of Kentucky, in Lexington.

Distribution. This species is known only from the holotype.
Records. USA: NC/TN

Trechus tobiasi Donabauer, 2005

Trechus tobiasi Donabauer, 2005b: 84. Type locality: «Tusquitee Bald, Macon/Clay Co[unty], N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality in the Nantahala Mountains.
Records. USA: NC

Trechus tuckaleechee Barr, 1962

Trechus tuckaleechee Barr, 1962a: 86. Type locality: «Tuckaleechee Caverns, Blount Co[unty], Tennessee» (original citation). Holotype (♂) in USNM [# 65991].

Distribution. This species is known only from the original specimens collected in a large stream cavern at the north side of the Great Smoky Mountains.
Records. USA: TN

Trechus unicoi Barr, 1979

Trechus luculentus unicoi Barr, 1979b: 68. Type locality: «Stratton Meadows (4900 feet), Monroe County, Tennessee, and Graham County, North Carolina» (original citation). Holotype (♂) in AMNH [# 1496].

Distribution. This species is endemic to the Unicoi Mountains in southeastern Tennessee and western North Carolina (Barr 1979b: 40).
Records. USA: NC, TN
Note. This taxon was first described as a subspecies but raised to species by Donabauer (2005b: 87).

Trechus valentinei Barr, 1979

Trechus valentinei Barr, 1979b: 62. Type locality: «Appalachian Trail near summit of M[oun]t Kephart (approximately 6000 feet), Great Smoky Mountains National Park, Sevier County, Tennessee» (original citation). Holotype (♂) in AMNH [# 1501].

Distribution. This species is found in the central Great Smoky Mountains in Tennessee and North Carolina (Barr 1979b: 40).
Records. USA: NC, TN

Trechus verus Barr, 1962

Trechus verus Barr, 1962a: 81. Type locality: «M[oun]t Sterling, Haywood Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65993].

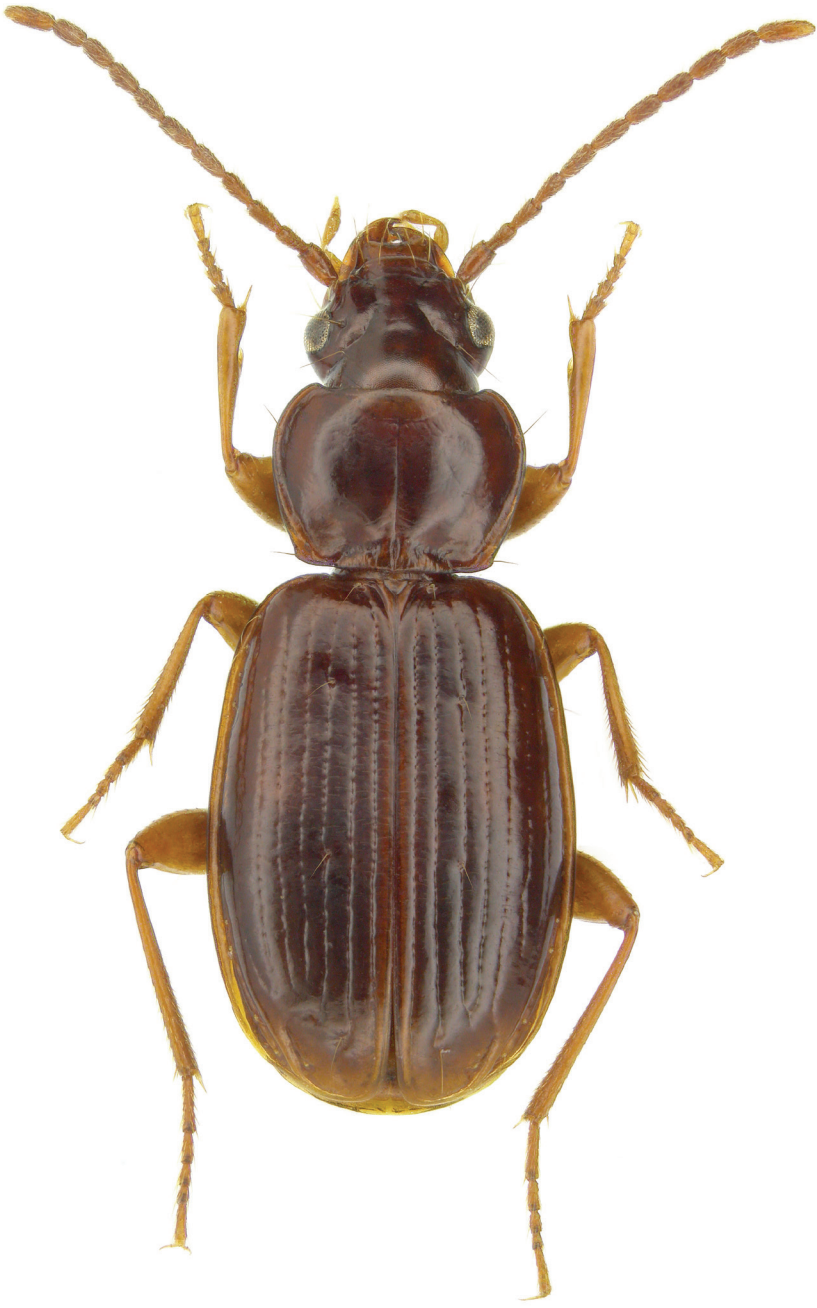

Figure 21. *Trechus apicalis* Motschulsky. This trechine species is "wing dimorphic" with the vast majority of individuals being micropterous (with short wing vestiges) and a few macropterous (with long wings). Usually macropterous individuals of dimorphic species are able to fly but this is not always the case as flight muscles could be atrophied. Carl Lindroth argued that in stable periods, when the species' habitat is not subject to drastic changes, the brachypterous form normally predominates but in unstable periods, the situation is reversed.

Distribution. This species is known only from the conifer forests in the eastern end of the Great Smoky Mountains in Haywood County, western North Carolina, and Cocke County, eastern Tennessee.
Records. USA: NC, TN

Trechus wayahbaldensis Donabauer, 2005

Trechus wayahbaldensis Donabauer, 2005b: 69. Type locality: «Wayah Bald, Macon Co[unty], N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality.
Records. USA: NC

[**uncifer group**]

Trechus aduncus Barr, 1962

Trechus aduncus Barr, 1962a: 82. Type locality: «M[oun]t Pisgah, Haywood Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65978].

Distribution. This species occurs in the Great Balsam Mountains in western North Carolina (Barr 1979b: 39).
Records. USA: NC

Trechus coweensis Barr, 1979

Trechus aduncus coweensis Barr, 1979b: 59. Type locality: «summit of Yellow Mountain (5000 feet), 4 miles southwest of Glenville, Macon-Jackson Counties, North Carolina» (original citation). Holotype (♂) in AMNH [# 1492].

Distribution. This species is known only from the Cowee Mountains in southwestern North Carolina (Donabauer 2005a: 56).
Records. USA: NC

Trechus howellae Barr, 1979

Trechus aduncus howellae Barr, 1979b: 60. Type locality: «east face of Big Butt (4800 feet), Coweeta Hydrologic Laboratory, Macon County, North Carolina» (original citation). Holotype (♂) in AMNH [# 1493]. Etymology. The subspecific name was proposed for Thelma Howell [1901-1979], executive director of the Highlands Biological Station for more than 25 years. The Station established the *Thelma Howell Memorial Scholarship* for investigators.

Distribution. This species is known only from Big Butt in the Nantahala Mountains, southwestern North Carolina (Donabauer 2005a: 57).
Records. USA: NC

***Trechus inexpectatus* Barr, 1985**

Trechus inexpectatus Barr, 1985b: 129. Type locality. «Camp Creek Bald, just below summit (1460 m), Greene Co[unty], Tennessee/Madison Co[unty], North Carolina» (original citation). Holotype (♂) in AMNH.

Distribution. This species is known only from the type locality.
Records. USA: TN/NC

***Trechus plottbalsamensis* Donabauer, 2005**

Trechus plottbalsamensis Donabauer, 2005a: 55. Type locality: «Waterrock Knob, Haywood/Jackson Co[unty], N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality in the Plott Balsam Mountains, southwestern North Carolina.
Records. USA: NC

***Trechus satanicus* Barr, 1962**

Trechus satanicus Barr, 1962a: 81. Type locality: «west end of Graveyard Fields near Devils Courthouse, Haywood Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65985].

Distribution. This species is endemic to the western Pisgah Ridge (Donabauer 2005a: 57) in the Great Balsam Mountains.
Records. USA: NC

***Trechus talequah* Barr, 1962**

Trechus talequah Barr, 1962a: 82. Type locality: «Haw Knob, Monroe Co[unty], Tennessee» (original citation). Holotype (♂) in USNM [# 65987].

Distribution. This species has been found yet only in the Unicoi Mountains, between 4800-5000 feet, in North Carolina and Tennessee (Barr 1979b: 40).
Records. USA: NC, TN

***Trechus thunderheadensis* Donabauer, 2005**

Trechus thunderheadensis Donabauer, 2005a: 54. Type locality: «Thunderhead Mountain, G[reat]S[moky]M[ountains], Blount/Swain Co[unty], N[orth]C[arolina]/T[en]n[essee]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from Thunderhead Mountain at the junction of Swain County in North Carolina and Blount County in Tennessee.
Records. USA: NC/TN

***Trechus toxawayi* Barr, 1979**

Trechus aduncus toxawayi Barr, 1979b: 59. Type locality: «0.25 mile west of the summit of Toxaway Mountain (4600 feet), Jackson County, North Carolina» (original citation). Holotype (♂) in AMNH [# 1494].

Distribution. This species is known only from the Toxaway Mountain in southwestern North Carolina.
Records. USA: NC

***Trechus tusquitensis* Donabauer, 2005**

Trechus tusquitensis Donabauer, 2005a: 57. Type locality: «Tusquitee Bald, Macon/Clay Co[unty], N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Vienna, Austria).

Distribution. This species is known only from the type locality in southwestern North Carolina.
Records. USA: NC

***Trechus uncifer* Barr, 1962**

Trechus uncifer Barr, 1962a: 80. Type locality: «Clingmans Dome, Sevier Co[unty], Tennessee - Swain Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65992].

Distribution. This species is known from the central Great Smoky Mountains east to Plott Balsam Mountains in Sevier and Cocke Counties, eastern Tennessee, and in Haywood and Jackson Counties, western North Carolina (Barr 1979b: 38).
Records. USA: NC, TN

[**vandykei group**]
***Trechus barberi* (Jeannel, 1931)**

Microtrechus barberi Jeannel, 1931: 444. Type locality: «Retreat [Haywood County], North Carolina» (original citation). Holotype (♂) in USNM [# 43664].

Distribution. The range of this common species extends from the vicinity of Asheville, western North Carolina, to the mountains of northeast Georgia (Barr 1979b: 38) and northwestern South Carolina (Ciegler 2000: 44).
Records. USA: GA, NC, SC, TN

***Trechus bowlingi* Barr, 1962**

Trechus bowlingi Barr, 1962a: 78. Type locality: «M[oun]t Kephart, Sevier Co[unty], Tennessee - Swain Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65980].

Distribution. This species is found in the spruce-fir forests, between 3000-6500 feet, in the Great Smoky Mountains of North Carolina and Tennessee (Barr 1979b: 38; Donabauer 2009: 137).
Records. USA: NC, TN

Trechus haoe Barr, 1979

Trechus haoe Barr, 1979b: 51. Type locality: «Haoe Lead (4800 feet) above Joyce Kilmer Memorial Forest, Graham County, North Carolina» (original citation). Holotype (♂) in AMNH [# 1495].

Distribution. This species is known only from the Unicoi Mountains, along the Tennessee-North Carolina border (Donabauer 2009: 138).
Records. USA: NC

Trechus pseudobarberi Donabauer, 2009

Trechus pseudobarberi Donabauer, 2009: 136. Type locality: «Waterrock Knob, Haywood/Jackson Co[unty], N[orth]C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Wien, Austria).

Distribution. This species is known only from two localities in western North Carolina (Donabauer 2009: 136).
Records. USA: NC

Trechus pseudosubtilis Donabauer, 2009

Trechus pseudosubtilis Donabauer, 2009: 133. Type locality: «Cataloochee Balsam (summit), G[reat]S[moky]M[ountains], Swain/Haywood Co[unty], T[en]n[essee]/N[orth] C[arolina]» (original citation). Holotype (♂) in Donabauer's collection (Wien, Austria).

Distribution. This species is known only from the type locality.
Records. USA: NC/TN

Trechus rivulis Dajoz, 2005

Trechus rivulis Dajoz, 2005: 208. Type locality: «Buck Creek [Nantahala Forest, Clay County, North Carolina]» (original citation). Holotype in Dajoz's collection (Paris, France).

Distribution. This species is known only from the type locality in southwestern North Carolina.
Records. USA: NC

Trechus subtilis Barr, 1962

Trechus subtilis Barr, 1962a: 80. Type locality: «M[oun]t Sterling, Haywood Co[unty], North Carolina» (original citation). Holotype (♂) in USNM [# 65986].

Distribution. This species has been found at several locations in the Great Smoky Mountains and the Plott Balsams in western North Carolina (Barr 1979b: 38; Donabauer 2009: 131).
Records. USA: NC

Trechus tonitru Barr, 1962

Trechus tonitru Barr, 1962a: 79. Type locality: «Thunderhead, Great Smoky Mountains National Park, Blount Co[unty], Tennessee» (original citation). Holotype (♂) in USNM [# 65990].

Distribution. This species is known only from the type locality in the western Great Smoky Mountains on the border between Blount County, Tennessee, and Swain County, North Carolina.
Records. USA: TN

Trechus tusquitee Barr, 1979

Trechus tusquitee Barr, 1979b: 52. Type locality: «Tusquitee Bald, Clay-Macon Counties, North Carolina» (original citation). Holotype (♂) in AMNH [# 1500].

Distribution. This species is known at present from small mountain ranges in southwestern North Carolina (Barr 1979b: 37).
Records. USA: NC

Trechus vandykei pisgahensis Barr, 1979

Trechus vandykei pisgahensis Barr, 1979b: 50. Type locality: «M[oun]t Pisgah (5000 feet), Haywood-Buncombe Counties, North Carolina» (original citation). Holotype (♂) in AMNH [# 1502].

Distribution. This subspecies is found in the Great Balsam and Cowee Mountains in western North Carolina (Barr 1979b: 37).
Records. USA: NC

Trechus vandykei vandykei (Jeannel, 1927)

Microtrechus vandykei Jeannel, 1927: 587. Type locality: «Black Mountains, Monts Alleghany, Virginia» (original citation). Holotype in MHNP.

Distribution. This subspecies is found in the Bald and Unaka Mountains of Tennessee and in the Black and Great Craggy Mountains of North Carolina (Barr 1979b: 37; Donabauer 2009: 138). Populations very similar to those of *T. vandykei* have been reported by Donabauer (2009: 138) in the Great Smoky Mountains.
Records. USA: NC, TN