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**SPECIES CATALOG OF THE NEUROPTERA, MEGALOPTERA,
AND RAPHIIDOPTERA OF AMERICA NORTH OF MEXICO**

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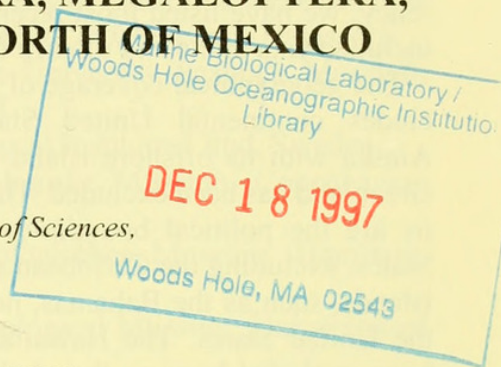
The 399 currently recognized valid species of the orders Neuroptera, Megaloptera, and Raphidioptera that are known to occur in America north of Mexico are listed and full synonymies given. Geographical distributions are listed by states and provinces. Complete bibliographic references are given for all names and nomenclatural acts. Included are two new junior homonyms indicated, seven new taxonomic combinations, two new changes of rank, fourteen new synonymies, three new lectotype designations, and one new name.

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The recent publication of *Nomina Insecta Nearctica*, A Check List of the Insects of North America (Poole 1996) has given us a listing of North American Neuropterida (Neuroptera + Megaloptera + Raphidioptera) species for the first time in more than a century. However, for anyone trying to identify these species, the literature is scattered and obscure. Only with the greatest difficulty is a non-specialist able to keep up with current usage of names. With this lack of reference materials in mind, the present catalog has been developed to allow the non-specialist and specialist alike to grasp the limits and diversity of these groups. The primary literature has

been consulted whenever possible, as well as Zoological Record, and appropriate monographic revisions published up to 1 January 1997.

A number of taxonomic changes are incorporated into this catalog: there are two new junior homonyms indicated, seven new taxonomic combinations, two new changes of rank, fourteen new synonymies, three new lectotype designations, and one new name. However, the classification of neuropteroid insects is constantly being modified and enhanced as we understand the group better. Thus, the authors know that the genus "Mantispa" is currently being redefined by Kevin Hoffman, and the genus "Brachynemu-



rus” was recently redefined by Stange (1994). Such studies enhance our knowledge of these groups and are a normal part of taxonomic development and maturity, but at the same time they require that this list, as with any catalog, be used in conjunction with other recent taxonomic literature to ensure the most up-to-date treatment of any particular taxon. To help maintain currency, we have listed most recent treatments of included taxa at the end of each family.

The geographical coverage of this catalog includes continental United States (including Alaska with its offshore islands), and Canada. Greenland has been excluded. The southern limits are the political boundaries of the United States, excluding the Caribbean and all offshore islands, such as the Bahamas, not belonging to the United States. The Hawaiian Islands have been excluded because they belong to another faunal region, as well as having a current, on-line faunal listing through the Hawaiian Biological Survey URL address (<http://www.bishop.hawaii.org/bishop/HBS/>).

This portion of the Nearctic Region, excluding Mexico, currently contains 399 valid species, distributed in the following families:

Family	Genera	Species
Neuroptera		
Ascalaphidae	3	8
Berothidae	1	10
Chrysopidae	15	81
Coniopterygidae	8	55
Dilaridae	1	2
Hemerobiidae	6	61
Ithonidae	1	1
Mantispidae	4	15
Myrmeleontidae	17	94
Polystoechotidae	2	2
Sisyridae	2	6
Raphidioptera		
Inocellidae	1	3
Raphidiidae	2	18
Megaloptera		
Corydalidae	7	19
Sialidae	1	24
Total	71	399

Distributional information is credited to an author only if a state or province is specifically mentioned in the referenced work. Thus, distributional records associated with some species

are sparse, even though earlier authors may have mentioned such regions as “Atlantic Coastal States” or “Maritime Provinces.” New distributional data introduced in this catalog are credited to the contributing author.

Some of the published records must be viewed with caution, particularly among older literature. Where we know records are wrong, such as with *Chrysoperla externa* in Canada, we have indicated this. However, other records which may have been correct are listed without comments under each species treatment.

Type label information has come from three sources. Where possible, information has been transcribed from the type specimens. Much label information has also been cited from the original literature. A valuable third source has been the electronic type catalog at Harvard University’s Museum of Comparative Zoology ([gopher://huh.harvard.edu:179/7](http://huh.harvard.edu:179/7)), which houses the extensive Banks collection.

There are a surprisingly large number of North American types in the collection at the Museum of Comparative Zoology, Harvard University. In addition to the expected types of Hagen, Banks, and Carpenter, there are also primary types described by Schneider, Burmeister, Smith and Navás, among others. Information about the types at this museum are now available as a listing on internet.

Within the main body of the catalog the orders are arranged: Neuroptera, Raphidioptera, and finally Megaloptera. Families are arranged alphabetically. The included species are arranged within a taxonomic infrastructure of subfamilies and tribes in the larger families, with included genera and species organized alphabetically. Each valid species includes in sequential order: reference to the original description; original generic placement; label data of type specimens and type depository; synonyms, their label data and type depository; taxonomic status changes with appropriate references; and finally geographical distribution by state or province within the defined area. Acronyms for states/provinces are alphabetized and followed by a superscript number that keys to the citation at the end of the entry, e.g., AZ⁶ (⁶Say, 1824:305).

Generic synonymies were published by Oswald and Penny (1991) and are not repeated here.

ABBREVIATIONS

The state and province abbreviations used throughout this paper are the two letter codes used by the U. S. Postal Service for the United States and Canada. Collection abbreviations are as follows:

AMNH = American Museum of Natural History, New York, NY

ANSP = Academy of Natural Sciences, Philadelphia, PA

BMNH = The Natural History Museum, London, England

CAS = California Academy of Sciences, San Francisco, CA

CIC = Cawthron Institute Collection, New Zealand

CMNH = Carnegie Museum of Natural History, Pittsburgh, PA

CNC = Canadian National Collection, Ottawa, Canada

CORN = Cornell University, Ithaca, NY

DEIC = Institut für Pflanzenschutzforschung, Eberswalde, Germany

HMB = Museum für Naturkunde der Humboldt Universität, Berlin, Germany

INHS = Illinois State Natural History Survey, Champaign, IL

IRSNB = Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium

LACM = Los Angeles County Natural History Museum, Los Angeles, CA

MACN = Museo Argentino de Ciencias Naturales, Buenos Aires, Argentina

MCZ = Museum of Comparative Zoology, Harvard University, Cambridge, MA

MLP = Museo de La Plata, La Plata, Argentina

MNHN = Muséum National d'Histoire Naturelle, Paris, France

MZB = Museu de Zoologia, Barcelona, Spain

MZH = Universitetets Zoologiska Museum, Helsingfors, Finland

NMV = National Museum of Victoria, Melbourne, Australia

NRS = Naturhistoriska Riksmuseet, Stockholm, Sweden

OHSTU = Ohio State University Insect Collection, Columbus, OH

PSU = Pennsylvania State University Insect Collection, State College, PA

ROM = Royal Ontario Museum, Ontario, Canada

SDNHM = San Diego Natural History Museum, San Diego, CA

SEM = Snow Entomological Museum, Lawrence, KS

USNM = National Museum of Natural History, Smithsonian Institution, Washington, DC

UCB = University of California, Berkeley, CA

UCD = University of California, Davis, CA

YPM = Yale University Peabody Museum, New Haven, CT

ZIL = Zoological Institute, Lund, Sweden

ZMC = Zoologiske Museum, Copenhagen, Denmark

ZMH = Zoologisches Museum, Hamburg, Germany

ZMUO = Zoological Museum, University of Oslo, Norway

ZSBS = Zoologische Sammlungen des Bayerischen Staates, Munich, Germany

ASCALAPHIDAE

Ascalaphidae, or owlflies, as adults are large crepuscular aerial predators. For some species the daily flight period is very short, less than a half hour before total darkness in the evening (MacNeill 1962). Eggs are laid on the tips of twigs (Henry 1977), often near streams. The larvae live on the soil surface or on leaves, where they await passing prey. Adults are strong fliers and superficially resemble dragonflies, except for their distinctive long antennae. Males and females are often dimorphic in wing coloration, wing shape, and even sometimes antennal length. The world fauna was monographed by Weele (1909a). Shetlar's (1977) unpublished Ph.D. thesis is the most recent treatment of North American species. Only three genera are known from North America.

HAPLOGLENIINAE

Ascalobyas Penny, 1982:395

Ascalobyas albistigma (Walker), 1853:452 [*Ascalaphus*].

Holotype (sex unknown): Honduras (BMNH).

TAXONOMY. — To *Haploglenius* (see McLachlan, 1871:236); to *Byas* (see Weele, 1908:30); to *Ascalobyas* (see Penny, 1982:395).

DISTRIBUTION. — **USA:** TX (Vogtsberger, 1990:158).

Ascaloptynx Banks, 1915:350

Ascaloptynx appendiculatus (Fabricius), 1793:96 [*Ascalaphus*].

Holotype female: USA, "Carolinas" (BMNH).

= *Ptynx juvenilis* McLachlan, 1871:239.

Type(s) (sex unknown): USA, Texas, Belfrage (BMNH). **NEW SYNONYMY.**

= *Ptynx furciger* McLachlan, 1891:509. Five syntypes (3 males, 2 females): USA, Arizona, H. K. Morrison (BMNH). **NEW SYNONYMY.**

TAXONOMY. — To *Haploglenius* (see Rambur, 1842:363); to *Ptynx* (see McLachlan, 1871:239); to *Neuroptynx* (see Banks, 1907c:32); to *Ascaloptynx* (see Banks, 1915a:350); (*P. juvenilis* = *A. appendiculatus*, *P. furciger* = *A. appendiculatus* (see Shetlar, 1977:99).

DISTRIBUTION. — **USA:** AL⁵, AR⁵, AZ², FL³, GA³, MO⁴, MS⁶, NC³, OK⁵, SC⁵, TN⁵, TX¹, VA⁵ (¹McLachlan, 1871:239, as *P. juvenilis*; ²McLachlan, 1891:509; ³Weele, 1908:58, 59; ⁴Froeschner, 1947:129; ⁵Shetlar, 1977:102; ⁶Lago & Testa, 1989:12).

REMARKS. — The synonymy of *Ptynx juvenilis* and *Ptynx furciger* with *Ascaloptynx appendiculatus* was first suggested by Shetlar in 1977. However, his Ph.D. thesis was never published and therefore cannot be used for nomenclatorial purposes. The present publication is the first official record of these synonymies.

ASCALAPHINAE

Ululodes Currie in Smith, [1900] 1899:57

Ululodes arizonensis Banks, 1907a:275. Three syntypes (sex unknown): USA, Arizona, Palmerlee, IX, C. R. Biedrman; same data, except VII (two specimens) (MCZ). **NEW STATUS.**

TAXONOMY. — To *U. quadrimaculata arizonensis* (see Weele, 1908:110); to *U. arizonensis* (see Shetlar, 1977:142).

DISTRIBUTION. — **USA:** AZ¹, CA², NM², NV³, TX², UT² (¹Banks, 1907a:275; ²Shetlar, 1977:147, 148); ³Penny, **NEW STATE RECORDS**).

REMARKS. — The elevation of *Ululodes arizonensis* to species rank was first suggested by Shetlar in 1977. However, his Ph.D. thesis was never published and therefore cannot be used for nomenclatorial purposes. The present publication is the first official record of this status change.

Ululodes bicolor (Banks), 1895a:521 [*Ulula*].

Three syntypes (sex unknown): Mexico, Baja California Sur, San José del Cabo; Sierra El Taste, IX (3 specimens) (MCZ).

TAXONOMY. — To *Ululodes* (see Weele, 1908:105).

DISTRIBUTION. — **USA:** AZ¹, CA¹, LA², TX¹ (¹Shetlar, 1977:138; ²Penny, **NEW STATE RECORD**).

Ululodes floridana (Banks), 1906a:99 [in *Suhpalacsa* as "Suhpalasca"]

Holotype male: USA, southern Florida (MCZ). **REVISED STATUS.**

TAXONOMY. — To subspecies of *Ululodes quadrimaculata* (see Weele, 1908:111); to species status (see Shetlar, 1977:139).

REMARKS. — The elevation of *Ululodes floridana* to species rank was first suggested by Shetlar in 1977. However, his Ph.D. thesis was never published and therefore cannot be used for nomenclatorial purposes. The present publication is the first official record of this status change.

DISTRIBUTION. — **USA:** FL¹, GA², SC² (¹Banks, 1906a:99; ²Shetlar, 1977:141).

Ululodes macleayana (Guilding), 1825:140 [*Ascalaphus*].

Holotype male: Antilles, Saint-Vincent, VI.1824, Guilding (BMNH).

= *Ascalaphus senex* Burmeister, 1839:1001. Syntype(s) unknown: locality unknown (collection unknown).

= *Ulula microcephala* Rambur, 1842:359.

= *Ascalaphus avunculus* Hagen, 1861:238. Syntype(s) unknown: Cuba, Poey (USNM).

= *Ululodes macleayana hageni* Weele, 1908:101.

TAXONOMY. — To *Ulula* (see McLachlan, 1871:247); to *Ululodes* as synonym of *U. hyalina* (see Banks, 1907c:32); as valid species (see Weele, 1908:101).

DISTRIBUTION. — **USA:** AL⁴, AR⁴, FL¹, GA⁴, KS², LA⁴, MO³, MS⁴, NC⁵, NJ¹, OK⁴, SC⁴, TX¹ (¹Weele, 1908:99 as subspecies *U. m. hageni*; ²Smith, 1925:170; ³Froeschner, 1947:129;

⁴Shetlar, 1977:116–120; ⁵Penny, **NEW STATE RECORD**).

Ululodes nigripes Banks, 1943:79.

Holotype (sex unknown): USA, Texas, Davis Mountains, D. J. & J. N. Knull (OHSTU).

DISTRIBUTION. — **USA:** TX (Banks, 1943:79).

Ululodes quadripunctatus (Burmeister), 1839:1001 [Ascalaphus]. **NEW STATUS**

Type(s) (female): USA, New York (MCZ).

= *Ascalaphus quadrimaculata* (Say), 1824:305. A junior primary homonym of *Ascalaphus quadrimaculatus* Lichtenstein, 1796:192.

Holotype female: USA, Pennsylvania (MCZ).

= *Colobopterus excisus* Hagen, 1887:193. Holotype male: USA, Florida, 1862, Uhler (MCZ).

= *Ulula albifrons* Banks, 1901c:172. Two synonym females: USA, Arizona, Phoenix, 20.IX, Kunze (MCZ).

TAXONOMY. — To *Ulula* (see McLachlan, 1871:247); to *Ululodes* (see Currie, 1900:57); (*A. quadripunctatus* = *U. quadrimaculata*; *U. albifrons* = *U. quadrimaculata albifrons*) (see Weele, 1908:109); (*C. excisus* = *U. quadrimaculata*) (see Beatty & Runner, 1970:153).

DISTRIBUTION. — **CAN:** ON¹³, **USA:** AL¹², AR¹⁴, AZ⁶, DC⁴, DE¹², FL³, IA¹², IL¹², IN⁸, KS⁷, KY¹², LA¹², MD², MI¹², MO¹⁰, MS¹², NC⁹, NE¹⁴, NJ⁵, NY², OH¹², OK¹², PA¹, SC¹², TN¹², TX¹², VA¹², WS¹¹, WV¹⁴ (¹Say, 1824:305; ²Hagen, 1861:239, as *U. quadripunctata*; ³Hagen, 1887:193, as *C. excisus*; ⁴Banks, 1892:361; ⁵Smith 1900:57; ⁶Banks, 1901c:172; ⁷Smith, 1925:170, as *C. excisus*; ⁸Montgomery & Trippel, 1933:260, as *C. excisus*; ⁹Brimley, 1938:32; ¹⁰Froeschner, 1947:129; ¹¹Throne, 1972:121; ¹²Shetlar, 1977:124–127; ¹³Garland & Marshall, 1980:637; ¹⁴Penny, **NEW STATE RECORDS**).

BEROTHIDAE

Berothidae, or beaded lacewings, are so called because of the development of secretion encrusted setae on wings of females. Adults of most North American species are immediately recognizable by the falcate shape of the forewing. Females lay stalked eggs on wood surfaces, often near termite nests. Larvae are inquiline in dry-wood termite nests, where they feed by injecting a paralyzing chemical into the termite, and then sucking out the body fluids of the immobile prey.

The only genus of berothids known from North American is *Lomamyia* Banks 1904. The species were reviewed and a key provided by Carpenter (1940). Several additional undescribed species are known from North America.

Lomamyia Banks, 1904c:209

Lomamyia banksi Carpenter, 1940:260.

Holotype male: USA, South Carolina, Clemson College, 30.IV.1932, D. Duncan (MCZ, specimen not found).

DISTRIBUTION. — **USA:** AL¹, AZ¹, DC¹, FL¹, IL¹, IN², KS¹, LA³, MI¹, MO¹, MS¹, NC¹, NY¹, SC¹, VA¹, (¹Carpenter, 1940; ²Lawson & McCafferty, 1984:130; ³Penny, **NEW STATE RECORD**).

Lomamyia flavicornis (Walker), 1853:278 [*Hemerobius*].

Lectotype (without abdomen): North America (BMNH).

= *Isoscelipteron pennsylvanicum* Brauer, 1864:898. Type(s) sex(es) unknown: USA, Pennsylvania (Vienna).

= *Lomamyia nearctica* Navás, 1913b:19. Holotype male: USA, New York, Japhank [Long Island], 23.IX.1911, De la Torre Bueno (MZB).

TAXONOMY. — To *Micromus* (see Hagen, 1861:198); to *Lomamyia* (see Banks, 1905a:27); (*L. nearctica* = *L. flavicornis*; *I. pennsylvanicum* = *L. flavicornis*) (see Navás, 1929a:26); lectotype designated (see Carpenter, 1940:260).

DISTRIBUTION. — **USA:** AL⁸, DC², FL⁸, GA¹, IN⁹, KS⁴, KY⁸, LA⁸, MS¹⁰, NC⁷, NJ³, NY⁵, PA⁸, VA⁶ (¹Walker, 1853:278; ²Hagen, 1861:199; ³Smith, 1900:56; ⁴Smith, 1925:167; ⁵Leonard, 1928:40; ⁶Navás, 1929:26; ⁷Brimley, 1938:30; ⁸Carpenter, 1940:260; ⁹Lawson & McCafferty, 1984:130; ¹⁰Penny, **NEW STATE RECORD**).

Lomamyia fulva Carpenter, 1940:264.

Holotype female: USA, California, Riverside Co., San Jacinto Mts., 21.VII.1929, R. H. Beamer (MCZ, specimen not found).

DISTRIBUTION. — **USA:** CA (Carpenter, 1940:264).

Lomamyia hamata (Walker), 1853:278 [*Hemerobius*].

Holotype male: North America (BMNH).

= *Lomamyia hubbardi* Banks, 1924:430. Type(s) sex(es) unknown: USA, Florida, Cedar Keys, 5.IV.1878, Hubbard and Schwarz (MCZ).

TAXONOMY. — To *Micromus* (see Hagen, 1861:199); to *Lomamyia* (see Banks, 1905a:48); (*H. hamatus* = *L. flavicornis*) (see Navás, 1929a:26); (*L. hamatus* not equal to *L. flavicornis*, *L. hubbardi* = *L. hamata*) (see Carpenter, 1940:265).

DISTRIBUTION. — USA: FL¹, SC² (¹Carpenter, 1940:265; ²Brushwein, 1987a:671).

Lomamyia latipennis Carpenter, 1940:262.

Holotype male: USA, California, Marin Co., Phoenix Lake, 4.VII.1927, H. H. Kiefer (CAS).

DISTRIBUTION. — AZ, CA (Carpenter, 1940:262).

Lomamyia longicollis (Walker), 1853:281 [*Hemerobius*].

Two syntype males: USA, Georgia, Abbot (BMNH).

TAXONOMY. — To *Lomamyia* (see Carpenter, 1940:267).

DISTRIBUTION. — GA¹, MS², NC², SC³ (¹Walker, 1853:281; ²Carpenter, 1940:267; ³Brushwein, 1987b:151).

Lomamyia occidentalis (Banks), 1905a:89 [*Berotha*].

Lectotype female: USA, Nevada, Ormsby Co., 6.VII, Baker (MCZ).

TAXONOMY. — To *Lomamyia* (see Banks, 1905c:48); considered a synonym of *L. texana* (see Banks, 1907c:23); considered a valid species (see Carpenter, 1940:263); lectotype designated (see Carpenter, 1940:263).

DISTRIBUTION. — CAN: BC², USA: AZ¹, CA², NV¹ (¹Banks, 1905a:89; ²Carpenter, 1940:263).

Lomamyia squamosa Carpenter, 1940:266.

Holotype male: USA, Texas, Brownsville, 1116.VI.1933, P. J. Darlington, Jr. (MCZ).

DISTRIBUTION. — USA: TX (Carpenter, 1940:266).

Lomamyia tenuis Carpenter, 1940:261.

Holotype male: USA, New Mexico, Torrance Co., VII.1925, C. H. Martin (MCZ).

DISTRIBUTION. — USA: NM (Carpenter, 1940:262).

Lomamyia texana (Banks), 1897:24 [*Berotha*].

Lectotype male: USA, Texas (MCZ).

TAXONOMY. — To *Lomamyia* (see Banks, 1905a:27); lectotype designated (see Carpenter, 1940:265).

DISTRIBUTION. — USA: AZ², TX¹, UT² (¹Banks, 1897:24; ²Carpenter, 1940:265).

CHRYSOPIDAE

Most chrysopid adults are green with golden eyes, but members of the genera *Nothochrysa*, *Pimachrysa*, *Eremochrysa*, and *Yumachrysa* are usually predominately brown or black. Most species have characteristic red or dark markings, which often fade within a few months after death. Eggs are laid on long stalks, usually singly. Larvae are voracious predators, those of some species carrying packets of trash or corpses of their prey on their backs (Smith 1922). Most species will feed upon a wide variety of slow-moving insects, although some have more specific food requirements. Larvae of Belonopterygini (*Abachrysa* and *Nacarina* in our region) live in ant nests, presumably feeding upon the ants. Adult chrysopids are very conservative morphologically, with many of the most taxonomically significant characteristics found in the male terminalic structures. Thus, to determine the generic placement of an unfamiliar male specimen, the abdomen must be cleared (in 10% KOH), and subsequently may be stained with chlorazol black-E. A key to subfamilies and genera of Nothochrysinæ was provided by Adams (1967). A worldwide generic revision of the family contains helpful descriptions and illustrations of wings and genitalic structures, as well as a key to genera (Brooks and Barnard 1990). The species of Chrysopidae of Canada were included in a key by Garland (1985). All other literature is too old to be of much help with identification. There are 14 genera of Chrysopidae known from North America; several new species are in collections, awaiting description.

NOTHOCHRYSINAE

Nothochrysa McLachlan, 1868:195

Nothochrysa californica Banks, 1892:373.

Holotype male: USA, California, Los Angeles (MCZ).

DISTRIBUTION. — CAN: BC², USA: CA¹, OR³, WA³ (¹Banks, 1892:373; ²Smith, 1932:582; ³Adams, 1967:224).

Pimachrysa Adams, 1957a:67

Pimachrysa albicostales Adams, 1967:226.

Holotype male: Mexico, Baja California, 22 miles north of Punta Prieta, 9.XII.1958, H. B. Leech (CAS).

DISTRIBUTION. — USA: AZ¹, CA² (¹Adams, 1967:227; ²Penny, **NEW STATE RECORD**).

Pimachrysa fusca Adams, 1967:227.

Holotype male: USA, California, Riverside Co., L. Covington Flat, Joshua Tree National Monument, 19.III.1961, E. L. Sleeper (CAS).

DISTRIBUTION. — USA: CA (Adams, 1967:227).

Pimachrysa grata Adams, 1957a:68.

Holotype female: USA, Arizona, Santa Rita Mountains, Madera Canyon, 26.VIII.1949, P. A. Adams (MCZ).

DISTRIBUTION. — USA: AZ (Adams, 1957a:67).

Pimachrysa intermedia Adams, 1967:228.

Holotype female: USA, California, Riverside Co., Whitewater, Snow Creek, 1500 ft., 8.III.1955, W. R. M. Mason (CNC).

DISTRIBUTION. — USA: CA (Adams, 1967:228).

Pimachrysa nigra Adams, 1967:228.

Holotype male: USA, California, Riverside Co., Gavilan, 19.III.1936, P. Timberlake (CAS).

DISTRIBUTION. — USA: CA (Adams, 1967:228).

CHRY SOPINAE BELONOPTERYGINI

Abachrysa Banks, 1938a:75

Abachrysa eureka (Banks), 1931:174 [*Chrysopa*].

Holotype (sex unknown): USA, Arkansas, Hope, Knobel (MCZ).

TAXONOMY. — To *Abachrysa* (see Banks, 1938a:75).

DISTRIBUTION. — USA: AR¹, FL⁵, GA³, MS², TX⁴, (¹Banks, 1931:174; ²Banks, 1938a:75; ³Bickley & MacLeod, 1956:197; ⁴Agnew et al., 1981:4; ⁵Brooks & Barnard, 1990:165).

Nacarina Navás, 1915c:133

Nacarina robusta (Banks), 1905b:5 [*Chrysopa*].

Type(s) (sex unknown): USA, North Carolina, Tyron (MCZ).

TAXONOMY. — To *Nacarina* by Adams (**NEW COMBINATION**).

DISTRIBUTION. — USA: FL², NC¹ (¹Banks 1905b:5; ²Stange, **NEW STATE RECORD**).

LEUCOCHRYSINI

Leucochrysa (Leucochrysa) McLachlan, 1868:208

Leucochrysa (Leucochrysa) ampla (Walker), 1853:268 [*Chrysopa*].

Lectotype female: no locality data (BMNH).

TAXONOMY. — Listed as possible synonym of *C. lineaticornis* (see Banks 1907c:27); to *Leucochrysa (Leucochrysa)* as valid species (see Brooks & Barnard, 1990:276); lectotype designated (see Kimmins, 1940:444).

DISTRIBUTION. — USA: GA (Walker, 1853:268).

Leucochrysa (Leucochrysa) arizonica (Banks), 1906a:98 [*Allochrysa*].

Holotype male: USA, Arizona, Palmerlee, VII (MCZ).

TAXONOMY. — To *Leucochrysa* (see Adams, 1977:95).

DISTRIBUTION. — USA: AZ (Banks, 1906a:98).

Leucochrysa (Leucochrysa) insularis (Walker), 1853:269 [*Chrysopa*].

Holotype male: Jamaica (BMNH).

= *Chrysopa virginica* Fitch, 1855:795. Holotype (sex unknown): USA, Virginian Cartersville, T. A. Culbertson (type probably lost).

= *Nothochrysa phantasma* MacGillivray, 1894:170. Lectotype male: USA, Massachusetts, West Chop, 8.VIII.1893 (MCZ).

= *Leucochrysa cerverai* Navás, 1924a:325. Type(s) (sex unknown): Cuba, Habana, Santiago de las Vegas, 18.IX.1923, F. Z. Cervera (MCZ).

= *Leucochrysa joannisi* Navás, 1925d:13. No type specimen designated: Cuba, Habana, Santiago de las Vegas, 17.VII and 20.VIII.1924, F. Cervera (no types located).

= *Allochrysa virginica ocala* Banks, 1938b:122. Holotype female: USA, Florida, Jefferson Co., Lloyd Sink, 9.VIII.1935, G. Fairchild (MCZ).

TAXONOMY. — To *Protochrysopa* (see Kolbe, 1888:74); to *Leucochrysa* (see Adams, 1977:97); *N. phantasma* = *C. virginica* (see Banks, 1895b:315); *L. joannisi* = *L. insularis* (see Alayo, 1968:57); *L. virginica* = *L. insularis*, *L. cerverai* = *L. insularis*, *L. virginica ocala* = *L. insularis* (see Adams, 1977:97). It appears that no formal description of *L. joannisi* was ever published; referred to by Alayo, 1968:57.

DISTRIBUTION. — USA: AL⁸, AR⁸, DC⁷, FL⁴, IA⁹, MA², MO⁸, MS⁸, NC⁵, NJ³, TN⁶, VA¹, WV⁸ (¹Fitch, 1855:795, ²MacGillivray, 1894:170, as *Nothochrysa phantasma*; ³Smith, 1900:55; ⁴Banks, 1938b:122; ⁵Brimley, 1938:30; ⁶Bickley, 1941:187; ⁷Bickley & MacLeod, 1956:184; ⁸Adams, 1977:98; ⁹Penny, NEW STATE RECORD).

***Leucochrysa (Nodita)* Navás, 1916a:21**

***Leucochrysa (Nodita) americana* Banks, 1897b:175.**

Holotype female: USA, Alabama, Auburn, 1938 (MCZ).

TAXONOMY. — To *Nodita* (see Navás, 1917b:280); to *Leucochrysa (Nodita)* (see Brooks & Barnard, 1990:277).

DISTRIBUTION. — USA: AL¹, KS³, TX² (¹Banks, 1897b:175; ²Banks, 1907c:26; ³Bickley & MacLeod, 1956:188).

***Leucochrysa (Nodita) antennata* Banks, 1905b:5.**

Type (sex unknown): Mexico, Tuxpan (MCZ).

TAXONOMY. — To *Nodita* (see Banks, 1939:2); to *Leucochrysa (Nodita)* (see Brooks & Barnard, 1990:277).

NOTE. — A male specimen in MCZ from Texas, Brownsville, 13.VIII.1909, H. S. Barber is erroneously labelled as type.

DISTRIBUTION. — USA: TX (Banks, 1907c:26).

***Leucochrysa (Nodita) callota* Banks, 1915b:626.**

Holotype female: USA, Texas, Austin, 3.V.1901 (MCZ).

TAXONOMY. — To *Nodita* (see Banks, 1939:2); returned to *Leucochrysa (Leucochrysa)* (see Brooks & Barnard, 1990:276); to *Leucochrysa (Nodita)* by Adams, NEW COMBINATION.

DISTRIBUTION. — USA: CA², FL², LA², TX¹ (¹Banks, 1915b:626; ²Adams, NEW STATE RECORDS).

***Leucochrysa (Nodita) explorata* (Hagen), 1861:217 [*Chrysopa*].**

Type(s) (sex unknown): Mexico, Cordova, Saussure (MCZ, specimen not found).

TAXONOMY. — To *Leucochrysa (Nodita)* (see Brooks and Barnard, 1990:277).

DISTRIBUTION. — USA: NM (Hagen, 1875:921).

***Leucochrysa (Nodita) floridana* Banks, 1897c:184.**

Holotype female: USA, Florida, Lake Worth (MCZ).

TAXONOMY. — To *Nodita* (see Navás, 1917b:280); to *Leucochrysa (Nodita)* (see Brooks & Barnard, 1990:277).

DISTRIBUTION. — USA: FL¹, MS², NC³, TX⁴ (¹Banks, 1897c:184; ²Banks, 1903a:144; ³Brimley, 1938:30; ⁴Agnew et al., 1981:14).

***Leucochrysa (Nodita) nigrinervis* (Banks), 1939:1 [*Nodita*].**

Type(s) (sex unknown): USA, New Mexico, McKinley Co., Satan Pass (MCZ, specimen not found).

TAXONOMY. — To *Leucochrysa (Nodita)* (see Brooks & Barnard, 1990:277).

DISTRIBUTION. — USA: AZ³, CA³, CO³, NM¹, TX² (¹Banks, 1939:1; ²Bickley & MacLeod, 1956:188; ³Adams, NEW STATE RECORDS).

***Leucochrysa (Nodita) pavida* (Hagen), 1861:216 [*Chrysopa*].**

Syntype series (sex unknown): Mexico, Cordova, Saussure, Deppe (NHB); USA, South Carolina, Zimmerman (female) (MCZ).

TAXONOMY. — To *Nodita* (see Banks, 1939:2); to *Leucochrysa (Nodita)* (see Brooks & Barnard, 1990:277).

DISTRIBUTION. — USA: FL², IN⁴, NC², SC¹, TX³ (¹Hagen, 1861:216; ²Bickley & MacLeod, 1956:188; ³Agnew et al., 1981:14; ⁴Lawson & McCafferty, 1984:130).

***Leucochrysa (Nodita) rufina* (Banks), 1950:54 [*Eremochrysa*].**

Holotype male: USA, Arizona, Coconino Co., Grand Canyon, 24.VII.1934 (MCZ).

TAXONOMY. — To *Leucochrysa (Nodita)* by Adams, NEW COMBINATION.

DISTRIBUTION. — USA: AZ (Banks, 1950:55).

Leucochrysa (Nodita) texana (Banks), 1939:3 [*Nodita*].

Holotype male: USA, Texas, Travis Co. (MCZ).

TAXONOMY. — To *Leucochrysa (Nodita)* (see Brooks & Barnard, 1990:278).

DISTRIBUTION. — USA: TX (Banks, 1939:3).

CHRY SOPINI

Ceraeochrysa Adams, 1982a:70**Ceraeochrysa cincta** (Schneider), 1851:86 [*Chrysopa*].

Syntype series (sex unknown): Brazil, RJ, Rio de Janeiro (HMB and IRSNB).

= *Chrysopa bilineata* Navás, 1914e:91. Holotype female: Guatemala, Vulcan de Attilan, 2500–3500 ft., Champion (BMNH).

= *Chrysopa lafonei* Navás, 1914a:222. Holotype male: Argentina (MLP - Bruch collection).

= *Chrysopa bruchi* Navás, 1914a:222. Lectotype male: Argentina, Huasan, 25.II.1912 (MACN) (Adams, **NEW SYNONYMY**).

= *Chrysopa incalis* Banks, 1915b:627. Syn- types (sex unknown): Peru, Matucana, 7780 ft., 14.VI, Parish (male); Chosica, 2800 ft., 10.VI, Parish (MCZ).

= *Chrysopa bicarnea* Banks, 1920:338. Holotype male: USA, Florida, Miami, G. F. Moznette (MCZ).

= *Chrysopa advena* Navás, 1922a:51. Holotype male: Coast of Uruguay, 1920, Renato Martin (MNHN).

= *Chrysopa habana* Navás, 1922a:52. Holotype (sex unknown): Cuba, Havana, Fermín Z. Cervera (MZB).

= *Chrysopa bessona* Navás, 1924d:361. Holotype female: Argentina, La Plata, 20.XI.1920, Bruch (MLP).

= *Chrysopa mestiza* Navás, 1924a:330. Lectotype female: Cuba, Santiago de las Vegas, IX.1923; Havana, Rio Almendares, 19.VII.1923, Fermín Z. Cervera (MCZ). **NEW LECTO- TYPE DESIGNATION.**

= *Chrysopa villosula* Navás, 1924b:337. Holotype (missing abdomen): Cuba, Havana, Santiago de las Vegas, 4.XII.1923 (MCZ).

= *Cintameva bina* Navás, 1924a:331. Holotype male: Cuba, Havana, Rio Almendares, 9.VIII.1923 (MCZ).

= *Chrysopa cornuta* Navás, 1925a:65. Holotype female: Brazil, RJ, Niterói, 21.XI.1924 (MNHN).

= *Chrysopa alternans* Navás, 1933a:306. Holotype male: Peru, Lima, 4.X.1933 (HMB).

= *Chrysopa wollebaeki* Esben-Petersen, 1934:291. Seven syntypes (six males, one female): Ecuador, Galapagos Islands, Santa Maria, Post Office Bay, 1–10.X.1925, one male; 29.X.1925, four males, one female; 48.XI.1925, one male, all collected by Wollebaek (ZMUO).

= *Chrysopa iona* Banks, 1944:12. Holotype male: Surinam, Paramaribo, 7.XII.1938, Geijskes (MCZ).

= *Chrysopodes sallei* Banks, 1946:171. Holotype male: Mexico, Salle (MCZ).

TAXONOMY. — *C. mestiza* = *C. habana* (see Alayo, 1968:30); *C. advena*, *C. alternans*, *C. bessona*, *C. bicarnea*, *C. bilineata*, *C. bina*, *C. caligata*, *C. cornuta*, *C. habana*, *C. incalis*, *C. iona*, *C. lafonei*, *C. mestiza*, *Chrysopodes sallei*, *C. villosula*, *C. wollebaeki* = *C. cincta* (Adams, 1982:72); *C. caligata* not = *C. cincta* (Adams & Penny, 1987:442).

DISTRIBUTION. — USA: FL (Banks, 1920:338).

Ceraeochrysa cubana (Hagen), 1861:215 [*Chrysopa*].

Neotype male: Cuba, Soledad, near Cienfuegos, 6–20.VIII, N. Banks (MCZ).

= *Chrysopa tolteca* Banks, 1901a:364. Holotype (female): Mexico, Oaxaca, Tomellin, VI (MCZ).

= *Chrysopa venularis* Navás, 1913b:20. Holotype female: Jamaica (ZSBS).

= *Chrysopa albatata* Banks, 1913a:139. Holotype (abdomen missing): Guyana, Bartica, XII, Parish (MCZ).

= *Chrysopa imbecilla* Navás, 1914e:107. Holotype male: Barbados (BMNH).

= *Chrysopa epheba* Navás, 1924a:328. Holotype (sex unknown): Cuba, Calabazas, 28.VIII.1923 (MZB).

= *Chrysopa seminole* Banks, 1924:432. Holotype female: USA, Florida, Marco, 24.VII, Mott (MCZ).

= *Chrysopa freemani* Smith, 1931:811. Holotype female: Haiti, Port-au-Prince, 500 ft., 16.XI.1929 (MCZ).

= *Chrysopa fischerina* Navás, 1933:196. Holotype female: Brazil, Central. Mang., 13.X.1913, R. Fischer (DEIC) (Adams, **NEW SYNONYMY**).

= *Chrysopa damiensis* var. *jamaicensis* Banks, 1941a:394.

Syntype series (male, female): Jamaica, Kingston, 27–29.VIII, P. J. Darlington; Trelawny, Perkins (MCZ).

TAXONOMY. — To *Ceraeochrysa* (see Adams, 1982:72); *C. epheba* = *C. cubana*, *C. jacobaea* = *C. cubana* (see Alayo, 1968:28); Adams, 1982:72 (*C. jacobaea* = *C. gundlachi*, *C. tolteca* = *C. cubana*, *C. albatala* = *C. cubana*, *C. venularis* = *C. cubana*, *C. imbecilla* = *C. cubana*, *C. epheba* = *C. cubana*, *C. seminole* = *C. cubana*, *C. freemani* = *C. cubana*, *C. damiensis jamaicensis* = *C. cubana*, *C. scapularis* = *C. cubana* (see Adams, 1982:72); *C. scapularis* not = *C. cubana* (see Adams & Penny, 1987:448); neotype designated (see Adams & Penny, 1987:446).

DISTRIBUTION. — **USA:** FL², NC³, VA¹ (¹Hagen, 1861:215; ²Banks, 1924:432, as *C. seminole*; ³Banks, 1938b:121).

Ceraeochrysa lineaticornis (Fitch), 1855:795 [*Chrysopa*].

Holotype (sex unknown): USA, New York (MCZ).

= *Chrysopa puncticornis* Fitch, 1855:796. Type(s) (sex unknown): USA, New York (MCZ, specimen not found).

= *Allochrysa parvula* Banks, 1903a:143. Holotype (male): USA, Florida, Runnymede (MCZ).

= *Chrysopa columbiana* Banks, 1903a:150. Holotype male: USA, D. C., Washington (MCZ).

= *Chrysopa stichoptera* Navás, 1914c:61. Holotype (sex unknown): USA, New York, Long Island, Yaphank, 10.VII.1913, J. R. de la Torre-Bueno (MZB).

TAXONOMY. — To *Ceraeochrysa* (see Adams, 1982:73) *C. puncticornis* = *C. lineaticornis* (see Banks, 1907c:27); *C. stichoptera* = *C. lineaticornis* (see Bickley & MacLeod, 1956:190); *C. columbiana* = *C. lineaticornis* (see Bram & Bickley, 1963:16); *A. parvula* = *C. lineaticornis* (see Adams, 1982:73).

DISTRIBUTION. — **CAN:** BC³, PQ³, **USA:** DC², FL², GA¹⁰, IN⁹, KS¹⁰, MA², MD², ME¹⁰, MI², NC⁴, NH², NY¹, PA¹⁰, TN⁵, TX⁸, VA⁶, WS⁷ (¹Fitch, 1855:795; ²Banks, 1903a:143, 150, 151 as *A. parvula*, *C. lineaticornis* and *C. colum-*

biana; ³Smith, 1932:585, as *C. columbiana* and *C. lineaticornis*; ⁴Brimley, 1938:30; ⁵Bickley, 1941:197; ⁶Bickley & MacLeod, 1956:191; ⁷Throne, 1971a:74; ⁸Agnew et al., 1981:12; ⁹Lawson & McCafferty, 1984:130; ¹⁰Adams, **NEW STATE RECORDS**).

Ceraeochrysa placita (Banks), 1908a:259 [*Chrysopa*].

Male syntypes: USA, Colorado, Chimney Gulch, 20.I.1907; Clear Creek (MCZ).

= *Chrysopa intacta* Navás, 1912a:199. Holotype (sex unknown): Canada, Quebec, Toronto, 1.VI.1908 (MZB).

= *Chrysopa forreri* Navás, 1914e:97. Type(s) (sex unknown): Mexico, Mexico City, 8100 ft., Forrer (BMNH).

TAXONOMY. — To *Ceraeochrysa* (see Adams, 1982:73); *C. forreri* = *C. placita* (see Adams, 1982:73); *C. intacta* = *C. placita* (see Brooks & Barnard, 1990:269).

DISTRIBUTION. — **CAN:** PQ², **USA:** CA⁴, CO¹, MO³, NH⁴, OR⁴ (¹Banks, 1908a:259; ²Navás, 1912a:200; ³Froeschner, 1947:134, as *C. intacta*; ⁴Adams, **NEW STATE RECORDS**).

Ceraeochrysa smithi (Navás), 1914e:105 [*Chrysopa*].

Two male syntypes: Grenadines, Union Island, W. J. H. H. Smith; West Indies, Mustiques (BMNH).

= *Chrysopa poeyi* Navás, 1924a:330. Holotype (male): Cuba, Havana, Rio Almendares, 20.VII.1923, Cervera (MCZ).

= *Chrysopa neotropica* Navás, 1929b:317. Syntype series (sex unknown): Honduras, Amapala, 9.VII.1908, R. Paessler; El Salvador, La Unión, 3.XII.1907, R. Paessler; Mexico, Jalisco, La Garita, 1912, W. Fritzsche; Colombia, Behn verid., 3.XII.1900 (Hamburg, specimen lost).

TAXONOMY. — To *Ceraeochrysa* (see Adams, 1982:73); *C. neotropica* = *C. smithi*, *C. poeyi* = *C. smithi* (see Adams, 1982:73).

DISTRIBUTION. — **USA:** FL (Adams, **NEW NATIONAL RECORD**).

REMARKS. — This species has been mentioned before from Florida by Banks under the names *C. claveri* and *C. cubana sanchezi*. Several specimens have been identified by other chrysopid specialists, but this distribution has not been reported in the taxonomic literature.

Ceraeochrysa valida (Banks), 1895:517 [Chrysopa].

Two syntypes (sex unknown): Mexico, Baja California Sur, Serra El Taste, IX; San José del Cabo, IX (MCZ).

= *Chrysopa bimaculata* McClendon, 1901:215. Lectotype female: USA, Texas, Laredo, VIII.1900 (MCZ) **NEW LECTOTYPE DESIGNATION**.

= *Chrysopa limitata* Navás, 1913c:84. Holotype (sex unknown): Brazil, Rio de Janeiro, Nova Friburgo, XII.1911, Ramos (MZB).

= *Chrysopa longicella* Navás, 1914e:97. Holotype male: Guatemala, Zapote, G. C. Champion (BMNH).

= *Chrysopa breviata* Banks, 1915b:628. One male syntype, one syntype of unknown sex. Ecuador, Guayaquil, 8.VI, Parish; Quevedo (MCZ).

= *Chrysopa lioni* Navás, 1927a:54. Holotype female: Haiti, Port-au-Prince, 1910, G. Lion (MNH).

= *Chrysopa damiensis* Smith, 1931:803. Holotype male: Haiti, Hatte Lathan, 18.I.1929, R. C. Smith (MCZ).

= *Chrysopa wolcottii* Smith, 1931:810. Holotype male: Haiti, Damien (MCZ).

TAXONOMY. — To *Ceraeochrysa* (see Adams, 1982:73); *C. bimaculata* = *C. tolteca*, *C. longicella* = *C. tolteca*, *C. tolteca* (?) = *C. valida* (see Banks, 1946:148); *C. bimaculata* = *C. valida*, *C. limitata* = *C. valida*, *C. longicella* = *C. valida*, *C. breviata* = *C. valida*, *C. lioni* = *C. valida*, *C. damiensis* = *C. valida*, *C. wolcottii* = *C. valida*, *C. camposana* = *C. valida*, *C. seminole* = *C. valida*, *C. tolteca* = *C. cubana* (see Adams, 1982:73); *C. seminole* = *C. cubana*; *C. camposana* = *Chrysopa incertae sedis* (see Brooks & Barnard, 1990:268, 279).

DISTRIBUTION. — **USA:** FL², TX¹ (¹McClendon, 1901:215, as *C. bimaculata*; ²Banks, 1903a:153).

Chrysopa Leach in Brewster, 1815:138

Chrysopa chi Fitch, 1855:791.

Holotype female: USA, New York (MCZ). = *Chrysopa upsilon* Fitch, 1855:791. Holotype female: no label data (MCZ).

= *Chrysopa upsilon* var. *haematica* Navás, 1918a:354. (as *Chrysopa hypsilon* [sic]) Holo-

type (sex unknown): USA, New York, White Plains, 31.V.1915, de la Torre Bueno (MZB).

TAXONOMY. — *C. upsilon* = *C. chi* (see Smith, 1922:1352); *C. hypsilon* var. *haematica* = *C. chi* (see Smith, 1932:592).

DISTRIBUTION. — **CAN:** AB⁵, BC⁵, MB⁵, NS⁵, ON⁵, PQ⁵, SK⁵, **USA:** DC², MD⁹, ME⁷, MN⁸, NJ³, NH⁴, NY¹, TN⁶, WA¹¹, WS¹⁰ (¹Fitch, 1855:791; ²Hagen, 1861:214; ³Smith, 1900:55; ⁴Banks, 1903a:148; ⁵Smith, 1932:592; ⁶Bickley, 1941:188; ⁷Procter, 1946:43; ⁸Parfin, 1952:424; ⁹Bram & Bickley, 1963:8; ¹⁰Throne, 1971a:70; ¹¹Penny, **NEW STATE RECORD**).

Chrysopa coloradensis Banks, 1895b:314.

Holotype male: USA, Colorado, Fort Collins (MCZ).

DISTRIBUTION. — **CAN:** BC³, **USA:** AZ², CA², CO¹, ID³, NM², OR², UT⁴, WA² (¹Banks, 1895b:315; ²Banks, 1903a:151; ³Smith, 1932:585; ⁴Bickley & MacLeod, 1956:190).

Chrysopa excepta Banks, 1911:340.

Holotype (sex unknown): USA, New Mexico, Fort Wingate, 25.VII, Woodgate (MCZ).

DISTRIBUTION. — **CAN:** AB², BC², **USA:** NM¹, UT³, WY³ (¹Banks, 1911:340; ²Smith, 1932:585; ³Bickley & MacLeod, 1956:190).

Chrysopa incompleta Banks, 1911:340.

Syntypes (sex unknown): USA: North Carolina, Beaufort, 15.V.1906, Woglum (male); Raleigh, 15.VII.1902, Sherman (MCZ).

DISTRIBUTION. — **USA:** FL⁶, GA², IN⁵, MA², MD², NC¹, NJ², TX⁴, VA², WS³ (¹Banks, 1911:341; ²Bram & Bickley, 1963:7; ³Throne, 1971a:72; ⁴Agnew et al., 1981:12; ⁵Lawson & McCafferty, 1984:130; ⁶Adams, **NEW STATE RECORD**).

Chrysopa nigricornis Burmeister, 1839:980.

Holotype male: North America (Berlin).

= *Chrysopa colon* Fitch, 1855:792. Type (sex unknown): (MCZ).

= *Chrysopa erythrocephala* Banks, 1898:201 not *C. erythrocephala* (Rambur) 1842:428 [Hemerobius]. Holotype female: USA, California, San Francisco, VII.1897, Morse (MCZ).

= *Chrysopa majuscula* Banks, 1906a:98. Replacement name for *Chrysopa erythrocephala* Banks.

= *Chrysopa vegeta* Navás, 1917:6. Type(s) (sex unknown): USA, New Mexico, Jemez Springs, 21.VI.1916, John Woodgate (MZB).

= *Chrysopa crotchii* Banks, 1938a:76. Holotype (female): Canada, British Columbia, Vancouver Island, Victoria, VII, Crotch (MCZ).

TAXONOMY. — *C. colon* = *C. nigricornis* (see Hagen, 1875:920); *C. majuscula*, new name for *C. erythrocephala* Banks (see Banks, 1906a:98); *C. majuscula* = *C. nigricornis* (see Bram & Bickley, 1963:10); *C. crotchii* = *C. nigricornis*; *C. vegeta* = *C. nigricornis* (Adams, **NEW SYNONYMY**).

DISTRIBUTION. — **CAN:** AB⁵, BC⁵, ON⁵, PQ⁴, **USA:** CA³, CO², DC⁴, IN⁶, KS⁴, MA⁴, MD¹², ME⁹, MN¹¹, MO¹⁰, NC⁷, NM², NY¹¹, OH⁴, RI⁴, TN⁸, TX¹⁴, VA⁴, WS¹³ (¹Fitch, 1855:792; ²Hagen, 1875:920; ³Banks, 1898:201; ⁴Banks, 1903a:150; ⁵Smith, 1932:584; ⁶Montgomery & Trippel, 1933:260; ⁷Brimley, 1938:30; ⁸Bickley, 1941:188; ⁹Procter, 1946:43; ¹⁰Froeschner, 1947:133; ¹¹Parfin, 1952:424; ¹²Bram & Bickley, 1963:9; ¹³Throne, 1971a:69; ¹⁴Agnew et al., 1981:12).

***Chrysopa oculata* Say, 1839:45.**

Type(s) (sex unknown): USA (depository unknown).

= *Chrysopa chlorophana* Burmeister, 1839:979. Type(s) (sex unknown): North America (depository unknown).

= *Chrysopa euryptera* Burmeister, 1839:980. Type(s) (sex unknown): North America (?) (Halle).

= *Chrysopa latipennis* Schneider, 1851:118. Holotype (sex unknown): North America (HMB or Frankfurt).

= *Chrysopa albicornis* Fitch, 1855:788. Holotype (sex unknown): USA, Mississippi (MCZ).

= *Chrysopa illepida* Fitch, 1855:788. Holotype (female): USA, New York; Illinois (MCZ).

= *Chrysopa omikron* Fitch, 1855:789. Holotype (female): USA, New York (MCZ).

= *Chrysopa xanthocephala* Fitch, 1855:789. Holotype (sex unknown): USA, New York; Michigan (MCZ).

= *Chrysopa fulvibucca* Fitch, 1855:790. Type(s) (sex unknown): USA, New York (Type not found).

= *Chrysopa mississippiensis* Fitch, 1855:790. Holotype female: USA, Mississippi, Jackson, IV, Fitch (MCZ).

= *Chrysopa bipunctata* Fitch, 1855:791. Holotype female: USA, New York (MCZ).

= *Chrysopa transmarina* Hagen, 1861:213. Syntypes (sex unknown): Canada, Ontario, La

Chine, near Montreal, Barnston; Trenton Falls, New York; Newfoundland, St. John; Nova Scotia (Types should be in BMNH).

= *Nothochrysa annulata* MacGillivray, 1894:169. Holotype female: USA, Massachusetts, Wellesley, 22.VI.1892 (CORN).

= *Chrysopa assimilis* Banks, 1898:202. One male syntype, one syntype of unknown sex: USA, Oregon, Ashland (male) and Hood River (MCZ).

= *Chrysopa mexicana* Banks, 1901:364. Six syntypes (sex unknown): Mexico, Veracruz, Thalpan, VII (MCZ) Adams, **NEW SYNONYMY**.

= *Chrysopa separata* Banks, 1911:341. Syntypes (sex unknown): USA, Colorado, Golden, Chimney Gulch, Oslar; New Mexico, Pecos, 23.VI, Cockerell (MCZ).

= *Chrysopa rubicunda* Navás, 1913b:20. Type(s) (sex unknown): USA, New York, Long Island, Yaphank, 23.IX.1911, Torre Bueno (MZB).

= *Cintameva conspersa* Navás, 1929:318. Adams, **NEW SYNONYMY**. Holotype male: Colombia (?), Behn vend., 3.XII.1900 (Hamburg, specimen destroyed).

TAXONOMY. — *C. euryptera* = *C. oculata*, *C. illepida* = *C. oculata*, *C. omikron* = *C. oculata*, *C. fulvibucca* = *C. oculata*, *C. mississippiensis* = *C. oculata*, *C. latipennis* = *C. chlorophana*, *C. xanthocephala* = *C. chlorophana*, *C. bipunctata* = *C. chlorophana*, *C. transmarina* = *C. chlorophana* (see Banks, 1903a:161); *C. chlorophana* and earlier synonymies = *C. oculata*, *C. albicornis* = *C. oculata*, *Nothochrysa annulata* (?) = *C. oculata*, *C. separata* = *C. oculata*, *C. rubicunda* = *C. oculata* (see Bickley & MacLeod, 1956:191); *C. assimilis* = *C. oculata*, *C. separata* is valid species, *C. chlorophana* is valid species with associated earlier synonymies (see Brooks & Barnard, 1990:270). We consider that the synonymy of *C. chlorophana* and *C. oculata* by Bickley and MacLeod is a correct decision.

DISTRIBUTION. — **CAN:** AB⁸, BC⁸, MB⁸, NF⁶, NS⁶, ON⁸, PQ⁶, SK⁸, **USA:** AZ⁶, CO⁶, DC², GA², IA¹⁶, IL², IN⁹, KS⁷, LA², MD², ME¹¹, MI³, MN¹³, MO¹², MS², NC¹⁰, NJ⁵, NM⁶, NY¹, OH⁶, OR⁴, PA², TN², TX¹⁵, VA², WS¹⁴ (¹Fitch, 1855:788; ²Hagen, 1861:212; ³Banks, 1892:358; ⁴Banks, 1898:202, as *C. chlorophana*; ⁵Smith, 1900:55; ⁶Banks, 1903a:148, as *C. chlorophana*; ⁷Smith, 1925:168; ⁸Smith,

1932:587; ⁹Montgomery & Trippel, 1933:260; ¹⁰Brimley, 1938:30; ¹¹Procter, 1946:43; ¹²Froeschner, 1947:133; ¹³Parfin, 1952:424; ¹⁴Throne, 1971a:69; ¹⁵Agnew et al., 1981:12; ¹⁶Penny, **NEW STATE RECORD**).

REMARKS. — Carpenter (1992:538) has indicated that Burmeister's *Handbuch der Entomologie* was apparently published in two parts. The first 400 pages were published in 1839, while the remainder, including all Neuroptera, were published in 1838. If this is found to be correct, it could lead to serious nomenclatorial instability. The synonymy of *Chrysopa oculata* and *Chrysopa chlorophana* would be reversed. Almost certainly the International Commission on Zoological Nomenclature would be petitioned to declare, for nomenclatorial purposes, that the entire book was published in 1839.

Chrysopa pleuralis Banks, 1911:341.

One male syntype, one syntype of unknown sex: USA, Colorado, Boulder Co., North Boulder Creek, 21.VIII.1907, S. A. Rohwer; Steamboat Springs, 27.V, Cockerell (male) (MCZ).

DISTRIBUTION. — **CAN:** AB², BC², **USA:** CO¹, MT³, UT³, WY³ (¹Banks, 1911:342; ²Smith, 1932:591; ³Adams, **NEW STATE RECORDS**).

Chrysopa quadripunctata Burmeister, 1839:980.

Type(s) (sex unknown): North America (Halle).

= *Chrysopa sulphurea* Fitch, 1855:793. Type(s) (sex unknown): USA, New Jersey, IX (MCZ, specimen not found).

= *Chrysopa sichelii* Fitch, 1855:793. Holotype male: USA, New York (MCZ).

TAXONOMY. — *C. sulphurea* = *C. quadripunctata*, *C. sichelii* = *C. quadripunctata* (see Banks, 1903a:162).

DISTRIBUTION. — **CAN:** BC⁶, **USA:** DC², IL⁶, IN⁷, KS⁵, MD¹², MN¹¹, MO¹⁰, NC⁸, NJ³, NY¹, PA², SC², TN⁹, TX⁴, VA⁴, WS¹³ (¹Fitch, 1855:793; ²Banks, 1892:359; ³Smith, 1900:55; ⁴Banks, 1903a:153; ⁵Smith, 1925:168; ⁶Smith, 1932:597; ⁷Montgomery & Trippel, 1933:260; ⁸Brimley, 1938:30; ⁹Bickley, 1941:189; ¹⁰Froeschner, 1947:134; ¹¹Parfin, 1952:425; ¹²Bram & Bickley, 1963:8; ¹³Throne, 1971a:70).

Chrysopa slossonae Banks, 1924:432.

Syntypes females: USA, North Carolina, Hendersonville, F. Sherman; New Hampshire, Fran-

conia, Mrs. A. T. Slosson; Virginia, Great Falls (MCZ).

DISTRIBUTION. — **USA:** NC¹, NH¹, NY², VA¹ (¹Banks, 1924:432; ²Eisner et al., 1978:790).

Chrysoperla Steinmann, 1964:260

Chrysoperla adamsi Henry, Wells and Pupedis, 1993:9.

Holotype male: USA, Oregon, Benton Co., Philomath (Mary's Peak), 28.IX.1989, C. S. Henry & M. M. Wells (YPM).

DISTRIBUTION. — **USA:** CA, ID, OR, WA (Henry, Wells & Pupedis, 1993:9).

Chrysoperla comanche (Banks), 1938b:119 [*Chrysopa*].

Holotype female: USA, Texas, Laredo (MCZ). = *Chrysopa sperryae* Banks, 1943:74. Lectotype female: USA, California, Riverside, 7.IX.1940, Sperry (MCZ).

TAXONOMY. — To *Chrysoperla* (see Brooks & Barnard, 1990:271); *C. sperryae* = *C. comanche* (see Adams, 1958:45); lectotype designated for *C. sperryae* (see Adams, 1958:45).

DISTRIBUTION. — **CAN:** BC², **USA:** AZ¹, CA¹, CO², NM¹, TX¹ (¹Banks, 1938b:119; ²Bickley & MacLeod, 1956:194, as *C. sperryae*).

Chrysoperla downesi (Smith), 1932:594 [*Chrysopa*].

Holotype female: Canada, British Columbia, Kelowna, W. Downes (CNC).

= *Chrysopa mohave* Banks, 1938b:120. Syntypes (sex unknown): USA, California, Claremont; Stanford University campus; Arizona, Chiricahua Mountains (MCZ).

TAXONOMY. — To *Chrysoperla* (see Henry, 1985:965); *C. mohave* synonymized with *C. carnea* (see Tauber & Tauber, 1973:1153); *C. downesi* synonymized with *C. carnea* (see Garland, 1985:753); *C. downesi* and *C. mohave* considered synonyms of *C. carnea* (see Brooks & Barnard, 1990:271); *C. downesi* considered valid species with *C. mohave* as synonym (see Henry, 1993:23).

DISTRIBUTION. — **CAN:** BC¹, SK¹, **USA:** AZ², CA², ID³, MA³, MT³, NH³, NY³, VT³ (¹Smith, 1932:595; ²Banks, 1938b:120, as *C. mohave*; ³Henry, 1985:967).

Chrysoperla externa (Hagen), 1861:221 [*Chrysopa*].

Neotype female: USA, Winter Park, Florida, 3.IX, E. M. Davis (MCZ).

= *Chrysopa lanata* Banks, 1910:154. Holotype male: Argentina, Mendoza, Jensen-Haarup Expedition (MCZ).

= *Chrysopa graciana* Navás, 1919b:301. Holotype (sex unknown): Argentina, Alta Gracia, II.1918, C. Bruch (MLP).

TAXONOMY. — *C. lanata* = *C. externa* (Adams, 1963:222); *C. graciana* = *C. externa* (Adams & Penny, 1987:421).

DISTRIBUTION. — USA: FL¹, SC¹, TX² (¹Adams, 1963:222; ²Agnew et al., 1981:9).

NOTE. — The specimens listed by Hagen, 1875:921 and Smith, 1932:596 are misidentifications.

Chrysoperla harrisii (Fitch), 1855:794 [*Chrysopa*].

Holotype male: USA, New York (MCZ).

= *Chrysopa stenostigma* Navás, 1914c:61. Holotype (abdomen missing): USA, New York, Long Island, Yaphank, 25.VII.1913 (MZB).

TAXONOMY. — *C. harrisii* is a replacement name for the *C. perla* of Harris, 1841:197. To *Chrysoperla* (see Garland, 1985:755); *C. stenostigma* = *C. harrisii* (Bickley & MacLeod, 1956:193).

DISTRIBUTION. — CAN: BC⁵, ON⁵; USA: AK¹¹, DC³, IN⁶, KS⁴, MD¹², MI³, MN¹⁰, MO⁹, NC⁷, NH³, NJ², NY¹, TN⁸, TX¹⁴, WS¹³ (¹Fitch, 1855:794; ²Smith, 1900:55; ³Banks, 1903a:155; ⁴Smith, 1925:169; ⁵Smith, 1932:595; ⁶Montgomery & Trippel, 1933:260; ⁷Brimley, 1938:30; ⁸Bickley, 1941:188; ⁹Froeschner, 1947:134; ¹⁰Parfin, 1952:425; ¹¹Bickley & MacLeod, 1956:193; ¹²Bram & Bickley, 1963:7; ¹³Throne, 1971a:73; ¹⁴Agnew et al., 1981:9).

Chrysoperla johnsoni Henry, Wells and Pupedis, 1993:10.

Holotype male: USA, Oregon, Benton Co., Philomath (Mary's Peak), 28.IX.1989, C. S. Henry & M. M. Wells (YPM).

DISTRIBUTION. — USA: AZ, CA, ID, OR, WA (Henry et al., 1993:10).

Chrysoperla plorabunda (Fitch), 1855:792 [*Chrysopa*].

One male syntype, one syntype of unknown sex: USA, Illinois (no head or abdomen) (USNM); female (no label data, except #8592) (MCZ).

= *Chrysopa robertsonii* Fitch, 1855:792. Holotype female: USA, Arkansas, V. W. S. Robertson (MCZ).

= *Chrysopa pseudographa* Fitch, 1855:793. Lectotype male: USA, Illinois, X (MCZ) **NEW LECTOTYPE DESIGNATION.**

= *Chrysopa illinoiensis* Shimer, 1865:208. Type(s) (sex unknown): USA, Illinois (depository unknown).

= *Chrysopa californica* Coquillett, 1890:288. Holotype female: USA, California, Los Angeles, Coquillett (USNM).

= *Chrysopa simplex* Navás, 1908:402. Type(s) (sex unknown): USA, Rocky Mountains, R. P. Joannis (MZB).

TAXONOMY. — To *Chrysoperla* (see Brooks & Barnard, 1990:271); *C. robertsonii* = *C. plorabunda*, *C. pseudographa* = *C. plorabunda*, *C. illinoiensis* = *C. plorabunda* (see Banks, 1903a:162); *C. californica* = *C. plorabunda* (see Smith, 1932:594); *C. californica* = subspecies of *C. plorabunda* (see Adams, 1956:45); *C. plorabunda* = *C. carnea* (see Tjeder, 1960:148); *C. plorabunda* not = *C. carnea* (see Henry, 1983:293); *C. simplex* = *C. plorabunda* (Adams, **NEW SYNONYMY**).

DISTRIBUTION. — CAN: AB⁵, BC⁵, MB⁵, SK⁵; USA: AK¹⁰, AZ¹⁴, CO³, CT¹³, DC¹⁴, FL¹⁴, IA³, ID¹³, IL¹, IN⁶, KS⁴, MD¹¹, ME¹⁴, MI³, MN³, MO⁹, MS³, MT¹³, NC⁷, NJ², NM¹⁴, NY¹, OH³, OK¹, OR¹⁴, TN⁸, TX³, WA¹⁴, WS¹² (¹Fitch, 1855:792; ²Smith, 1900:55; ³Banks, 1903a:155; ⁴Smith, 1925:168; ⁵Smith, 1932:593; ⁶Montgomery & Trippel, 1933:260; ⁷Brimley, 1938:30; ⁸Bickley, 1941:188; ⁹Froeschner, 1947:134; ¹⁰Bickley & MacLeod, 1956:193; ¹¹Bram & Bickley, 1963:4, as *C. carnea*; ¹²Throne, 1971a:72, as *C. carnea*; ¹³Henry, 1985:967; ¹⁴Henry et al., 1993:9).

REMARKS. — Henry (1985:967) indicated that the holotype of *C. plorabunda* is at MCZ. In fact, this is one of two syntypes, and no lectotype has yet been designated. Henry, Wells and Pupedis (1993:9) reported that *C. plorabunda* possibly does not occur in California, so that previous records from this state probably pertain to *C. adamsi* or *C. johnsoni*, which are morphologically indistinguishable from *C. plorabunda*.

Chrysoperla rufilabris (Burmeister), 1839:979 [*Chrysopa*].

Syntypes (sex unknown): USA and Mexico (ZMH, specimen destroyed).

= *Chrysopa interrupta* Schneider, 1851:76. Holotype male: USA, Pennsylvania (HMB).

= *Chrysopa attenuata* Walker, 1853:242. Lectotype male: USA, east Florida, St. John's Bluff, E. Doubleday (BMNH).

= *Chrysopa repleta* Walker, 1853:244. Holotype male: USA, Georgia, Abbot (BMNH).

= *Chrysopa novaeboracensis* Fitch, 1855:794. Holotype female: USA, New York (MCZ).

= *Chrysopa tabida* Fitch, 1855:796. Type(s) (sex unknown): USA (MCZ, specimen not found).

= *Chrysopa citri* Ashmead, 1880:12. Holotype male: USA, Florida, W. H. Ashmead & S. Henshaw (MCZ).

= *Chrysopa medialis* Banks, 1903a:154. Holotype female: USA, Maryland, High Island, IX (MCZ).

TAXONOMY. — To *Chrysoperla* (see Garland, 1985:756); Hagen, 1866:395, 398 (*C. novaeboracensis* = *C. rufilabris*, *C. tabida* = *C. rufilabris*) (see Hagen, 1866:395, 398); *C. repleta* = *C. rufilabris*, *C. attenuata* = *C. rufilabris* (see Banks, 1903a:161); *C. citri* = *C. rufilabris* (see Bickley & MacLeod, 1956:194); *C. medialis* = *C. rufilabris*, *C. interrupta* = *C. rufilabris* (see Bram & Bickley, 1963:6); lectotype designated for *C. attenuata* (see Kimmins, 1940:447).

DISTRIBUTION. — CAN: NB⁴, ON⁶ USA: DC⁴, FL², GA², IN⁷, KS⁵, LA⁴, MD¹², MI⁴, MN¹¹, MO¹⁰, NC⁸, NJ³, NY³, OH⁴, PA¹, TN⁹, TX¹⁴, VA⁴, WS¹³ (¹Schneider, 1851:79; ²Walker, 1853:242, 244; ³Smith, 1900:55; ⁴Banks, 1903a:152; ⁵Smith, 1925:168; ⁶Smith, 1932:597; ⁷Montgomery & Trippel, 1933:260; ⁸Brimley, 1938:30; ⁹Bickley, 1941:189; ¹⁰Froeschner, 1947:134; ¹¹Parfin, 1952:425; ¹²Bram & Bickley, 1963:5; ¹³Throne, 1971a:74; ¹⁴Agnew et al., 1981:5).

Chrysopodes (Neosuarius) Adams and Penny, 1987:435

Chrysopodes (Neosuarius) collaris (Schneider), 1851:80 [*Chrysopa*].

Holotype (abdomen missing): Puerto Rico (HMB).

= *Chrysopa thoracica* Walker, 1853:243. Holotype (abdomen missing): Dominican Republic, Santo Domingo, M. A. Pierret (BMNH).

= *Chrysopa krugii* Kolbe, 1888:173. Type(s) (sex unknown): Puerto Rico (HMB).

= *Chrysopa signatalis* Banks, 1911:342. Syn-type females: USA, Texas, Brownsville, VI, Schaeffer (MCZ, USNM).

= *Chrysopa rufolinea* Banks, 1914a:24. Holotype male: Colombia, Cali, 1000m, Fassl (MCZ).

= *Chrysopa acolhua* Banks, 1948:156. Holotype male: Mexico, Guerrero, Pungarabato, 1260 m, 22.VIII.1930, José Paner (MCZ).

TAXONOMY. — *C. thoracica* = *C. collaris*, *C. krugii* = *C. collaris*, *C. rufolinea* = *C. collaris*, *C. signatalis* = *C. collaris*, *C. acolhua* = *C. collaris* (see Adams & Penny, 1987:436).

DISTRIBUTION. — USA: FL², TX¹ (¹Banks, 1911:342; ²Banks, 1938b:121, as *C. thoracica*).

Eremochrysa (Chrysopiella) Banks, 1911:344

Eremochrysa (Chrysopiella) brevisetosa (Adams & Garland), 1981:1 [*Chrysopiella*].

Holotype male: USA, Utah, Uintah Co., 22.V.1954, M. Cazier (AMNH).

TAXONOMY. — To *Eremochrysa (Chrysopiella)* (see Brooks & Barnard, 1990:272).

DISTRIBUTION. — CAN: AB, USA: ID, NV, OR, UT, WY (Adams & Garland, 1981:3).

Eremochrysa (Chrysopiella) minora (Banks), 1935:55 [*Chrysopiella*].

Holotype (sex unknown): USA, Oregon, Umatilla, 24.VI.1882, S. Henshaw (MCZ).

TAXONOMY. — To *Eremochrysa (Chrysopiella)* (see Brooks & Barnard, 1990:272).

DISTRIBUTION. — USA: CA², CO², OR¹ (¹Banks, 1935:55; ²Adams, **NEW STATE RECORDS**).

Eremochrysa (Chrysopiella) pallida (Banks), 1911:345 [*Chrysopiella*].

Holotype male: USA, New Mexico, Rincon, 31.VIII, Cockerell (MCZ).

TAXONOMY. — To *Eremochrysa (Chrysopiella)* (see Brooks & Barnard, 1990:272).

DISTRIBUTION. — AZ², CA³, NM¹, OR², UT², (¹Banks, 1911:345; ²Bickley & MacLeod, 1956:198; ³Adams, **NEW STATE RECORD**).

Eremochrysa (Chrysopiella) sabulosa (Banks), 1897b:174 [*Chrysopa*].

Holotype female: USA, Colorado, Fort Collins, 1916 (MCZ).

TAXONOMY. — To *Chrysopiella* (see Banks, 1911:344); to *Eremochrysa (Chrysopiella)* (see Brooks & Barnard, 1990:272).

DISTRIBUTION. — CO¹, KS³, NM², UT⁴, WY⁴ (¹Banks, 1897b:174; ²Banks, 1903a:151;

³Smith, 1925:169; ⁴Bickley & MacLeod, 1956:198).

REMARKS. — Bickley and MacLeod (1956:198) erroneously reported that Banks (1948) listed specimens from Texas.

Eremochrysa (Eremochrysa) Banks,
1903a:158

Eremochrysa (Eremochrysa) altilis Banks, 1950:56.

Syntype male and females: USA, Arizona, Graham Co., Pinaleno Mtns., Stockton Pass, 5440 ft., 4.VIII.1948, W. Nutting and F. Werner (MCZ).

DISTRIBUTION. — AZ (Banks, 1950:57).

Eremochrysa (Eremochrysa) californica Banks, 1905b:6.

Holotype male: USA, California, Santa Clara Co. (MCZ).

DISTRIBUTION. — AZ², CA¹ (¹Banks, 1905b:6; ²Banks, 1950:63).

Eremochrysa (Eremochrysa) canadensis (Banks), 1911:339 [*Chrysopa*].

Holotype female: Canada, Ontario, Lake Huron, Go Home Bay, 12.VII.1907 (MCZ).

TAXONOMY. — To *Eremochrysa* (see Banks, 1950:64).

DISTRIBUTION. — CAN: ON¹, USA: MA², ME², NH², WS³ (¹Banks, 1911:339; ²Banks, 1950:66; ³Throne, 1971a:76).

Eremochrysa (Eremochrysa) fraterna (Banks), 1897b:174 [*Chrysopa*].

Holotype female: USA, Colorado (MCZ).

TAXONOMY. — To *Eremochrysa* (see Banks, 1903a:159).

DISTRIBUTION. — CAN: BC⁴, USA: CO¹, KS³, NV² (¹Banks, 1897b:174; ²Banks, 1903a:159; ³Smith, 1925:169; ⁴Smith, 1932:582).

Eremochrysa (Eremochrysa) hageni (Banks), 1903a:158 [*Chrysopa*].

Holotype female: USA, Texas, Austin, 20.V.1900 (MCZ).

DISTRIBUTION. — USA: AZ², NM², TX¹, UT² (¹Banks, 1903a:159; ²Banks, 1950:60). Procter (1946:44) recorded a specimen of *E. ha-geni* from Maine, but *E. canadensis* is the only species of *Eremochrysa* which is found in the northeastern U. S.

Eremochrysa (Eremochrysa) pima Banks, 1950:61.

Two syntypes (one female, one missing abdomen): USA, Arizona, White Mtns., South Fork Camp, 22.VI.1947, G. H. and J. L. Sperry (missing abdomen); New Mexico, Santa Fe, Cockerell (female) (MCZ). Note that MCZ records only indicate presence of paratype.

DISTRIBUTION. — USA: AZ, NM (Banks, 1950:62).

Eremochrysa (Eremochrysa) pumilis Banks, 1950:58.

Holotype male: USA, Colorado, Garland, VII, Yarrow (MCZ).

DISTRIBUTION. — USA: CA², CO¹, TX¹, UT¹ (¹Banks, 1950:58; ²Bickley & MacLeod, 1956:200).

Eremochrysa (Eremochrysa) punctinervis (McLachlan), 1869:24 [*Chrysopa*].

Holotype female: USA, Texas, Bosque Co. (BMNH).

TAXONOMY. — To *Eremochrysa* (see Banks, 1903a:159).

DISTRIBUTION. — CAN: BC⁴, USA: AZ², CA², CO², FL⁵, KS³, NM², TX¹ (¹McLachlan, 1869:24; ²Banks, 1903a:159; ³Smith, 1925:169; ⁴Smith, 1932:583; ⁵Banks, 1950:53).

Eremochrysa (Eremochrysa) rufifrons Banks, 1950:57.

Syntype series (both sexes): USA, Arizona, Globe, 9.VIII.1933, Parker; Arizona, Globe, 19.VII, F. Werner and W. Nutting (MCZ).

DISTRIBUTION. — USA: AZ (Banks, 1950:58).

Eremochrysa (Eremochrysa) spilota Banks, 1950:61.

Five syntype females: USA, California, Fort Yuma, 6–13.VI.1948, Andahl; California, Brawley, 8.IV, A. L. Melander (MCZ). Note that MCZ records only indicate presence of paratype.

DISTRIBUTION. — USA: CA (Banks, 1950:61).

Eremochrysa (Eremochrysa) tibialis Banks, 1950:55.

Syntype male: USA, Arizona, Florence Junction, 18.IV.1935, F. H. Parker; Utah, Waston 22.VII, F. M. Carpenter; California, Vidal, 9.IV, Sperry (MCZ).

DISTRIBUTION. — USA: AZ¹, CA¹, NV², UT¹ (¹Banks, 1950:56; ²Bickley & MacLeod, 1956:199).

Eremochrysa (Eremochrysa) yosemite Banks, 1950:63.

Holotype male: USA, California, Yosemite, 12.VI.1931, Essig (MCZ).

DISTRIBUTION. — **USA:** CA (Banks, 1950:64).

Meleoma Fitch, 1855:786

Meleoma arizonensis (Banks), 1903a:155 [*Chrysopa*].

Holotype female: USA, Arizona, Prescott (MCZ).

TAXONOMY. — To *Meleoma* (see Tauber, 1969:18).

DISTRIBUTION. — **USA:** AZ¹, CA², NM³, TX³, UT³ (¹Banks, 1903a:155; ²Bickley & MacLeod, 1956:195; ³Tauber, 1969:18).

Meleoma beardi Tauber, 1969:20.

Holotype male: USA, Arizona, Chiricahua Mountains, Rustler's Park, 8,400 ft., 11.VI.1956, H. & A. Howden (CNC).

DISTRIBUTION. — **USA:** AZ (Tauber, 1969:21).

Meleoma dolicharthra (Navás), 1914e:96 [*Chrysopa*].

Holotype male: Guatemala: Capetillo, XI.1914, G. C. Champion (BMNH).

= *Meleoma cavifrons* Banks, 1950:46. Holotype male: USA, California, Tuolumne Co., Pinecrest, 10.VII.1948, P. H. Arnaud, Jr. (MCZ).

TAXONOMY. — To *Meleoma* (see Kimmins, 1940:448); *M. cavifrons* = *M. dolicharthra* (see Adams, 1969:6).

DISTRIBUTION. — **CAN:** BC², **USA:** AZ², CA¹, CO², OR², UT², WA² (¹Banks, 1950:46; ²Tauber, 1969:36).

Meleoma emuncta (Fitch), 1855:792 [*Chrysopa*].

Holotype (sex unknown): USA, New York (MCZ).

= *Meleoma slossonae* Banks, 1896:95. Holotype male: USA, New Hampshire, Mount Washington (MCZ).

= *Meleoma verticalis* Banks, 1908a:259. Holotype male: USA, Colorado, Golden, Chimney Gulch, 3.VIII.1907, Oslar (MCZ).

= *Meleoma comata* Banks, 1950:45. Holotype male: USA, California, San Bernardino Co., Upper Santa Ana River, 15.VII.1948, G. H. & J. L. Sperry (MCZ).

TAXONOMY. — To *Meleoma* (see Banks, 1924:432); *M. slossonae* = *M. emuncta* (see Banks, 1924:432); *M. verticalis* = *M. emuncta*, *M. comata* = *M. emuncta* (see Tauber, 1969:23).

DISTRIBUTION. — **CAN:** BC⁵, MB⁸, NB⁸, NF⁸, NS⁸, ON⁵, PQ⁵, **USA:** AZ⁷, CA⁴, CO³, ID⁸, MA⁸, ME⁶, MI⁸, NC⁸, NH², NM⁷, NV⁸, NY¹, OR⁸, UT⁸, VA⁷, VT⁸, WA⁸, WS⁸ (¹Fitch, 1855:792; ²Banks, 1896:95; ³Banks, 1908a:259; ⁴Banks, 1950:45; ⁵Smith, 1932:583; ⁶Procter, 1946:44; ⁷Bickley & MacLeod, 1956:185, 186; ⁸Tauber, 1969:23).

Meleoma furcata (Banks), 1911:342 [*Chrysopa*].

Holotype female: USA, New Mexico, Fort Wingate, 19.VII (MCZ).

= *Meleoma delicata* Banks, 1950:48. Holotype male: USA, New Mexico, Fort Wingate, 14.VIII.1908, J. Woodgate (MCZ).

TAXONOMY. — To *Meleoma* (see Tauber, 1969:40); *M. delicata* = *M. furcata* (see Tauber, 1969:40).

DISTRIBUTION. — **USA:** AZ², CA², NM¹, UT³ (¹Banks, 1911:342; ²Bickley & MacLeod, 1956:186, 196; ³Tauber, 1969:41).

Meleoma hageni Banks, 1948:170.

Holotype male: Mexico, Distrito Federal, Mexico City, Lomas de Chapultepec, 25.VII.1939, A. Dampf (MCZ).

DISTRIBUTION. — **USA:** AZ, NM (Tauber, 1969:38).

Meleoma kennethi Tauber, 1969:42.

Holotype male: USA, Nevada, Clark Co., 38 miles northwest of Las Vegas, Lee Canyon, 6,900 ft., 29.VII.1966, F., P., and M. Rindge (AMNH).

DISTRIBUTION. — **USA:** CA, NV (Tauber, 1969:42).

Meleoma pallida Banks, 1908a:260.

Holotype male: USA, Arizona, Huachuca Mountains, 8,000 ft., 20.VIII.1905, Oslar (MCZ).

DISTRIBUTION. — **USA:** AZ¹, CA² (¹Banks, 1908a:260; ²Bickley & MacLeod, 1956:186).

Meleoma pinalena (Banks), 1950:49 [*Chrysopa*].

Holotype (abdomen missing): USA, Arizona, Pinal-Globe, 18.VII.1948, F. Werner & W. Nutting (MCZ).

TAXONOMY. — To *Meleoma* (see Tauber, 1969:13).

DISTRIBUTION. — **USA:** AZ¹, NM² (¹Banks, 1950:49; ²Tauber, 1969:13).

Meleoma schwarzi (Banks), 1903a:146 [*Chrysopa*].

Holotype (abdomen missing): USA, New Mexico, Las Vegas Hot Springs, 5.VIII, Barber & Schwarz (USNM).

TAXONOMY. — To *Meleoma* (see Adams, 1962:178).

DISTRIBUTION. — USA: AZ², CA², CO², NM¹, NV², OR², UT² (¹Banks, 1903a:147; ²Tauber, 1969:14).

Meleoma signoretii Fitch, 1855:786.

Type(s) (sex unknown): USA, Vermont, Rupert (depository unknown)

DISTRIBUTION. — CAN: BC³, MB⁹, NS⁹, ON³, PQ³, USA: DC⁸, IL⁹, IN¹⁰, MA⁹, MD⁸, ME⁶, MI⁹, MN⁷, NC⁴, NH⁸, NJ⁹, NY², PA⁹, TN⁵, VA⁸, VT¹, WS⁹, WV⁹, (¹Fitch, 1855:786; ²Leonard, 1928:40; ³Smith, 1932:584; ⁴Brimley, 1938:31; ⁵Bickley, 1941:187; ⁶Procter, 1946:44; ⁷Parfin, 1952:424; ⁸Bickley & MacLeod, 1956:185; ⁹Tauber, 1969:33; ¹⁰Lawson & McCafferty, 1984:130).

Meleoma tezcucana (Banks), 1948:157 [*Chrysopa*].

Holotype female: Mexico, Distrito Federal, Lomas de Chapaltepec, Mexico City, 8.VIII.1940, A. Dampf (MCZ).

TAXONOMY. — To *Meleoma* (see Adams, 1969:8).

DISTRIBUTION. — USA: AZ (Adams, 1969:8).

Nineta Navás, 1912b:98

Nineta gravida (Banks), 1911:343 [*Chrysopa*].

Type male: USA, California, Yosemite (MCZ).

TAXONOMY. — to *Nineta* (see Brooks & Barnard, 1990:275).

DISTRIBUTION. — CAN: BC², USA: CA¹ (¹Banks, 1911:343; ²Smith, 1932:597).

Nineta nanina (Banks), 1911:344 [*Chrysopa*].

Type(s) (sex unknown): USA, Arizona, Palmerlee (MCZ).

TAXONOMY. — To *Nineta* (see Brooks & Barnard, 1990:275).

DISTRIBUTION. — USA: AZ¹, UT² (¹Banks, 1911:340; ²Adams, NEW STATE RECORD).

Plesiochrysa Adams, 1982b:28

Plesiochrysa brasiliensis (Schneider), 1851: 83 [*Chrysopa*].

Holotype (female): Brazil (HMB).

= *Chrysopa cubana* Navás, 1921:120. A junior primary homonym of *Chrysopa cubana* Hagen, 1861:215.

= *Chrysopa antillana* Navás, 1922c:392. A replacement name for *Chrysopa cubana* Navás. Lectotype male: Cuba, Havana, F. Cervera (MCZ).

= *Chrysopa bouvieri* Navás, 1924c:112. Holotype female: Costa Rica, Paul Serre (MNHN).

= *Chrysopa rata* Lacroix, 1926:68. Syntype series (one male, one female, one without abdomen): Brazil, Minas Gerais, Uberaba (MNHN).

= *Chrysopa uribei* Navás, 1927b:5. Holotype male: Colombia, Cundinamarca, San Antonio de Tena, San Pedro Claver (MZB, specimen not found).

= *Chrysopa scalaris* Navás, 1929c:26. Holotype male: Colombia, Behn vend., 3.XII.1900 (Hamburg, specimen destroyed).

= *Chrysopa yucatanensis* Navás, 1929c:28. Holotype male: Mexico, Yucatan, Progreso, 5.V.1905, W. Schwinghammer (Hamburg, specimen destroyed).

= *Chrysopa divergens* Navás, 1931:82. Holotype (sex unknown): Costa Rica, San José, 8 km wsw San José, Farm La Caja, V.1925 (Hamburg, specimen destroyed).

TAXONOMY. — To *Plesiochrysa*; *C. bouvieri* = *C. brasiliensis*, *C. antillana* = *C. brasiliensis*, *C. rata* = *C. brasiliensis*, *C. uribei* = *C. brasiliensis*, *C. scalaris* = *C. brasiliensis*, *C. yucatanensis* = *C. brasiliensis*, *C. divergens* = *C. brasiliensis* (see Adams, 1982:29).

DISTRIBUTION. — USA: FL (Adams, NEW NATIONAL RECORD).

Pseudomallada Tsukaguchi, 1995:67

Pseudomallada luctuosus (Banks), 1911:343 [*Chrysopa*].

Holotype male: USA, New Mexico, Fort Wingate, 26.VI (MCZ).

TAXONOMY. — To *Mallada* (see Adams, 1975:172); to *Pseudomallada* by Adams, NEW COMBINATION.

DISTRIBUTION. — USA: AZ², CO², IN³, NE², NM¹ (¹Banks, 1911:343; ²Adams & Garland, 1982:246; ³Lawson & McCafferty, 1984:130).

Pseudomallada macleodi (Adams & Garland), 1982:240 [*Mallada*].

Holotype male: USA, Texas, Erath Co., Stephenville, 20.IV.1981, C. W. Agnew (MCZ).

TAXONOMY. — To *Pseudomallada* by Adams, **NEW COMBINATION**.

DISTRIBUTION. — CAN: ON, USA: AZ, KS, MD, TX (Adams & Garland, 1982:242).

Pseudomallada perfectus (Banks), 1895a:516 [*Chrysopa*].

Holotype female: Mexico, Baja California Sur, Serra El Taste (MCZ).

= *Chrysopa cockerelli* Banks, 1903a:154. Holotype female: USA, New Mexico, East Las Vegas (MCZ).

= *Chrysopa injusta* Banks, 1906a:98. Holotype female: USA, California, mountains near Claremont, Baker (MCZ).

= *Chrysopa marginalis* Banks, 1905b:5 not Navás 1905:122. Holotype (sex unknown): USA, California, mountains near Claremont, Baker (MCZ, specimen not found).

TAXONOMY. — To *Mallada* (see Adams, 1975:172); *C. cockerelli* = *M. perfectus*, *C. injusta* = *M. perfectus* (see Adams & Garland, 1982:244); to *Pseudomallada* by Adams, **NEW COMBINATION**.

DISTRIBUTION. — CAN: BC⁴, USA: AZ⁵, CA², CO⁵, KS³, NM¹, OR⁵, UT⁵, WA⁵, WY⁵ (¹Banks, 1903a:154; ²Banks, 1906a:98; ³Smith, 1925:168, as *C. cockerelli*; ⁴Smith, 1932:597, as *C. cockerelli*; ⁵Adams & Garland, 1982:244).

REMARKS. — The Navás name of *Chrysopa marginalis* was published in June, 1905 while the *Chrysopa marginalis* of Banks was published in November, 1905.

Pseudomallada sierra (Banks), 1924:431 [*Chrysopa*].

Holotype female: USA, California, Los Angeles Co., San Gabriel Mtns., Sister Elsie Peak, 10.VI, F. Grinnell (MCZ).

TAXONOMY. — To *Mallada* (see Adams & Garland, 1982:245); to *Pseudomallada* by Adams, **NEW COMBINATION**.

DISTRIBUTION. — USA: AZ², CA¹, OR², WA² (¹Banks, 1924:431; ²Adams & Garland, 1982:245).

Yumachrysa Banks, 1950:51

Yumachrysa apache (Banks), 1938b:120 [*Chrysopa*].

Holotype female: USA, Arizona, Globe, 27.VI.1933, Parker (MCZ).

TAXONOMY. — To *Chrysopa* (*Yumachrysa*) (see Bickley & MacLeod, 1956:189); to *Suarius* (*Prochrysopa*) (see Tauber, 1975:696), to *Yumachrysa* (see Brooks & Barnard, 1990:276).

DISTRIBUTION. — USA: AZ¹, CA³, TX² (¹Banks, 1938b:121; ²Bickley & MacLeod, 1956:189; ³Tauber, 1975:697).

Yumachrysa clarivena (Banks), 1950:50 [*Chrysopa* (*Yumachrysa*)].

Holotype female: USA, Arizona, Yuma Co., Ehrenberg, 11.VII.1948, W. Nutting and F. Werner (MCZ).

TAXONOMY. — *Yumachrysa* elevated to generic status (see Brooks & Barnard, 1990:241).

DISTRIBUTION. — USA: AZ (Banks, 1950:50).

Yumachrysa yuma (Banks), 1950:49 [*Chrysopa* (*Yumachrysa*)].

Two syntypes (male and female): USA, California, Fort Yuma, 6.VI and 13.VI, Andahl (MCZ).

TAXONOMY. — To *Suarius* (*Prochrysopa*) (see Tauber, 1975:697); to *Yumachrysa* (see Brooks & Barnard, 1990:241).

DISTRIBUTION. — USA: AZ², CA¹ (¹Banks, 1950:50; ²Tauber, 1975:698).

NOTE. — *Leucochrysa californica* Navás, 1928a:35 was described from California, and the type specimen is present in the Stockholm Museum. Adams, 1977:94 has subsequently shown that this species is a synonym of *Leucochrysa colombia* Banks, 1910:150, known only from Colombia. The locality label associated with the type specimen of *L. californica* dates from the last century and may have originally been noted as "Cali" or "Col."

CONIOPTERYGIDAE

Coniopterygidae, or dusky-wings, comprise the smallest and some of the most highly modified lacewings. Adults are generally only 2–3 mm long, with reduced wing venation and a white powder covering the wings and body. Because of this white powder, they often are mistaken for white-flies (Aleyrodidae) in flight. They are most active near dawn and dusk, fluttering slowly between plants, where they lay eggs and feed on soft-bodied insects. Eggs are usually laid singly on bark or leaves. Withycombe (1923) indicated that a larval dusky-wing will consume between 150 and 300 aphid eggs

or young nymphs before metamorphosing to a pupa. Larvae and adults can feed on a wide variety of sluggish, soft-bodied insects, like aphids, white-flies, mealy-bugs, scale insects, etc. This makes them one of our more important biological control agents, although because of their size, they are often overlooked in the field. Although a wide variety of insects are consumed by the family in general, many species are closely associated with a specific species of tree or bush, indicating a close association with a specific type of host insect. The taxonomy of Coniopterygidae has been covered in a series of monographs and papers by Meinander (1972, 1974, 1975, 1990) and Johnson (1976, 1981a, 1981b).

ALEUROPTERYGINAE

Aleuropteryx Löw, 1885:79

Aleuropteryx arceuthobii Meinander, 1975:28.

Holotype male: USA, Colorado (USNM).

DISTRIBUTION. — USA: CO¹, TX² (¹Meinander, 1975:28; ²Johnson, 1981a:272).

Aleuropteryx arizonica Johnson, 1981a:272.

Holotype male: USA, Arizona, Pinal Co., near Superior, Boyce Thompson Southwestern Arbo-
retum, 11.VII.1949, B. W. Benson (INHS).

DISTRIBUTION. — USA: AZ (Johnson, 1981a:274).

Aleuropteryx cupressi Meinander, 1974:218.

Holotype male: USA, California, Marin Co., emerged ex *Cupressus goveniana*, 2.V.1961, J. Powell (CAS).

DISTRIBUTION. — USA: CA (Meinander, 1974:218).

Aleuropteryx dragoonica Johnson, 1981a:275.

Holotype male: USA, Arizona, Cochise Stronghold, Dragoon Mountains, 15–18.VIII.1969, R. J. Shaw (USNM).

DISTRIBUTION. — USA: AZ (Johnson, 1981a:275).

Aleuropteryx juniperi Ohm, 1968:14.

Holotype male: Germany, Treisbach (Ohm Collection).

DISTRIBUTION. — USA: PA¹, VA² (¹Henry, 1974:643; ²Flint, 1974:703).

Aleuropteryx knowltoni Johnson, 1981a:278.

Holotype male: USA, Utah, Logan, 29.VI.1950, G. F. Knowlton (USNM).

DISTRIBUTION. — USA: UT (Johnson, 1981a:279).

Aleuropteryx longipennis Meinander, 1974:218.

Holotype male: Mexico, Baja California Norte, 1 mile north of Meling Ranch, 2100 ft., 17.III.1972, J. Doyen & J. Powell (CAS).

DISTRIBUTION. — USA: CA¹, NM¹, UT² (¹Meinander, 1974:219; ²Johnson, 1981a:281).

Aleuropteryx maculipennis Meinander, 1972:45.

Holotype male: USA, California, Kern Co., 19 miles north northeast of Mojave, 14.VI.1962, C. MacNeill, D. Rentz & R. Brown (CAS).

DISTRIBUTION. — USA: AZ², CA¹, NM³, TX² (¹Meinander, 1972:45; ²Johnson, 1981a:282; ³Meinander, 1990:7).

Aleuropteryx megacornis Johnson, 1981a:284.

Holotype male: USA, Arizona, Cochise Stronghold, Dragoon Mountains, 9–12.V.1970, R. J. Shaw (USNM).

DISTRIBUTION. — USA: AZ, NM, TX (Johnson, 1981a:284).

Aleuropteryx punctata Meinander, 1974:220.

Holotype male: Mexico, Sinaloa, 20 mi W Rosario, 30.I.1964, E. Schlinger (CAS).

DISTRIBUTION. — AZ¹, NM² (¹Meinander, 1974:220; ²Johnson, 1981a:287).

Aleuropteryx simillima Meinander, 1972:46.

Holotype male: Mexico, Baja California, San Felipe, 7.III.1963, P. H. Arnaud (CAS).

DISTRIBUTION. — USA: AZ², TX¹ (¹Wheeler, 1980:51; ²Johnson, 1981a:289).

Aleuropteryx unicolor Meinander, 1972:48.

Holotype male: USA, California, Riverside Co., Palm Desert, 4 miles south of Boyd Desert Research Center, 11.IV.1963, W. A. Steffan (CAS).

DISTRIBUTION. — USA: AZ², CA¹ (¹Meinander, 1972:49; ²Johnson, 1981a:290).

Aleuropteryx vulgaris Meinander, 1972:51.

Holotype male: USA, Texas, Kerrville, VII.1954, L. J. Bottimer (USNM).

DISTRIBUTION. — USA: AZ, CA, NM, TX, UT (Meinander, 1972:51).

Aleuropteryx wernerii Johnson, 1981a:294.

Holotype male: USA, New Mexico, Las Cruces, 28.VII–3.VIII.1975, W. P. Morrison (USNM).

DISTRIBUTION. — USA: NM (Johnson, 1981a:294).

Bidesmida Johnson, 1976:192**Bidesmida morrisoni** Johnson, 1976:193.

Holotype male: USA, New Mexico, Las Cruces, 30.XI.1975, W. P. Morrison (USNM).

DISTRIBUTION. — **USA:** NM (Johnson, 1976:294).

Helicoconis Enderlein, 1905b:226**Helicoconis (Helicoconis) californica** Meinander, 1972:119.

Holotype male: USA, California, Mono Co., 1 mile southwest of Tom's Place, 10.VIII.1963, M. J. Tauber & C. A. Toschi (CAS).

DISTRIBUTION. — **USA:** CA (Meinander, 1972:119).

Helicoconis (Helicoconis) lutea (Wallengren), 1871:55 [*Coniopteryx*].

Type lost: Sweden, Gotland (NRS).

TAXONOMY. — To *Aleuropteryx* (see Klapálek, 1894:121); to *Helicoconis* (see Enderlein, 1905b:226).

DISTRIBUTION. — **USA:** PA (Meinander, 1972:124).

Helicoconis (Helicoconis) similis Meinander, 1972:124.

Holotype male: Canada, British Columbia, Top of Moyle Mountains., 6868 ft., East Kootenaya, H. B. Leech (CAS).

DISTRIBUTION. — **CAN:** BC (Meinander, 1972:124).

Helicoconis (Helicoconis) walshi (Banks), 1906b:83 [*Aleuropteryx*].

Holotype male: USA, Michigan, Michigan Agricultural College, 3.VII.1896 (MCZ).

TAXONOMY. — To *Helicoconis* (see Enderlein, 1908:16); to *Cryptosceneia* (see Enderlein, 1930:113); returned to *Helicoconis* (see Meinander, 1972:125).

DISTRIBUTION. — **USA:** CA³, IN⁴, ME², MI¹, WS² (¹Banks, 1906:83; ²Meinander, 1972:125; ³Meinander, 1974:223; ⁴Lawson & McCafferty, 1984:130).

Neoconis Enderlein, 1930:112**Neoconis bifurcata** Meinander, 1974:223.

Holotype male: USA, Arizona, Cochise Co., Stewart Camp, 1 mile south of Portal, 12–15.VIII.1971, J. Doyen (CAS).

DISTRIBUTION. — **USA:** AZ (Meinander, 1974:223).

Neoconis inexpectata Meinander, 1972:155.

Holotype male: USA, Arizona, Cochise Co., Southwest Research Station, 5400 ft., Chiracahua Mts., 58.VII.1964, D. R. Davis (MZH).

DISTRIBUTION. — **USA:** AZ (Meinander, 1972:155).

Neoconis marginata Meinander, 1972:156.

Holotype male: USA, Texas, Kerrville, 13.VIII.1954, L. J. Bottimer (USNM).

DISTRIBUTION. — **USA:** AZ, CA, TX (Meinander, 1972:157).

CONIOPTERYGINAE

Coniopteryx (Coniopteryx) Curtis, 1834:
unpaginated letterpress to plate 528**Coniopteryx (Coniopteryx) californica** Meinander, 1974:225.

Holotype male: USA, California, San Luis Obispo Co., Oro Haco Lake, 5.VIII.1962, E. Schlinger (CAS).

DISTRIBUTION. — **USA:** CA¹, TX² (¹Meinander, 1974:226; ²Meinander, 1990:61).

Coniopteryx (Coniopteryx) dorsicornis Johnson, 1981b:183.

Holotype male: USA, Florida, Highlands Co., Archbold Biological Station, 30.III–5.IV.1967, S. W. Frost (PSU).

DISTRIBUTION. — **USA:** FL (Johnson, 1981b:183).

Coniopteryx (Coniopteryx) fitchi Banks, 1895b:315.

Type lost: USA, Colorado (MCZ).

= *Malacomyza farinosa* Banks, 1906b:85. Type lost: USA, California, San Mateo Co. (MCZ).

TAXONOMY. — To *Malacomyza* (see Banks, 1906b:84); to *Semidalis* (see Enderlein, 1907:12); returned to *Coniopteryx* (see Meinander, 1972:256); *M. farinosa* = *C. fitchi* (see Meinander, 1972:256).

DISTRIBUTION. — **USA:** AZ, CA, NV, TX (Meinander, 1972:257).

Coniopteryx (Coniopteryx) forcipata Johnson, 1981b:185.

Holotype male: USA, Arizona, Cochise Co., Stronghold, Dragoon Mountains, 20–24.VI.1970, R. J. Shaw (USNM).

DISTRIBUTION. — **USA:** AZ (Johnson, 1981b:185).

Coniopteryx (Coniopteryx) latipalpis Meinander, 1972:257.

Holotype male: USA, Colorado, Junction Creek Road, 10,000 ft., 12–17.VII.1968, E. C. Becker (CNC).

DISTRIBUTION. — **USA:** AZ, CA, CO (Meinander, 1972:259).

Coniopteryx (Coniopteryx) mexicana Meinander, 1974:226.

Holotype male: Mexico, Sinaloa, 20 miles east of Villa Union, 31.I.1964, E. Schlinger & M. Irwin (CAS).

DISTRIBUTION. — **USA:** TX (Meinander, 1990:62).

Coniopteryx (Coniopteryx) minuta Meinander, 1972:259.

Holotype male: USA, California, San Luis Obispo Co., Morro Bay 8 miles, 2.V.1962, C. A. Toschi (CAS).

DISTRIBUTION. — **USA:** CA (Meinander, 1972:260).

Coniopteryx (Coniopteryx) palpalis Meinander, 1972:260.

Holotype male: Mexico, Mexico, Route 15, km 152 west of Bosencheve, 20.VII.1966, Flint & Ortiz (USNM).

DISTRIBUTION. — **USA:** CA (Meinander, 1990:62).

Coniopteryx (Coniopteryx) quadricephala Johnson, 1981b:188.

Holotype male: USA, Utah, Cache Co., Green Canyon, 25–30.VII.1968, W. J. Hanson (USNM).

DISTRIBUTION. — **USA:** UT (Johnson, 1981b:188).

Coniopteryx (Coniopteryx) simplex Meinander, 1974:228.

Holotype male: USA, California, El Dorado Co., Pino Grande, southwest of Lake Edson, 8.VII.1967, W. J. Turner (CAS).

DISTRIBUTION. — **USA:** CA (Meinander, 1974:228).

Coniopteryx (Coniopteryx) simplicior Meinander, 1972:261.

Holotype male: USA, Texas, Kerr Co., Kerrville, VII.1953, L. J. Bottimer (USNM).

DISTRIBUTION. — **USA:** AR², CA², FL¹, GA¹, IN³, MD¹, NY¹, TN¹, TX¹, VA¹ (¹Meinander, 1972:262; ²Meinander, 1974:64; ³Lawson & McCafferty, 1984:130).

Coniopteryx (Coniopteryx) tineiformis Curtis, 1834: text to plate 528.

Lectotype male: England (NMV).

= *Aleyrodes dubia* Stephens, 1829:367 (nomen nudum).

= *Malacomyza lactea* Wesmael, 1836:166.

Type (sex unknown): (locality unknown) (IRSNB).

= *Sciodus lacteus* Zetterstedt, 1840:1051.

Type (sex unknown): Sweden, Bohuslän (NRS).

= *Sciodus fuscus* Zetterstedt, 1840:1051. Type (sex unknown): Sweden, Gotland (NRS).

= *Coniopteryx tineiformis* var. *xaveriana* Navás, 1918:20. Holotype female: Spain, Javier (MZB).

TAXONOMY. — Originally described from a mixed syntype series of seven specimens, with the text describing one species, and associated plate describing another. Meinander, 1972:254 has corrected this problem by designating a lectotype. *Aleyrodes dubia* is a nomen nudum, with no description and no type designation. *A. dubia* = *C. tineiformis*, *M. lactea* = *C. tineiformis* (see Enderlein, 1905b:197); *S. lacteus* = *C. tineiformis*, *S. fuscus* = *C. tineiformis*, *S. albus* = *C. tineiformis*, *C. t. xaveriana* = *C. tineiformis* (see Meinander, 1972:256).

DISTRIBUTION. — **CAN:** BC³, MB⁴, NF¹, PQ¹, YU³, **USA:** AK¹, CA¹, ID¹, IN², MI¹, TN¹, VA¹ (¹Meinander, 1972:254; ²Lawson & McCafferty, 1984:130; ³Meinander, 1990:61; ⁴Penny, **NEW STATE RECORD**).

Coniopteryx (Coniopteryx) westwoodii (Fitch), 1855:802 [*Aleuronia*].

Type lost: USA, New York

= *Malacomyza ventralis* Navás, 1912a:198. Type (very deteriorated): USA, New York, White Plains (MZB).

= (?) *Coniopteryx gidae* Procter, 1938:44 (nomen nudum).

TAXONOMY. — No description or type were designated for *C. gidae*. *M. ventralis* = *C. westwoodii* (see Meinander, 1972:263).

DISTRIBUTION. — **CAN:** MB⁸, **USA:** FL⁶, IN⁷, ME³, MI⁶, MN⁵, MO⁴, NJ², NY¹, TN⁶, TX⁶, VA⁶, WS⁶ (¹Fitch, 1855:98; ²Smith, 1900:54; ³Procter, 1946:44, as *C. gidae*; ⁴Froeschner, 1947:135; ⁵Parfin, 1952:426; ⁶Meinander, 1972:263; ⁷Lawson & McCafferty, 1984:130; ⁸Penny, **NEW STATE RECORD**).

Coniopteryx (Xeroconiopteryx) Meinander, 1972:203

Coniopteryx (Xeroconiopteryx) canadensis Meinander, 1972:211.

Holotype male: Canada, Saskatuwan, Elbow, 10.VI.1960, A. R. Brooks (CNC).

DISTRIBUTION. — **CAN:** SA¹, **USA:** AK², WS¹ (¹Meinander, 1972:212; ²Meinander, 1990:40).

Coniopteryx (Xeroconiopteryx) diversicornis Meinander, 1972:213.

Holotype male: USA, Texas, Kerr Co., Kerrville, 13.X.1953, L. J. Bottimer (USNM).

DISTRIBUTION. — **USA:** AZ, CA, FL, TX (Meinander, 1972:214).

Coniopteryx (Xeroconiopteryx) meinanderi Johnson, 1981b:186.

Holotype male: USA, Arizona, Cochise Stronghold, Dragoon Mountains, R. J. Shaw (USNM).

DISTRIBUTION. — **USA:** AZ¹, CA² (¹Johnson, 1981b:186; ²Meinander, 1990:40).

Coniopteryx (Xeroconiopteryx) texana Meinander, 1972:214.

Holotype male: USA, Texas, Kerr Co., Kerrville, 30.VI.1953, L. J. Bottimer (USNM).

DISTRIBUTION. — **USA:** AZ¹, CA², TX¹ (¹Meinander, 1972:215; ²Meinander, 1990:40).

Conwentzia Enderlein, 1905a:10

Conwentzia barretti (Banks), 1898:202 [*Coniopteryx*].

Holotype female: Mexico, Amecameca (MCZ).

= *Parasemidalis flaviceps* Banks, 1906b:81. Lectotype female: USA, California, Los Angeles (MCZ).

TAXONOMY. — To *Semidalis* (see Enderlein, 1907:12); to *Conwentzia* (see Meinander, 1972:295); *P. flaviceps* = *C. barretti* (see Meinander, 1972:295).

DISTRIBUTION. — **USA:** CA (Fleschner & Ricker, 1953:458, as *Parasemidalis flaviceps*).

Conwentzia californica Meinander, 1972:297.

Holotype male: USA, California, Mono Co., Lee Vining Campground, west of Mono Lake, VII.1961, D. C. Rentz (CAS).

DISTRIBUTION. — **CAN:** BC², **USA:** AZ¹, CA¹, CO¹, NM³, OR³, UT¹, WA¹, WY¹ (¹Mei-

ander, 1972:298; ²Meinander, 1990:72; ³Penny, **NEW STATE RECORDS**).

Conwentzia pineticola Enderlein, 1905a:40.

Lectotype male: Berlin, Germany (HMB).

= *Conwentzia pineticola* var. *furcilla* Enderlein, 1906a:194. Two syntype males: Berlin, Germany (probably lost).

= *Conwentzia pineticola* var. *tetensi* Enderlein, 1906a:195. Lectotype female: Finland, Jakobstad (MZH).

= *Conwentzia hageni* Banks, 1906b:82. Lectotype female: USA, Virginia (MCZ).

= *Coniopteryx reticulata* Tullgren, 1906:14. Syntypes male and female: Sweden, Stockholm (depository unknown).

= *Conwentzia angulata* Navás, 1914b:16. Holotype female: USA, New York (MZB).

= *Conwentzia axillata* Navás, 1914b:17. Holotype male: USA, New York (MZB).

= *Conwentzia cryptoneuris* Bagnall, 1915:192. Syntype male, 2 females: England, Newcastle-upon-Tyne (depository unknown).

TAXONOMY. — *C. p.* var. *furcilla* = *C. pineticola*, *C. p.* var. *tetensi* = *C. pineticola*, *C. hageni* = *C. pineticola*, *C. angulata* = *C. pineticola*, *C. axillata* = *C. pineticola*; lectotypes designated for *C. pineticola* and *C. hageni* (see Meinander, 1972:301).

DISTRIBUTION. — **CAN:** MB⁹, NF⁶, NS⁶, ON⁶, **USA:** AR⁷, DC⁶, FL⁶, IA⁹, IN⁸, MA⁶, MD⁶, ME³, MI⁶, MN⁵, MO⁴, NC⁶, NH⁶, NJ⁶, NY², OH⁶, PA⁶, VA¹, WS⁶ (¹Banks, 1906b:82; ²Navás, 1914b:16, as *C. angulata*; ³Procter, 1946:44, as *C. hageni*; ⁴Froeschner, 1947:135, as *C. hageni*; ⁵Parfin, 1952:426, as *C. hageni*; ⁶Meinander, 1972:303; ⁷Throne, 1972:126; ⁸Lawson & McCafferty, 1984:130; ⁹Penny, **NEW STATE RECORDS**).

Conwentzia psociformis (Curtis), 1834: plate 528 [*Coniopteryx*].

Type deposition unknown: England, specimen presumed lost.

= *Coniopteryx aphidiformis* Rambur, 1842:316. Type depository unknown.

TAXONOMY. — To *Coniortes* (see Walker, 1853:299); to *Conwentzia* (see Enderlein, 1905:10); *C. aphidiformis* = *C. psociformis* (see Meinander, 1972:305).

DISTRIBUTION. — **CAN:** BC, **USA:** NJ, OH (Meinander, 1972:306).

Parasemidalis Enderlein, 1905c:197

Parasemidalis fuscipennis (Reuter), 1894:13 [*Coniopteryx*].

Holotype male: Finland (MZH).

= *Parasemidalis annae* Enderlein, 1905c:198.

Holotype female: Germany, Berlin (HMB).

TAXONOMY. — To *Parasemidalis* (see Enderlein, 1906:219); *P. annae* = *P. fuscipennis* (see Meinander, 1972:281).

DISTRIBUTION. — **USA**: AZ, CA, FL, MI (Meinander, 1972:283).

Semidalis Enderlein, 1905c:197

Semidalis angusta (Banks), 1906b:81 [*Coniopteryx*].

Lectotype male: USA, Arizona, Williams, 29.V. Barber & Schwarz (USNM).

TAXONOMY. — To *Semidalis* (see Enderlein, 1908:11); lectotype designated (see Meinander, 1972:327).

DISTRIBUTION. — **USA**: AR, AZ, CA, MT, TX (Meinander, 1972:327).

Semidalis arnaudi Meinander, 1972:328.

Holotype male: Mexico, Sonora, Alamos, 27.II.1963, P. H. Arnaud (CAS).

DISTRIBUTION. — **USA**: AZ (Meinander, 1990:78).

Semidalis bituberculata Meinander, 1990:79

Holotype male: USA, California, Riverside Co., hills on west side of Meniffee Valley, 27.VII.1980, J. D. Pinto (CAS).

DISTRIBUTION. — **USA**: CA (Meinander, 1990:79).

Semidalis deserta Meinander, 1974:230.

Holotype male: USA, California, Riverside Co., Boyd Desert Research Center, 3 miles south of Palm Desert, 24–26.VI.1969, S. Frommer & B. Worley (CAS).

DISTRIBUTION. — **USA**: CA (Meinander, 1974:231).

Semidalis flinti Meinander, 1972:335.

Holotype male: USA, Texas, Kerr Co., Kerrville, 17.VIII.1954, L. J. Bottimer (USNM).

DISTRIBUTION. — **USA**: AZ¹, CA², TX¹ (¹Meinander, 1972:336; ²Meinander, 1974:231).

Semidalis frommeri Meinander, 1974:231.

Holotype male: USA, California, Riverside Co., Deep Canyon, 22.VII.1964, M. Irwin (CAS).

DISTRIBUTION. — **USA**: CA (Meinander, 1974:232).

Semidalis inconspicua Meinander, 1972:336.

Holotype male: USA, Virginia, Falls Church, Holmes Run, 6.VI.1961, W. W. Wirth (USNM).

DISTRIBUTION. — **USA**: AR², AZ¹, CA¹, IN³, MD¹, OK¹, TX¹, VA¹, WS¹ (¹Meinander, 1972:336; ²Meinander, 1974:232; ³Lawson & McCafferty, 1984:130).

Semidalis tricornis Johnson, 1981b:190.

Holotype male: USA, Arizona, Cochise Stronghold, Dragoon Mountains, R. J. Shaw (USNM).

DISTRIBUTION. — **USA**: AZ (Johnson, 1981b:191).

Semidalis vicina (Hagen), 1861:197 [*Coniopteryx*].

Holotype female: USA, Washington, D. C. (MCZ).

= *Parasemidalis nigriceps* Navás, 1918a:355. Holotype female: USA, New York, White Plains, 18.VII.1915 (MZB).

= *Semidalis ribesi* Ohm, 1973:237. Holotype male: France, Pyrénées orientales, above the Bains du Boulou, 27.V.1963 (Ohm Collection).

TAXONOMY. — To *Semidalis* (see Enderlein, 1906:215); to *Niphetia* (see Enderlein, 1930:106); returned to *Semidalis* (see Procter, 1938:44); *P. nigriceps* = *S. vicina*, *S. ribesi* = *S. vicina* (Meinander, 1972:330).

DISTRIBUTION. — **CAN**: AB⁸, PQ⁸ **USA**: CT⁸, DC¹, FL⁸, GA⁸, IN⁹, KS³, ME⁵, MO⁶, MN⁷, MA⁸, ME⁸, MI⁸, MS⁸, NC⁴, NH⁸, NY², OH⁸, PA⁸, SC⁸, TN⁸, VA⁸, WS⁸ (¹Hagen, 1861:197; ²Navás, 1918:19, as *P. nigriceps*; ³Smith, 1925:170; ⁴Brimley, 1938:32; ⁵Procter, 1946:44; ⁶Froeschner, 1947:135; ⁷Parfin, 1952:425; ⁸Meinander, 1972:331; ⁹Lawson & McCafferty, 1984:130).

Semidalis wallacei Meinander, 1972:337.

Holotype male: USA, Pennsylvania, Pittsburgh, 15.VII.1932, H. Kahl (CMNH).

DISTRIBUTION. — **USA**: PA (Meinander, 1972:338).

Semidalis xerophila Meinander, 1990:84.

Holotype male: USA, California, Riverside Co., south of Palm Desert, Boyd Desert Research Center, 19–21.VI.1978 (CAS).

DISTRIBUTION. — **USA**: CA (Meinander, 1990:84).

DILARIDAE

The dilarids, or pleasing lacewings, comprise a small family of tropical, moth-like lacewings which are rarely seen in North America. This family has broad, darkly-banded wings with considerable long pilosity on the wings, giving them a "hairy" appearance. Males have distinctive pectinate antennae. However, unlike most moths, the eyes are very large in proportion to the rest of the head. Females bear ovipositors which are recurved over the abdomen. Larvae are very elongate, and live under the bark of dead trees, where they are presumed to feed on beetle adults or larvae (Gurney, 1947). Tropical American species appear to be most abundant in the forest canopy as adults, and seem to emerge most frequently during the driest part of the year (Penny and Arias, 1981). Only two species are known from the U. S., both in the genus *Nallachius* Navás, 1909a, and although one species is rather widely distributed over eastern North America, it is seldom collected. A key to New World species can be found in Adams (1970).

Nallachius Navás, 1909a:666

Nallachius americanus (McLachlan), 1881:55 [*Dilar*].

Holotype female: USA, Kentucky, Bee Spring, VI.1874, Sanborn (MCZ).

TAXONOMY. — To *Nallachius* (see Navás, 1909a:669).

DISTRIBUTION. — USA: GA⁵, IN⁴, KY¹, MD², SC⁵, TX³, VA² (¹McLachlan, 1881:55; ²Carpenter, 1940:274; ³Stange, 1961b:144; ⁴Lawson & McCafferty, 1984:130; ⁵Hoffman, 1990:155).

Nallachius pulchellus (Banks), 1938c:289 [*Dilar*].

Male and female syntypes: Cuba, Soledad (Cienfuegos), 4.V.1930, P. J. Darlington, Jr. (MCZ).

TAXONOMY. — To *Nallachius* (see Carpenter, 1940:274).

DISTRIBUTION. — USA: AZ (Carpenter, 1940:275).

HEMEROBIIDAE

Hemerobiidae, or brown lacewings, comprise one of the more commonly encountered families of Neuroptera. Adults are predominantly brown

or black in coloration. They can be characterized as having the Rs and MA fused with R in the forewing to give the appearance of having multiple radial sectors. The number of these apparent radial sectors is important in recognizing individual genera. They are rather small insects, and individuals of the genus *Symphorobius* can have forewing length 2–3 mm. Adults are most abundant on trees and bushes, although some groups, most notably *Micromus*, can be found on grasses. Both adults and larvae feed on soft-bodied insects. The genus *Symphorobius* was revised by Oswald (1988), and he has dealt with the family level classification (Oswald, 1993). The Canadian species have been redescribed by Kevan and Klimaszewski (1986, 1987) and Klimaszewski and Kevan (1985, 1987a, 1987b, 1988a, 1988b, 1989, 1990a, 1990b).

HEMEROBIINAE

Hemerobius Linnaeus, 1758:549

Hemerobius alpestris Banks, 1908a:261.

Holotype male: USA, Colorado, Sugar Loaf Mountain, 13.V, S. A. Rohwer (MCZ).

DISTRIBUTION. — USA: AZ², CO¹ (¹Banks, 1908a:261; ²Carpenter, 1940:208).

Hemerobius bistrigatus Currie, 1904a:79.

Holotype female: USA, California, Humboldt Co., Little River, 31.V.1903 (USNM).

DISTRIBUTION. — CAN: BC², USA: CA¹, ID², OR² (¹Currie, 1904a:79; ²Carpenter, 1940:208).

Hemerobius conjunctus Fitch, 1855:798.

Holotype male: Kelson's Cabin, 7.VII (MCZ).

= *Hemerobius citrinus* Hagen, 1861:204. Holotype (male): America Septentrionalis, Knoch (HMB).

= *Hemerobius venustus* Banks, 1897a:25. Holotype female: USA, New Hampshire, Mount Washington, N. Banks (MCZ).

= *Hemerobius cockerelli* Banks, 1901b:286. Holotype male: USA, New Mexico, Las Vegas Range, 11000 ft., Cockerell (MCZ).

= *Hemerobius caudelli* Currie, 1904b:87. Holotype female: Canada, British Columbia, London Hill Mine, Bear Lake, 7000 ft., 29.VII.1903 (USNM).

= *Hemerobius glacialis* Currie, 1904b:88. Holotype female: Canada, British Columbia,

Kokanee Mountain, 9000 ft., 10.VIII.1903 (USNM).

TAXONOMY. — *H. venustus* = *H. conjunctus*, *H. caudelli* = *H. cockerelli* (see Banks, 1905c:49); *H. citrinus* = *H. conjunctus*, *H. glacialis* = *H. conjunctus*, *H. cockerelli* = *H. conjunctus* (see Carpenter, 1940:209). Carpenter, 1940:209 considered the single Fitch specimen of *H. conjunctus* at MCZ to be the holotype. Klimaszewski and Kevan (1985:40) rejected this point of view and designated this specimen as lectotype. As there is no evidence of additional specimens in the original type series, we agree with Carpenter and herein list it as holotype.

DISTRIBUTION. — **CAN:** AB⁶, BC³, LB⁶, MB¹⁰, NF⁶, NS⁶, ON⁶, PE⁶, PQ⁶, SK⁶, YT¹⁰, **USA:** AK⁶, CO⁶, IN⁹, ME⁶, MN⁷, MT⁶, NC⁵, NH¹, NM², NY⁴, TN⁶, VT⁶, WS⁸, WY⁶ (¹Banks, 1897a:25, as *H. venustus*; ²Banks, 1901b:286, as *H. cockerelli*; ³Currie, 1904b:87, as *H. caudelli*; ⁴Leonard, 1928:39; ⁵Brimley, 1938:29; ⁶Carpenter, 1940:209; ⁷Parfin, 1952:423; ⁸Throne, 1971b:80; ⁹Lawson & McCafferty, 1984:130; ¹⁰Klimaszewski & Kevan, 1985:39).

Hemerobius costalis Carpenter, 1940:213.

Holotype male: USA, Maine, Eastport, 14.VII.1909, C. W. Johnson (MCZ).

DISTRIBUTION. — **CAN:** AB¹, BC¹, NS¹, NT¹, ON¹, PQ¹, SK³, YT², **USA:** AK¹, CO¹, MA¹, ME¹, NH¹, VT¹ (¹Carpenter, 1940:213; ²Klimaszewski & Kevan, 1985:69; ³Klimaszewski & Kevan, 1989:205).

Hemerobius discretus Navás, 1917a:5.

Lectotype female: USA, New Mexico, Jemez Springs, 16.VI.1916 (MZB).

= *Hemerobius neglectus* Hagen, 1861:206. Type(s) unknown: Mexico, Ehrenberg (ZMB).

= *Hemerobius mexicanus* Navás, 1921:123.

= *Hemerobius pallidulus* Kimmins, 1928:366.

= *Hemerobius neadelphus* Gurney, 1948:214.

Holotype male: Canada, British Columbia, Kaslo, 4.VII.1903, R. P. Currie (USNM).

TAXONOMY. — *H. discretus* = *H. pacificus* (see Carpenter, 1940:204). *H. discretus* not equal *H. pacificus*; *H. mexicanus* = *H. discretus*, *H. neglectus* = *H. discretus*, *H. pallidulus* = *H. discretus* (see Monserrat, 1996:416–417). *H. neadelphus* = *H. discretus* (Penny, **NEW SYNONYMY**).

DISTRIBUTION. — **CAN:** BC¹, **USA:** AZ³, CA², CO³, LA³, NM³, OK³, OR¹, TX³, UT²

(¹Gurney, 1948:214; ²Klimaszewski & Kevan, 1985:25; ³Monserrat, 1996:421).

Hemerobius dorsatus Banks, 1904a:61.

Lectotype male: USA, Colorado, Veta Pass, 1.VII (MCZ).

TAXONOMY. — Lectotype designated (see Carpenter, 1940:211).

DISTRIBUTION. — **CAN:** AB², BC², NT², ON³, PQ³, SA², YT³, **USA:** AK², CO¹, UT² (¹Banks, 1904a:61; ²Carpenter, 1940:212; ³Klimaszewski & Kevan, 1985:66).

Hemerobius humulinus Linnaeus, 1758:550.

Type lost.

= *Hemerobius crispus* Stephens, 1836:112.

Type lost: England.

= *Hemerobius maculatus* Wesmael, 1841:215.

Type(s) (unknown): Belgium, Brussels (IRSCB).

= *Hemerobius obliteratus* Walker, 1853:289.

Holotype male: USA, Georgia (BMNH).

= *Hemerobius castaneae* Fitch, 1855:798.

Holotype female: USA (MCZ).

= *Hemerobius tutatrix* Fitch, 1855:798. Holotype male: USA (MCZ).

= *Hemerobius gossypii* Ashmead, 1895:27.

Lectotype female: USA, Georgia (BMNH).

= *Hemerobius algonquinus* Banks, 1924:429.

Lectotype female: USA, New Hampshire, Hampton, 6.III.1904, S. A. Shaw (MCZ).

= *Hemerobius obtusus* Nakahara, 1954:42.

Holotype male: Japan, Mejiro, Tokyo (Nakahara Collection).

= *Hemerobius shikotanus* Kuwayama, 1956:77. Holotype female: Kurile Islands, Shikotan Island, Shakotan, 23–27.VI.1935, Y. Sugihara (Kuwayama Collection).

TAXONOMY. — *H. humuli* = *H. humulinus*, *H. maculatus* = *H. humulinus*, *H. castaneae* = *H. humulinus*, *H. tutatrix* = *H. humulinus*, *H. gossypii* = *H. humulinus*, *H. algonquinus* = *H. humulinus*, *H. obliteratus* = *H. humulinus* (see Carpenter, 1940:201); *H. shikotanus* = *H. humulinus* (see Makarkin, 1985:105).

DISTRIBUTION. — **CAN:** AB¹², BC⁶, MB⁶, NF⁶, NS⁶, ON⁶, PQ⁶, SK⁶, YT¹², **USA:** AK¹⁰, CO⁶, DC³, FL⁶, GA¹, IN⁴, KS³, MD¹³, ME⁷, MI³, MN⁹, MO⁸, NC⁵, ND⁶, NH³, NJ², NY², PA³, SD⁶, TN⁶, TX⁶, VA², WA¹⁰, WS¹¹ (¹Walker, 1853:289; ²Smith, 1900:56, as *H. castanea* and *H. tutatrix*; ³Banks, 1905c:32; ⁴Montgomery & Trippel, 1933:259; ⁵Brimley, 1938:29, as *H. humuli*; ⁶Carpenter, 1940:202;

⁷Procter, 1946:43; ⁸Froeschner, 1947:131; ⁹Parfin, 1952:423; ¹⁰Nakahara, 1966:212; ¹¹Throne, 1971b:80; ¹²Klimaszewski & Kevan, 1985:56; ¹³Monserrat, 1996:429).

Hemerobius kokaneeanus Currie, 1904b:86.

Holotype female: Canada, British Columbia, Kokanee Mountain, 9000 ft., 10.VIII.1903 (USNM).

= *Hemerobius hesperus* Banks, 1924:429. Lectotype female (abdomen missing): USA, California, Tahoe, Angora Pk., 10.VII.1915, E. P. Van Duzee (MCZ).

TAXONOMY. — *H. hesperus* = *H. kokaneeanus* (see Carpenter, 1940:206); lectotype designated for *H. hesperus* (see Klimaszewski & Kevan, 1985:30).

DISTRIBUTION. — CAN: BC¹, MB⁴, PQ², YT³, USA: AK⁵, CA², CO², MT², NV⁵, WA² (¹Currie, 1904b:85; ²Carpenter, 1940:206; ³Klimaszewski & Kevan, 1985:32; ⁴Klimaszewski & Kevan, 1989:205; ⁵Penny, **NEW STATE RECORDS**).

Hemerobius nigrans Carpenter, 1940:207.

Holotype male: Canada, British Columbia, Kamloops, Mount Lobo, 2.VI.1938, J. K. Jacob (CNC).

DISTRIBUTION. — CAN: BC¹, YT², USA: CA¹, CO¹, WY¹ (¹Carpenter, 1940:207; ²Klimaszewski & Kevan, 1985:36).

Hemerobius ovalis Carpenter, 1940:205.

Holotype male: USA, California, Claremont, C. F. Baker (MCZ).

DISTRIBUTION. — CAN: AB¹, BC¹, NF², PQ², YT², USA: AK¹, CA¹, OR¹, UT¹, WA¹, WY¹, (¹Carpenter, 1940:205; ²Klimaszewski & Kevan, 1985:28).

Hemerobius pacificus Banks, 1897a:24.

Lectotype male: USA, Washington, Olympia, T. Kincaid (MCZ).

= *Hemerobius pallescens* Currie, 1904a:80. Holotype female: USA, California, Humboldt Co., Fieldbrook, 30.V.1903 (USNM).

TAXONOMY. — *H. pallescens* = *H. pacificus* (see Banks, 1905c:49). Lectotype designated for *H. pacificus* (see Carpenter, 1940:204).

DISTRIBUTION. — CAN: AB⁴, BC⁴, MB⁵, SK⁴, USA: AK⁶, AZ⁴, CA², CO⁴, ID⁴, IN⁵, MT⁸, NM³, NV⁷, OR⁴, TX⁴, UT⁸, WA¹ (¹Banks, 1897a:24; ²Currie, 1904a:80; ³Navás, 1917a:5; ⁴Carpenter, 1940:204; ⁵Lawson & McCafferty, 1984:130; ⁶Klimaszewski & Kevan, 1985:23; ⁷

Monserrat, 1996:415; ⁸Penny, **NEW STATE RECORDS**).

REMARKS. — The Indiana record is probably in error. However, one of us (NDP) has seen a series of specimens of the closely related *H. neadelphus* labelled from northwestern Minnesota.

Hemerobius pinidum Fitch, 1855:799.

Holotype male: no locality data (MCZ).

= *Hemerobius hyalinatus* Fitch, 1855:799. Holotype male: no locality data (MCZ).

= *Hemerobius canadensis* Banks, 1897a:26. Holotype female: Canada, Quebec, Sherbrooke, October, L'Abbe, P. A. Bégin (MCZ).

= *Hemerobius kootenayensis* Currie, 1904b:88.

Holotype female: Canada, British Columbia, Kaslo, 17.VI.1903 (USNM).

TAXONOMY. — *H. canadensis* = *H. hyalinatus* (see Banks, 1905c:34); *H. kootenayensis* = *H. conjunctus* (see Carpenter, 1940:209); *H. hyalinatus* = *H. conjunctus* var. *pinidum* (see Carpenter, 1940:211); *H. kootenayensis* = *H. pinidum* (see Klimaszewski & Kevan, 1985:41); *H. pinidum* variety of *H. conjunctus* (see Carpenter, 1940:209); *H. pinidum* is valid species (see Throne, 1971b:81).

DISTRIBUTION. — CAN: AB⁶, BC³, PQ¹, USA: CO⁴, IN⁵, MA⁴, ME⁴, MN⁴, NH⁴, NJ², NY², WS⁴ (¹Banks, 1897a:26, as *H. canadensis*; ²Smith, 1900:56, as *H. pinidum* and *H. hyalinatus*; ³Currie, 1904b:88, as *H. kootenayensis*; ⁴Carpenter, 1940:211; ⁵Lawson & McCafferty, 1984:130; ⁶Klimaszewski & Kevan, 1985:42).

Hemerobius simulans Walker, 1853:285.

Holotype male: Canada, Hudson's Bay, St. Martin's Falls, Albany River (BMNH).

= *Hemerobius orotypus* Wallengren, 1870:155. Syntypes (number unknown): Sweden, regions of Dalarne, Norbotten and Västbotten; one syntype in BMNH, others may be in ZIL and NRS.

= *Hemerobius nevadensis* Banks, 1904a:61. Holotype female: USA, Nevada, Ormsby Co., 3.VII.1903, Baker (MCZ).

= *Hemerobius placidus* Banks, 1908a:260. Lectotype male: USA, New York, Lake Placid, 12.VIII.1904, E. C. Van Duzee (MCZ).

= *Hemerobius piceus* Navás, 1925e:2. Three male, four female syntypes: Russia, Kamchatka Peninsula (NRS).

TAXONOMY. — *H. orotypus* = *H. simulans* (see Kimmins, 1932:88); *H. placidus* = *H. simulans*, *H. nevadensis* = *H. simulans* (see Carpenter, 1940:212); *H. piceus* = *H. simulans* (see Tjeder, 1960:148); lectotype designated for *H. placidus* (see Klimaszewski & Kevan, 1985:60).

DISTRIBUTION. — CAN: AB³, BC³, MB⁵, NB³, NF³, NS⁵, ON³, PQ³, SK⁵, YT⁵, USA: AK³, CO⁴, MA³, ME³, MI³, NH³, NV¹, NY² (¹Banks, 1904a:61; ²Banks, 1908a:260; ³Carpenter, 1940:212; ⁴Nakahara, 1966:213; ⁵Klimaszewski & Kevan, 1985:63).

Hemerobius stigma Stephens, 1836:112.

Lectotype (without abdomen): England, near Ripley (BMNH).

= *Hemerobius irroratus* Stephens, 1836:111.

Lectotype (without abdomen): England, London metropolitan district (BMNH).

= *Hemerobius strigosus* Zetterstedt, 1840:1049. Type(s) (unknown): Lapponia-Upland-Ostrogoth-cania (ZIL).

= *Hemerobius limbatellus* Zetterstedt, 1840:1050. Type(s) (unknown): Lapponia meridional (ZIL).

= *Hemerobius limbatus* Wesmael, 1841:215. Type(s) (unknown): Belgium, Brussels (IRSNB).

= *Hemerobius crispus* Stephens, 1836:112. Single remaining syntype male: North America (BMNH).

= *Hemerobius stigmaterus* Fitch, 1855:797. Lectotype male: no locality data (MCZ).

= *Hemerobius moestus* Banks, 1897a:25. Holotype female: USA, Washington, Olympia, T. Kincaid (MCZ).

= *Hemerobius dyari* Currie, 1904b:85. Holotype female: Canada, British Columbia, Kaslo, 17.VII.1903 (USNM).

= *Hemerobius simplex* Banks, 1905c:32. Lectotype male: USA, Arizona, Prescott, 18.V.1902, Oslar (MCZ).

= *Hemerobius buyssoni* Navás, 1909b:217. Type(s) (unknown): France, La Bouboule (Puy-de-Dôme) (MNHN).

= *Hemerobius periphericus* Navás, 1913d:81. Type(s) (unknown): Spain, Escorial (depository of type unknown).

TAXONOMY. — *H. crispus* = *H. stigmaterus*, *H. moestus* = *H. stigmaterus*, *H. dyari* = *H. stigmaterus*, *H. simplex* = *H. stigmaterus* (see Carpenter, 1940:202); *H. irroratus* = *H. stigma*, *H. strigosus* = *H. stigma*, *H. limbatellus* = *H.*

stigma, *H. limbatus* = *H. stigma*, *H. stigmaterus* = *H. stigma*, *H. buyssoni* = *H. stigma*, *H. periphericus* = *H. stigma* (see Klimaszewski & Kevan, 1985:44); lectotype designated for *H. stigmaterus* (see Carpenter, 1940:202); lectotype designated for *H. simplex* (see Klimaszewski & Kevan, 1985:46).

DISTRIBUTION. — CAN: AB¹¹, BC³, LB⁶, MB¹¹, NF¹¹, NS¹¹, ON¹¹, PQ¹¹, SK¹¹, YT¹¹, USA: AK¹², AZ³, CA³, CO³, DC³, FL¹⁰, IA³, ID³, IN⁴, KS³, MD⁶, ME⁷, MI³, MN³, MO³, NC⁵, NJ², NM³, NV³, NY², TX⁹, WA¹, WS⁸ (¹Banks, 1897a:25; ²Smith, 1900:56, as *H. stigmaterus*; ³Banks, 1905c:49; ⁴Montgomery & Trippel, 1933:259; ⁵Brimley, 1938:29, as *H. stigmaterus*; ⁶Carpenter, 1940:203; ⁷Procter, 1946:43; ⁸Throne, 1971b:79; ⁹Agnew et al., 1981:16; ¹⁰MacLeod & Stange, 1981:1; ¹¹Klimaszewski & Kevan, 1985:49; ¹²Klimaszewski & Kevan, 1989:205).

REMARKS. — *Hemerobius californicus* Banks, 1905a:90 (nomen nudum).

Wesmaelius Krüger, 1922:170

Wesmaelius brunneus (Banks), 1920:333 [*Boriomyia*].

Holotype female: USA, Montana, Midvale, C. E. Brown (MCZ).

TAXONOMY. — To *Kimminsia* (see Carpenter, 1940:221); to *Wesmaelius* (see Kevan & Klimaszewski, 1986:19).

DISTRIBUTION. — CAN: AB², BC⁴, YT⁴, USA: AK³, CA², CO², MT¹, UT³, WA², WY² (¹Banks, 1920:333; ²Carpenter, 1940:222; ³Parfin, 1956:208; ⁴Klimaszewski & Kevan, 1987b:256).

Wesmaelius coloradensis (Banks), 1897a:26 [*Hemerobius*].

Lectotype male: USA, Colorado, Fort Collins, F. C. Baker (MCZ).

TAXONOMY. — To *Boriomyia* (see Banks, 1905c:38); to *Kimminsia* (see Carpenter, 1940:217); to *Wesmaelius* (see Kevan & Klimaszewski, 1986:19); lectotype designated (see Carpenter, 1940:217).

DISTRIBUTION. — CAN: AB², BC², YT⁴, USA: CA², CO¹, NV³, OR², UT², WA³, WY² (¹Banks, 1897a:26; ²Carpenter, 1940:217; ³Parfin, 1956:208; ⁴Klimaszewski & Kevan, 1987b:252).

Wesmaelius constrictus (Parfin), 1956:203 [*Kimminsia*].

Holotype male: USA, Alaska, 10–15 miles below Gulkana Lake along Gulkana River, 27.VI–20.VII.1955, G. O. Schumann (USNM).

= *Kimminsia olympica* Nakahara, 1966:216. Holotype male: USA, Washington, Deer Park, 5,400 ft., 17.VII.1948, C. P. Alexander (USNM).

TAXONOMY. — To *Wesmaelius*; *K. olympica* = *W. constrictus* (see Kevan & Klimaszewski, 1986:19).

DISTRIBUTION. — USA: AK¹, WA² (¹Parfin, 1956:203; ²Nakahara, 1966:216, as *K. olympica*).

Wesmaelius fumatus (Carpenter), 1940:225 [*Kimminsia*].

Holotype male: USA, Colorado, Boulder Co., Long's Peak Inn, 9000 ft., 13.VII.1926, E. C. Van Dyke (CAS).

TAXONOMY. — To *Wesmaelius* (see Kevan & Klimaszewski, 1986:19).

DISTRIBUTION. — CAN: AB², USA: CO¹ (¹Carpenter, 1940:225; ²Klimaszewski & Kevan, 1987b:258).

Wesmaelius furcatus (Banks), 1935:55 [*Boriomyia*].

Holotype male: USA, Colorado, Argentine Pass, T. D. A. Cockerell (MCZ).

TAXONOMY. — To *Kimminsia* (see Carpenter, 1940:219); to *Wesmaelius* (see Kevan & Klimaszewski, 1986:19).

DISTRIBUTION. — CAN: AB², BC³, MB³, NT³, YT³, USA: AK³, CA³, CO¹ (¹Banks, 1935:55; ²Carpenter, 1940:219; ³Klimaszewski & Kevan, 1987b:254).

Wesmaelius involutus (Carpenter), 1940:21 [*Kimminsia*].

Holotype male: Canada, Alberta, Banff, Rundle Mountain, 5000–7000 ft., 25.VI.1925, Owen Bryant (MCZ).

TAXONOMY. — To *Wesmaelius* (see Kevan & Klimaszewski, 1986:19).

DISTRIBUTION. — CAN: AB¹, BC¹, NF³, NS³, NT³, PQ³, YU¹, USA: AK², CO¹, ID¹, UT², WY¹ (¹Carpenter, 1940:220; ²Parfin, 1956:209; ³Klimaszewski & Kevan, 1987a:175).

Wesmaelius longifrons (Walker), 1853:291 [*Hemerobius*].

Holotype female: Canada, Ontario, Albany River, St. Martin's Falls (BMNH).

= *Hemerobius alternatus* Fitch, 1855:797. Holotype female: USA, New York (MCZ).

= *Hemerobius transversus* Banks, 1904a:61. Holotype male: USA, Colorado, Denver (MCZ).

= *Allotomyia borealis* Banks, 1935:56. Holotype male: USA, New Hampshire, Hillsboro, 11.VI (MCZ).

TAXONOMY. — To *Boriomyia* (see Banks, 1905c:37); to *Wesmaelius* (see Carpenter, 1940:226).

DISTRIBUTION. — CAN: AB³, BC³, MB³, NB⁵, NF⁵, NS³, ON¹, PQ³, SK³, YT⁵, USA: AK³, AZ³, CO³, ME³, MI³, MN⁴, NH³, NY², OR³, UT³, VT³, WA³, WY³ (¹Walker, 1853:291; ²Smith, 1900:55; ³Carpenter, 1940:226; ⁴Parfin, 1952:423; ⁵Klimaszewski & Kevan, 1987b:266).

Wesmaelius longipennis (Banks), 1920:333 [*Boriomyia*].

Holotype female: USA, California, Alameda Co., Berkeley, 1.IV.1915 (MCZ).

TAXONOMY. — To *Kimminsia* (see Carpenter, 1940:221); to *Wesmaelius* (see Klimaszewski & Kevan, 1987a:163).

DISTRIBUTION. — USA: CA (Banks, 1920:333).

Wesmaelius nervosus (Fabricius), 1793:85 [*Hemerobius*].

Two syntypes of unknown sex: France (Kiel). = *Hemerobius betulinus* Ström, 1788:387 (nomen dubium). Type(s) lost.

= *Hemerobius nebulosus* Stephens, 1836:107. Type(s) (sex unknown): England, presumably near London (depository unknown).

= *Hemerobius conspersus* Burmeister, 1839:974. Type(s) (sex unknown): Germany, Halle (Halle).

= *Mucropalpus distinctus* Rambur, 1842:421. Type(s) (sex unknown): Spain, Andalusia (depository unknown).

= *Hemerobius disjunctus* Banks, 1897:25. Lectotype female: USA, New Hampshire, Mount Washington (MCZ).

= *Hemerobius frostinus* Navás, 1933b:109. Type(s) (sex unknown): USA, Massachusetts, Framingham (depository unknown).

= *Kimminsia alexanderi* Nakahara, 1966:217. Holotype male: USA, Alaska, Haines Highway, M. P., 5.VII.1952, C. P. Alexander (USNM).

= *Kimminsia melaleuca* Nakahara, 1966:219. Holotype female: Canada, Yukon Territory,

Alaska Highway, M. P. 320, 2.VII.1952, C. P. Alexander (USNM).

TAXONOMY. — To *Boriomyia* (see Banks, 1905c:29); to *Kimminsia* (see Hale Carpenter, 1938:532); to *Wesmaelius* (see Tjeder, 1967:5); *H. conspersus* = *H. nervosus* (see Wallengren, 1871:37); *H. nebulosus* = *B. betulina*, *M. distinctus* = *B. betulina* (see Killington, 1937:5); *H. disjunctus* = *W. nervosus*, *H. frostinus* = *W. nervosus*, *K. alexanderi* = *W. nervosus*, *K. melaleuca* = *W. nervosus* (Kevan & Klimaszewski, 1986:11); lectotype designated for *H. disjunctus* (see Klimaszewski & Kevan, 1987a:169).

DISTRIBUTION. — CAN: BC⁵, MB⁴, NB⁸, NF⁸, NS⁴, NT⁸, ON⁴, PQ⁴, SK⁴, USA: AK⁴, CO⁴, ID⁴, IN⁷, MA³, ME⁴, MI⁵, MT⁴, NC⁴, NH¹, NY², OR⁵, RI⁵, UT⁵, WS⁶, WY⁴ (¹Banks, 1897:25; ²Leonard, 1928:40; ³Navás, 1933b:109; ⁴Carpenter, 1940:216; ⁵Parfin, 1956:208, as *K. disjuncta*; ⁶Throne, 1971b:84, as *K. disjuncta*; ⁷Lawson & McCafferty, 1984:130, as *K. disjuncta*; ⁸Klimaszewski & Kevan, 1987a:172).

Wesmaelius posticatus (Banks), 1905c:39 [*Boriomyia*].

Holotype female: USA, south Utah, VII.1900 (MCZ).

TAXONOMY. — To *Kimminsia* (see Carpenter, 1940:218); to *Wesmaelius* (see Kevan & Klimaszewski, 1986:19).

DISTRIBUTION. — CAN: AB², YT³, USA: AZ², CA³, CO², NM², UT¹, (¹Banks, 1905c:39; ²Carpenter, 1940:219; ³Nakahara, 1966:217).

Wesmaelius pretiosus (Banks), 1908a:260 [*Boriomyia*].

Lectotype male: USA, Colorado, Golden, 22.VII.1907, Oslar (MCZ).

TAXONOMY. — To *Kimminsia* (see Carpenter, 1940:223); to *Wesmaelius* (see Kevan & Klimaszewski, 1986:19; lectotype designated (see Carpenter, 1940:223).

DISTRIBUTION. — CAN: BC⁵, PQ⁵, USA: AZ², CO¹, NE², NV⁶, OR², UT³, WS⁴ (¹Banks, 1908a:260; ²Carpenter, 1940:223; ³Parfin, 1956:209; ⁴Throne, 1971b:84; ⁵Klimaszewski & Kevan, 1987b:259; ⁶Penny, NEW STATE RECORD).

Wesmaelius schwarzi (Banks), 1903b:24 [*Hemerobius*].

Holotype female: USA, Arizona, Williams, 23.VII, H. S. Barber (USNM).

= *Boriomyia ultima* Banks, 1930a:223 Holotype female: USA, California, Angora Park, Tahoe, E. P. Van Duzee (MCZ).

TAXONOMY. — To *Boriomyia* (see Banks, 1905c:38); to *Kimminsia* (see Carpenter, 1940:223); to *Wesmaelius* (see Kevan & Klimaszewski, 1986:19); *B. ultima* = *K. schwarzi* (see Carpenter, 1940:223).

DISTRIBUTION. — USA: AZ¹, CA², CO², NM² (¹Banks, 1903b:241; Carpenter, 1940:224).

Wesmaelius subnebulosus (Stephens), 1836:107 [*Hemerobius*].

Type(s) (sex unknown): England, presumably near London (depository unknown).

= *Hemerobius fuscus* Stephens, 1836:107. Type(s) (sex unknown): England, presumably near London (depository unknown).

= *Boriomyia maorica* Tillyard, 1923:221. Holotype female: New Zealand, Dunedin, George Street (CIC).

TAXONOMY. — To *Boriomyia* (see Banks, 1905c:29); to *Kimminsia* (see Killington, 1937:255); to *Wesmaelius* (see Tjeder, 1967:5); *H. fuscus* = *H. subnebulosus*, *H. nebulosus* = *H. subnebulosus* (see Wallengren, 1871:36); *B. maorica* = *W. subnebulosus* (see Wise, 1973:181, 182).

DISTRIBUTION. — CAN: NS³, ON³, PQ³, USA: CT¹, IN², NY¹ (¹Parfin, 1956:206; ²Lawson & McCafferty, 1984:130; ³Klimaszewski & Kevan, 1987b:248).

Wesmaelius yukonensis Klimaszewski & Kevan, 1987b:262.

Holotype male: Canada, Yukon Territory, km 1,683 Alaska Highway, 7.VI.1979 (ROM).

DISTRIBUTION. — CAN: YT (Klimaszewski & Kevan, 1987b:263).

MEGALOMINAE

Megalomus Rambur, 1842:418

Megalomus angulatus Carpenter, 1940:242.

Holotype male: USA, New York, Ithaca, 3.IX.1939, J. S. Franclemont (Cornell).

DISTRIBUTION. — CAN: ON, USA: AZ, ME, NH, NY (Carpenter, 1940:242).

Megalomus carpenteri Penny, Adams & Stange, NEW NAME.

= *Hemerobius speciosus* (Banks), 1904a:62. A junior primary homonym of *Hemerobius specio-*

sus Linnaeus, 1758:551 (now *Palpares speciosus*). Holotype female: USA, Maryland, Plummer's Island, 9.IX (MCZ).

TAXONOMY. — To *Boriomyia* (see Banks, 1904c:209); to *Allotomyia* (see Banks, 1930a:224); returned to *Boriomyia* (see Carpenter, 1940:245); to *Megalomus* (see Oswald, 1993:241).

DISTRIBUTION. — USA: FL², MD¹, VA² (¹Banks, 1904a:62; ²Carpenter, 1940:245).

Megalomus fidelis (Banks), 1897:27 [*Hemerobius*].

Holotype female: USA, New York, Gowanda, 25.VI, E. P. Van Duzee (MCZ).

TAXONOMY. — To *Boriomyia* (see Banks, 1904c:209); to *Allotomyia* (see Banks, 1930a:224); returned to *Boriomyia* (see Carpenter, 1940:244); to *Megalomus* (see Oswald, 1993:239).

DISTRIBUTION. — CAN: BC⁴, ON⁴, USA: DC⁴, FL⁶, IL⁴, IN⁷, MA⁴, MD⁴, MN⁵, MS⁴, NC³, NH⁴, NJ², NY¹, PA⁴, SC⁴, TX⁴, VA⁴, WV⁴ (¹Banks, 1897:27; ²Smith, 1900:56; ³Brimley, 1938:29; ⁴Carpenter, 1940:244; ⁵Parfin, 1952:423, as *Boriomyia*; ⁶MacLeod & Stange, 1981:1, as *Boriomyia*; ⁷Lawson & McCafferty, 1984:130).

Megalomus minor Banks, 1905a:90.

Lectotype male: USA, Nevada, Ormsby Co., G. F. Baker (MCZ).

TAXONOMY. — Lectotype designated by Carpenter, 1940:242.

DISTRIBUTION. — USA: AL², CA², MS², NV¹ (¹Banks, 1905a:90; ²Penny, NEW STATE RECORDS).

Megalomus moestus Banks, 1895b:314.

Holotype (missing abdomen): USA, New Mexico, Santa Fé, VII, T. D. A. Cockerell (MCZ).

= *Megalomus latus* Banks, 1903b:240.

Holotype female: USA, Arizona, Williams (USNM).

TAXONOMY. — *M. latus* = *M. moestus* (see Carpenter, 1940:241).

DISTRIBUTION. — USA: AZ², CA², CO², NM¹, TX², UT², WY² (¹Banks, 1895b:314; ²Carpenter, 1940:241).

Megalomus parvulus Kimmins, 1935:614.

Holotype male: West Indies, St. Vincent Island, windward side, H. H. Smith (BMNH).

DISTRIBUTION. — USA: FL (Stange, 1995:7).

Megalomus uniformis Banks, 1935:56.

Holotype female: USA, Texas, Brownsville, VI, F. H. Snow (MCZ).

DISTRIBUTION. — USA: TX (Banks, 1935:56).

MICROMINAE

Micromus Rambur, 1842:416

Micromus angulatus (Stephens), 1836:106 [*Hemerobius*].

Holotype female: no locality data (BMNH).

= *Hemerobius villosus* Zetterstedt, 1840:1050 (nomen nudum). Type(s) (sex unknown): (locality unknown) (Lund).

= *Hemerobius intricatus* Wesmael, 1841:214. Type(s) (sex unknown): (locality unknown) (IRSNB).

= *Micromus tendinosus* Rambur, 1842:417. Type(s) (sex unknown): Sardinia (MNHN).

= *Hemerobius lineatus* Göszy, 1852:345. Type(s) (sex unknown): no locality data (probably Vienna).

= *Micromus jonas* Needham, 1905:15. Type(s) (sex unknown): USA, New York (depository unknown).

TAXONOMY. — To *Micromus*; *H. villosus* = *M. angulatus*, *H. intricatus* = *M. angulatus*, *M. tendinosus* = *M. angulatus*, *H. lineatus* = *M. angulatus*, *M. aphidivorus* = *M. angulatus* (see Hagen, 1889:280); *M. jonas* = *M. angulatus* (see Carpenter, 1940:247).

DISTRIBUTION. — CAN: AB², BC², MB², NF³, NS³, NT³, ON², PQ², SK², YT², USA: CO², ME², MI², MN², NH², NY¹, SD², VT², WS² (¹Leonard, 1928:40; ²Carpenter, 1940:247; Klimaszewski & Kevan, 1990b:65).

Micromus borealis Klimaszewski & Kevan, 1988:49.

DISTRIBUTION. — CAN: AB, BC, YT, USA: AK (Klimaszewski & Kevan, 1990b:65).

Micromus montanus Hagen, 1886:279.

Lectotype male: USA, Massachusetts, Natick (MCZ).

DISTRIBUTION. — CAN: AB⁴, BC⁴, NS⁴, PQ⁴, SK⁷, USA: AZ⁴, CA⁴, CO⁴, CT⁴, ID⁴, MA¹, ME⁵, NC³, ND⁴, NH⁷, NV⁴, NY², TN⁴, UT⁴, VT⁷, WA⁴, WS⁶ (¹Hagen, 1889:279; ²Leonard, 1928:40; ³Brimley, 1938:30; ⁴Car-

penter, 1940:249; ⁵Procter, 1946:43; ⁶Throne, 1971b:83; ⁷Klimaszewski & Kevan, 1990b:64). **Micromus posticus** (Walker), 1853:283 [*Hemerobius*].

Male and female syntypes: USA, Georgia (BMNH).

= *Micromus insipidus* Hagen, 1861:199. Syntypes (sex unknown): USA, New York; Pennsylvania, Philadelphia (MCZ).

= *Micromus sobrius* Hagen, 1861:199. Holotype (sex unknown): USA, Illinois, Chicago, Osten Sacken (MCZ).

TAXONOMY. — McLachlan, 1867:271 (*M. insipidus* = *M. posticus*, *M. sobrius* = *M. posticus* (see McLachlan, 1867:271).

DISTRIBUTION. — **CAN:** BC ¹¹, ON ⁷, PQ ¹¹, YT ¹¹, **USA:** AZ ⁷, CO ⁷, CT ¹¹, FL ⁷, GA ¹, IA ¹², IL ², IN ⁶, KS ⁵, MA ³, ME ⁸, MN ⁷, MO ⁹, NC ³, ND ⁷, NE ⁷, NJ ⁴, NY ², OH ¹², PA ², TX ⁷, VA ¹¹, WA ¹¹, WS ¹⁰ (¹Walker, 1853:283; ²Hagen, 1861:199, 200; ³Hagen, 1889:286, as *M. insipidus*; ⁴Smith, 1900:56; ⁵Smith, 1925:167; ⁶Montgomery & Trippel, 1933:259; ⁷Carpenter, 1940:248; ⁸Procter, 1946:43; ⁹Froeschner, 1947:131; ¹⁰Throne, 1971b:82; ¹¹Klimaszewski & Kevan, 1990b:65; ¹²Penny, **NEW STATE RECORDS**).

Micromus remiformis Oswald, 1987:1.

Holotype male: USA, California, Madera Co., 4.75 miles east southeast of Fish Camp, 6400 ft., 9.VIII.1971, H. B. Leech (CAS).

DISTRIBUTION. — **USA:** CA, ID, NV, OR, UT (Oswald, 1987:3).

Micromus subanticus (Walker), 1853:282 [*Hemerobius*].

Holotype male: USA, East Florida, St. John's Bluff (BMNH).

= *Micromus angustus* Hagen, 1889:287. Seven syntypes: USA, Florida and North Carolina (MCZ and CNC).

= *Micromus nesoticus* Navás, 1914b:16. Holotype (sex unknown): USA, New York, Long Island, Yaphank (MZB).

= *Micromus haitiensis* Smith, 1931:800. Holotype female: Haiti, Petionville near Port-au-Prince, 17.II.1930, H. L. Dozier (MCZ).

TAXONOMY. — To *Micromus* (see Banks, 1905c:46); Carpenter, 1940:250, 251 (*M. angustus* = *M. subanticus*, *M. nesoticus* = *M. subanticus* (see Carpenter, 1940:250, 251); *M. haitiensis* = *M. subanticus* (see Monserrat, 1993:511).

DISTRIBUTION. — **CAN:** BC ¹¹, MB ¹¹, ON ¹¹, PQ ¹¹, **USA:** AZ ⁵, CA ⁵, FL ¹, IA ¹¹, IL ¹¹, IN ¹⁰, KS ¹¹, LA ², MA ⁵, MN ⁷, MO ⁶, NC ⁴, NV ⁵, NY ³, OH ¹², SC ¹², TX ⁹, VA ², WS ⁸ (¹Walker, 1853:282; ²Banks, 1905c:46; ³Leonard, 1928:40; ⁴Brimley, 1938:30; ⁵Carpenter, 1940:250, 251; ⁶Froeschner, 1947:131; ⁷Parfin, 1952:423; ⁸Throne, 1971b:82; ⁹Agnew et al., 1981:16; ¹⁰Lawson & McCafferty, 1984:130; ¹¹Klimaszewski & Kevan, 1990b:65; ¹²Monserrat, 1993:511).

Micromus variegatus (Fabricius, 1793:85) [*Hemerobius*].

Type(s): location unknown.

DISTRIBUTION. — **CAN:** BC (Klimaszewski & Kevan, 1990b:66).

NOTE. — This species appears to be established on Galiano Island, off the west coast of British Columbia, Canada. Klimaszewski and Kevan suspect this to be an introduction from Japan.

Micromus variolosus Hagen, 1886:284.

Holotype female: USA, Colorado, Denver (MCZ).

DISTRIBUTION. — **CAN:** BC ³, SK ⁶, YT ⁶, **USA:** AZ ³, CA ³, CO ¹, ID ³, IN ⁵, KS ², MN ⁴, NM ³, NV ³, OR ³, UT ³, WA ³, WY ³ (¹Hagen, 1886:284; ²Smith, 1925:167; ³Carpenter, 1940:251; ⁴Parfin, 1952:423; ⁵Lawson & McCafferty, 1984:130; ⁶Klimaszewski & Kevan, 1990b:65).

NOTIOBIELLINAE

Psectra Hagen, 1866:376, 458

Psectra diptera (Burmeister), 1839:973 [*Hemerobius*].

Holotype male: Germany, Saxony, near Leipzig (Halle).

= *Hemerobius delicatulus* Fitch, 1855:800. Two syntypes: USA, Illinois (MCZ).

= *Psectra buenoi* Navás, 1909b:218. Five syntypes (1 male, 4 females): USA, New Jersey, Westfield, 5.VIII.1904; New York, Putnam Co., 5.IX.1903 (MZB).

TAXONOMY. — To *Psectra* (see Hagen, 1866:376); *H. delicatulus* = *P. diptera*, *P. buenoi* = *P. diptera* (see Carpenter, 1940:252).

DISTRIBUTION. — **CAN:** NF ⁷, ON ³, **USA:** IA ⁸, IL ¹, IN ⁶, MI ³, MN ⁴, NY ², VA ³, WS ⁵, WV ³

(¹Fitch, 1855:800; ²Leonard, 1928:39; ³Carpenter, 1940:252; ⁴Parfin, 1952:423; ⁵Throne, 1971b:84; ⁶Lawson & McCafferty, 1984:130; ⁷Kevan and Klimaszewski, 1986:9; ⁸Penny, **NEW STATE RECORD**).

SYMPHEROBIINAE

Symphorobius Banks, 1904c:209

Symphorobius amicus (Fitch), 1855:799 [*Hemerobius*].

Lectotype female: USA, New York, Washington Co., Salem, 20.VIII.1852, A. Fitch (MCZ).

= *Symphorobius buenoi* Navás, 1912a:198. Holotype (sex unknown): USA, New York, White Plains (MZB).

TAXONOMY. — To *Symphorobius* (see Banks, 1904c:209); *S. buenoi* = *S. amicus* (see Carpenter, 1940:230). See note (Oswald, 1988:451) for clarification of type status.

DISTRIBUTION. — **CAN:** NS⁴, ON⁴, PQ⁸, **USA:** AL⁸, AR⁴, AZ⁸, CO⁸, CT⁸, DC⁸, FL⁴, GA⁴, IA⁸, IL⁴, IN⁷, KS², LA⁴, MA⁴, MD⁸, ME⁵, MI⁴, MN⁴, MO⁶, MS⁸, NC³, NE⁴, NH⁴, NJ⁸, NY¹, OH⁴, OK⁴, PA⁸, SC⁸, TN⁸, TX⁴, VA⁴, VT⁴, WS⁴, WV⁴ (¹Fitch, 1855:799; ²Smith, 1925:167; ³Brimley, 1938:29; ⁴Carpenter, 1940:229; ⁵Procter, 1946:42; ⁶Froeschner, 1947:130; ⁷Lawson & McCafferty, 1984:130; ⁸Oswald, 1988:433).

Symphorobius angustus (Banks), 1904b:102 [*Hemerobius*].

Lectotype female: USA, New Mexico, Mesilla, A. P. Morse (MCZ).

= *Symphorobius tristis* Navás, 1914b:15. Type(s) (sex unknown): USA, New Mexico, Pecos (MZB).

= *Symphorobius stangei* Nakahara, 1960:16. Type (sex unknown): USA, California, San Bernardino Co., Barton Flats (probably in Nakahara Collection, Japan).

= *Symphorobius brunneus* Nakahara, 1966:207. Holotype male: USA, California, Mariposa Co., Miami Ranger Station (CAS).

TAXONOMY. — To *Symphorobius* (see Banks, 1905c:41); *S. tristis* = *S. angustus* (see Carpenter, 1940:233); *S. stangei* = *S. angustus*, *S. brunneus* = *S. angustus* (see Oswald, 1988:418).

DISTRIBUTION. — **CAN:** BC², **USA:** AZ³, CA³, CO², ID³, NM¹, NV³, OR³, SD³, UT²

(¹Banks, 1904b:102; ²Carpenter, 1940:233; ³Oswald, 1988:421).

Symphorobius arizonicus Banks, 1911:346.

Holotype female: USA, Arizona, Prescott, Osler (MCZ).

DISTRIBUTION. — **USA:** AZ¹, CA² (¹Banks, 1911:346; ²Oswald, 1988:408).

Symphorobius barberi (Banks), 1903b:241 [*Hemerobius*].

Two female syntypes: USA, Arizona, Williams, 20,21.VII, H. S. Barber and E. A. Schwarz (USNM).

TAXONOMY. — To *Symphorobius* (see Banks, 1905c:42).

DISTRIBUTION. — **USA:** AL⁸, AR³, AZ¹, CA³, CO³, FL³, IA⁸, IL⁸, IN⁷, KS², LA⁸, MD⁸, MN⁵, MO⁴, MS⁸, NC³, NJ⁸, NM³, OK³, OR³, PA³, SC³, TX³, UT³, VA³, WS⁶ (¹Banks, 1903b:241; ²Smith, 1925:166; ³Carpenter, 1940:236; ⁴Froeschner, 1947:130; ⁵Parfin, 1952:423; ⁶Throne, 1971b:83; ⁷Lawson & McCafferty, 1984:130; ⁸Oswald, 1988:429).

Symphorobius beameri Gurney, 1948:220.

Holotype male: USA, California, Lake Tahoe, 11.VIII.1940, R. H. Beamer (SEM).

DISTRIBUTION. — **USA:** AZ², CA¹, UT² (¹Gurney, 1948:220; ²Oswald, 1988:406).

Symphorobius bifasciatus Banks, 1911:347.

Holotype male: USA, Colorado, G. F. Baker (MCZ).

DISTRIBUTION. — **CAN:** AB², **USA:** CO¹, AZ³, CA³, UT³ (¹Banks, 1911:347; ²Carpenter, 1940:233; ³Oswald, 1988:423).

Symphorobius californicus Banks, 1911:346.

Lectotype male: USA, California, Pasadena (MCZ).

TAXONOMY. — Lectotype designated by Carpenter, 1940:232.

DISTRIBUTION. — **USA:** CA¹, WA² (¹Carpenter, 1940:232; ²Oswald, 1988:425).

Symphorobius constrictus Oswald, 1988:425.

Holotype male: USA, California, San Francisco, Lobos Creek, 16.II.1967, J. Powell (CAS).

DISTRIBUTION. — **USA:** CA (Oswald, 1988:427).

Symphorobius distinctus Carpenter, 1940:238.

Holotype male: USA, Colorado, Pingree Park, 18.VIII.1926, R. C. Smith (MCZ).

DISTRIBUTION. — **USA:** AZ², CO¹ (¹Carpenter, 1940:238; ²Oswald, 1988:418).

Symphorobius killingtoni Carpenter, 1940:238.

Holotype male: USA, Utah, Eureka, 13.VIII, T. Spaulding (MCZ).

= *Symphorobius texanus* Nakahara, 1966:209.

Holotype male: USA, Texas, Kerr Co., Kerrville, VI.1954, L. J. Bottimer (USNM).

TAXONOMY. — *S. texanus* = *S. killingtoni* (see Oswald, 1988:408).

DISTRIBUTION. — USA: AZ¹, CA¹, CO², ID¹, NM¹, NV², OR², TX¹, UT¹, WA² (¹Carpenter, 1940:239; ²Oswald, 1988:410).

Symphorobius limbus Carpenter, 1940:236.

Holotype male: USA, Texas, Alpine, 11.VII.1928, R. H. Beamer (SEM).

DISTRIBUTION. — USA: AZ², NM², TX¹ (¹Carpenter, 1940:236; ²Oswald, 1988:416).

Symphorobius occidentalis (Fitch), 1855:799 [*Hemerobius*].

Holotype (sex unknown): USA, Illinois, Henderson River, 2.X.1854, A. Fitch (lost).

TAXONOMY. — To *Symphorobius* (see Banks, 1905c:40).

DISTRIBUTION. — USA: AL¹⁰, AR⁴, DC⁴, FL⁹, GA¹⁰, IL¹, IN⁸, KS², LA¹⁰, MO⁵, NC³, NY¹⁰, OH¹⁰, PA¹⁰, TX⁷, VA¹⁰, WS⁶ (¹Fitch, 1855:799; ²Banks, 1905c:40; ³Brimley, 1938:29; ⁴Carpenter, 1940:231; ⁵Froeschner, 1947:130; ⁶Throne, 1971b:83; ⁷Agnew et al., 1981:16; ⁸Lawson & McCafferty, 1984:130; ⁹MacLeod & Stange, 1981:2; ¹⁰Oswald, 1988:415).

Symphorobius perparvus (McLachlan), 1869:22 [*Hemerobius*].

Lectotype male: USA, Texas, Bosque, G. W. Belfrage (BMNH).

= *Symphorobius sparsus* Banks, 1911:346.

Holotype female: USA, Kansas (MCZ).

TAXONOMY. — To *Symphorobius* (see Banks, 1905c:41); *S. sparsus* = *S. perparvus* (see Carpenter, 1940:238); lectotype designated by Oswald, 1988:403.

DISTRIBUTION. — CAN: SK³, USA: AZ³, CA³, CO³, NM³, OK³, IA⁴, KS², MN⁴, MT⁴, NE⁴, NV⁴, OR⁴, SD⁴, TX¹, UT⁴, WY⁴ (¹McLachlan, 1869:22; ²Banks, 1911:346; ³Carpenter, 1940:238; ⁴Oswald, 1988:405).

Symphorobius pictus (Banks), 1904a:62 [*Hemerobius*].

Lectotype female: USA, southwestern Colorado, Oslar (MCZ).

TAXONOMY. — To *Symphorobius* (see Banks, 1905c:41); lectotype designated by Carpenter, 1940:235.

DISTRIBUTION. — USA: AZ², CA², CO¹, NM², NV² (¹Banks, 1904a:62; ²Oswald, 1988:413).

Symphorobius quadricuspis Oswald, 1988:421.

Holotype male: USA, Arizona, Cochise Co., Southwest Research Station, 22–30.IV.1963, Vincent Roth (AMNH).

DISTRIBUTION. — USA: AZ (Oswald, 1988:422).

Symphorobius similis Carpenter, 1940:236.

Holotype male: USA, Arizona, Santa Rita Mountains, 17.VII.1932, R. H. Beamer (SEM).

DISTRIBUTION. — USA: AZ (Carpenter, 1940:236).

Symphorobius umbratus (Banks), 1903b:242 [*Hemerobius*].

Holotype male: USA, Arizona, Williams, 10.VI (USNM).

= *Symphorobius gracilis* Carpenter, 1940:231.

Holotype male: USA, North Carolina, Raleigh, 11.VI.1934, R. R. Leiby (MCZ).

TAXONOMY. — To *Symphorobius* (see Banks, 1905c:41); *S. gracilis* = *S. umbratus* (see Oswald, 1988:430).

DISTRIBUTION. — USA: AR⁵, AZ¹, FL⁴, GA⁵, MO³, NC², NM², OK⁵, PA⁵, SC⁵, VA⁵ (¹Banks, 1903b:242; ²Carpenter, 1940:230, 231; ³Froeschner, 1947:130; ⁴MacLeod & Stange, 1981:2, as *S. gracilis*; ⁵Oswald, 1988:431).

ITHONIDAE

Ithonidae, or moth-like lacewings, are known from only one species in the genus *Oliarces* Banks 1908 in the United States, and are probably encountered less than any other family of Neuroptera. The original type locality is now flooded by the Salton Sea, and only one specimen (a male) was known until 1949. Its known distribution includes the desert of southern California and Arizona, being seen most often between the Gila Mtns. of Arizona and the Salton Sea. Adults are known to have mass emergences, and the larvae appear to feed on the roots of creosote bush (Faulkner, 1990a:18). Another species was recently described from Honduras (Penny, 1996). All other known species of this family are from Australia, although there are other undescribed species known from Mexico, and it is thought that the Mexican species *Narodona mexicana* Navás is actually an ithonid, rather than an osmylid, as originally indicated by Navás

(Adams, 1969). The adult behavior of *Oliarces clara* was described by Faulkner (1990a, 1990b).

Oliarces Banks, 1908b:203

Oliarces clara Banks, 1908b:203.

Holotype male: USA, California, Imperial Co., Walter's Station, IV, J. B. Smith (MCZ).

DISTRIBUTION. — USA: AZ², CA¹, NV³ (¹Banks, 1908b:203; ²Belkin, 1954:67; ³Penny, NEW STATE RECORD).

MANTISPIDAE

Mantispidae, or mantid-flies, superficially resemble preying mantids, or in the case of *Climaciella*, *Polistes* wasps. All species have raptorial forelegs as adults. Larvae are hypermetamorphic, being very active triungulins in the first instar, and becoming inactive scarabaeiform larvae in subsequent stages. Primitive members of the family are known to feed on noctuid pupae, solitary bee larvae, and polybiine social wasp larvae. Other species, in the more advanced Mantispinae, are spider egg sac predators, having a number of strategies for seeking out and entering the spider egg sacs (Redborg and MacLeod, 1985). In this family, adult size is dependent on larval food availability, and striking differences in size are common. The higher classification of Mantispidae has been discussed by Penny (1982b) and Lambkin (1986).

SYMPHRASINAE

Plega Navás, 1928b:326

Plega banksi Rehn, 1939:248.

Holotype male: USA, Arizona, Pima Co., Kits Peak Rincon, Balboquivari Mts., 4050', 14.VIII.1916, Lutz & Rehn (AMNH).

DISTRIBUTION. — USA: AZ (Rehn, 1939:250).

Plega dactylota Rehn, 1939:250.

Holotype male: USA, Arizona, Mohave Co., Kingman, 20.VII.1920, O. C. Poling (ANSP).

= *Plega dactylota lipanica* Rehn, 1939:254. Holotype male: USA, Texas, Brewster Co., hills west of Ord Mountains, 1–15.VI.1926, O. C. Poling (ANSP).

TAXONOMY. — Two subspecies synonymized (see Rice, 1987:342).

DISTRIBUTION. — USA: AZ¹, CA², NV¹, TX¹, UT¹ (¹Rehn, 1939:253; ²Penny, NEW STATE RECORD).

Plega fratercula Rehn, 1939:247.

Holotype male: USA, Arizona, Gila Co., Capitán Mountain, 8.VIII.1933, R. Anderson (MCZ).

DISTRIBUTION. — USA: AZ (Rehn, 1939:248).

Plega signata (Hagen), 1877:208 [*Symphrasis*].

Holotype female: USA, California, Kern Co., Fort Tejon, 1879, F. Brown (MCZ).

TAXONOMY. — To *Plega* (see Navás, 1928b:326).

DISTRIBUTION. — USA: AZ², CA¹ (¹Hagen, 1877:208; ²Rehn, 1939:246).

CALOMANTISPINAE

Nolima Navás, 1914f:100

Nolima dine Rehn, 1939:261.

Holotype male: USA, Arizona, Pima Co., Santa Catalina Mts., Pepper Sauce Canyon, 16.VIII.1924, J. O. Martin (CAS).

DISTRIBUTION. — USA: AZ (Rehn, 1939:262).

Nolima kantsi Rehn, 1939:260.

Holotype male: USA, Texas, Brewster Co., Chisos Mts., 16.VII.1921, C. D. Duncan, (CAS).

DISTRIBUTION. — USA: TX (Rehn, 1939:261).

Nolima pinal Rehn, 1939:257.

Holotype male: USA, Arizona, Gila Co., base of Pinal Mts., IX, D. K. Duncan (MCZ).

DISTRIBUTION. — USA: AZ (Rehn, 1939:259).

MANTISPINAE

Climaciella Enderlein, 1910:360

Climaciella brunnea (Say), 1824:309 [*Mantispa*].

Syntype male: USA, Minnesota, St. Peter's River (depository unknown).

= *Mantispa denarius* Taylor, 1862:494 No types designated.

= *Mantispa burquei* Provancher, 1875:247. Type(s) (sex unknown): Canada, Quebec (depository unknown).

= *Mantispa brunnea* var. *occidentis* Banks, 1911:348. Syntype males: USA, Colorado, Golden, Chimney Gulch, Osler; Nevada, Ormsby Co., Baker; Washington, Wawawai, Mann (MCZ).

= *Climaciella rubescens* Stitz, 1913:37. Holotype (sex unknown): Mexico, Tampico (HMB).

= *Climaciella rubescens* var. *unicolor* Stitz, 1913:39. Holotype (sex unknown): Mexico, Sierra Mixteca (HMB).

= *Climaciella rubescens* var. *laciniata* Stitz, 1913:39. Holotype (sex unknown): Mexico, Mexico (HMB).

TAXONOMY. — To *Climaciella* (see Enderlein, 1910:360); *M. burquei* = *M. brunnea* (see Provancher, 1877:174); *C. rubescens* and varieties *unicolor* and *laciniata* = *C. brunnea* (see Handschin, 1960:546547); *M. denarius* = *C. brunnea* (see Kevan, 1989:8); *C. brunnea* var. *occidentis* = *C. brunnea* (see Welch & Kondratieff, 1991:70).

DISTRIBUTION. — CAN: BC¹⁰, ON¹², PQ⁴, USA: AZ¹⁴, CA¹⁶, CO¹⁵, FL², GA², ID¹⁵, IL³, IN⁸, KS⁶, MN¹, MO¹¹, NC⁹, NJ⁵, NV¹⁵, NY⁷, PA³, TX¹⁴, UT¹⁵, WA¹⁵, WS¹² (¹Say, 1824:309; ²Walker, 1853:214; ³Hagen, 1861:208; ⁴Provancher, 1875:247; ⁵Smith, 1900:54; ⁶Smith, 1925:166; ⁷Leonard, 1928:39; ⁸Montgomery & Trippel, 1933:259; ⁹Brimley, 1938:29; ¹⁰Spencer, 1942:24; ¹¹Froeschner, 1947:124; ¹²Robert, 1949:10; ¹³Throne, 1972:119; ¹⁴Redborg & MacLeod, 1983:63; ¹⁵Welch & Kondratieff 1991:71; ¹⁶Penny, NEW STATE RECORD).

Mantispa Illiger in Kugleann, 1798:499

Mantispa floridana Banks, 1897a:23.

Holotype (sex unknown): USA, Florida, Lake Worth, A. T. Slosson (MCZ).

DISTRIBUTION. — USA: FL (Banks, 1897a:23).

Mantispa interrupta Say, 1825: unpaginated text to plate 25.

Type(s) (sex unknown): USA, Pennsylvania, Philadelphia (specimen probably lost).

= *Mantispa aureus* Taylor, 1862:494. No types designated.

= *Mantispa cincticornis* Banks, 1911:347. Holotype female: USA, Texas, near Brownsville, Snow (MCZ).

TAXONOMY. — *M. aureus* = *M. interrupta* (see Kevan, 1989:8); *M. cincticornis* = *M. interrupta* (see Welch & Kondratieff, 1991:72).

DISTRIBUTION. — CAN: PQ⁶, USA: CO¹⁰, IN⁹, KS³, MN⁷, MO⁵, NJ², NY⁴, PA¹, SC¹¹, TX¹, VA¹, WS⁸ (¹Banks, 1892:358; ²Smith, 1900:54; ³Smith, 1925:166; ⁴Leonard, 1928:39; ⁵Froeschner, 1947:124; ⁶Robert, 1949:12; ⁷Parfin, 1952:423; ⁸Throne, 1972:120; ⁹Lawson & McCafferty, 1984:130; ¹⁰Welch & Kondratieff, 1991:72; ¹¹Hoffman & Brushwein, 1992:161).

Mantispa moesta Hagen, 1861:210.

Type(s) (sex unknown): USA, Tennessee (MCZ).

DISTRIBUTION. — USA: TN (Hagen, 1861:210).

Mantispa pulchella (Banks), 1912:179 [*Mantispa*].

Holotype female: USA, Utah, Eureka (MCZ).

TAXONOMY. — Transferred to *Mantispa* (see Redborg, 1976:17).

DISTRIBUTION. — USA: CO⁴, GA³, IL², NC³, SC³, UT¹ (¹Banks, 1912:179; ²Redborg, 1976:18; ³Hoffman & Brushwein, 1989:8; ⁴Welch & Kondratieff, 1991:74).

Mantispa sayi Banks, 1897a:23.

Lectotype male: USA, Texas, Brazos Co. (MCZ).

= *Mantispa fuscicornis* Banks, 1911:347. Lectotype male: USA, Florida, Kissimmee (MCZ).

= *Mantispa uhleri* Banks, 1943:79. Holotype female: USA, Pennsylvania (MCZ).

TAXONOMY. — *M. fuscicornis* = *M. sayi*, *M. uhleri* = *M. sayi*; lectotypes designated for *M. sayi* and *M. fuscicornis* (see Hoffman, 1989:638, 639).

DISTRIBUTION. — USA: AR⁹, AZ⁹, CO¹⁰, CT⁹, FL¹, GA⁹, IL⁵, IN⁸, KS², MD⁹, MI³, MN⁷, MO⁶, MS⁹, NC⁴, NE⁹, NM⁹, OH⁹, OK⁹, PA⁵, SC⁹, TX¹, UT⁹, WS⁵ (¹Banks, 1897a:23; ²Smith, 1925:166; ³Kaston, 1938:148, as *M. fuscicornis*; ⁴Brimley, 1938:29; ⁵Banks, 1943:79; ⁶Froeschner, 1947:124; ⁷Parfin, 1952:423; ⁸Lawson & McCafferty, 1984:130, as *M. uhleri*; ⁹Hoffman, 1989:637; ¹⁰Welch & Kondratieff, 1991:72).

Mantispa scabrosa (Banks), 1912:179 [*Mantispa*].

Holotype female: USA, New Mexico, Mesilla (MCZ).

TAXONOMY. — Transferred to *Mantispa* (see Welch & Kondratieff, 1991:75).

DISTRIBUTION. — **USA:** AZ², NM¹, TX² (¹Banks, 1912:179; ²Welch & Kondratieff, 1991:75).

Mantispa viridis Walker, 1853:227.

Holotype (sex unknown): USA, East Florida (BMNH).

DISTRIBUTION. — **USA:** FL¹, SC⁵, TX², VA³, WS⁴ (¹Walker, 1853:227; ²Banks, 1907c:23; ³Parfin, 1958:203; ⁴Throne, 1972:121; ⁵Hoffman & Brushwein, 1992:161).

REMARKS. — *Mantispa gulosus* Taylor, 1862:294 (nomen dubium); *Mantispa brevicollis* Banks, 1905a:88 (nomen nudum).

MYRMELEONTIDAE

Myrmeleontidae, or ant-lions and doodlebugs, are among the largest, and in southern parts of the country, probably the most familiar neuropterans to most people. The larvae of one genus, *Myrmeleon*, form pits in sheltered areas of dry soil and can only move backward. They wait at the bottom of the pits with only their heads exposed, waiting for insects to fall in. To make sure that the prey cannot escape up the loose sides of the funnel, the ant-lion larva throws loose sand or soil at it with its head. Then, the larva drags the insect under the soil surface where the victim's movements are inhibited. The prey is drained of body liquids, and the hollow body thrown out of the pit by the powerful head and mandibles. Other genera of ant-lions move forward and backward (except *Vella*) and live just under the soil surface, in rock crevices, in caves, or in tree-holes. Larvae pupate under the soil surface, and a damselfly-like adult later emerges. Adults generally rest quietly on twigs and grass stems during the day and become active at night. However, some species are active during the daytime and have rather bright pigment patterns on the wings. Ant-lions are most abundant in hot, dry regions, but can also be found in moist, forested regions. North American species of Myrmeleontidae were reviewed by Banks (1927) and Stange and Miller (1990). Current views on higher categories of Myrmeleontidae are to be found in Stange (1994). Keys to genera of Glenurini are to be found in Stange (1970b) and genera and species of Nemoleontini in Stange (1970a).

ACANTHACLISINI

Paranthaclisis Banks, 1907a:275

Paranthaclisis congener (Hagen), 1861:224 [*Acanthaclisis*].

Holotype female: USA, "Western Texas," Pecos River (now New Mexico) (MCZ).

TAXONOMY. — To *Paranthaclisis* (see Banks, 1907a:275).

DISTRIBUTION. — **USA:** AZ², CA³, NM¹, OR³, UT³, WA³ (¹Hagen, 1861:224; ²Currie, 1903:274; ³Banks, 1927:81).

Paranthaclisis hageni (Banks), 1899a:170 [*Acanthaclisis*].

Lectotype male: USA, Arizona, Phoenix, V (MCZ).

TAXONOMY. — To *Paranthaclisis* (see Banks, 1907a:275); lectotype designated by Stange, 1961a:674.

DISTRIBUTION. — **USA:** AZ¹, NM², TX² (¹Banks, 1899a:170; ²Banks, 1927:81).

Paranthaclisis nevadensis Banks, 1939:4.

Holotype male: USA, Nevada, Esmeralda Co., 2 mi. S Silver Peak, 4350', 22.VIII.1924, Rehn & Hebard (ANSP).

DISTRIBUTION. — **USA:** CA², NV¹ (¹Banks, 1939:4; ²Stange, **NEW STATE RECORD**).

Vella Navás, 1913e:46

Vella americana (Drury), 1773: unpaginated index [*Myrmeleon*].

Type(s) (sex unknown): USA, New York (depository unknown).

= *Acanthaclisis striata* Hagen, 1861:324 (nomen nudum). Type(s) (sex unknown): Colombia (depository unknown).

TAXONOMY. — To *Myrmecoleon* (see Burmeister, 1839:996); to *Acanthaclisis* (see Rambur, 1842:380); to *Myrmeleon* (see Walker, 1853:317); returned to *Acanthaclisis* (see Hagen, 1861:223); to *Heoclisis* (see Taschenberg, 1879:186); *A. striata* = *A. americana* (see Hagen 1887:136); to *Grypopteron* (see Esben-Petersen, 1928:75); to *Vella* (see Stange, 1980:3).

DISTRIBUTION. — **USA:** FL³, GA³, NC³, NJ², NY¹, SC¹, VA³ (¹Hagen, 1861:223; ²Smith, 1900:56; ³Banks, 1927:83).

Vella fallax haitiensis Smith, 1931:815.

Holotype female: Haiti, Jacmel, V.1927, G. N. Wolcott (MCZ).

= *Vella fallax cubana* Hagen, 1860:363 [*Acanthaclisis*] (nomen nudum). Type(s) (sex unknown): unknown locality, unknown depository.

TAXONOMY. — To *Vella* (see Navás, 1913e:46); *Vella fallax cubana* = *Vella fallax haitiensis* (Stange, **NEW SYNONYMY**).

DISTRIBUTION. — **USA**: FL (Stange, **NEW NATIONAL RECORD**).

Vella fallax texana (Hagen), 1887:147 [*Acanthaclisis*].

Lectotype male: USA, Texas, Dimmit Co., Carrizo Springs (MCZ).

= *Acanthaclisis hesperus* Banks, 1914b:618. Syntype males: USA, Utah, Eureka and New Mexico, Jemez Mts., 28.VII and 4.VIII, Spalding and Woodgate (MCZ). Stange, **NEW SYNONYMY**.

= *Vella texana minor* Banks, 1943:75. Holotype (sex unknown): USA, Arizona, Phoenix (MCZ). Stange, **NEW SYNONYMY**.

TAXONOMY. — To *Vella* (see Navás, 1913e:46); lectotype designated by Stange, 1961:674.

DISTRIBUTION. — **USA**: AZ³, CA³, NM², TX¹, UT² (¹Hagen, 1887:147; ²Banks, 1914b:618; ³Stange, **NEW STATE RECORDS**).

DENDROLEONTINI

Dendroleon Brauer, 1866:42**Dendroleon obsoletus** (Say), 1839:44 [*Formicaleo*].

Type(s) (sex unknown): USA (specimen lost).

= *Myrmeleon nigrocinctus* Rambur, 1842:398. Holotype (sex unknown): no locality data (depository unknown).

TAXONOMY. — To *Myrmecoleon* as *M. ocellatus* Borkhausen:1791:161 (see Burmeister, 1839:995); to *Glenurus* (see Hagen, 1866:405); *D. obsoletus* not = *D. ocellatus* Borkhausen (see Hagen, 1888:185) to *Dendroleon* (see Hagen, 1888:187); *M. nigrocinctus* = *M. obsoletus* (see Hagen, 1866:445).

DISTRIBUTION. — **USA**: CT³, FL³, IA⁷, IL³, IN⁴, KS², MA³, MD³, MI³, MO⁵, NC³, NH³, NJ¹, NY³, VA³, WS⁶ (¹Smith, 1900:56; ²Smith,

1925:169; ³Banks, 1927:7; ⁴Montgomery & Trippel, 1933:260; ⁵Froeschner, 1947:128; ⁶Throne, 1972:124; ⁷Penny, **NEW STATE RECORD**).

Dendroleon speciosus Banks, 1905b:7.

Holotype female: USA, Colorado, Boulder (MCZ).

DISTRIBUTION. — **USA**: AZ², CA², CO¹, NM² (¹Banks, 1905b:7; ²Banks, 1927:8).

NEMOLEONTINI

Eremoleon Banks, 1901a:366**Eremoleon femoralis** (Banks), 1942:146 [*Psammoleon*].

Holotype (sex unknown): 20 mi N. W. La Paz, Lower California, 16.VII.1938, Michelbacher & Ross (CAS).

TAXONOMY. — To *Eremoleon* (see Stange, 1970b:21).

DISTRIBUTION. — **USA**: AZ (Stange, **NEW NATIONAL RECORD**)

Eremoleon gracile Adams, 1957b:90.

Holotype female: USA, California, Riverside, 31.VIII.1939, P. DeBach (CAS).

DISTRIBUTION. — **USA**: CA (Adams, 1957b:90).

Eremoleon insipidus Adams, 1957b:88.

Holotype male: 5 mi S. San Miguel, Lower California, 20.VII.1938, Michelbacher & Ross (MCZ).

DISTRIBUTION. — **USA**: CA (Adams, 1957b:89).

Eremoleon macer (Hagen), 1861:236 [*Myrmeleon*].

Holotype (sex unknown): Mexico (Vienna).

= *Segura vitreus* Navás, 1914g:18. Holotype male: Mexico, Morelos, Cuernavaca, 1871, Bilimek (MNHN).

= *Novulga mexicana* Navás, 1925c:189. Holotype male: Mexico, Veracruz, Veracruz, 1921 (MNHN).

= *Hesperoleon atomarius* Navás, 1933c:105. Holotype (sex unknown): Mexico, Morelos, Cuernavaca, 1929–30 (Hamburg, specimen destroyed).

TAXONOMY. — To *Eremoleon* (see Banks, 1901:366); *S. vitreus* = *E. macer* (see Banks, 1927:71); *N. mexicana* = *E. macer*, *H. atomarius* = *E. macer* (see Stange, 1970:21).

DISTRIBUTION. — USA: AZ (Banks, 1927:71).

Eremoleon nigribasis Banks, 1920:329.

Syntypes male and female: USA, Utah, St. George, VI 5,6 (MCZ).

= *Eremoleon affine* Banks, 1942:144. Holotype male: Mexico, Baja California Sur, Miraflores, VII.8.1938 (CAS).

TAXONOMY. — *E. affine* = *E. nigribasis* (see Adams, 1957b:91).

DISTRIBUTION. — USA: AZ², NM², UT¹ (¹Banks, 1920:329; ²Adams, 1957b:91).

Eremoleon pallens Banks, 1941b:101.

Syntypes (sex unknown): USA, Arizona, Pichaco Peak, VII.23, Bequaert, Tinkham, Flock (MCZ).

DISTRIBUTION. — USA: AZ (Banks, 1941b:101).

Glenurus Hagen, 1866:372, 405

Glenurus gratus (Say), 1839:45 [*Formicaleo*].

Holotype (sex unknown): USA, Indiana, Evansville, Corson (depository unknown).

= *Myrmecoleon roseipennis* Burmeister, 1839:995. Holotype (sex unknown): Nord Amerika (Halle).

TAXONOMY. — To *Myrmecoleon* (see Walker, 1853:392); to *Glenurus* (see Hagen, 1866:405); to *Dendroleon* (see Banks, 1892:360); returned to *Glenurus* (see Banks, 1907c:30); *M. roseipennis* = *M. gratus* (see Hagen, 1861:225).

DISTRIBUTION. — USA: FL³, IN¹, KY³, MO⁴, NJ², OH³, TN³ (¹Say, 1839:45; ²Smith, 1900:56; ³Banks, 1927:68; ⁴Froeschner, 1947:128).

REMARKS. — Carpenter (1992:538) has indicated that Burmeister's *Handbuch der Entomologie* was apparently published in two parts. The first 400 pages were published in 1839, while the remainder, including all Neuroptera, were published in 1838. If this is found to be correct, it could lead to serious nomenclatorial instability. The synonymy of *Glenurus gratus* and *Glenurus roseipennis* would be reversed. Almost certainly the International Commission on Zoological Nomenclature would be petitioned to declare, for nomenclatorial purposes, that the entire book was published in 1839.

Glenurus luniger Gerstaecker, 1894:125.

Holotype female: Panama, Chiriqui (Greifswald).

DISTRIBUTION. — USA: AZ (Stange, 1970b:22).

Glenurus snowii Banks, 1907b:100.

Holotype female: USA, Arizona, Baboquivari Mountains (MCZ).

DISTRIBUTION. — USA: AZ (Banks, 1907b:100).

Psammoleon Banks, 1899b:69

Psammoleon albovaria (Banks), 1942:146 [*Puren*].

Holotype (sex unknown): Mexico, Baja California, Venancio, 17.VII.1938, Michelbacher & Ross (CAS).

TAXONOMY. — To *Psammoleon* (see Stange, 1970b:23).

DISTRIBUTION. — USA: CA (Stange, **NEW NATIONAL RECORD**).

Psammoleon arizonensis Banks, 1935:53.

Three syntype females: USA, Arizona, Tucson (one syntype); Phoenix (two syntypes) (MCZ).

DISTRIBUTION. — USA: AZ (Banks, 1935:53).

Psammoleon bistictus (Hagen), 1861:235 [*Myrmecoleon*].

Holotype (sex unknown): Cuba, Poey (depository unknown).

TAXONOMY. — To *Nelees* (see Navás, 1921:117); to *Psammoleon* (see Banks, 1927:61).

DISTRIBUTION. — USA: FL (Banks, 1927:62).

Psammoleon connexus (Banks), 1920:329 [*Puren*].

Holotype male: USA, California, San Jacinto Mountains, 25.VI (MCZ).

TAXONOMY. — To *Psammoleon* (see Banks, 1927:64).

DISTRIBUTION. — USA: AZ², CA¹, TX² (¹Banks, 1920:329; ²Banks, 1927:65).

Psammoleon decipiens Banks, 1935:53.

Two syntypes: USA, Georgia, Scriven Co., Millin (one male); Louisiana, Shreveport (one of unknown sex) (MCZ).

DISTRIBUTION. — USA: GA, LA (Banks, 1935:53).

Psammoleon guttipes Banks, 1906a:99.

Holotype male: USA, North Carolina, Tryon (MCZ).

DISTRIBUTION. — USA: FL³, GA³, KS², LA³, MO⁴, NC¹, NJ³, TX³ (¹Banks, 1906a:99;

²Smith, 1925:170; ³Banks, 1928:64; ⁴Froeschner, 1947:128).

Psammoleon inscriptus (Hagen), 1861:230 [*Myrmeleon*].

Holotype male: USA, western Texas (now New Mexico), Pecos River, Pope (MCZ).

TAXONOMY. — To *Psammoleon* (see Banks, 1904b:106); to *Puren* (see Banks, 1927:66); returned to *Psammoleon* (see Stange, 1970b:24).

DISTRIBUTION. — USA: CA⁴, CO², NM¹, UT³ (¹Hagen, 1851:230; ²Hagen, 1875:922; ³Banks, 1927:66; ⁴Stange, **NEW STATE RECORD**).

Psammoleon minor Banks, 1927:62.

Lectotype female: USA, Florida, Loggerhead Key, Dry Tortugas, VI.1917 (MCZ).

TAXONOMY. — Lectotype designated by Stange, 1961:674.

DISTRIBUTION. — USA: FL (Banks, 1927:63).

Psammoleon normalis Banks, 1942:145.

Holotype female: Mexico, Baja California, Venancio, 17.VII.1938 (CAS).

DISTRIBUTION. — USA: AZ, CA (Stange, **NEW NATIONAL RECORDS**).

Psammoleon sinuatus Currie, 1903:275.

Holotype male: USA, Arizona, Santa Rita Mountains, 31.V (USNM).

= *Psammoleon serpentinus* Navás, 1923:185. Holotype (sex unknown): USA, New Mexico, Jemez Springs, VII.1916, Woodgate (MZB).

TAXONOMY. — *P. serpentinus* = *P. sinuatus* (see Banks, 1927:5).

DISTRIBUTION. — USA: AZ¹, CO¹, NM², UT² (¹Currie, 1903:275; ²Banks, 1927:64).

BRACHYNEMURINI

Abatoleon Banks, 1924:436

Abatoleon dorsalis (Banks), 1903c:240 [*Brachynemurus*].

Holotype female: USA, Texas, Laredo (MCZ).

= *Brachynemurus curriei* McClendon, 1906a:93. Holotype male: USA, Texas, Brownsville (USNM).

= *Netroneurus pygmaeus* Esben-Petersen, 1933:111. Holotype male: USA, Texas, Dallas, Boll (Hamburg, specimen destroyed).

TAXONOMY. — To *Austroleon* (see Banks, 1928:54); to *Abatoleon* (see Stange, 1994:80); *B.*

curriei = *B. dorsalis* (see Banks, 1927:54); *N. pygmaeus* = *B. dorsalis* (see Stange, 1970a:66).

DISTRIBUTION. — USA: TX (Banks, 1903c:240).

Abatoleon indiges (Walker), 1860:189 [*Myrmeleon*].

Holotype male: Haiti (BMNH).

= *Nelees cubitalis* Navás, 1921:117. Holotype female: Cuba, Habana, Playa Chivo, 7.VII.1919, Cervera (MCZ).

TAXONOMY. — To *Clathroneuria* (see Navás, 1922b:168); to *Austroleon* (see Smith, 1931:816); to *Abatoleon* (see Stange, 1994:80); *N. cubitalis* = *A. indiges* (see Smith, 1931:816).

DISTRIBUTION. — USA: FL (Stange, 1970a:68).

Atricholeon Stange, 1994:75, 82

Atricholeon tuberculatus (Banks), 1899b:70 [*Brachynemurus*].

Holotype female: USA, New Mexico, Mesilla (MCZ).

TAXONOMY. — To *Atricholeon* (see Stange, 1994:82).

DISTRIBUTION. — USA: AZ², NM¹ (¹Banks, 1899b:70; ²Banks, 1928:49).

Brachynemurus Hagen, 1888:34

Brachynemurus abdominalis (Say), 1823:163 [*Myrmeleon*].

Neotype male: USA, Arkansas, Hope, 8.VI. Knobel (MCZ).

= *Myrmeleon iniquus* Walker, 1853:330. Holotype male: (no locality data) (BMNH).

= *Myrmeleon salvus* Hagen, 1861:227. Lectotype male: USA, D. C., Washington (MCZ).

= *Myrmeleon juvenis* Hagen, 1861:234. Holotype female: USA, western Texas (now New Mexico), Pecos River, VII, Pope (MCZ).

= *Brachynemurus tenuis* Banks, 1898:204. Lectotype male: USA, New Mexico, Mesilla, 28.VI.1897, Pope (MCZ).

= *Hesperoleon placidus* Navás, 1915a:51. Holotype male: USA, New Jersey, Pt. Pleasant (depository unknown).

TAXONOMY. — To *Macronemurus* (see Hagen, 1866:424); to *Brachynemurus* (see Hagen, 1888:57); to *Hesperoleon* (see Banks, 1913b:65); returned to *Brachynemurus* (see

Stange, 1970a:76); *M. juvencus* = *M. abdominalis* (see Hagen, 1888:5759); *M. salvus* = *B. abdominalis* (see Banks, 1907c:31); *H. placidus* = *B. abdominalis* (see Banks, 1927:5); *M. iniquus* = *B. abdominalis*, *B. tenuis* = *B. abdominalis*; neotype for *M. abdominalis* and lectotype for *M. salvus* designated (see Banks, 1938d:413–414); lectotype for *B. tenuis* designated (see Stange, 1961a:677).

DISTRIBUTION. — **CAN:** BC⁶, MB⁴, ON⁴, **USA:** AR⁸, AZ⁴, CA⁴, CO⁴, CT⁴, DC⁴, GA⁴, IA⁸, ID⁸, IL⁸, IN⁵, KS³, LA⁸, MA⁴, MD⁴, MI⁸, MN⁴, MO⁷, NC⁴, ND⁴, NE⁴, NJ², NM¹, NV⁸, NY⁴, OK⁸, OR⁴, PA⁸, SD⁸, TN⁸, TX⁴, UT⁴, VA⁴, WA⁴, WS⁹, WY⁸ (¹Hagen, 1861:234; ²Smith, 1900:56; ³Smith, 1925:169; ⁴Banks, 1928:39; ⁵Montgomery & Trippel, 1933:260; ⁶Spencer, 1942:28; ⁷Froeschner, 1947:128; ⁸Stange, 1970a:map 7; ⁹Throne, 1972:123).

Brachynemurus blandus (Hagen), 1861:235 [*Myrmeleon*].

Holotype female: USA, western Texas (now New Mexico), Pecos River, Pope (MCZ).

TAXONOMY. — To *Brachynemurus* (see Hagen, 1888:73); to *Hesperoleon* (see Banks, 1913b:65); returned to *Brachynemurus* (see Stange, 1970a:77).

DISTRIBUTION. — **USA:** AZ⁴, CA⁴, CO³, KS², NM¹, NV³, TX⁴, UT³, WA⁴, WY³ (¹Hagen, 1861:235; ²Smith, 1925:170; ³Banks, 1927:29; ⁴Stange, 1970a:78).

Brachynemurus californicus Banks, 1895a:519.

Lectotype male: Mexico, Baja California Sur, San José del Cabo (MCZ).

= *Brachynemurus fraternus* Banks, 1895a:520. Lectotype male: Mexico, Baja California Sur, San José del Cabo (MCZ).

= *Comptesa ambitiosa* Navás, 1915b:464. Holotype male: Mexico, Baja California (MNHN).

= *Belluga implexa* Navás, 1920:195. Holotype female: Mexico, Baja California Sur, La Paz, 1914, Diguët (MNHN).

TAXONOMY. — *B. fraternus* = *B. californicus*, *C. ambitiosa* = *B. californicus*, *B. implexa* = *B. californicus* (see Banks, 1942:139); lectotypes designated for *B. californicus* and *B. fraternus* (see Stange, 1961:675, 676).

DISTRIBUTION. — **USA:** AZ, CA (Stange, 1970a:93).

Brachynemurus carolinus Banks, 1911:349.

Lectotype female: USA, North Carolina, Southern Pines (MCZ).

TAXONOMY. — To *Netroneurus* (see Banks, 1927:42); returned to *Brachynemurus* (see Stange, 1961a:675); lectotype designated (see Stange, 1961a:675).

DISTRIBUTION. — **USA:** FL, GA, NC (Banks, 1927:43).

Brachynemurus elongatus Banks, 1904b:105.

Lectotype male: USA, New Mexico, Mesilla, 30.VI.1897, Morse (MCZ).

TAXONOMY. — Lectotype designated (see Stange, 1961:676).

DISTRIBUTION. — **USA:** AZ¹, CA², CO¹, NE², NM¹, NV², UT¹ (¹Banks, 1928:48; ²Stange, 1970a:88).

Brachynemurus ferox (Walker), 1853:332 [*Myrmeleon*].

Holotype male: USA, California, Hartweg (BMNH).

= *Brachynemurus brunneus* Currie, 1898:273. Holotype male: USA, Wyoming, Yellowstone National Park, Fountain, 10.VIII.1896, Currie (USNM).

= *Brachynemurus centralis* Banks, 1898:204. Lectotype female: USA, Colorado, Estes Park (MCZ).

TAXONOMY. — To *Macronemurus* (see Hagen, 1866:424); to *Hesperoleon* (see Banks, 1913b:64); to *Brachynemurus* (see Stange, 1970a:81); *B. centralis* = *B. brunneus* (see Banks, 1907c:31); *B. brunneus* = *B. ferox* (see Stange, 1970a:81).

DISTRIBUTION. — **CAN:** BC⁴, **USA:** AZ³, CA¹, CO³, NM³, NV³, OR⁵, UT³, WY² (¹Walker, 1853:332; ²Currie, 1898:204; ³Banks, 1928:25, as *H. brunneus*; ⁴Spencer, 1942:28; ⁵Stange, 1970a:81).

Brachynemurus fuscus (Banks), 1905b:6 [*Calinemurus*].

Lectotype male: USA, Arizona, Nogales, 6.VII.1903, Oslar (MCZ).

TAXONOMY. — To *Brachynemurus* (see Stange, 1970a:93); lectotype designated (see Stange, 1961a:677).

DISTRIBUTION. — **USA:** AZ (Banks, 1905b:6).

Brachynemurus henshawi (Hagen), 1887:216 [*Maracanda*].

Holotype male: USA, Oregon, Umatilla, 24.VI.1882, Henshaw (MCZ).

TAXONOMY. — To *Cryptoleon* (see Banks, 1907c:32); to *Brachynemurus* (see Stange, 1970a:82).

DISTRIBUTION. — USA: CA², NV², OR¹ (¹Hagen, 1887:216; ²Stange, 1970a:82).

Brachynemurus hubbardi Currie, 1898:241.

Lectotype male: USA, Arizona, Fort Grant, 22.VII.1897, Hubbard (MCZ).

= *Brachynemurus cockerelli* Banks, 1902:86. Holotype female: USA, New Mexico, Lone Mountain (MCZ).

= *Brachynemurus hubbardi nubeculipennis* Currie, 1903:277. Lectotype male: USA, Arizona, Phoenix (USNM).

= *Brachynemurus hubbardi curtus* Banks, 1927:31. Lectotype male: USA, Kansas, Seward Co., 18.VIII.1911, Williams (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913:65); returned to *Brachynemurus* (see Stange, 1970a:88); *B. cockerelli* = *B. hubbardi* (see Currie, 1903:277); *B. h. nubeculipennis* = *B. h. hubbardi* (see Banks, 1907c:31); *B. h. curtus* = *B. h. hubbardi* (see Stange, 1970a:88); lectotype designated for *B. h. curtus* (see Stange, 1961a:677); for *B. hubbardi* and *B. h. nubeculipennis* (see Stange, 1970a:88).

DISTRIBUTION. — USA: AZ¹, CO⁵, KS³, NM², NV⁵, OK⁵, TX⁴, UT⁴ (¹Currie, 1898:241; ²Banks, 1902:86; ³Smith, 1925:169; ⁴Banks, 1927:30, 31; ⁵Stange, 1970a:89).

Brachynemurus irregularis Currie, 1906:186.

Holotype female: USA, Texas, Columbus, VI.1879, Schwarz (USNM).

= *Mastega texanus* Navás, 1914b:13. Holotype female: USA, Texas (Vienna).

TAXONOMY. — *B. irregularis* to *Hesperoleon* and *M. texanus* to *Cryptoleon* (see Banks, 1927:5, 36); returned to *Brachynemurus*; *M. texanus* = *B. irregularis* (see Stange, 1970a:78).

DISTRIBUTION. — USA: IL¹, KS², OK³, TX¹ (¹Currie, 1905:186; ²Smith, 1925:170; ³Stange, 1970a:79).

Brachynemurus longicaudus (Burmeister), 1839:994 [*Myrmecoleon*].

Syntypes male and female: "Nord-Amerika," Winthem Coll. (MCZ).

= *Myrmecoleon irroratus* Burmeister, 1839:995. Two syntype females: USA, South Carolina (Halle).

TAXONOMY. — To *Myrmeleon* (see Hagen, 1860:365); to *Macronemurus* (see Hagen, 1866:424); to *Brachynemurus* (see Hagen,

1888:35); *M. longicaudus* = *M. abdominalis*, *M. irroratus* = *M. conspersus* (see Hagen, 1860:365); *M. irroratus* = *M. talpinus* (see Hagen, 1861:226); *M. irroratus* = *M. conspersus* (see Taschenberg, 1879:213); *B. longicaudus* not = *B. abdominalis*, *B. irroratus* not = *B. conspersus*, *B. irroratus* = *B. longicaudus* (see Hagen, 1888:3536).

DISTRIBUTION. — USA: FL³, GA², IN⁵, MS⁴, NC³, NJ³, SC¹, VA⁴ (¹Burmeister, 1839:995; ²Hagen, 1861:227; ³Banks, 1927:46; ⁴Stange, 1970a:83; ⁵Lawson & McCafferty, 1984:130).

Brachynemurus mexicanus Banks, 1895a:520.

Lectotype female: Mexico, Tepic (MCZ).

TAXONOMY. — *B. mexicanus* = *B. versutus* (see Banks, 1901:365); *B. mexicanus* not = *B. versutus* (see Banks, 1927:32); lectotype designated by Stange, 1961:676.

DISTRIBUTION. — USA: AZ¹, NM² (¹Banks, 1927:33; ²Stange, 1970a:91).

Brachynemurus nebulosus (Olivier), 1811:127 [*Myrmeleon*].

Type(s) (sex unknown): USA, New York, M. Bofe (depository unknown).

= *Myrmeleon talpinus* Hagen, 1866:448 (nomen nudum). Type(s) (sex unknown): USA, South Carolina, Zimmerman (depository unknown).

= *Myrmecoleon contaminatus* Burmeister, 1839:995. Syntype females: USA, South Carolina, Zimmerman (Halle).

= *Myrmeleon conspersus* Rambur, 1842:387. Holotype female: "l'Amerique septentrionale" (IRSNB).

TAXONOMY. — To *Macronemurus* (see Hagen, 1866:424); to *Maracanda* (see Hagen, 1887:212); to *Cryptoleon* (see Banks, 1901:330); to *Brachynemurus* (see Stange, 1970a:84); *M. irroratus* (?) = *M. conspersus* (see Walker, 1853:329); *M. irroratus* = *M. abdominalis*, *M. conspersus* = *M. abdominalis*, *M. talpinus* = *M. abdominalis* (see Hagen, 1861:226); *M. talpinus* = *M. nebulosus*, *M. contaminatus* = *M. nebulosus*, *M. irroratus* = *M. nebulosus*, *M. conspersus* = *M. nebulosus* (see Hagen, 1887:212).

DISTRIBUTION. — CAN: ON⁴, USA: FL⁴, GA⁴, IL⁶, IN⁷, LA⁶, MI⁴, MN⁵, NC⁴, NE⁶, NJ³, NY¹, OH⁴, OK⁶, PA⁶, SC², TX⁶, WS⁶ (¹Olivier, 1811:127; ²Burmeister, 1839:995; ³Smith, 1900:56, as *M. conspersa*; ⁴Banks, 1927:11; ⁵Parfin, 1952:425; ⁶Stange, 1970a:84; ⁷Lawson & McCafferty, 1984:130).

Brachynemurus pulchellus Banks, 1911:348.

Holotype female: USA, California, Brown, 10.X, Grinnell (MCZ).

= *Clathroneuria exigua* Navás, 1920:197.

Holotype male: Mexico, Baja California Sur, La Paz, 1914, Diguët (MNHN).

= *Netroneurus pulchellus pallescens* Banks, 1942:140. Holotype male: Mexico, Baja California, San Domingo (CAS).

TAXONOMY. — To *Netroneurus* (see Banks, 1927:42); returned to *Brachynemurus* (see Stange, 1970a:102); *C. exigua* = *N. pulchellus* (see Banks, 1942:138); *N. p. pallescens* = *B. pulchellus* (see Stange, 1970a:102).

DISTRIBUTION. — USA: AZ², CA¹, NV² (¹Banks, 1911:348; ²Stange, 1970a:104).

Brachynemurus ramburi Banks, 1907c:31 (replacement name).

Holotype female: "l'Amerique septentrionale" (IRSNB).

= *Myrmeleon nebulosus* Rambur, 1842:387. A junior primary homonym of *M. nebulosus* Olivier, 1811:127.

TAXONOMY. — To *Macronemurus* (see Hagen, 1866:444); to *Brachynemurus* (see Hagen, 1888:36).

DISTRIBUTION. — USA: FL, GA, NC (Banks, 1927:47).

Brachynemurus sackeni Hagen, 1888:94.

Lectotype female: USA, Texas, Dallas, Boll (MCZ).

= *Bollenga dinamitensis* Navás, 1932:14. Holotype female: Mexico, Dinamita (Turin).

= *Hesperoleon brevipilis* Banks, 1938d:414. Holotype male: USA, Arizona, Colorado River (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913b:65); returned to *Brachynemurus* (see Stange, 1970a:144); *B. dinamensis* = *B. sackeni*, *H. brevipilis* = *B. sackeni* (see Stange, 1970a:144); lectotype designated by Stange, 1961a:676.

DISTRIBUTION. — USA: AZ², CA³, CO³, KS⁴, NE⁴, NM³, NV³, OR⁴, TX¹, UT³, WY⁴ (¹Hagen, 1888:94; ²Banks, 1938d:414; ³Banks, 1928:34; ⁴Stange, 1970a: map 28).

Brachynemurus seminolae Stange, 1970a:86.

Holotype male: USA, Florida, Bay Co., St. Andrews State Park, 30.VIII.1960, L. A. Stange (UCD).

DISTRIBUTION. — USA: FL, NC (Stange, 1970a:86).

Brachynemurus signatus (Hagen), 1887:215 [*Maracanda*].

Lectotype female: USA, Michigan, Lake Superior, Whitefish Point (MCZ).

TAXONOMY. — To *Cryptoleon* (see Banks, 1907c:32); to *Brachynemurus* (see Stange, 1970a:79); lectotype designated by Banks, 1928:12.

DISTRIBUTION. — USA: CO⁵, DE⁵, IL³, KS², MI¹, MN⁴, ND⁵, NE⁵, NJ⁵, NY³, OH³, PA⁵, RI³, WS⁶ (¹Hagen, 1887:215; ²Smith, 1925:170; ³Banks, 1928:12; ⁴Parfin, 1952:425; ⁵Stange, 1970a:80; ⁶Throne, 1972:123).

Brachynemurus versutus (Walker), 1853:331 [*Myrmeleon*].

Holotype male: Mexico (BMNH).

= *Hesperoleon spegazzinii* Navás, 1934:72. Two syntype females: Mexico, Texcoco, 20.X.1930; Ixcapalapa, 15.IX.1931, Spegazzini (depository unknown).

TAXONOMY. — To *Macronemurus* (see Hagen, 1866:449); to *Hesperoleon* (see Banks, 1928:13); to *Brachynemurus* (see Stange, 1970a:91); *H. spegazzinii* = *B. versutus* (see Stange 1970a:91).

DISTRIBUTION. — USA: AZ, CO, NM (Stange, 1970a:91).

Chaetoleon Banks, 1920:328**Chaetoleon pumilis** (Burmeister), 1839:995 [*Myrmecoleon*].

Type(s) (sex unknown): USA, South Carolina (Halle).

= *Myrmeleon angusticollis* Rambur, 1842:399. Holotype female: "Bombay" (IRSNB).

TAXONOMY. — To *Macronemurus* (see Hagen, 1866:424); to *Creagris* (see McLachlan, 1873b:137); to *Brachynemurus* (see Banks, 1892:361); to *Dendroleon* (see Banks, 1907c:30); to *Chaetoleon* (see Banks, 1920:328); returned to *Brachynemurus* (see Stange, 1970a:100); returned to *Chaetoleon* (see Stange, 1994:84); *M. angusticollis* = *B. pumilis* (see Stange, 1970a:10).

DISTRIBUTION. — USA: FL³, GA³, NC³, NY², SC¹ (¹Burmeister, 1839:995; ²Smith, 1900:56; ³Banks, 1927:57).

Chaetoleon pusillus (Currie), 1899:363 [*Brachynemurus*].

Lectotype female: USA, New Mexico, Mesilla Park, 13.VI, Cockerell (USNM).

TAXONOMY. — To *Scotoleon* (see Banks, 1913b:65); to *Chaetoleon* (see Banks, 1920:328); returned to *Brachynemurus* (see Stange, 1970a:100); returned to *Chaetoleon* (see Stange, 1994:84); lectotype designated by Stange, 1970a:101.

DISTRIBUTION. — **USA:** AZ², CA³, CO³, NM¹, NV³, TX³, UT² (¹Currie, 1899:363; ²Banks, 1927:58; ³Stange, 1970a:101).

Chaetoleon tripunctatus (Banks), 1922:60 [*Hesperoleon*].

Lectotype male: USA, Arizona, Palmerlee, VI (MCZ).

TAXONOMY. — To *Austroleon* (see Banks, 1928:55); to *Brachynemurus* (see Stange, 1970a:98); to *Chaetoleon* (see Stange, 1994:84); lectotype designated by Stange, 1961:677.

DISTRIBUTION. — **USA:** AZ (Banks, 1922:60).

***Clathroneuria* Banks, 1913b:65**

Clathroneuria arapahoe Banks, 1938d:418.

Holotype male: USA, Arizona, Tucson (MCZ).

TAXONOMY. — To *Brachynemurus* (see Stange, 1970a:105); returned to *Clathroneuria* (see Stange, 1994:85).

DISTRIBUTION. — **USA:** AZ (Banks, 1938d:418).

Clathroneuria coquilletti (Currie), 1898:93 [*Brachynemurus*].

Holotype male: USA, Arizona, San Simon, 5.VII.1897, Hubbard (USNM).

= *Brachynemurus maculosus* Banks, 1899a:170. Holotype male: USA, California, Tehama (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913b:65); to *Brachynemurus* (see Stange, 1970a:106); to *Clathroneuria* (see Stange, 1994:85); *B. coquilletti* = *B. blandus* (see Banks, 1899a:171); *B. coquilletti* not = *B. blandus* (see Currie, 1903:276); *B. maculosus* = *B. coquilletti* (see Stange, 1970a:106).

DISTRIBUTION. — **USA:** AZ¹, CA¹, KS², NM², NV³, TX², UT², WA², WY³ (¹Currie, 1898:93; ²Banks, 1927:32, 37; ³Stange, 1970a:Map 17).

Clathroneuria navajo Banks, 1938d:418.

Holotype female: USA, Arizona, Pinery Canyon (MCZ).

TAXONOMY. — To *Brachynemurus* (see Stange, 1970a:107); returned to *Clathroneuria* (see Stange, 1994:85).

DISTRIBUTION. — **USA:** AZ¹, CA² (¹Banks, 1938d:418; ²Stange, 1970a:107).

Clathroneuria schwarzi (Currie), 1903:280 [*Brachynemurus*].

Holotype male: USA, Arizona, Flagstaff (USNM).

TAXONOMY. — To *Clathroneuria* (see Banks, 1913b:63); returned to *Brachynemurus* (see Stange, 1970a:107); returned to *Clathroneuria* (see Stange, 1994:85).

DISTRIBUTION. — **USA:** AZ¹, CA², CO³, ID³, NM², NV³, OK³, OR³, TX³, UT², WY³ (¹Currie, 1903:280; ²Banks, 1927:52; ³Stange, 1970a:107).

Clathroneuria westcotti (Stange), 1970a:109 [*Brachynemurus*].

Holotype male: USA, Arizona, Cochise Co., west side of Willcox Dry Lake, 7.VIII.1959, R. L. Westcott (LACM).

TAXONOMY. — To *Clathroneuria* (see Stange, 1994:85).

DISTRIBUTION. — **USA:** AZ (Stange, 1970a:110).

***Mexoleon* Stange, 1994:75, 86**

Mexoleon papago (Currie), 1899:361 [*Brachynemurus*].

Holotype male: USA, Arizona, Santa Rita Mountains, Madera Canyon, 7.VI.1898, Schwarz (USNM).

= *Clathroneuria arioles* Banks, 1941b:103. Holotype male: USA, California, Riverside, 25.IX.1940, G. & H. Sperry (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913b:65); returned to *Brachynemurus* (see Stange, 1970a:97); to *Mexoleon* (see Stange, 1994:86); *C. arioles* = *B. papago* (see Stange, 1970a:97).

DISTRIBUTION. — **USA:** AZ¹, CA², OR³, TX³ (¹Currie, 1899:361; ²Banks, 1941b:103; ³Stange, 1970a:97).

***Scotoleon* Banks, 1913b:65**

Scotoleon carrizonus (Hagen), 1888:93 [*Brachynemurus*].

Lectotype male: USA, Texas, Dimmit Co., Carrizo Springs (MCZ).

= *Hesperoleon douglasi* Banks, 1927:20. Lectotype male: USA, Arizona, Nogales, 6.VII.1903, Oslar (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913b:64); returned to *Brachynemurus* (see Stange, 1970a:117); to *Scotoleon* (see Stange, 1994:87); *H. carrizonus* = *H. peregrinus* (see Banks, 1913b:64); *H. carrizonus* not = *H. peregrinus* (see Banks, 1927:16); *H. douglasi* = *B. carrizonus* (see Stange, 1970a:117); lectotype designated by Stange, 1961a:675.

DISTRIBUTION. — USA: AZ², CA³, NM², NV³, OK³, TX¹, UT³ (¹Hagen, 1888:93; ²Banks, 1927:20; ³Stange, 1970a:120).

Scotoleon deflexus (Adams), 1957b:98 [*Hesperoleon*].

Holotype male: USA, California, San Bernardino Co., Baker, 23.VIII.1952 (CAS).

TAXONOMY. — To *Brachynemurus* (see Stange, 1970a:120); to *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — USA: CA¹, NV² (¹Adams, 1957b:100; ²Stange, 1970a:121).

Scotoleon dissimilis (Banks), 1903d:175 [*Brachynemurus*].

Lectotype male: Mexico, Baja California Sur, San José del Cabo (MCZ).

= *Brachynemurus plectus* Navás, 1913e:49. Lectotype male: Mexico, Basse-Californie, Diguët (MNHN).

= *Hesperoleon planus* Navás, 1920:200. Holotype male: Mexico, Baja California Sur, La Paz, 1914, Diguët (MNHN).

= *Hesperoleon curriei* Banks, 1938d:416. Holotype female: USA, Arizona, Santa Catalina Mountains (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1942:136); to *Scotoleon* (see Stange, 1994:87); *B. plectus* and *H. planus* probably = *B. dissimilis* (see Banks, 1942:135); *B. curriei* = *B. dissimilis* (see Stange, 1970a:121); lectotypes designated for *B. dissimilis* (see Stange, 1961a:675) and *B. plectus* (see Stange, 1970a:121).

DISTRIBUTION. — USA: AZ¹, TX² (¹Banks, 1938d:416, as *H. curriei*; ²Stange, 1970a:122).

Scotoleon eiseni Banks, 1908c:33 [*Brachynemurus*].

Lectotype male: Mexico, Baja California Sur, San José del Cabo (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1942:137); to *Scotoleon* (see Stange, 1994:87); lectotype designated (see Stange, 1961a:676).

DISTRIBUTION. — USA: AZ, CA, NV (Stange, 1970a:123).

Scotoleon expansus (Navás), 1913e:48 [*Brachynemurus*].

Holotype female: Mexico, Baja California, Diguët (MNHN).

= *Hesperoleon apache* Banks, 1938d:417. Holotype female: USA, Arizona, Globe (MCZ).

TAXONOMY. — To *Hesperoleon* via synonymy with *H. sackeni* (see Banks, 1942:138); returned to *Brachynemurus* (see Stange, 1970a:125); to *Scotoleon* (see Stange, 1994:87); *B. expansus* = *H. sackeni* (see Banks, 1942:138); *B. expansus* not = *B. sackeni*, *H. apache* = *B. expansus* (see Stange, 1970a:125).

DISTRIBUTION. — USA: AZ¹, CA², NM², TX² (¹Banks, 1938d:417 as *H. apache*; ²Stange, 1970a:125).

Scotoleon fidelitas (Adams), 1957b:94 [*Hesperoleon*].

Holotype male: USA, Arizona, Santa Rita Mountains, Box Canyon, 21.VIII.1949 (MCZ).

TAXONOMY. — To *Brachynemurus* (see Stange, 1970a:126); to *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — USA: AZ, CA (Adams, 1957b:97).

Scotoleon infuscatus (Adams), 1957b:104 [*Hesperoleon*].

Holotype male: USA, California, Contra Costa Co., Antioch, 24.V.1949, MacSwain (CAS).

TAXONOMY. — To *Brachynemurus* (see Stange, 1970a:127); to *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — USA: CA (Adams, 1957b:105).

Scotoleon intermedius (Currie), 1903:283 [*Brachynemurus*].

Holotype male: USA, Arizona, Phoenix (USNM).

TAXONOMY. — To *Hesperoleon* (see Banks, 1927:18); returned to *Brachynemurus* (see Stange, 1970a:127); to *Scotoleon* (see Stange, 1994:87); *B. intermedius* = *B. texanus* (see Banks, 1907c:31); *B. intermedius* not = *B. texanus* (see Banks, 1927:18).

DISTRIBUTION. — USA: AZ¹, CA², NV³, UT³ (¹Currie, 1903:283; ²Banks, 1927:19; ³Stange, 1970a:128).

Scotoleon longipalpis (Hagen), 1888:95 [*Brachynemurus*].

Lectotype male: Mexico, Baja California Sur, Cabo San Lucas, 1860, Xanthus (MCZ).

= *Scotoleon congener* Banks, 1942:138. Holotype male: Mexico, Baja California, Chapala Dry Lake, 21.VI, Michelbacher & Ross (CAS).

TAXONOMY. — To *Scotoleon* (see Banks, 1913b:64); returned to *Brachynemurus* (see Stange, 1970a:128); returned to *Scotoleon* (see Stange, 1994:87); *B. congener* = *B. longipalpis* (see Stange, 1970a:129); lectotype designated (see Stange, 1961a:676).

DISTRIBUTION. — **USA:** AZ¹, CA², NM², NV², TX² (¹Currie, 1903:276; ²Stange, 1970a:Map 19).

Scotoleon marshi (Stange), 1970a:130 [*Brachynemurus*].

Holotype male: USA, Texas, Brewster Co., 22 miles south of Marathon, 3.IX.1950, Stange & Marsh (UCD).

TAXONOMY. — To *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — **USA:** TX (Stange, 1970a:130).

Scotoleon minusculus (Banks), 1898:203 [*Brachynemurus*].

Lectotype male: USA, California, Lancaster, VII, Morge (MCZ).

= *Brachynemurus texanus* Banks, 1903d:175. Lectotype male: USA, Texas, Laredo, VIII, McClendon (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1927:24); returned to *Brachynemurus* (see Stange, 1961a:676); to *Scotoleon* (see Stange, 1994:87); *B. texanus* = *B. minusculus* (see Stange, 1970a:131); lectotype designated for *B. minusculus* (see Stange, 1961a:676), and for *B. texanus* (see Stange, 1970a:131).

DISTRIBUTION. — **USA:** AZ³, CA¹, KS⁵, NE⁵, NM⁴, NV⁵, OK⁵, TX², UT⁵ (¹Banks, 1898:203; ²Banks, 1903d:175; ³Currie, 1903:278; ⁴Banks, 1928:24; ⁵Stange, 1970a:131).

Scotoleon minutus (Adams), 1957b:100 [*Hesperoleon*].

Holotype male: USA, California, Cathedral City, 24.VII.1950, Isaak (CAS).

TAXONOMY. — To *Brachynemurus* (see Stange, 1970a:132); to *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — **USA:** AZ¹, CA¹, NV² (¹Adams, 1957b:102; ²Stange, 1970a:133).

Scotoleon niger (Currie), 1898:134 [*Brachynemurus*].

Holotype female: USA, Arizona, Fort Grant, 20.VII.1897, Hubbard (USNM).

= *Hesperoleon huachuca* Banks, 1938d:415. Holotype male: USA, Arizona, Reef (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1927:26); returned to *Brachynemurus* (see Stange, 1970a:133); to *Scotoleon* (see Stange, 1994:87); *B. huachuca* = *B. niger* (see Stange, 1970a:133).

DISTRIBUTION. — **USA:** AZ¹, CA², NV² (¹Currie, 1898:134; ²Stange, 1970a:134).

Scotoleon nigrescens (Stange), 1970a:135 [*Brachynemurus*].

Holotype male: USA, Arizona, Cochise Co., 13 miles east of Douglas, San Bernardino Ranch, 12.VI.1959, L. Stange (UCD).

TAXONOMY. — To *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — **USA:** AZ, TX (Stange, 1970a:136).

Scotoleon nigrilabris (Hagen), 1888:72 [*Brachynemurus*].

Lectotype female: USA, Colorado, Manitou (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913b:65); returned to *Brachynemurus* (see Stange, 1970a:136); to *Scotoleon* (see Stange, 1994:87); lectotype designated (see Banks, 1927:27).

DISTRIBUTION. — **USA:** AZ², CA⁶, CO¹, ID⁶, KS³, MN⁵, MT⁶, NE⁴, NM⁴, NV⁴, SD⁴, TX⁶, UT⁴, WY⁶ (¹Hagen, 1888:72; ²Currie, 1903:275; ³Smith, 1925:169; ⁴Banks, 1927:28; ⁵Parfin, 1952:425; ⁶Stange, 1970a:137).

Scotoleon nivatensis (Navás), 1915a:52 [*Hesperoleon*].

Holotype male: USA, Nevada, Lyon Co., Yerington (despository unknown).

TAXONOMY. — To *Brachynemurus* (see Stange, 1970a:138); to *Scotoleon* (see Stange, 1994:87); *H. nivatensis* = *H. singularis* (see Banks, 1927:5); *B. nivatensis* not = *B. singularis* (see Stange, 1970a:138).

DISTRIBUTION. — **USA:** AZ², CA², ID², NV¹, OR² (¹Navás, 1915a:52; ²Stange, 1970a:138).

Scotoleon pallidus (Banks), 1899a:171 [*Brachynemurus*].

Holotype female: USA, Arizona, Phoenix, IX, Kunze (MCZ).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913:65); returned to *Brachynemurus* (see Stange, 1970a:139); to *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — USA: AZ¹, CA², NM², NV², TX² (¹Banks, 1899a:171; ²Stange, 1970a:139).

Scotoleon peregrinus (Hagen), 1861:234 [*Myrmeleon*].

Lectotype female: USA, California, Havilah (MCZ).

= *Brachynemurus assimilis* Banks, 1903d:174
Lectotype male: USA, California, Tehama, 28.VIII.1897 (MCZ).

TAXONOMY. — To *Brachynemurus* (see Hagen, 1888:59); to *Hesperoleon* (see Banks, 1913b:64 as synonym of *H. ferox*); returned to *Brachynemurus* (see Stange, 1970a:141); to *Scotoleon* (see Stange, 1994:87); lectotype designated for *H. peregrinus* (see Banks, 1927:16); for *B. assimilis* (see Stange, 1961:675); *B. peregrinus* = *B. ferox* (see Banks, 1903d:175); *B. peregrinus* = *B. ferox* (see Currie, 1903:276); *H. carrizonus* = *H. peregrinus* (see Banks, 1938d:414); *H. carrizonus* not = *H. peregrinus* (see Stange, 1961a:676); *B. ferox* not = *B. peregrinus*, *B. assimilis* = *B. peregrinus* (see Stange, 1970a:141).

DISTRIBUTION. — CAN: BC², USA: AZ², CA¹, CO², NE², NM², NV², UT², WY² (¹Hagen, 1861:325; ²Stange, 1970a:142).

Scotoleon quadripunctatus (Currie), 1898:136 [*Brachynemurus*].

Holotype female: USA, California, San Bernardino Co., Coquillett (USNM).

TAXONOMY. — To *Hesperoleon* (see Banks, 1927:21); returned to *Brachynemurus* (see Stange, 1970a:143); returned to *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — USA: AZ², CA¹, NV³ (¹Currie, 1898:136; ²Banks, 1927:22; ³Stange, 1970a:144).

Scotoleon singularis (Currie), 1903:284 [*Brachynemurus*].

Holotype male: USA, Arizona, Phoenix (USNM).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913b:65); returned to *Brachynemurus* (see Stange, 1970a:145); to *Scotoleon* (see Stange, 1994:87); *H. nivatensis* = *H. singularis* (see Banks, 1927:5); *B. nivatensis* not = *B. singularis* (see Stange, 1970a:145).

DISTRIBUTION. — USA: AZ¹, CA³, NV³, NM³, UT² (¹Currie, 1903:284; ²Banks, 1927:18; ³Stange, 1970a:146).

Scotoleon yavapai (Currie), 1903:281 [*Brachynemurus*].

Holotype male: USA, Arizona, Yavapai Co., Hot Springs (USNM).

TAXONOMY. — To *Hesperoleon* (see Banks, 1913b:65); returned to *Brachynemurus* (see Stange, 1970a:148); returned to *Scotoleon* (see Stange, 1994:87).

DISTRIBUTION. — USA: AZ¹, CA³, NV³, UT² (¹Currie, 1903:281; ²Banks, 1927:35; ³Stange, 1970a:148).

GNOPHOLEONTINI

Gnopholeon Stange, 1970a:148

Gnopholeon barberi (Currie), 1903:282 [*Brachynemurus*].

Holotype female: USA, Arizona, Hot Springs (USNM).

TAXONOMY. — To *Scotoleon* (see Banks, 1913b:65); to *Austroleon* (see Banks, 1927:55); to *Gnopholeon* (see Stange, 1970a:150).

DISTRIBUTION. — USA: AZ¹, CA² (¹Currie, 1903:282; ²Stange, 1970a:150).

Gnopholeon delicatulus (Currie), 1903:279 [*Brachynemurus*].

Holotype male: USA, Arizona, Phoenix, 11.V.1898, Kunze (USNM).

TAXONOMY. — To *Scotoleon* (see Banks, 1913b:65); to *Clathroneuria* (see Banks, 1927:52); to *Gnopholeon* (see Stange, 1970a:151).

DISTRIBUTION. — USA: AZ¹, CA², NV² (¹Currie, 1903:279; ²Stange, 1970a:152).

Menkeleon Stange, 1970a:154

Menkeleon bellulus (Banks), 1905b:7 [*Maracandula*].

Lectotype female: USA, California, Three Rivers (MCZ).

= *Maracandula bellula* Banks, 1905:90 (nomen nudum).

= *Maracandula minima* Banks, 1942:140.
Holotype male: USA, Mexico, Baja California, San Miguel (CAS).

TAXONOMY. — To *Menkeleon* (see Stange, 1970a:155); *M. minima* = *M. bellula* (see Stange, 1970a:155); lectotype designated (see Stange, 1970a:155).

DISTRIBUTION. — USA: AZ², CA¹, NM³, UT² (¹Banks, 1905b:7; ²Banks, 1927:59; ³Stange, 1970a:157).

Tyttholeon Adams, 1957b:106

Tyttholeon puerilis Adams, 1957b:107.

Holotype male: USA, California, Riverside Co., Palm Springs, 27.VI.1939, Isaacs (CAS).

DISTRIBUTION. — USA: AZ, CA (Adams, 1957b:108).

MYRMELEONTINI

Myrmeleon Linnaeus, 1767:913

Myrmeleon arizonicus Banks, 1943:76.

Syntypes (sex unknown): USA, Arizona, Tucson, 6.20.VI; Texas, Brownsville, IV (MCZ).

DISTRIBUTION. — USA: AZ, TX (Banks, 1943:76).

Myrmeleon californicus Banks, 1943:77.

Holotype female: USA, California, Gavilan, 11.VII, G. & J. Sperry (MCZ).

DISTRIBUTION. — USA: CA (Banks, 1943:77).

Myrmeleon carolinus Banks, 1943:75.

Syntypes (sex unknown): USA, North Carolina, Southern Pines, VVIII, Manee; Georgia, Scriben Co., Millin, VII, Morrison (MCZ).

DISTRIBUTION. — USA: GA, NC (Banks, 1943:75).

Myrmeleon crudelis Walker, 1853:388.

Holotype (sex unknown): USA, E. Florida, St. John's Bluff, E. Doubleday (BMNH).

= *Myrmeleon tectus* Walker, 1853:378. Lectotype male: USA, E. Florida, St. John's Bluff, E. Doubleday (BMNH).

TAXONOMY. — *M. tectus* = *M. crudelis* Stange, **NEW SYNONYMY**.

DISTRIBUTION. — USA: FL¹, GA², MO³, NC², NJ², NY², TX², VA² (¹Walker, 1853:378; ²Banks, 1927:78; ³Froeschner, 1947:128).

Myrmeleon exitialis Walker, 1853:376.

Holotype (sex unknown): USA, California, Hartweg's coll. (BMNH).

= *Myrmeleon immaculatus occidentalis* Currie, 1903:274. Holotype male: USA, Arizona, Williams (USNM).

= *Myrmeleon immaculatus coloradensis* Banks, 1905a:90 (nomen nudum). Holotype (sex unknown): USA, Nevada, Ormsby Co. (MCZ).

TAXONOMY. — *M. immaculatus occidentalis* = *M. exitialis*, *M. immaculatus coloradensis* = *M. exitialis* Stange, **NEW SYNONYMY**.

DISTRIBUTION. — CAN: BC⁴, USA: AZ², CA¹, NV³, (¹Walker, 1853:376; ²Currie, 1903:274; ³Banks, 1905a:90; ⁴Spencer, 1942:28, as *M. immaculatus occidentalis*).

Myrmeleon immaculatus DeGeer, 1773:564.

Type(s) (sex unknown): USA, Pennsylvania, Acrelius (NRS).

= *Myrmeleon melanocephalum* Olivier, 1811:127. Type(s) (sex unknown): USA, New York, environs of New York, M. Bofe (depository unknown).

TAXONOMY. — To *Neleon* (see Navás, 1915a:53); returned to *Myrmeleon* (see Banks, 1928:74); *M. melanocephalum* = *M. immaculatus* (see Hagen, 1888:188).

DISTRIBUTION. — USA: DC³, FL⁵, GA³, IN⁶, KS⁴, MD⁵, MI⁵, MN⁸, MO⁷, NC⁵, NH⁵, NY², OH⁵, OK⁵, PA¹, VA³, WS⁹ (¹DeGeer, 1773:564; ²Olivier, 1811; ³Hagen, 1861:232; ⁴Smith, 1925:170; ⁵Banks, 1927:74 [western records excluded as probably pertaining to *M. exitialis*]; ⁶Montgomery & Trippel, 1933:260; ⁷Froeschner, 1947:128; ⁸Parfin, 1952:425; ⁹Throne, 1972:123).

Myrmeleon insertus Hagen, 1861:233.

Syntypes (sex unknown): Cuba, Poey; Haiti, Port-au-Prince (MCZ).

DISTRIBUTION. — USA: FL (Lucas & Stange, 1981:213).

Myrmeleon invisus Walker, 1853:379.

Holotype (sex unknown): no locality data (BMNH).

= *Myrmeleon heriocles* Banks, 1914b:619. Syntypes (sex unknown): USA, North Carolina, Southern Pines, May (MCZ).

TAXONOMY. — *M. heriocles* = *M. invisus* Stange, **NEW SYNONYMY**.

DISTRIBUTION. — USA: FL², NC¹, NJ² (¹Banks, 1914b:618, as *M. heriocles*; ²Banks, 1927:76, as *M. heriocles*).

Myrmeleon mexicanus Banks, 1903c:241.

Syntypes (sex unknown): Mexico, Guadalajara, McClendon (MCZ).

DISTRIBUTION. — **USA:** AZ (Banks, 1938d:420).

Myrmeleon mobilis Hagen, 1888:204.

Syntypes male and female: USA, Alabama, VII.1883, Lyon (MCZ).

= *Myrmeleon mobilis* Hagen, 1860:368 (nomen nudum).

DISTRIBUTION. — **USA:** AL¹, FL⁵, GA², MO⁴, NC³, (Hagen, 1888:204; ²Banks, 1927:75; ³Brimley, 1938:30; ⁴Froeschner, 1947:128; ⁵Lucas & Stange, 1981:214).

Myrmeleon rusticus Hagen, 1861:233.

Lectotype (sex unknown): USA, western Texas (now New Mexico), Pecos River, 4.VIII, Pope (MCZ).

= *Myrmeleon diversus* Hagen, 1873:729. Holotype (sex unknown): USA, Wyoming, Yellowstone National Park (MCZ).

= *Myrmeleon distans* Banks, 1898:206. Holotype (sex unknown): USA, California, Coronado Beach, VII, Morse (MCZ).

= *Myrmeleon agriope* Banks, 1914b:618. Syntypes (sex unknown): USA, California, Claremont; Arizona, Nogales; Arizona, Phoenix (MCZ).

TAXONOMY. — *M. rusticus* = *M. crudelis* (see Banks, 1907c:29); *M. rusticus* not = *M. crudelis*, *M. distans* = *M. rusticus*, *M. agriope* = *M. rusticus* (see Banks, 1927:78); *M. diversus* = *M. rusticus* Stange, **NEW SYNONYMY**; lectotype designated by Banks, 1927:78.

DISTRIBUTION. — **USA:** AZ⁴, CA³, NM¹, UT⁴, WY² (Hagen, 1861:233; ²Hagen, 1873:729; ³Banks, 1898:206; ⁴Banks, 1927:78). (A New Jersey record by Smith, 1900:56 must certainly be a misidentification).

Myrmeleon texanus Banks, 1900:596.

Holotype (sex unknown): USA, Texas, Galveston, VI.1900 (MCZ).

DISTRIBUTION. — **USA:** TX (Banks, 1900:596).

POLYSTOECHOTIDAE

Polystoechotids, or giant lacewings, are among the largest of North American neuropterans, and among the least known. Only the first instar larva has been described (Welch, 1914), and no one has yet been able to get the young larvae to feed. Pupal skins of *Platystoechotes* have been found around the roots of incense cedar trees in the Sierra Nevada Mountains of California. Adult *Platystoechotes* emerge in

early summer, while adult *Polystoechotes* emerge in late summer and early fall. Adult *Polystoechotes* are most frequently seen around the smoke of campfires, and sometimes are attracted to lights. The geographical distribution of *Platystoechotes* is entirely in the Sierra Nevada of California. The range of *Polystoechotes* at one time included almost all of northern North America and much of California south to Panama. However, this genus cannot now be found over much of its former range, and today appears confined to remote mountainous areas.

Platystoechotes Carpenter, 1940:270

Platystoechotes lineatus Carpenter, 1940:271.

Holotype male: USA, California, Wolverton, Sequoia National Park, 7000–9000', 14.VI.1929, E. C. Van Dyke (CAS).

DISTRIBUTION. — **USA:** CA (Carpenter, 1940:271).

Polystoechotes Burmeister, 1839:982

Polystoechotes punctatus (Fabricius), 1793:73 [Semblis].

Holotype (sex unknown): without locality data (BMNH).

= *Hemerobius nebulosus* Fabricius, 1798:202. Type(s) (sex unknown): (locality unknown), (depository unknown).

= *Hemerobius irroratus* Say, 1824:306. Type(s) (sex unknown): USA (depository unknown).

= *Hemerobius vittatus* Say, 1824:307. Type(s) (sex unknown): USA: New Jersey; Pennsylvania (ANSP).

= *Polystoechotes sticticus* Burmeister, 1839:982. Type(s) (sex unknown): North America (Halle).

= *Osmylus validus* Walker, 1853:233. 5 syntypes (sex unknown): USA (BMNH).

TAXONOMY. — To *Polystoechotes* (see Hagen, 1861:206); *H. nebulosa* = *P. punctatus*, *H. irroratus* = *P. punctatus*, *P. sticticus* = *P. punctatus*, *O. validus* = *P. punctatus* (see Hagen, 1861:206); *H. vittatus* = *P. punctatus* (see Carpenter, 1940:268269).

DISTRIBUTION. — **CAN:** AB⁷, BC⁷, ON⁷, PQ⁷, **USA:** AK¹¹, AZ⁷, CA⁷, CO², GA⁷, IA¹¹, ID⁷, IN¹⁰, KS⁴, MA⁷, MD⁷, ME⁷, MI¹¹, MN⁸,

MT⁷, NC⁶, NE¹¹, NH⁷, NJ¹², NM², NV⁷, NY⁵, OH¹¹, OR⁷, PA³, SD¹¹, TX¹, UT⁷, WA⁷, WS⁹, WY⁷ (¹Hagen, 1861:206; ²Hagen, 1875:920; ³Smith, 1900:55; ⁴Smith, 1925:167; ⁵Leonard, 1928:40; ⁶Brimley, 1938:30; ⁷Carpenter, 1940:269; ⁸Parfin, 1952:425; ⁹Throne, 1971b:86; ¹⁰Lawson & McCafferty, 1984:130; ¹¹Penny, **NEW STATE RECORDS**; ¹²S. Marshall, **NEW STATE RECORD**).

SISYRIDAE

Sisyrids, or spongilla-flies, are larval predators of freshwater sponges, sucking out the liquid contents of the cells with their long, straight, hollow mandibles. This is the only truly aquatic family of Neuroptera, although some Osmylidae are semi-aquatic. The larvae bear external, abdominal gills in second and third instars. When mature, larvae leave the water and climb nearby vegetation, where they spin a silken cocoon. Often, the cocoon is surrounded by a distinctive, outer, mesh-like covering. Adults usually emerge in late summer, and are often attracted to lights, sometimes at a considerable distance from water. Eggs are laid above water, and when they hatch, the young larvae fall directly into the water. The taxonomy of North American spongilla-flies was dealt with by Parfin and Gurney (1956).

Climacia McLachlan, 1869a:21

Climacia areolaris (Hagen), 1861:199 [*Micromus*].

Neotype male: USA Oklahoma, Grant, 1.VII.1937, Standish and Kaiser (MCZ).

= *Climacia dictyona* Needham, 1901:558. Lectotype male: USA, New York, Saranac Inn, 28.VI.1900 (Cornell).

= *Sisyr lampra* Navás, 1914c:60. Type(s) (sex unknown): USA, New Jersey, Lakehurst (depository unknown).

TAXONOMY. — To *Climacia* (see McLachlan, 1869:21); *S. lampra* = *C. areolaris* (see Navás, 1935:33); *C. dictyona* = *C. areolaris*, *S. lampra* = *S. vicaria* (see Carpenter, 1940:254, 255); *S. lampra* = *C. areolaris* (see Parfin & Gurney, 1956:486). Hagen's original type was apparently lost in shipment from Europe, and Carpenter (1940:256) designated a neotype. Parfin and

Gurney (1956:488) designated a lectotype from Needham's syntype series of *C. dictyona*.

DISTRIBUTION. — CAN: ON⁴, PQ⁴, USA: AL⁷, AR⁷, CO⁷, CT⁴, FL¹, GA⁴, IL⁴, IN⁷, LA⁴, MA⁴, MD⁴, ME⁴, MI⁴, MN⁶, MO⁵, MS⁴, NC², NH⁴, NJ⁴, NM⁴, NY³, OH⁴, OK⁴, PA⁴, TX⁴, VA⁴, VT⁴, WS⁷ (¹Hagen, 1861:199; ²Brimley, 1938:29; ³Leonard, 1928:39; ⁴Carpenter, 1940:256; ⁵Froeschner, 1947:132; ⁶Parfin, 1952:424; ⁷Parfin & Gurney, 1956:489).

Climacia californica Chandler, 1953:183.

Holotype male: USA, California, Lake Co., Clear Lake, 19.V.1949, 1318 ft., H. P. Chandler (CAS).

DISTRIBUTION. — USA: CA¹, ID² (¹Chandler, 1953:182; ²Clark, 1985:391).

Climacia chapini Parfin and Gurney, 1956:495.

Holotype male: USA, Texas, Columbus, E. A. Schwarz (USNM).

DISTRIBUTION. — USA: NM¹, OK², TX¹ (¹Parfin & Gurney, 1956:498; ²Penny, **NEW STATE RECORD**).

Sisyr Burmeister, 1839:975

Sisyr apicalis Banks, 1908a:261.

Holotype female: Cuba, Havana (MCZ).

DISTRIBUTION. — USA: FL¹, GA¹, LA², MS³ (¹Parfin & Gurney, 1956:472; ²Poirrier, 1969:574; ³Lago, 1981:28).

Sisyr fuscata (Fabricius), 1793:84 [*Hemerobius*].

Holotype female: Denmark (ZMC).

= *Hemerobius confinis* Stephens, 1836:115. Type(s) (sex unknown): England (BMNH).

= *Sisyr morio* Burmeister, 1839:976. Type(s) (sex unknown): Germany (Halle).

= *Sisyr nigripennis* Wesmael, 1841:213. Type(s) (sex unknown): Belgium (IRSNB).

= *Branchiotoma spongillae* Westwood, 1842:108. Type(s) (sex unknown): larva, England (Oxford).

= *Hemerobius fumatus* Motschulsky, 1853:20. Type(s) (sex unknown): Russia (Moscow).

TAXONOMY. — To *Sisyr* (see Burmeister, 1839:976); *H. nitidulus* = *S. fuscata*, *H. confinis* = *S. fuscata*, *S. morio* = *S. fuscata*, *S. nigripennis* = *S. fuscata*, *B. spongillae* = *S. fuscata*, *H. fumatus* = *S. fuscata* (see Parfin & Gurney, 1956:468).

DISTRIBUTION. — CAN: BC¹, ON¹, PQ¹, USA: AK¹, IN², MA¹, ME¹, MI¹, MN¹, NY¹,

WS¹ (¹Parfin & Gurney, 1956:470; ²Lawson & McCafferty, 1984:130).

Sisyrta vicaria (Walker), 1853:297 [*Hemero-bius*].

Lectotype male: USA, Georgia, John Abbot (BMNH).

= *Sisyrta umbrata* Needham, 1901:555. Lectotype male: USA, Illinois, Lake Forest, 2.VI.1899 (Cornell).

TAXONOMY. — To *Sisyrta* (see Hagen, 1861:197); *S. umbrata* = *S. vicaria*, *S. lampra* = *S. vicaria* (see Carpenter, 1940:254); *S. lampra* not = *S. vicaria* (see Parfin & Gurney, 1956:486).

DISTRIBUTION. — CAN: BC⁵, NS⁵, ON⁵, PQ⁵, USA: AZ⁹, CT⁵, DC⁵, FL⁵, GA¹, IL⁵, IN⁹, KS², KY⁹, MA⁵, MD⁵, ME⁶, MI⁵, MN⁸, MO⁷, MS¹⁰, NC⁴, NY³, OK⁹, OR⁵, PA⁵, RI⁹, TN⁹, TX⁵, VA⁹, WA⁹, WS⁵, (¹Walker, 1853:297; ²Smith, 1925:166; ³Leonard, 1928:39; ⁴Brimley, 1938:29; ⁵Carpenter, 1940:254; ⁶Procter, 1946:42; ⁷Froeschner, 1947:132; ⁸Parfin, 1952:424; ⁹Parfin & Gurney, 1956:464; ¹⁰Poirier & Holzenthal, 1980:1).

RAPHIDOPTERA

Snake flies are elongate as larvae, living as predators under the surface of tree bark, under fallen logs, or in leaf litter. Adults may be associated with a variety of coniferous and broad-leaved trees and shrubs. Life histories of most of our species are still unknown. In America north of Mexico, they do not occur east of the Rocky Mountains, except in Texas. The taxonomy of all species of Raphidioptera was treated by Aspöck (1974, 1975), and H. and U. Aspöck and Rausch (1991).

INOCELLIDAE

Inocellid snake-flies can be separated from raphidiids by the absence of ocelli, longer thicker antennae, and darker thicker pterostigmal spot. Only a single genus, *Negha* Navás 1916b, is found in North America.

Negha Navás, 1916b:510

Negha inflata (Hagen), 1861:196 [*Raphidia*].

Neotype male: USA, California, Yosemite National Park, Mariposa Grove, 12.VII.1927, F. M. Carpenter (MCZ).

= *Inocellia hageni* Albarda, 1891:171. Holotype female: USA, California, San Francisco (BMNH).

TAXONOMY. — To *Inocellia* (see Albarda, 1891:167); to *Negha* (see Navás, 1916b:510); returned to *Inocellia* (see Carpenter, 1936:138); to *Inocellia* (*Negha*) (see Aspöck, 1975:540); returned to *Negha* (see Aspöck, 1988:107); *I. hageni* = *I. inflata* (see Carpenter, 1936:139); *I. longicornis* = *I. inflata* (see Aspöck, 1975:540).

DISTRIBUTION. — CAN: BC², USA: CA¹, ID³, MT³, NV², OR², UT³, WA³ (¹Hagen, 1861:196; ²Carpenter, 1936:140; ³Aspöck, 1975:540).

Negha longicornis (Albarda), 1891:169 [*Inocellia*].

Holotype male: USA, California (BMNH).

TAXONOMY. — To *Negha* (see Navás, 1919a:75); returned to *Inocellia* (see Carpenter, 1936:140); returned to *Negha* (see Aspöck, 1988:107); *I. longicornis* = *I. inflata* (see Aspöck, 1975:540); *I. longicornis* not = *I. inflata* (see Aspöck, 1988:107).

DISTRIBUTION. — CAN: BC², USA: CA¹, NV², OR², WA² (¹Albarda, 1891:169; ²Carpenter, 1936:141).

Negha meridionalis U. Aspöck, 1988:107.

Holotype male: USA, California, Riverside Co., 35 miles south of Palm Springs, 26.II.1977, S. Johnson (SDNHM).

DISTRIBUTION. — USA: CA (Aspöck, 1988:107).

RAPHIDIIDAE

The biology of raphidiids is similar to that of inocellids. For subgeneric characters, see H. and U. Aspöck and Rausch (1991).

Agulla (**Agulla**) Navás, 1914d:66

Agulla (**Agulla**) **arnaudi** (U. Aspöck), 1973:234 [*Raphidia* (*Agulla*)].

Holotype male: Mexico, Baja California, San Pedro Martir, trail La Joya to La Zanja, 10.6.1953, P. H. Arnaud, Jr. (CAS).

TAXONOMY. — To *Agulla* (see Aspöck, 1986:25).

DISTRIBUTION. — USA: CA (Aspöck, 1973:234).

Agulla (**Agulla**) **assimilis** (Albarda), 1891:144 [*Rhaphidia*].

Holotype female: Canada, British Columbia, Vancouver Island (BMNH).

= *Raphidia arizonica* (Banks), 1911:338. Holotype male: USA, Arizona, Phoenix, Oslar (MCZ).

= *Agulla bagnalli* Navás, 1914d:67. Holotype male: Canada, British Columbia, Vancouver Island, Victoria (Oxford).

TAXONOMY. — To *Agulla* (see Navás, 1914d:66); to *Raphidia* (*Agulla*) (see Aspöck, 1975:538); returned to *Agulla* (see Aspöck, 1986:25); *A. bagnalli* = *R. assimilis* (Navás, 1918c:26); *R. arizonica* = *R. assimilis* (Aspöck, 1975:538).

DISTRIBUTION. — CAN: AB³, BC¹, USA: AZ², CA³, CO⁴, ID⁴, MT⁴, OR³, UT⁴, WA⁴, WY⁴ (¹Albarda, 1891:144; ²Banks, 1911:338, as *R. arizonica*; ³Carpenter, 1936:128; ⁴Carpenter, 1936:118, as *R. arizonica*).

Agulla (*Agulla*) astuta (Banks), 1911:338 [*Raphidia*].

Three syntype males: USA, California, Pasadena, 31.V.1919, F. Grinnell, Jr.; San Gabriel Mountains, 17.VI; Mount Wilson, 5.VI.1904 (MCZ).

= *Agulla singularis* Carpenter, 1936:132. Holotype male: USA, California, Banning, 29.V.1928, E. C. Van Dyke (CAS).

TAXONOMY. — To *Glavia* (see Navás, 1919a:30); to *Agulla* (*Agulla*) (see Carpenter, 1936:131); to *Raphidia* (*Agulla*) (see Aspöck, 1975:538); returned to *Agulla* (see Aspöck, 1986:25); *A. singularis* = *A. astuta* (see Aspöck, 1975:538).

DISTRIBUTION. — USA: AZ², CA¹ (¹Banks, 1911:338; ²Aspöck, 1975:538).

Agulla (*Agulla*) barri (U. Aspöck), 1973:238 [*Raphidia* (*Agulla*)].

Holotype male: USA, California, Inyo Co., Westgard Pass, 11.6.1969, W. F. Barr, on pinyon pine (CAS).

TAXONOMY. — To *Agulla* (see Aspöck, 1986:25).

DISTRIBUTION. — USA: CA, NV (Aspöck, 1973:239).

Agulla (*Agulla*) bicolor (Albarda), 1891:152 [*Rhaphidia*].

Ten syntypes (four males, six females): USA, Colorado (BMNH).

= *Raphidia occulta* Banks, 1905a:88 (nomen nudum).

= *Raphidia occulta* Banks, 1905b:4. Syntypes (sex unknown): USA, California, Claremont, Baker; Arizona, Prescott, Oslar; New Mexico, Pecos (MCZ).

TAXONOMY. — To *Raphidilla* (see Navás, 1919a:51); to *Agulla* (*Agulla*) (see Carpenter, 1936:126); to *Raphidia* (*Agulla*) (see Aspöck, 1975:538); returned to *Agulla* (see Aspöck, 1986:25); *R. occulta* = *A. bicolor* (see Carpenter, 1936:126).

DISTRIBUTION. — CAN: BC³, USA: AZ², CA², CO¹, NM², NV³, OR³, UT³, WA³ (¹Albarda, 1891:152; ²Banks, 1905b:4; ³Carpenter, 1936:126).

Agulla (*Agulla*) bractea Carpenter, 1936:130.

Holotype male: USA, California, San Gabriel Mountains, 3500', 11.VI.1910, F. Grinnell, Jr. (MCZ).

= *Agulla neglecta* Carpenter, 1936:132. Holotype male: USA, California, East Lake, VI.1883, Turner (USNM).

TAXONOMY. — To *Raphidia* (*Agulla*) (see Aspöck, 1975:538); returned to *Agulla* (see Aspöck, 1986:25); *A. neglecta* = *A. bractea* (see Aspöck, 1975:538).

DISTRIBUTION. — USA: CA (Carpenter, 1936:130).

Agulla (*Agulla*) crotchii (Banks), 1924:429 [*Raphidia*].

Holotype male: USA, California, Crotch (MCZ).

TAXONOMY. — To *Agulla* (*Agulla*) (see Carpenter, 1936:123).

DISTRIBUTION. — USA: CA (Banks, 1924:429).

Agulla (*Agulla*) faulkneri U. Aspöck, 1987:1.

Holotype male: USA, California, Riverside Co., Idylwild-Pine Cove, 26.VI.1977, J. W. Brown (SDNHM).

DISTRIBUTION. — USA: CA (Aspöck, 1987:1).

Agulla (*Agulla*) flexa Carpenter, 1936:125.

Holotype male: USA, New Mexico, Jemez Mountains, 18.VI, Woodgate (MCZ).

TAXONOMY. — To *Raphidia* (*Agulla*) (see Aspöck, 1975:539); returned to *Agulla* (see Aspöck, 1986:25).

DISTRIBUTION. — USA: AZ, NM (Carpenter, 1936:125).

Agulla (*Agulla*) herbsti (Esben-Petersen), 1912:273 [*Raphidia*].

Holotype male: "Chile, Concepcion," 29.XII.1908, P. Herbst (HMB). Note: This locality is certainly in error, the species is only found in North America.

= *Raphidia bifurca* Banks, 1920:327. Syntypes male and female: Canada, British Columbia, Wellington, 9.V.1898; 3.V.1897 (MCZ).

= *Agulla occidentis* Carpenter, 1936:129. Holotype male: USA, California, Pinecrest, Johnson (CAS).

TAXONOMY. — To *Raphidia* (*Agulla*) (see Aspöck, 1975:538); *R. bifurca* = *R. herbsti*, *A. occidentis* = *R. herbsti* (see Aspöck, 1975:538).

DISTRIBUTION. — CAN: AB³, BC¹, USA: CA², ID³, OR², MT³, NV³, WA³ (¹Banks, 1920:327, as *R. bifurca*; ²Carpenter, 1936:130, as *A. occidentis*; ³Aspöck, 1975:539).

***Agulla* (Californoraphidia) Aspöck et al., 1991:464**

***Agulla* (Californoraphidia) nigrinotum** Woglum and McGregor, 1964:201.

Holotype male: USA, California, Kern Co., Mill Potrero, 1.VII.1963, R. S. Woglum (CAS).

TAXONOMY. — To *Raphidia* (*Agulla*) (see Aspöck, 1975:539); to *Agulla* (see Aspöck, 1986:25); to *Agulla* (*Californoraphidia*) by Aspöck et al., 1991:464.

DISTRIBUTION. — USA: CA (Woglum & McGregor, 1964:202).

***Agulla* (Franciscoraphidia) Aspöck et al., 1991:462**

***Agulla* (Franciscoraphidia) directa** Carpenter, 1936:124 [*Agulla* (*Agulla*)].

Holotype male: USA, California, Oroville, 17.IV.1928, H. Kiefer (CAS).

TAXONOMY. — To *Raphidia* (*Agulla*) (see Aspöck, 1975:539); returned to *Agulla* (see Aspöck, 1986:25); to *Agulla* (*Franciscoraphidia*) (see Aspöck et al., 1991:462).

DISTRIBUTION. — USA: CA (Carpenter, 1936:125).

***Agulla* (*Glavia*) Navás, 1916b:?**

Agulla* (*Glavia*) *adnixa (Hagen), 1861:195 [*Raphidia*].

Lectotype female: USA, California; Oregon, Willcox (HMB).

= *Raphidia oblita* Hagen, 1861:195. Holotype male (destroyed): USA, California.

TAXONOMY. — To *Glavia* (see Navás, 1916b:509); to *Agulla* (*Agulla*) (see Carpenter, 1936:116); to *Raphidia* (*Agulla*) (see Aspöck, 1975:539); to *Agulla* (*Glavia*) (see Aspöck et al., 1991:450); *R. oblita* = *A. adnixa* (see Carpenter, 1936:117); lectotype designated (see Aspöck, et al., 1991:452).

DISTRIBUTION. — CAN: AB², BC², USA: AZ², CA¹, CO², ID², MT², NM², NV², OR¹, UT², WA², WY² (¹Hagen, 1861:195; ²Carpenter, 1936:116).

Agulla* (*Glavia*) *modesta adryte U. Aspöck, 1982:98.

Holotype male: USA, California, Inyo Co., 7 miles north of Parcher's Camp, 30.VI.1961, J. K. Drew (UCB).

DISTRIBUTION. — USA: CA (Aspöck, 1982:98).

Agulla* (*Glavia*) *modesta aphynphte U. Aspöck, 1982:102.

Holotype male: USA, California, Los Angeles Co., Westwood Hills, IV–V.1949 (LACM).

DISTRIBUTION. — USA: CA (Aspöck, 1982:102).

Agulla* (*Glavia*) *modesta aphyrtte U. Aspöck, 1982:100.

Holotype male: USA, Arizona, Coconino Co., Oak Creek Canyon, 26.VI.1950, L. D. Beamer (SEM).

DISTRIBUTION. — USA: AZ, NM (Aspöck, 1982:100).

Agulla* (*Glavia*) *modesta banksi Carpenter, 1936:119 [*Agulla* (*Agulla*)].

Holotype male: USA, California, Big Bear Lake, 26.VII.1932, R. H. Beamer (MCZ).

TAXONOMY. — To *Raphidia* (*Agulla*) (see Aspöck, 1975:539); to *Agulla* (*Glavia*) (see Aspöck, 1988:98); *A. banksi* = *R. modesta* (see Aspöck, 1975:539); *A. banksi* = subspecies of *A. modesta* (see Aspöck, 1988:98).

DISTRIBUTION. — USA: CA (Carpenter, 1936:120).

Agulla* (*Glavia*) *modesta modesta Carpenter, 1936:119 [*Agulla* (*Agulla*)].

Holotype male: USA, Utah, Beaver Canyon (USNM).

TAXONOMY. — To *Raphidia* (*Agulla*) (see Aspöck, 1975:539); to *Agulla* (*Glavia*) (see Aspöck, 1982:97).

DISTRIBUTION. — USA: CO², UT¹ (¹Carpenter, 1936:120; ²Aspöck, 1982:98).

Agulla* (*Glavia*) *paramerica U. Aspöck, 1982:104.

Holotype male: USA, California, Plumas Co., Johnsville, 11.VII–27.VIII.1964, H. Pini (UCD).

DISTRIBUTION. — USA: CA (Aspöck, 1982:104).

Agulla* (*Glavia*) *unicolor Carpenter, 1936:121 [*Agulla* (*Agulla*)].

Holotype male: USA, California, Yosemite National Park, Mariposa Grove, 20.VII.1932, F. M. Carpenter (MCZ).

TAXONOMY. — To *Raphidia* (*Agulla*) (see Aspöck, 1975:539); to *Agulla* (*Glavia*) (see Aspöck, 1982:102).

DISTRIBUTION. — CAN: BC, USA: CA, ID, MT, NV, OR, UT, WA (Carpenter, 1936:121).

***Alena* (*Alena*) Navás, 1916b:510**

Alena* (*Alena*) *distincta (Banks), 1911:338 [*Raphidia*].

Holotype male: USA, California, Kern Co., Mt. Pinos, 6.VI.1904, F. Grinnell, Jr. (MCZ).

TAXONOMY. — To *Alena* (see Navás, 1916b:510); to *Agulla* (*Alena*) (see Carpenter, 1936:134); to *Raphidia* (*Alena*) (see Aspöck, 1975:539); returned to *Alena* (see Aspöck, 1986:25).

DISTRIBUTION. — USA: CA (Banks, 1911:338).

***Alena* (*Aztekorphidia*)** U. Aspöck and H. Aspöck, 1970:709

Alena* (*Aztekorphidia*) *minuta (Banks), 1903b:239 [*Raphidia*].

Holotype male: USA, Arizona, Williams, 1.VI, Barber and Schwarz (USNM).

TAXONOMY. — To *Alena* (see Navás, 1916b:510); to *Agulla* (*Alena*) (see Carpenter, 1936:133); to *Raphidia* (*Sombreroraphidia*) (see Aspöck, 1975:539); to *Alena* (*Aztekorphidia*) (see Aspöck et al., 1991:471).

DISTRIBUTION. — USA: AZ, NM (Banks, 1903b:239).

MEGALOPTERA

CORYDALIDAE

Corydalidae, or dobson-flies and fish-flies, are among our largest neuropteroids. Males of the dobson-fly *Corydalus cornutus* can have a wingspan of five and one-half inches (14 cm) and bear elongate, sickle-shaped mandibles more than one and one-half inches (4 cm) long. The larvae are aquatic predators known as hellgrammites, which feed on aquatic insects, tadpoles, and small fish. Larvae may go through seven or eight instars and take two or three years or longer to reach maturity. Larvae of some species of *Protochauliodes* live in intermittent streams and form a cell in the soil of the stream bed during the months when the stream is dry. Despite their ferocious appearance, adults either do not feed, or feed on small quantities of nectar and fruit juices. The taxonomy of this group has been treated by Chandler (1956), Contreras-Ramos (1996), Evans (1984), Flint (1965), and Merritt and Cummins (1978).

CORYDALINAE

***Corydalus* Latreille, 1802:290**

Corydalus cornutus (Linnaeus), 1758:551 [*Hemerobius*].

Type(s) (sex unknown): USA, Pennsylvania, DeGeer (London).

= *Corydalus cognatus* Hagen, 1861:193 (as *Corydalis* [*sic*] *cognata*). Holotype female: USA, western Texas (now New Mexico), Pecos River, 4.VII, Pope (MCZ).

= *Corydalus luteus* Hagen, 1861:193 (as *Corydalis* [*sic*] *lutea*). Syntype males: Mexico, Salle; Cordova, Saussure, one in Selys Collection (IRSNB).

= *Corydalus crassicornis* McLachlan, 1867:233 (as *Coryalis* [*sic*] *crassicornis*). Holotype (sex unknown): USA, Texas (MNHN).

= *Corydalus inamabilis* McLachlan, 1867:235 (as *Corydalis* [*sic*] *inamabilis*). Type(s) (sex unknown): USA, Texas (BMNH).

= *Nevromus pallidus* Davis, 1903:470 (as *Neuromus* [*sic*] *pallidus*). Holotype male: (locality and depository unknown).

= *Corydalus texanus* Banks, 1903:239 (as *Corydalis* [*sic*] *texana*). Holotype female: USA, Texas (depository unknown).

TAXONOMY. — To *Raphidia* (see Linnaeus, 1767:916); returned to *Hemerobius* (see DeGeer, 1773:559); to *Corydalis* (see Latreille, 1802:290); *C. crassicornis* = *C. cornutus*, *C. inamabilis* = *C. cornutus*, *C. cognata* = *C. cornutus*, *C. lutea* = *C. cornutus*, *C. pallidus* = *C. cornutus*, *C. texana* = *C. cornutus* (see Weele, 1910:13); *C. cognatus* not = *C. cornutus* (see Evans, 1972:77).

DISTRIBUTION. — **CAN:** PQ⁴, **USA:** AZ⁵, CA⁷, DC⁴, IA⁸, IL², IN⁶, KS⁴, MD², MN⁴, MO⁴, NC⁴, NM⁵, NV⁷, NY², OH⁴, PA¹, SC⁴, TX³, UT⁷, VA⁴ (¹Linnaeus, 1758:551; ²Hagen, 1861:192; ³McLachlan, 1867:233; ⁴Davis, 1903:478, as *C. cornutus*; ⁵Davis, 1903:479, as *C. cognata*; ⁶Montgomery & Trippel, 1933:259; ⁷Evans, 1972:78, as *C. cognata*; ⁸Penny, **NEW STATE RECORD**).

CHAULIODINAE

Chauliodes Latreille, 1796:102

Chauliodes pectinicornis (Linnaeus), 1763:412 [*Hemerobius*].

Type(s) (sex unknown): (locality unknown) (Tring).

= *Hemerobius virginiensis* Drury, 1773: unpaginated index. Type(s) (sex unknown): (locality unknown) (BMNH).

TAXONOMY. — To *Sembris* (see Fabricius, 1781:386); to *Chauliodes* (see Latreille, 1802:290); *H. virginiensis* = *C. pectinicornis* (see Davis, 1903:461).

DISTRIBUTION. — **CAN:** BC⁷, **USA:** DE², FL⁴, IA⁹, IL⁹, IN⁵, KS⁹, LA⁴, MA², MD³, ME⁸, MI⁴, MO⁴, MS⁹, NC⁶, NE⁹, NH⁹, NJ³, NY⁴, OH⁴, PA³, SC⁴, RI⁹, TX⁹, VA¹, VT⁹, WS⁴ (¹Drury, 1773:2; ²Walker, 1853:198; ³Hagen, 1861:189; ⁴Davis, 1903:462; ⁵Montgomery & Trippel, 1933:259; ⁶Brimley, 1938:28; ⁷Spencer, 1942:23; ⁸Procter, 1946:42; ⁹Tarter, Watkins et al., 1976:223).

Chauliodes rastricornis Rambur, 1842:444.

Holotype female: no published locality data, Selys Collection (IRSNB).

= *Hermes indecisus* Walker, 1853:204. Type(s) (sex unknown): no locality data (BMNH).

TAXONOMY. — *H. indecisus* = *C. rastricornis* (see Davis, 1903:460).

DISTRIBUTION. — **USA:** AL⁷, FL², GA², IA⁷, IL¹, IN², KS³, ME⁵, MN⁶, MO², MS⁷, NC⁴, NE⁷, NH⁷, NY², PA², RI⁷, SC², SD⁷, TN⁷, VA⁷, WS⁷ (¹Hagen, 1863:181; ²Davis, 1903:460; ³Smith, 1925:166; ⁴Brimley, 1938:28; ⁵Procter, 1946:42; ⁶Parfin, 1952:422; ⁷Tarter, Watkins, et al., 1976:224).

Dysmicohermes Munroe, 1953:191

Dysmicohermes disjunctus (Walker), 1866:334 [*Chauliodes*].

Holotype female: Canada, British Columbia, Vancouver Island, Chalukweyuh Lake, IX.1859 (BMNH).

TAXONOMY. — To *Neohermes* (see Weele, 1910:54); to *Dysmicohermes* (see Munroe, 1953:190).

DISTRIBUTION. — **CAN:** BC¹, **USA:** CA², OR², WA² (¹Walker, 1866:334; ²Evans, 1972:87).

Dysmicohermes ingens Chandler, 1954:105.

Holotype male: USA, California, Mariposa Co., Miami Ranger Station, 27.VII.1946, 5000 ft., H. P. Chandler (CAS).

DISTRIBUTION. — **USA:** CA (Chandler, 1954:106).

Neohermes Banks, 1908d:29

Neohermes angusticollis (Hagen), 1861:191 [*Chauliodes*].

Neotype male: USA, Georgia, Atlanta, 11.VI.1939, P. W. Fattig (USNM).

TAXONOMY. — To *Neohermes* (see Banks, 1908d:29); *N. angusticollis* = *N. californicus* (see Weele, 1910:53); *N. angusticollis* is valid species (see Flint, 1965:259); neotype designated (see Flint, 1965:260).

DISTRIBUTION. — **USA:** GA¹, SC² (¹Flint, 1965:260; ²Tarter et al., 1976:225).

Neohermes californicus (Walker), 1853:199 [*Chauliodes*].

Holotype female: USA, California (BMNH).

TAXONOMY. — To *Neohermes* (see Banks, 1908d:29).

DISTRIBUTION. — **USA:** CA¹, NV² (¹Walker, 1853:199; ²Flint, 1965:258).

Neohermes concolor (Davis), 1903:462 [*Chauliodes*].

Lectotype female: (no locality data) (Cornell).

TAXONOMY. — *N. concolor* = *N. californicus* (see Weele, 1910:53); *N. concolor* is valid species (see Flint, 1965:262); lectotype designated (see Flint, 1965:262).

DISTRIBUTION. — **USA:** AR², DC², DE², GA³, IL³, IN¹, KS⁴, KY², MA², MD², MO², MS³, NC², NJ², NY², OH³, OK³, PA², TN³, VA², VT³ (¹Montgomery & Trippel, 1933:259; ²Flint, 1965:262; ³Tarter, Watkins et al., 1976:225; ⁴Roble, 1984:69).

Neohermes filicornis (Banks), 1903b:238 [*Chauliodes*].

Holotype male: USA, Arizona, Jerome, 24.VI.1902, Oslar (MCZ).

TAXONOMY. — To *Neohermes* (see Banks, 1908d:29); *N. filicornis* = *N. californicus* (see Weele, 1910:53); *N. filicornis* is valid name (see Van Dyke, 1945:110).

DISTRIBUTION. — **USA:** AZ¹, CA², NM² (¹Banks, 1903b:238; ²Flint, 1965:257).

Neohermes matheri Flint, 1965:260.

Holotype male: USA, Mississippi, Hinds Co., Clinton, 12.VI.1960, Bryant Mather (USNM).

DISTRIBUTION. — **USA:** MS (Flint, 1965:260).

Nigronia Banks, 1908d:30

Nigronia fasciata (Walker), 1853:201 [*Chauliodes*].

Two syntype males: USA, New York (BMNH).

= *Chauliodes lunatus* Hagen, 1863:180. Syn- types (sex unknown): USA, Illinois; Maryland; New York; Pennsylvania (depository unknown).

TAXONOMY. — To *Nigronia* (see Banks, 1908d:30); *C. lunatus* = *C. fasciatus* (see Davis, 1903:458).

DISTRIBUTION. — **USA:** AL⁶, AR³, DC³, DE⁶, IL², LA⁶, MD², ME⁵, MN³, MO³, MS⁷, NC⁴, NH⁶, NY¹, OH³, PA², SC⁶ (¹Walker, 1853:201; ²Hagen, 1863:181; ³Davis, 1903:458; ⁴Brimley, 1938:28; ⁵Procter, 1946:42; ⁶Tarter, Watkins et al., 1976:224; ⁷Stark & Lago, 1983:357).

Nigronia serricornis (Say), 1824:307 [*Chauliodes*].

Type(s) (sex unknown): USA: Arkansas; Minnesota, Lake of the Woods; Pennsylvania; Mis- souri; Canada: Saskatchewan, Red River of Lake Winnipeg (depository unknown).

= *Nevromus maculatus* Rambur, 1842:442. Holotype female: (no locality data) (IRSNB).

TAXONOMY. — To *Nigronia* (see Banks, 1908d:30); *C. maculatus* = *C. serricornis* (see Hagen, 1863:181).

DISTRIBUTION. — **CAN:** MB¹, **USA:** AL⁹, AR¹, CT⁸, DC², FL¹¹, GA¹, IN⁴, KS³, LA⁸, MA¹, MD¹, ME⁶, MN⁷, MO¹, MS¹⁰, NC⁵, NY¹, OH², PA¹, RI⁸, SC⁸, TN⁸ (¹Hagen, 1861:191; ²Davis, 1903:460; ³Smith, 1925:166; ⁴Montgomery & Trippel, 1933:259; ⁵Brimley, 1938:28; ⁶Procter, 1946:42; ⁷Parfin, 1952:422; ⁸Tarter, Watkins et al., 1976:224; ⁹Scheiring, 1979:176; ¹⁰Stark & Lago, 1983:358; ¹¹Stange, **NEW STATE RECORD**).

Orohermes Evans, 1984:1

Orohermes crepusculus (Chandler), 1954:107 [*Dysmicohermes*].

Holotype male: USA, California, El Dorado Co., Pyramid Ranger Station, 20.VIII.1952, J. W. MacSwain (CAS).

TAXONOMY. — To *Orohermes* (see Evans, 1984:1).

DISTRIBUTION. — **USA:** CA, OR (Chandler, 1954:108).

Protochauliodes Weele, 1909b:257

Protochauliodes aridus Maddux, 1954:70.

Holotype male: USA, California, Butte Co., Neal Road, 7 miles southeast of Chico, 15.V.1951, D. Maddux (CAS).

DISTRIBUTION. — **USA:** CA (Maddux, 1954:70).

Protochauliodes cascadius Evans, 1984:1.

Holotype male: USA, Oregon, Marion Co., ca. 8 miles west of Mill City, along Little Santiam River, 26.VII.1963, S. Jewett (CAS).

DISTRIBUTION. — **USA:** OR (Evans, 1984:2).

Protochauliodes minimus (Davis), 1903:463 [*Chauliodes*].

Holotype male: USA, California, San Rafael, 26.V, O. Sacken (MCZ).

= *Neohermes infuscatus* Caudell, 1933:125. Holotype female: USA, California, Solano Co., Vacaville, 1.VI.1932, A. S. Harrison (USNM).

= *Neohermes nigrinis* Van Dyke, 1945:110. Holotype male: USA, California, Butte Co.,

Richardson's Spring, 12.V.1944, E. C. Van Dyke (CAS).

TAXONOMY. — To *Protochauliodes* (see Chandler, 1954:110); *C. minimus* = *N. californicus* (see Weele, 1910:53); *P. minimus* not = *N. californicus* (see Chandler, 1954:110); *N. infuscatus* = *P. minimus*, *N. nigrinis* = *N. minimus* (see Evans, 1972:128).

DISTRIBUTION. — USA: CA (Davis, 1903:463).

Protochauliodes montivagus Chandler, 1954:111.

Holotype male: USA, California, Sierra Co., St. Charles Hill, 7.VII.1921, E. H. Nast (CAS).

DISTRIBUTION. — USA: CA (Chandler, 1954:111).

Protochauliodes simplus Chandler, 1954:110.

Holotype male: USA, California, Los Angeles Co., San Dimas Experimental Forest, Tanbark Flat, 13.VII.1950, J. D. Paschke (CAS).

DISTRIBUTION. — USA: CA (Chandler, 1954:110).

Protochauliodes spenceri Munroe, 1953:190.

Holotype male: Canada, British Columbia, Duncan, 1.VIII.1918, W. Downes (CNC).

DISTRIBUTION. — CAN: BC¹, USA: CA², OR², WA² (¹Munroe, 1953:190; ²Evans, 1972:134).

SIALIDAE

Sialidae, or alder-flies, as adults are rather uniform insects about one inch long, with smoky black wings. Head markings can vary from orange to black. They live along the margins of rivers, streams, and lakes, never getting more than several yards away from water. Larvae live in the bottom substrate of these same water courses, and often survive in heavily polluted waters. The immatures are predators, feeding on other aquatic arthropods. The taxonomy of *Sialis* Latreille, 1802, was treated by Ross (1937).

Sialis Latreille, 1802:290

Sialis aequalis Banks, 1920:326.

Lectotype male: USA, Virginia, Falls Church, 25.IV, N. Banks (MCZ).

TAXONOMY. — Lectotype designated (see Ross, 1937:77).

DISTRIBUTION. — USA: CT⁴, DE⁴, GA⁵, KY⁵, MD², ME⁵, MI⁵, MN⁴, NC², NJ², NY⁴,

OH⁴, PA², SC⁴, VA¹, VT⁵, WV³ (¹Banks, 1920:326; ²Ross, 1937:77; ³Tarter & Woodrum, 1973b:147; ⁴Tarter, et al., 1978:231; ⁵Whiting, 1991b:51).

Sialis americana Rambur, 1842:447 [*Semblis*].

Holotype female: (no locality data), Selys Collection (IRSNB).

= *Sialis ferrugineus* Walker, 1853:195. Holotype (sex unknown): USA, Georgia (BMNH).

TAXONOMY. — To *Sialis* (see Hagen, 1861:188); to *Protosialis* (see Weele, 1909b:263); returned to *Sialis* (see Ross, 1937:70); *S. ferrugineus* = *S. americana* (see Banks, 1907c:22).

DISTRIBUTION. — USA: CT⁹, DC⁶, FL⁹, GA¹, IN⁸, LA⁹, MD⁴, MO¹¹, MS¹⁰, NC⁵, NH¹¹, NJ¹¹, OH³, PA², SC⁹, TX⁹, VA⁶, WS⁷ (¹Walker, 1853:195 as *S. ferrugineus*; ²Hagen, 1861:188; ³Banks, 1907c:22; ⁴Ross, 1937:71; ⁵Brimley, 1938:29; ⁶Flint, 1964:12; ⁷Tennessen, 1968:185; ⁸Lawson & McCafferty, 1984:129; ⁹Tarter, et al., 1978:231; ¹⁰Stark & Lago, 1983:117; ¹¹Whiting, 1991b:51).

Sialis arvalis Ross, 1937:68.

Holotype male: USA, California, Mokelumne Hill, IV, F. E. Blaisdell (CAS).

DISTRIBUTION. — USA: CA¹, OR² (¹Ross, 1937:68; ²Evans, 1972:23).

Sialis bilobata Whiting, 1991a:411.

Holotype male: USA, California, Los Angeles Co., Brents Mountain Crags, 20.V.1939 (LACM).

DISTRIBUTION. — USA: CA (Whiting, 1991a:412).

Sialis californica Banks, 1920:326.

Lectotype male: USA, California, Kern Co., San Emigdio Cañon, 3.VI.1904, F. Grinnell, Jr. (MCZ).

TAXONOMY. — Lectotype designated (see Ross, 1937:69).

DISTRIBUTION. — CAN: AB², BC², USA: CA¹, OR², WA² (¹Banks, 1920:326; ²Ross, 1937:69).

Sialis concava Banks, 1897a:22.

Holotype male: USA, New York, Ithaca (MCZ).

DISTRIBUTION. — CAN: BC⁶, ON², USA: MD², ME⁶, NC³, NY¹, VA⁵, WV⁴ (¹Banks, 1897a:22; ²Ross, 1937:73; ³Brimley, 1938:29; ⁴Tarter et al., 1977:104; ⁵Tarter et al., 1978:232; ⁶Whiting, 1991b:51).

***Sialis contigua* Flint, 1964:10.**

Holotype male: USA, Virginia, Highland Co., bridge on route 220 over East Branch Potomac River, 19.V.1963, O. S. Flint, Jr. & W. D. Field (USNM).

DISTRIBUTION. — USA: TN², VA¹ (¹Flint, 1964:12; ²Tarter et al., 1978:232).

***Sialis cornuta* Ross, 1937:69.**

Holotype male: USA, Oregon, Blue Mts., Horseshoe Lake, 7500', 26.VII.1929, H. A. Scullen (INHS).

DISTRIBUTION. — CAN: AB¹, USA: ID¹, MT², OR¹, UT¹, WA², WY² (¹Ross, 1937:70; ²Evans, 1972:32).

***Sialis dreisbachi* Flint, 1964:9.**

Holotype male: USA, Michigan, Schoolcraft Co., 5.VI.1959, R. & K. Dreisbach (USNM).

DISTRIBUTION. — USA: MI¹, MN², WS³ (¹Flint, 1964:10; ²Tarter et al., 1978:232; ³Whiting, 1991b:52).

***Sialis glabella* Ross, 1937:71.**

Holotype male: USA, Illinois, Mt. Carmel, 28.V.1884 (INHS).

DISTRIBUTION. — USA: IL¹, Y², MS³ (¹Ross, 1937:71; ²Canterbury & Neff, 1980:415; ³Stark & Lago, 1980:118).

***Sialis hamata* Ross, 1937:70.**

Holotype male: USA, Utah, Logan, 16.IV.1933, J. A. Meacham (INHS).

DISTRIBUTION. — CAN: AB¹, BC¹, USA: ID², MT¹, NV², OR¹, UT¹, WA², WY¹ (¹Ross, 1937:70; ²Evans, 1972:34).

***Sialis hasta* Ross, 1937:74.**

Holotype male: USA, Michigan, Lovells, along Au Sable River, 22.V.1936, Frison & Ross (INHS).

DISTRIBUTION. — AR², IN³, KY⁴, MI¹, MO³, PA¹ (¹Ross, 1937:74; ²Flint, 1964:12; ³Tarter et al., 1978:232; ⁴Canterbury & Neff, 1980:413).

***Sialis infumata* Newman, 1838:500.**

Holotype female: USA, New Jersey, Trenton Falls, Doubleday (BMNH).

DISTRIBUTION. — CAN: ON¹⁰, USA: AR⁷, IL², IN⁷, KS², KY⁸, ME⁴, MI², MN⁷, MO⁷, NC³, NJ¹, NY², OH², OK⁹, PA², SC⁷, VA⁵, WS⁶, WV¹⁰ (¹Newman, 1838:500; ²Ross, 1937:73; ³Brimley, 1938:29; ⁴Procter, 1946:42; ⁵Flint, 1964:13; ⁶Tennessen, 1968:185; ⁷Tarter et al., 1978:232; ⁸Canterbury & Neff, 1980:414; ⁹Stark & Lago, 1980:121; ¹⁰Whiting, 1991b:52).

***Sialis iola* Ross, 1937:68.**

Holotype male: USA, Pennsylvania, Pittsburgh (INHS).

DISTRIBUTION. — CAN: PQ¹, USA: CT³, DC¹, GA⁶, IN⁵, ME³, MS⁴, NC³, NH¹, NJ¹, NY¹, OH³, PA¹, SC³, VA² (¹Ross, 1937:68; ²Flint, 1964:13; ³Tarter et al., 1978:232; ⁴Stark & Lago, 1980:118; ⁵Lawson & McCafferty, 1984:129; ⁶Whiting, 1991b:53).

***Sialis itasca* Ross, 1937:72.**

Holotype male: USA, Illinois, Momence, along Kankakee River, 1.VI.1937, B. D. Burks (INHS).

DISTRIBUTION. — CAN: ON¹, PQ¹, USA: AR⁵, DC¹, GA², IL¹, IN⁵, KS¹, MD², MI¹, MN², MO¹, NC⁵, ND¹, NY¹, OH¹, OK⁵, PA¹, TN⁵, TX⁵, VA¹, WS³, WV⁴, (¹Ross, 1937:72; ²Flint, 1964:13; ³Tennessen, 1968:185; ⁴Tarter, Ashley et al., 1976:32; ⁵Tarter et al., 1978:232).

***Sialis joppa* Ross, 1937:67.**

Holotype male: USA, North Carolina, Great Smoky Mountains National Park, Newfound Gap, 28.V.1934, T. H. Frison (INHS).

DISTRIBUTION. — CAN: ON⁶, USA: CT⁴, DE⁴, FL⁶, IL¹, KY⁵, LA⁴, MD², ME¹, MI⁴, NC¹, NH¹, NY¹, OH³, PA¹, VA², VT⁴, WS⁴, WV³ (¹Ross, 1937:68; ²Flint, 1964:13; ³Tarter & Woodrum, 1973a:165; ⁴Tarter et al., 1978:232; ⁵Canterbury & Neff, 1980:413; ⁶Stange, 1990:2).

***Sialis mohri* Ross, 1937:74.**

Holotype male: USA, Wisconsin, Boulder Junction, on Trout River, 20.VI.1934, Frison & Mohr (INHS).

DISTRIBUTION. — CAN: NB¹, ON¹, PQ¹, USA: AR², CT¹, IL¹, IN¹, KS³, KY¹, MA¹, ME³, MI¹, MN¹, MO³, MS⁴, NE⁵, NH³, NJ¹, NY¹, OH¹, OK², PA¹, RI³, TN³, VT⁵, WS¹ (¹Ross, 1937:74; ²Flint, 1964:13; ³Tarter et al., 1978:232; ⁴Stark & Lago, 1980:118; ⁵Whiting, 1991b:53).

***Sialis nevadensis* Davis, 1903:450.**

Two syntypes, male and female: USA, Nevada, Reno (USNM).

= *Sialis morrisoni* Davis, 1903:450. Holotype female: USA, Nevada, Reno (MCZ).

TAXONOMY. — *S. morrisoni* = *S. nevadensis* (see Banks, 1907c:22).

DISTRIBUTION. — CA², NV¹ (¹Davis, 1903:450; ²Ross, 1937:76).

Sialis nina Townsend, 1939:224.

Holotype male: USA, Kentucky, Lexington, along North Elkhorn Creek, 1.IV.1938, P. O. Ritcher and L. H. Townsend (USNM).

DISTRIBUTION. — KY (Townsend, 1939:225).

Sialis occidentis Ross, 1937:69.

Holotype male: USA, California, Sequoia National Park, Wolverton, 7000–9000 ft., 25.VI.1929, E. C. Van Dyke (CAS).

DISTRIBUTION. — CA¹, NV² (¹Ross, 1937:69; ²Evans, 1972:37).

Sialis rotunda Banks, 1920:327.

Lectotype male: Canada, British Columbia, Bon Accord, 20.V (MCZ).

TAXONOMY. — Lectotype designated (see Ross, 1937:75).

DISTRIBUTION. — CAN: BC¹, USA: CA³ OR², WA², WS⁴ (¹Banks, 1920:327; ²Ross, 1937:75; ³Evans, 1972:43; ⁴Tarter et al., 1978:233).

Sialis spangleri Flint, 1964:12.

Holotype male: USA, Maryland, Garrett Co., Swallow Falls State Park near Oakland, 14.V.1963, P. J. Spangler (USNM).

DISTRIBUTION. — MD (Flint, 1964:12).

Sialis vagans Ross, 1937:76.

Holotype male: USA, Indiana, Columbia City, along Eel River, 19.V.1936, Frison & Ross (INHS).

DISTRIBUTION. — CAN: NB¹, NS¹, ON¹, PQ¹; USA: AR⁴, CT³, FL⁶, GA³, IL¹, IN¹, KS⁷, KY⁵, MA¹, MD⁷, ME¹, MI¹, MN², MS⁴, NC⁴, NH¹, NJ¹, NY¹, OH⁴, PA¹, VA³, VT⁴, WS¹ (¹Ross, 1937:77; ²Parfin, 1952:422; ³Flint, 1964:13; ⁴Tarter et al., 1978:233; ⁵Canterbury & Neff, 1980:415; ⁶Stange, 1990:2; ⁷Whiting, 1991b:54).

Sialis velata Ross, 1937:71.

Holotype male: USA, Michigan, Houghton Lake, 15–18.VI.1935, T. H. Frison (INHS).

DISTRIBUTION. — CAN: AB¹, BC¹, MB¹, ON¹, PQ¹, SK¹; USA: CO⁵, CT⁵, ID⁴, IL¹, IN², KS¹, MA¹, MD¹, ME¹, MI¹, MN¹, MO¹, MT⁵, NC³, ND¹, NE³, NH¹, NJ⁵, NY¹, TN³, TX¹, UT⁵, VA¹, VT³, WS¹, WV¹, WY⁵ (¹Ross, 1937:71; ²Lawson & McCafferty, 1984:129; ³Tarter et al., 1978:233; ⁴Stark & Lago, 1980:121; ⁵Whiting, 1991b:55).

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