

FAMILY GROUP NAMES AND CLASSIFICATION

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compiled by

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The family and tribe level classification used below follows the findings of M. Prentice (1998, unpublished Ph.D. thesis) and Melo (1999). Their systems differ at the tribal level, and that of Prentice is accepted here as it is based on a much larger data set, but his one new tribe and one new subtribe are not included since they were not published. The names, authorship, dates, stems, and other pertinent information, are from Menke (1997), who was advised by Don Cameron, a Latin and Greek scholar at the University of Michigan, about the proper formation of names. The authorship of Palarini and Xenosphecini is as corrected by Menke and Pulawski (2002). I follow both Melo and Prentice in recognizing only the tribes within Ampulicidae (rather than raising these tribes to subfamilies, the correct first degree subdivisions). Because Astatinae and Dinetinae each have a single tribe I am not using them in this catalog. All genera described subsequent to Bohart and Menke (1976) have been added (both extant and fossil), and recently established synonymies are also indicated. A full list of family-group names of Sphecidae s.l. can also be found in M. Engel (2005).

Menke (1997) commented that “Ammophilomorpha, Sphecinomorpha, and Palmodomorpha could be construed as valid [correctly: available] since they are based on generic names with -morpha endings”. Article 11.7.1.3 of the Code (Fourth Edition) leaves no doubt that these names are available, with their original authorship and date, but with a correct suffix (as specified in Article 29.2).

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Families are listed in the presumed phylogenetic order, whereas subfamilies and tribes are listed alphabetically within each family, as are the subtribes within each tribe. The dagger symbol (†) indicates fossil taxa.

Superfamily: Apoidea

(= Sphecoidea)

Apoidea Latreille, 1802a:425 (April). Based on *Apis* Linnaeus, 1758 (stem: *Ap-*).

Family: Heterogynaidae

Heterogynaidae Nagy, 1969:7. Based on *Heterogyna* Nagy (stem: *Heterogyna-*). Originally spelled Heterogynidae (stem: *Heterogyn-*), a junior homonym of Heterogynidae Rambur, 1866, based on *Heterogynis* Rambur, 1837. Both family name and stem emended by International Commission on Zoological Nomenclature, 1987:150, in Opinion 1445, as proposed by Day, 1985b:385..

Included genus: *Heterogyna* Nagy, 1969 (= *Daycatinca* Argaman, 1985, = *Daya* Antropov and Gorbatovskiy, 1992).

Family: Ampulicidae

Ampulicidae Shuckard, 1840:178, 180. Based on *Ampulex* Jurine (stem: *Ampulic*-).

Tribe: Ampulicini

= Dolichurini Dahlbom, 1842:3. Based on *Dolichurus* Latreille, 1809 (stem: *Dolichur*-). Originally spelled Dolichuridae. Menke (1997:250) incorrectly attributed authorship to Lepeletier de Saint Fargeau, 1845.

Included genera: *Ampulex* Jurine, 1807, *Aphelotoma* Westwood, 1841, *Dolichurus* Latreille, 1809, *Paradolichurus* F. Williams, 1960, †*Protodolichurus* Nemkov, 1988, *Riekefella* Özdikmen, 2005 (= *Austrotoma* Riek, 1955), *Trirogma* Westwood, 1841.

Tribe: †Apodolichurini Antropov, 2000. Based on *Apodolichurus* Antropov, 2000 (stem: *Apodolichur*-).

Included genus: †*Apodolichurus* Antropov, 2000.

Tribe: †Cretampulicini Antropov, 2000. Based on *Cretampulex* Antropov, 2000 (stem: *Cretampulic*-).

Included genus: †*Cretampulex* Antropov, 2000.

Tribe: †Mendampulicini Antropov, 2000. Based on *Mendampulex* Antropov, 2000 (stem: *Mendampulic*-).

Included genus: †*Mendampulex* Antropov, 2000.

Tribe unknown

†*Cariridris* Brandão and Martins-Neto, 1889:201, †*Longivenula* Zhang, 1989.

Family: Sphecidae (sensu stricto)

Sphecidae Latreille, 1802b:331 (November). Based on *Sphex* (stem: *Spheci*-). Originally spelled Sphegimes, latinized to Sphegineae by Fallén, 1812:129, to Sphecida and Sphecides by Leach, 1812 (Edinb. Encycl.), and to Sphegidae by Westwood, 1840 (Introd. Class. Ins.). Tillyard (1926:300) first demonstrated the proper stem.

Subfamily: Ammophilinae André, 1886:50. Based on *Ammophila* Kirby, 1798 (stem: *Ammophil*-).

= Acutoclypeata Ohl, 1996:32. Not available: not based on any of the included genera (Article 11.7.1). Genera of Acutoclypeata: *Eremnophila*, *Hoplammophila*.

= Ammophilomorpha Ohl, 1996:35 (correct spelling: Ammophilinae). Based on *Ammophila* Kirby, 1798 (stem: *Ammophil*-). Synonym and junior homonym of Ammophilinae André, 1886. Genera of Amophilomorpha: *Ammophila*, *Eremochares*, *Parapsammophila*, *Podalonia*.

Included genera: *Ammophila* W. Kirby, 1798, *Eremnophila* Menke, 1964, *Eremochares* Gribodo, 1883, *Hoplammophila* de Beaumont, 1960, *Parapsammophila* Taschenberg, 1869, *Podalonia* Fernald, 1927.

Subfamily: Chloriontinae Fernald, 1905:16. Based on *Chlorion* (stem: *Chloriont*-). Originally spelled Chlorioninae.

Included genus: *Chlorion* Latreille, 1802.

Subfamily: Sceliphrinae Ashmead, 1899:349 (1815). Based on *Sceliphron* (stem: *Sceliph-*). Originally spelled Sceliphroninae. The name, a junior synonym of Pelopeini Leach, 1815, was retained by Menke (1997) as valid because of its nearly universal use (Article 40.2.1 of the Code).

= Pelopoeinae Leach, 1815:150. Based on *Pelopoeus* Latreille, 1802. Originally spelled Pelopaeida.

= Lutifera Ohl, 1996:19. Not available: not based on any of the included genera (Article 11.7.1). Include Podiini + Sceliphriini.

Tribe: Podiini de Saussure, 1892. Based on *Podium* (stem: *Podi-*). Originally spelled *Podiites*, latinized to Podiinae by Ashmead, 1899:348.

Included genera: *Dynatus* Lepeletier de Saint Fargeau, 1845, *Penepodium* Menke in R. Bohart and Menke, 1976, *Podium* Fabricius, 1804, *Trigonopsis* Perty, 1833.

Tribe: Sceliphriini Ashmead, 1899 (1815).

Included genera: *Chalybion* Dahlbom, 1843, †*Hoplisia* Cockerell, 1906, *Sceliphron* Klug, 1801.

Subfamily: Sphecinae Latreille, 1802 (same data as for the family).

= *Sphecinomorpha* Ohl, 1996:24 (correct spelling: *Sphecini*). Based on *Sphex* (stem: *Spheci-*). Synonym and junior homonym of Sphecini Latreille, 1802. Include *Stangeella* + *Eusphecinomorpha* Ohl, 1996:26 (not available: not based on any of the included genera; Article 11.7.1; include Sphecini + Ammophilini except *Stangeella*).

Tribe: Prionychini Bohart and Menke, 1963:94, 141. Based on *Prionyx* Vander Linden, 1827 (stem: *Prionych-*). Originally spelled Prionyxina.

= *Palmodomorpha* Ohl, 1996:29 (correct spelling: *Palmodini*). Based on *Palmodes* Kohl, 1890 (stem: *Palmod-*). Genera of *Palmodomorpha*: *Chilosphex*, *Palmodes*.

Included genera: *Chilosphex* Menke in R. Bohart and Menke, 1976, *Palmodes* Kohl, 1890, *Prionyx* Vander Linden, 1827.

Tribe: Sphecini Latreille, 1802 (same data as for the family).

Ammobiini Krombein in Krombein and Burks, 1967. Based on *Ammobia*, a junior synonym of *Sphex* (stem: *Ammobi-*). A junior homonym of *Ammobiini* Desbrochers des Loges, 1903 (which is a synonym of *Opatrini* Brullé, 1832), a tribe in Tenebrionidae.

= *Eusphecinomorpha* Ohl, 1996:26. Not available: not based on any of the included genera (Article 11.7.1). Include Ohl's Sphecini + Ammophilini.

Included genera: *Isodontia* Patton, 1880, *Sphex* Linnaeus, 1758.

Tribe: Stangeellini Bohart and Menke, 1976:87. Based on *Stangeella* (stem: *Stangeell-*).

Included genus: *Stangeella* Menke, 1962.

Family: Crabronidae

Crabronidae Latreille, 1802b:340. Based on *Crabro* Fabricius, 1775 (stem: *Crabron-*). Originally spelled Crabronites, latinized to Crabronida by Leach, 1812 (Edinb. Encycl.). Four other names of Latreille (1802b) were available for this family, but Acloque (1897:80) used Crabronidi acting as first reviser.

Subfamily: Astatinae Lepeletier de Saint Fargeau, 1845:231. Based on *Astata* Latreille (stem: *Astat*-). Originally spelled Astatites, latinized to Astatini by de Saussure, 1867:65.

= Diploplectri W. Fox, 1894:302. Based on *Diploplectron* (stem: *Diploplectr*-).

= Dimorphini Brues and Melander, 1932:503. Based on *Dimorpha* Panzer, 1806 (stem: *Dimorph*-).

Included genera: *Astata* Latreille, 1797 (= *Dimorpha* Panzer, 1806), *Diploplectron* W. Fox, 1893, *Dryudella* Spinola, 1843, *Uniplectron* F. Parker, 1966.

Subfamily: Bembicinae Latreille, 1802b:365. Based on *Bembex* Fabricius [correctly *Bembix*] (stem: *Bembi*-). Originally spelled Bembiciles, latinized to Bembecinae by Fallén, 1813.

Tribe: Alyssontini Dalla Torre, 1897:562. Based on *Alysson* Panzer (stem: *Alyssont*-). Originally spelled Alysoninae, based on *Alyson* Jurine, 1807.

Included genera: *Alysson* Panzer, 1806, *Analysson* Krombein, 1985, *Didineis* Wesmael, 1852.

Tribe: Bembicini Latreille, 1802.

Subtribe: Bembicina Latreille, 1802.

= Stictiellina R. Bohart and Horning, 1971. Based on *Stictiella* Parker, 1917 (stem: *Stictiell*-).

Included genera: *Bembix* Fabricius, 1775, *Bicyrtes* Lepeletier de Saint Fargeau, 1845, *Carlobembix* Willink, 1958, *Chilostictia* Gillaspay, 1983, *Editha* J. Parker, 1929, *Glenostictia* Gillaspay in Gillaspay, Evans, and Lin, 1962, *Hemidula* Burmeister, 1874, *Microbembex* Patton, 1979c, *Microstictia* Gillaspay, 1963, *Rubrica* J. Parker, 1929, *Selman* J. Parker, 1929, *Steniolia* Say, 1837, *Stictia* Illiger, 1807, *Stictiella* J. Parker, 1917, *Trichostictia* J. Parker, 1929, *Xerostictia* Gillaspay, 1963, *Zyzyx* Pate, 1837.

Subtribe: Exeirina Dalla Torre, 1897:534. Based on *Exeirus* Shuckard (stem: *Exeir*-).

Prentice (1998) recognized the subtribe Clitemnestrina, which is a junior synonym of *Exeirina*, with the following genera included: *Clitemnestra*, *Olgi*, and *Exeirus*. I regard this as synonymizing *Exeirina* with *Clitemnestrina* and *Olgiina*.

= Clitemnestrina Nemkov and Lelej, 1996:11. Based on *Clitemnestra* Spinola (stem: *Clitemnestr*-). Synonymy resulting from Prentice's classification of 1998.

= Olgiina Nemkov and Lelej, 1996:11. Based on *Olgi* Radoszkowski (stem: *Olgi*-). Synonymy resulting from Prentice's classification of 1998.

Included genera: *Clitemnestra* Spinola, 1851 (= *Ochloptera* Holmberg, 1903), *Exeirus* Shuckard, 1838, *Olgi* Radoszkowski, 1877.

Subtribe: Gorytina Lepeletier de Saint Fargeau, 1845. Based on *Gorytes* Latreille (stem: *Goryt*-). Originally spelled Gorytites, latinized to Gorytinae by Dalla Torre, 1897:535. Spelled Goritini by A. Costa, 1859:3, 26, 53 (Italian vernacular), and *Gorytesii* by Acloque, 1897:80.

= Arpactini R. Turner, 1915:67. Based on *Arpactus* Panzer, 1805 (stem: *Arpact*-).

= Hoplisini Rohwer, 1916:654,656. Based on *Hoplilus* Lepeletier de Saint Fargeau, 1832 (stem: *Hoplis*-).

= Argogorytina Nemkov and Lelej, 1996:11. Based on *Argogorytes* Ashmead, 1899 (stem: *Argogoryt*-).

Included genera: *Afrogorytes* Menke, 1967, *Allogorytes* R. Bohart, 2000, *Argogorytes* Ashmead, 1899, *Arigorytes* Rohwer, 1912, *Aroliagorytes* R. Bohart, 2000, *Austrogorytes* R. Bohart, 1967, †*Biamogorytes* Nemkov, 1990, *Eogorytes* R. Bohart in Bohart and Menke, 1976, *Epigorytes* R. Bohart, 2000, *Gorytes*

Latreille, 1805, *Hapalomellinus* Ashmead, 1899, *Harpactostigma* Ashmead, 1899, *Harpactus* Shuckard, 1837, *Hoplisoides* Gribodo, 1884, *Leiogorytes* R. Bohart, 2000, *Lestiphorus* Lepeletier de Saint Fargeau, 1832, *Leurogorytes* R. Bohart, 2000, *Liogorytes* R. Bohart, 1967, *Malaygorytes* Nemkov, 1999, *Megistommum* W. Schulz, 1906, *Neogorytes* R. Bohart in Bohart and Menke, 1976, *Oryttus* Spinola, 1836, *Paraphilanthus* Vardy, 1995, *Psammaecius* Lepeletier de Saint Fargeau, 1832, *Psammaletes* Pate, 1936, *Pseudoplisus* Ashmead, 1899, *Pterygorytes* R. Bohart, 1967, *Sagenista* R. Bohart, 1967, *Saygorytes* Nemkov, 2007, *Stenogorytes* Schrottky, 1911 (= *Neoplisus* R. Bohart, 1967), *Stethogorytes* R. Bohart, 2000, *Tretogorytes* R. Bohart, 2000, *Trichogorytes* Rohwer, 1912, *Xerogorytes* R. Bohart in Bohart and Menke, 1976.

Subtribe: Handlirschiina Nemkov and Lelej, 1996:12. Based on *Handlirschia* Kohl (stem: *Handlirschi*-).

Included genera: *Ammatomus* A. Costa, 1859, *Handlirschia* Kohl, 1897, *Kohlia* Handlirsch, 1895, *Sphecius* Dahlbom, 1843, *Tanyoprymnus* Cameron, 1905.

Subtribe: Heliocausina Handlirsch, 1925:807. Based on *Heliocausus* Kohl (stem: *Heliocaus*-).

Included genera: *Acanthocausus* Fritz and Toro, 1977, *Heliocausus* Kohl, 1892, *Tiguipa* Fritz and Toro, 1976.

Subtribe: Stizina A. Costa, 1859:2, 4, 55. Based on *Stizus* Latreille (stem: *Stiz*-).

Included genera: *Bembecinus* A. Costa, 1859, *Stizoides* Guérin-Méneville, 1844, *Stizus* Latreille, 1802.

Tribe: Nyssonini Latreille, 1804:180. Based on *Nysson* Latreille (stem: *Nysson*-, ruled to be *Nysson*- by International Commission on Zoological Nomenclature, 1979, Opinion 1115).

Included genera: *Acanthostethus*, Smith, 1869, *Antomartinezius* Fritz, 1955, *Brachystegus* A. Costa, 1859, *Cresson* Pate, 1938, *Epinysson* Pate, 1935, *Foxia* Ashmead, 1898, *Hovanysson* Arnold, 1945, *Hyponysson* Cresson, 1882, *Idionysson* Pate, 1940, *Losada* Pate, 1940, *Metanysson* Ashmead, 1899, *Nippononysson* Yasumatsu and Maidl, 1936, *Neonysson* R. Bohart, 1968, *Nursea* Cameron, 1902, *Nysson* Latreille, [1802] (= *Synnevrus* A. Costa, 1859), *Perisson* Pate, 1938, *Zanysson* Rohwer, 1921.

Subfamily: Crabroninae Latreille, 1802. Based on *Crabro* Fabricius, 1775 (stem: *Crabron*-). Originally spelled Crabronites.

Tribe: Bothynostethini W. Fox, 1894:302. Based on *Bothynostethus* Kohl, 1894 (stem: *Bothynosteth*-).

Subtribe: Bothynostethina W. Fox, 1894.

Included genera: *Bothynostethus* Kohl, 1894, *Sanaviron* Vardy, 1987, *Willinkiella* Menke, 1968.

Subtribe: Scapheutina Menke, 1968:91. Based on *Scapheutes* Handlirsch (stem: *Scapheut*-).

Included genera: *Bohartella* Menke, 1968, *Scapheutes* Handlirsch, 1887.

Tribe: Crabronini Latreille, 1802.

Subtribe: Anacrabronina Ashmead, 1899:163. Based on *Anacrabro* Packard (stem: *Anacrabron*-).

= *Karossiina* Pate, 1936:151. Based on *Karossia* Arnold, 1929 (stem: *Karossi*-).

Included genera: *Anacrabro* Packard, 1866, *Encopognathus* Kohl, 1897, *Entomocrabro* Kohl, 1905, *Entomognathus* Dahlbom, 1844.

Subtribe: Crabronina Latreille, 1802.

- = Lindeniina Ashmead, 1899:163. Based on *Lindenius* Lepeletier de Saint Fargeau and Brullé, 1834 (stem: *Lindeni-*).
- = Thyreopodina Ashmead, 1899:164. Based on *Thyreopus* (stem: *Thyreopod-*). Originally spelled Thyreopinae. Thyreocopidae of Strickland, 1947:127 is probably a misspelling.
- = Rhopalina Ashmead, 1899:164. Based on *Rhopalum* Stephens, 1829 (stem: *Rhopal-*). Junior homonym of Rhopalidae Amyot and Serville, 1843, based on *Rhopalus* Schilling, 1827 (Heteroptera).
- = Soleniina Bradley, 1926:1029. Based on *Solenius* Lepeletier de Saint Fargeau and Brullé, 1835 (stem: *Soleni-*).
- = Pemphilidina Pate, 1935:246. Based on *Pemphilis* Risso, 1826 (stem: *Pemphilid-*). Originally spelled Pemphilidae.

Included genera: *Alinia* Antropov, 1993, *Arnoldita* Pate, 1948, *Chimila* Pate, 1944, *Chimiloides* Leclercq, 1951, *Crabro* Fabricius, 1775, *Crorhopalum* Tsuneki, 1984, *Crossocerus* Lepeletier de Saint Fargeau and Brullé, 1835 (= *Towada* Tsuneki, 1970), *Dasyproctus* Lepeletier de Saint Fargeau and Brullé, 1835, *Echucoides* Leclercq, 1957, *Ectemnius* Dahlbom, 1845 (= *Spadicocrabro* Tsuneki, 1990), *Enoplolindenius* Rohwer, 1911, *Eupliloides* Pate, 1946, *Foxita* Pate, 1942 (= *Taruma* Pate, 1944), *Hingstoniola* Turner and Waterston, 1926, *Holcorhopalum* Cameron, 1904, *Huacrabro* Leclercq, 2000, *Huaeva* Pate, 1948, *Isorhopalum* Leclercq, 1963, *Krombeinictus* Leclercq, 1996, *Leclercqia* Tsuneki, 1968, *Lecrenierus* Leclercq, 1977, *Lestica* Billberg, 1820, *Lindenius* Lepeletier de Saint Fargeau and Brullé, 1835, *Minicrabro* Leclercq, 2003, *Moniaecera* Ashmead, 1899, *Neodasyproctus* Arnold, 1926, *Notocrabro* Leclercq, 1951, *Odontocrabro* Tsuneki, 1971, *Pae* Pate, 1944 (= *Lamocrabro* Leclercq, 1951), *Papurus* Tsuneki, 1983, *Parataruma* Kimsey, 1982, *Pericrabro* Leclercq, 1954, *Piyum* Pate, 1944b, *Piyumoides* Leclercq, 1963, *Podagrutoides* Leclercq, 1957, *Podagrutus* Spinola, 1851, *Pseudoturneria* Leclercq, 1954, *Quexua* Pate, 1942, *Rhopalum* Stephens, 1829, *Tracheliodes* A. Morawitz, 1866, *Tsunekiola* Antropov, 1986, *Vechtia* Pate, 1944, *Williamsita* Pate, 1947, *Zutrhopalum* Leclercq, 1998.

Tribe: Larrini Latreille, 1810:289, 438. Based on *Larra* Fabricius (stem: *Larr-*).

- = Larradini de Saussure, 1892:471. Based on *Larrada* F. Smith, 1856 (stem: *Larrad-*).

Subtribe: Gastrosericina André, 1886:51. Based on *Gastrosericus* Spinola, 1838 (stem: *Gastroseric-*). Originally spelled Gasteroserididae, corrected to Gastrosericidae by André, 1888:211.

- = Tachytina G. Bohart, 1951:945. Based on *Tachytes* Panzer, 1806 (stem: *Tachyt-*).

Included genera: *Ancistromma* W. Fox, 1893, *Gastrosericus* Spinola, 1839, *Holotachysphex* de Beaumont, 1940, *Kohliella* Brauns, 1910, *Larropsis* Patton, 1892, *Parapiagetia* Kohl, 1897, *Prosopigastra* A. Costa, 1867, *Tachysphex* Kohl, 1883, *Tachytella* Brauns, 1906, *Tachytes* Panzer, 1806.

Subtribe: Larrina Latreille, 1810.

Included genera: *Dalara* Ritsema, 1884, *Dicranorhina* Shuckard, 1840, *Larra* Fabricius, 1793, *Liris* Fabricius, 1804, *Paraliris* Kohl, 1884.

Tribe: Miscophini W. Fox, 1894:302. Based on *Miscophus* Jurine, 1807 (stem: *Miscoph-*).

- = Lyrodini W. Fox, 1895:302. Based on *Lyroda* Say (stem: *Lyrod-*).
- = Sericophorini Dalla Torre, 1897:577. Based on *Sericophorus* F. Smith (stem: *Sericophor-*).
- = Nitelini Dalla Torre, 1897:697. Based on *Nitela* Latreille (stem: *Nitel-*).

= Paranyssontini R. Turner, 1914:337. Based on *Paranysson* Guérin-Méneville (stem: *Paranyssont-*). Originally spelled Paranyssoninae.

Included genera: *Aha* Menke, 1977, *Auchenophorus* R. Turner, 1907, *Larrisson* Menke, 1967, *Lyroda* Say, 1837, *Miscophoidellus* Menke in Bohart and Menke, 1976, *Miscophoides* Brauns in Kohl, 1897, *Miscophus* Jurine, 1807, *Namiscophus* Lomholdt, 1985, *Nitela* Latreille, 1809, *Paranysson* Guérin-Méneville, 1844, *Plenoculus* W. Fox, 1893, *Saliostethoides* Arnold, 1924, *Saliostethus* Brauns in Kohl, 1897, *Sericophorus* F. Smith, 1851, *Solierella* Spinola, 1851, *Sphodrotes* Kohl, 1889.

Tribe: Oxybelini Leach, 1815:152. Based on *Oxybelus* Latreille (stem: *Oxybel-*). Originally spelled Oxybellida.

Included genera: *Belarnoldus* Antropov, 2007, *Belokohlus* Antropov, 2007, *Belomicrinus* Antropov, 2000, *Belomicroides* Kohl, 1899, *Belomicrus* A. Costa, 1871, *Brimocelus* Arnold, 1927, *Gessus* Antropov, 2001, *Guichardus* Antropov, 2007, *Enchemicrum* Pate, 1929, *Minimicroides* Antropov, 2000, *Nototis* Arnold, 1927, *Oxybelomorpha* Brauns, 1897, *Oxybelus* Latreille, 1797, *Pseudomicroides* Antropov, 2001, *Wojus* Antropov, 1999.

Tribe: Palarini Schrottky, 1909:249. Based on *Palarus* Latreille, 1802 (stem: *Palar-*). Originally spelled Palaridae.

= Palarini Börner, 1919:185. Based on *Palarus* Latreille (stem: *Palar-*).

= Mesopalarini Lomholdt, 1985:22. Based on *Mesopalarus* Brauns (stem: *Mesopalar-*). Synonymized with Palarini by Prentice (1998).

Included genera: *Mesopalarus* Brauns, 1899, *Palarus* Latreille, 1802.

Tribe: Trypoxylini Lepeletier de Saint Fargeau, 1845:224. Based on *Trypoxylon* Latreille (stem: *Trypoxyl-*). Originally spelled Trypoxylites, latinized to Trypoxylidae by Thomson, 1870:207, and incorrectly to Trypoxylonidae in subsequent publications.

= Pisini Ashmead, 1899:241 (originally spelled Pisoninae). Based on *Pison* Jurine, Greek for pea, and also one of the rivers in the Garden of Eden (stem: *Pis-*). May have been based on the Roman family name *Pison*, in which case the stem would be *Pison-*.

Included genera: *Aulacophilinus* Lomholdt, 1980, *Aulacophilus* F. Smith, 1869, †*Eopison* Nel, 2005, †*Megapison* Zhang, 1989, *Pison* Jurine in Spinola, 1808, *Pisonopsis* W. Fox, 1893, *Pisoxylon* Menke, 1968, *Trypoxylon* Latreille, 1796.

Subfamily: Dinetinae W. Fox, 1895:305. Based on *Dinetus* Panzer (stem: *Dinet-*).

Included genus: *Dinetus* Panzer, 1806.

Subfamily: Eremiasphecinae Menke, 1967:148. Based on *Eremiasphecium* Kohl, 1897 (stem: *Eremiasphec-*).

Tribe: Eremiasphecini Menke, 1967.

Included genus: *Eremiasphecium* Kohl, 1897 (= *Taukumia* Kazenas, 1991, = *Xanthosphecium* Simon Thomas, 1994).

Tribe: Laphyragogini R. Bohart and Menke, 1976:217. Based on *Laphyragogus* Kohl (stem: *Laphyragog-*).

Included genus: *Laphyragogus* Kohl, 1889.

Subfamily: Mellininae Latreille, 1802b:337. Based on *Mellinus* Fabricius (stem: *Mellin-*). Originally spelled Melliniores, latinized to Mellinii by Fallén, 1812:130.

Tribe: Mellinini Latreille, 1802.

Included genus: *Mellinus* Fabricius, 1790 (= *Trachogorytes* R. Bohart, 2000).

Tribe: Xenosphecini F. Parker, 1966:195. Based on *Xenosphex* F. Williams (stem: *Xenosphex*-).

= Xenosphecini R. Bohart and Menke, 1976:437. Based on *Xenosphex* F. Williams (stem: *Xenosphex*-).

Included genus: *Xenosphex* F. Williams, 1954.

Subfamily: Pemphredoninae Dahlbom, 1835:2, 6, 8. Based on *Pemphredon* Latreille (stem: *Pemphredon*-). Nomen protectum (Article 23.9). Originally spelled Pemphredonides, corrected to Pemphredonides in Isis von Oken, 1936, Heft 4:col. 288, and spelled Pemphredonidae by Dahlbom, 1842:1.

= Cemoninae Fallén, 1812:131. Based on *Cemonus* Panzer, 1806 (stem: *Cemon*-), a junior synonym of *Pemphredon*. Nomen oblitum (Article 23.9). Originally spelled Cemonii. Not listed by Menke, 1997.

Tribe: Entomosericiini Dalla Torre, 1897:557. Based on *Entomosericus* Dahlbom (stem: *Entomoseric*-).

Included genus: *Entomosericus* Dahlbom, 1845.

Tribe: Odontosphecini Menke, 1967:144. Based on *Odontosphex* Arnold (stem: *Odontosphex*-).

Included genus: *Odontosphex* Arnold, 1951.

Tribe: Pemphredonini Dahlbom, 1835.

Subtribe: Ammoplanina Evans, 1959:182, 189. Based on *Ammoplanus* Giraud (stem: *Ammoplan*-).

Included genera: *Ammoplanops* Gussakovskij, 1931, *Ammoplanus* Giraud, 1869 (= *Ammoplanellus* Gussakovskij, 1931), *Protostigmus* Turner, 1918 (= *Anomiopteryx* Gussakovskij, 1935), *Pulverro* Pate, 1937, *Timberlakena* Pate, 1939.

Subtribe: Pemphredonina Dahlbom, 1835.

Included genera: *Diodontus* Curtis, 1834, *Passaloecus* Shuckard, 1837, *Pemphredon* (= †*Sinostigma* Hong, 1984), *Polemistus* de Saussure, 1892.

Subtribe: Spilomenina Menke, 1989:740. Based on *Spilomena* Shuckard (stem: *Spilomen*-).

Included genera: *Arpactophilus* F. Smith, 1863, *Microstigmus* Duce, 1907, *Spilomena* Shuckard, 1838, *Xysma* Pate, 1937.

Subtribe: Stigmina R. Bohart and Menke, 1976:175, 185. Based on *Stigmus* Panzer (stem: *Stigm*-).

Included genera: *Allostigmus* Melo and Naumann, 1999, *Araucastigmus* Finnamore, 1995, *Aykhustigmus* Finnamore, 1995, *Ceratostigmus* Melo and Naumann, 1999, *Carinostigmus* Tsuneki, 1954, *Incastigmus* Finnamore, 1995, *Llaqhastigmus* Finnamore, 1995, *Paracrabro* Turner, 1907, *Parastigmus* Antropov, 1992, *Stigmus* Panzer, 1804, *Tzustigmus* Finnamore, 1995.

Fossil genera of Pemphredoninae not assigned to tribes.

†*Cretoecus* Budrys, 1993, †*Cretospilomena* Antropov, 2000, †*Eomimesa* Budrys, 1993, †*Eopinoecus* Budrys, 1993, †*Eoxyloecus* Budrys, 1993, †*Iwestia* Rasnitsyn and Jarzembowski in Rasnitsyn, Jarzembowski, and Ross, 1998, †*Lisponema* Evans, 1969, †*Palanga* Budrys, 1993, †*Pittoecus* Evans, 1973, †*Prolemistus* Antropov, 2000, †*Psolimena* Antropov, 2000, †*Succinoecus* Budrys, 1993.

Tribe: Psenini A. Costa, 1858:4, 21. Based on *Psen* Latreille (stem: *Psen*-).
= Mimesini Cresson, 1887:119. Based on *Mimesa* Shuckard (stem: *Mimes*-).
= Psenulini Gittins, 1969:50. Based on *Psenulus* Kohl (stem: *Psenul*-). Originally spelled Psenuli.

Included genera: *Ammopsen* Krombein, 1959, *Deinomimesa* Perkins, 1899, *Lithium* Finnermore, 1987, *Mimesa* Shuckard, 1937, *Mimumesa* Malloch, 1933, *Nesomimesa* Malloch, 1933, *Odontopsen* Tsuneki, 1964, *Pluto* Malloch, 1933, *Psen* Latreille, 1796, *Pseneo* Malloch, 1933, *Psenulus* Kohl, 1897.

Subfamily: Philanthinae Latreille, 1802b:365. Based on *Philanthus* Fabricius (stem: *Philanth*-). Originally spelled Philanthores, spelled *Philanthoidae* by Agassiz, 1847:284.

Tribe: Aphilanthopini R. Bohart, 1966. Based on *Aphilanthops* Patton (stem: *Aphilanthop*-). Originally spelled Aphilanthopsina.

Included genera: *Aphilanthops* Patton, 1881, *Clypeadon* Patton, 1897 (= *Listropygia* R. Bohart, 1959).

Tribe: Cercerini Lepelletier de Saint Fargeau, 1845:1. Based on *Cerceris* Latreille, 1802 (stem: *Cercer*-). Originally spelled Cercérites, latinized to Cerceridae by A. Costa, 1860:6.

Included genera: *Cerceris* Latreille, 1802, *Eucerceris* Cresson, 1865.

Tribe: Philanthini Latreille, 1802.

Subtribe: Philanthina Latreille, 1802.

Included genera: *Philanthus* Fabricius, 1790, †*Prophilanthus*, Cockerell, 1906 (placed here tentatively), *Trachypus* Klug, 1810.

Subtribe: Philanthinina Menke, 1967:148. Based on *Philanthinus* de Beaumont (stem: *Philanthin*-).

Included genus: *Philanthinus*, de Beaumont, 1949.

Tribe: Pseudoscoliini Menke, 1967:148. Based on *Pseudoscolia* Radoszkowski (stem: *Pseudoscoli*-).

Included genus: *Pseudoscolia* Radoszkowski, 1876.

Family: Apidae (sensu lato) =

= Apoidea of bee workers

See: C.D. Michener. 2000. The bees of the world. The John Hopkins University Press, Baltimore and London. 913 pp. Second edition: 2007, 953 pp.

Fossil Subfamilies of Uncertain Position Within Apoidea

Subfamily: Angarosphecinae Rasnitsyn, 1975:109 Based on *Angarosphech* Rasnitsyn, 1975 (stem: *Angarosphec-*). Originally spelled Angarosphecidae.

= Baissodinae Rasnitsyn, 1975:122 Based on *Baissodes* Rasnitsyn, 1975 (stem: *Baissod-*). Originally spelled Baissodidae.

Included genera: †*Angarosphech* Rasnitsyn, 1975 (= †*Shandongodes* Zhang, 1985), †*Archisphech* Evans, 1969 (= *Cretosphech* Rasnitsyn, 1975, = *Paleapis* Hong, 1984, = *Mateosphech* Zhang, 1985), †*Baissodes* Rasnitsyn, 1975, †*Cretobestiola* Pulawski and Rasnitsyn, 2000 (= *Bestiola* Pulawski and Rasnitsyn, 1999, junior homonym of *Bestiola* Nikol'skaya, 1963, and of *Bestiola* Andronov, 1972), †*Calobaissodes* Zhang, 1992, †*Cretosphecium* Pulawski and Rasnitsyn, 2000, †*Eosphecium* Pulawski and Rasnitsyn, 2000, †*Eubaissodes* Zhang, 1992, †*Ilerdosphech* Rasnitsyn, 2000, †*Montecosphech* Rasnitsyn and Martínez-Delclòs, 2000, †*Oryctobaissodes* Rasnitsyn, 1975, †*Pompilopterus* Rasnitsyn, 1975, †*Trichobaissodes* Rasnitsyn, 1975.

Subfamily: Burmastatinae Antropov, 2000:60. Based on *Burmastatus* Antropov, 2000 (stem: *Burmastat-*).

Included genus: †*Burmastatus* Antropov, 2000:60.

Subfamily: Cirrosphecinae Antropov, 2000:61. Based on *Cirrosphech* Antropov, 2000 (stem: *Cirrosphec-*).

Included genus: †*Cirrosphech* Antropov, 2000:62.

Genera incertae sedis.

†*Gallosphech* Schlüter, 1978:83, †*Trigampulex* Antropov, 2000:70.

Genus and species unknown.

Rasnitsyn, Jarzembowski, and Ross, 1998:379 (England, body without head or wings); Rasnitsyn and Martínez-Delclòs, 2000:85, 86 (Spain: Lérida Province: Montsec Range).

FOSSIL GENERA AND SPECIES DESCRIBED IN SPHECIDAE (sensu lato) AND TRANSFERRED TO OTHER FAMILIES

Jibaissodes Ren in Ren, Lu, Guo, and Ji, 1995:120. Type species: *Jibaissodes giganteus* Ren in Ren, Lu, Guo, and Ji, 1995, by original designation and monotypy. Transferred to Megalodontidae by Rasnitsyn (2002, pers. comm.).

Taimyrisphech Evans, 1973d. Type species: *Taimyrisphech pristinus* Evans, 1973, by original designation and monotypy.

Included species: *Taimyrisphech pristinus* Evans, 1973d:168, ♂. Holotype: Russia, Taimyr Peninsula: Yantardagh Hill 3 km S up from mouth of Maimetcha River (PIN). Age: Upper Cretaceous amber. Transferred to Falsiformicidae (Scolioidea) by Rasnitsyn, 1980:28.

Shandongodes necrodes Zhang, 1985:35. Holotype: China: Shandong Province: Laiyang District: Tuanwang (Shandong Provincial Museum, Shandong, China). Age: Lower Cretaceous (as Upper Jurassic), Laiyang Formation. – Rasnitsyn, Jarzembowski, and Ross, 1998:370 (is not a member of Aculeata because of external ovipositor).