

Checklist of the Spheciform Wasps (Hymenoptera: Crabronidae & Sphecidae) of British Columbia

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There are nine subfamilies of spheciform wasps recorded from British Columbia, represented by 64 genera and 280 species. The majority of these are Crabronidae, with 241 species in 55 genera and five subfamilies. Sphecidae is represented by four subfamilies, with 39 species in nine genera. The following descriptions are general summaries for each of the subfamilies and include nesting habits and provisioning information.

The Subfamilies of Crabronidae

Astatinae

Three genera and 16 species of astatine wasps are found in British Columbia. All species of *Astata*, *Diploplectron*, and *Dryudella* are groundnesting and provision their nests with heteropterans (Bohart and Menke 1976). Males of *Astata* and *Dryudella* possess holoptic eyes and are often seen perching on sticks or rocks.

Bembicinae

Nineteen genera and 47 species of bembicine wasps are found in British Columbia. All species are groundnesting and most prefer habitats with sand or sandy soil, hence the common name of “sand wasps”. Four genera, *Bembix*, *Microbembex*, *Steniolia* and *Stictiella*, have been recorded nesting in aggregations (Bohart and Horning, Jr. 1971; Bohart and Gillaspay 1985). Aggregations of nesting *Bembix americana* Fabricius are often seen in the summer on hot sandy paths throughout the southern half of British Columbia. Most species provision their nests with Hemiptera (Auchenorrhyncha), with the exception of *Bembix*, *Glenostictia* and *Stenolia* (dipterans), *Stictiella* (lepidopterans), *Microbembex* (dead or dying arthropods), and *Epinysson*, *Hyponysson*, *Nysson*, *Stizoides* and *Zanysson* (cleptoparasites of other spheciform wasps, usually focusing on a single genus) (Bohart and Horning, Jr. 1971; Bohart and Menke 1976; Bohart and Gillaspay 1985).

Crabroninae

The crabronine wasps are the most speciose and diverse subfamily in the province, with 17 genera and 95 species recorded. Most species are groundnesting (members of this subfamily are what are usually referred to as “digger wasps”) but some, e.g., members of the genera *Rhopalum* and *Solierella*, utilize existing cavities, such as holes in wood, stems or abandoned nests of other organisms (Bohart and Menke 1976). When provisioning their nest, each genus tends to have a preferred prey, but the variation between the genera is great. Twelve insect orders, primarily Diptera, Orthoptera and Hemiptera, as well as the arachnid order Araneae, have been recorded from the nests of Crabronine wasps (Williams 1960; Bohart 1976; Bohart and Menke 1976; Pulawski 1988). Members of the genus *Miscophus* are unusual in that they walk on the ground, resembling ants, while searching for prey; this mimicry provides them with protection from predators (Bohart and Menke 1976).

Pemphredoninae

Eleven genera and 55 species of this often-cryptic subfamily are recorded from British Columbia. Only nests of three genera, *Diodontus*, *Mimesa* and *Pulverro*, have been located exclusively in the ground (Bohart and Menke 1976; Finnamore 1983; Eighme 1989). All other genera have been found to nest primarily in holes in wood or in stems of plants. Thysanoptera and small Hemiptera (Auchenorrhyncha) are used exclusively to provision their nests. Four genera, *Diodontus*, *Passaloecus*, *Pemphredon* and *Stigmus*, prey exclusively on Aphididae (Bohart and Menke 1976; Eighme 1989). Many species in the subfamily are not commonly encountered, because of their small size. The genera *Ammoplanus* and *Parammoplanus* contain the smallest spheciform wasps in the province (~2mm). Their members, as well as those in *Pulverro*, *Spilomena* and *Stigmus*, are seldom over 5 mm in length and therefore rarely seen (Smith 2008).

Philanthinae

Five genera and 28 species of philanthine wasps are recorded from British Columbia. All species nest in the ground, and nest provisions for each genus are exclusively selected from a specific group of insects. *Aphilanthops* use winged ant queens of the genus *Formica*, *Cerceris* use adult Coleoptera primarily from the families Curculionidae and Buprestidae, *Clypeadon* exclusively use workers of the ant genus *Pogonomyrmex*, *Eucerceris* use adult Curculionidae, and *Philanthus* use a wide variety of bees as well as some wasps (Bohart and Grissell 1975).

The Subfamilies of Sphecidae

Ammophilinae

Two genera and 27 species are recorded from British Columbia. Species in the genus *Ammophila* provision their nest with the larvae of Lepidoptera and Hymenoptera (Symphyta), while species in the genus *Podalonia* primarily use larvae of the moth family Noctuidae. Females of *Podalonia* search on the ground for subterranean larvae, excavating those they find (Bohart and Menke 1976).

Chloriontinae

A single species, *Chlorion aerarium* Patton, has been recorded from the Okanagan– Similkameen region of British Columbia. This is a large metallic blue–green wasp that nests in the ground. They provision their nests with orthopterans primarily from the family Gryllidae, earning them the common name of “Steel-Blue Cricket Hunter” (Bohart and Menke 1976).

Sceliphrinae

Two genera, each with a single species, are recorded from British Columbia. The most common species, *Sceliphron caementarium* (Drury)—often known as a “mud-dauber”—is a medium-sized black and yellow wasp that constructs free nests out of mud. The second species, *Chalybion californicum* (de Saussure), is a similar-sized, metallic-blue wasp that nests in existing cavities, such as holes in wood or abandoned nests of other mud-daubers. Both species provision their nests with Araneae (Bohart and Menke 1976).

Sphecinae

Four genera and 9 species are recorded from British Columbia. Species in the genera *Palmodes*, *Prionyx*, and *Sphex* are groundnesting, while *Isodontia elegans* (Smith), the only representative of that genus in the province, nests in existing cavities. All species provision their nests with orthopterans, with *Isodontia* and *Sphex* almost exclusively using Gryllidae and Tettigoniidae, *Palmodes* exclusively using Tettigoniidae and Prophalangopsidae, and *Prionyx* exclusively using Acrididae (Bohart and Menke 1976).

FAMILY CRABRONIDAE

SUBFAMILY ASTATINAE

Astata bakeri Parker
Astata bicolor Say
Astata leuthstromi Ashmead
Astata mexicana Cresson
Astata nevadica Cresson
Astata nubecula Cresson
Astata occidentalis Cresson

Diploplectron brunneipes (Cresson)
Diploplectron fossor Rohwer
Diploplectron peglowi Krombein

Dryudella caerulea (Cresson)
Dryudella immigrans (Williams)
Dryudella montana Cresson
Dryudella picta (Kohl)
Dryudella rhimpa Parker

SUBFAMILY BEMBICINAE

Alysson radiatus Fox
Alysson triangulifer Provancher
Alysson triangulifer shawi Provancher

Bembix americana Fabricius
Bembix amoena Handlirsch

Bicyrtes ventralis (Say)

Clitemnestra bipunctata (Say)

Didineis nodosa Fox

Epinysson mellipes (Cresson)
Epinysson moestus (Cresson)
Epinysson pacificus (Rohwer)

Glenostictia pulla (Handlirsch)

Gorytes angustus (Provancher)
Gorytes atricornis Packard
Gorytes canaliculatus Packard
Gorytes flagellatus Bohart
Gorytes provancheri Handlirsch
Gorytes simillimus Smith

Harpactus mendicus (Handlirsch)
Harpactus pictifrons Fox
Harpactus rugulosus Bohart

Hoplisoides hamatus (Handlirsch)
Hoplisoides nebulosus spiloferus (Handlirsch)
Hoplisoides punctifrons (Cameron)
Hoplisoides tricolor (Cresson)

Hyponysson bicolor Rohwer

Lestiphorus piceus (Handlirsch)

Microbembex californica Bohart

Microbembex nigrifrons (Provancher)

Nysson chumash Pate

Nysson fidelis Cresson

Nysson gagates Bradley

Nysson hesperus Bohart

Nysson neorusticus Bohart

Nysson plagiatus Cresson

Nysson recticornis Bradley

Nysson tristis Cresson

Nysson sp.

Oryttus laminiferus Fox

Oryttus mirandus (Fox)

Steniolia obliqua (Cresson)

Steniolia scolopacea albicantia Parker

Steniolia tibialis Handlirsch

Stictiella emarginata (Cresson)

Stictiella tuberculata (Fox)

Stizoides renicinctus (Say)

Zanysson texanus fuscipes (Cresson)

SUBFAMILY CRABRONINAE

Belomicrus columbianus (Kohl)

Crabro advena Smith

Crabro argusinus Bohart

Crabro conspicuus Cresson

Crabro flavicrus Bohart

Crabro florissantensis Rohwer

Crabro hispidus Fox

Crabro largior Fox

Crabro latipes Smith

Crabro monticola (Packard)

Crabro nigrostriatus Bohart

Crabro pallidus Fox

Crabro pleuralis Fox

Crabro tenuis Fox

Crabro vernalis (Packard)

Crossocerus angelicus (Kincaid)

Crossocerus annulipes (Lepeletier & Brullé)

Crossocerus barbipes (Dahlbom)

Crossocerus chromatipus Pate

Crossocerus elongatulus (Vander Linden)

Crossocerus harringtonii (Fox)

Crossocerus lentus (Fox)

Crossocerus leucostoma (Linnaeus)

Crossocerus maculiclypeus (Fox)

Crossocerus maculipennis (Smith)
Crossocerus nigrinus (Lepeletier & Brullé)
Crossocerus pseudochromatipus Leclercq & Miller
Crossocerus stricklandi Pate
Crossocerus tarsatus planipes (Fox)

Ectemnius alphaeus Pate
Ectemnius arcuatus (Say)
Ectemnius atriceps (Cresson)
Ectemnius borealis (Zetterstedt)
Ectemnius cephalotes (Olivier)
Ectemnius continuus (Fabricius)
Ectemnius dilectus (Cresson)
Ectemnius dives (Lepeletier & Brullé)
Ectemnius lapidarius (Panzer)
Ectemnius maculosus (Gmelin)
Ectemnius ruficornis (Zetterstedt)
Ectemnius rufifemur (Packard)
Ectemnius spiniferus (Fox)
Ectemnius trifasciatus (Say)

Larropsis capax (Fox)
Larropsis corrugata (Bohart & Bohart)
Larropsis distincta (Smith)
Larropsis tenuicornis (Smith)

Lestica confluenta (Say)
Lestica producticollis (Packard)

Lindenius columbianus (Kohl)

Liris argentatus (Palisot de Beauvois)

Miscophus evansi (Krombein)
Miscophus sp.

Oxybelus emarginatus Say
Oxybelus uniglumis (Linnaeus)
Oxybelus ventralis Fox

Pisonopsis birkmanni Rohwer
Pisonopsis clypeata Fox

Plenoculus davisii Fox

Plenoculus propinquus Fox

Rhopalum clavipes (Linnaeus)
Rhopalum coarctatum (Scopoli)
Rhopalum occidentale (Fox)

Solierella affinis (Rohwer)
Solierella peckhami (Ashmead)
Solierella plenoculoides similis (Bridwell)
Solierella sp. (inermis-group)

Tachysphex aequalis Fox
Tachysphex aethiops (Cresson)
Tachysphex alpestris Rohwer
Tachysphex amplus Fox
Tachysphex antennatus Fox
Tachysphex apicalis Fox
Tachysphex ashmeadii Fox
Tachysphex clarconis Viereck
Tachysphex hopi Pulawski
Tachysphex montanus (Cresson)
Tachysphex mundus Fox
Tachysphex orestes Pulawski
Tachysphex pauxillus Fox
Tachysphex pompiliformis (Panzer)
Tachysphex psammobius (Kohl)
Tachysphex semirufus (Cresson)
Tachysphex similis Rohwer
Tachysphex tarsatus (Say)
Tachysphex verticalis Pulawski
Tachysphex williamsi Bohart

Tachytes distinctus Smith
Tachytes nevadensis Bohart
Tachytes pennsylvanicus Banks
Tachytes sayi Banks

Trypoxylon bidentatum Fox
Trypoxylon frigidum Smith
Trypoxylon sculleni Sandhouse
Trypoxylon tridentatum Packard

SUBFAMILY PEMPHREDONINAE

Ammoplanus vanyumi Pate

Diodontus adamsi Titus
Diodontus argentinae Rohwer
Diodontus bidentatus Rohwer
Diodontus boharti Eighme
Diodontus crassicornus Viereck
Diodontus flavitarsis Fox
Diodontus fraternus Rohwer
Diodontus leguminiferus Cockerell
Diodontus minutus (Fabricius)
Diodontus occidentalis Fox
Diodontus rugosus Fox
Diodontus striatus (Mickel)
Diodontus vallicolae Rohwer
Diodontus virginianus Rohwer

Mimesa cressonii Packard
Mimesa dawsoni Mickel
Mimesa edentata (Malloch)
Mimesa gregaria (Fox)

Mimesa lutaria (Fabricius)
Mimesa pauper Packard
Mimesa senijextee Finnamore
Mimesa simplex (Malloch)
Mimesa uncinata Cresson

Mimumesa atratina (Morawitz)
Mimumesa clypeata (Fox)
Mimumesa mixta (Fox)
Mimumesa nigra (Packard)

Parammoplanus apache Pate
Parammoplanus olamentke Pate

Passaloecus armeniacae Cockerell
Passaloecus borealis Dahlbom
Passaloecus cuspidatus Smith
Passaloecus lineatus Vincent
Passaloecus monilicornis Dahlbom
Passaloecus patagiatus Vincent
Passaloecus singularis Dahlbom

Pemphredon baltica Merisuo
Pemphredon confertim Fox
Pemphredon grinnelli (Rohwer)
Pemphredon inornata Say
Pemphredon lethifer (Shuckard)
Pemphredon lugubris (Fabricius)
Pemphredon montana Dahlbom
Pemphredon nearctica (Kohl)
Pemphredon rileyi Fox

Psenulus frontalis (Fox)

Pulverro columbianus (Kohl)

Spilomena alboclypeata Bradley

Stigmus americanus Packard
Stigmus fraternus Say
Stigmus fulvipes Fox
Stigmus inornatus inornatus Fox

SUBFAMILY PHILANTHINAE

Aphilanthops frigidus (Smith)
Aphilanthops subfrigidus Dunning

Cerceris aequalis Provancher
Cerceris californica Cresson
Cerceris calochorti Rohwer
Cerceris cockerelli Viereck**
Cerceris convergens Viereck
Cerceris crucis Viereck & Cockerell
Cerceris echo Mickel
Cerceris fumipennis Say
Cerceris nigrescens Smith

Cerceris sexta Say
Cerceris sextoides Banks
Cerceris tepaneca de Saussure
Cerceris vanduzeei Banks
Clypeadon laticinctus (Cresson)
Eucerceris flavocincta Cresson
Eucerceris vittatifrons Cresson
Philanthus bilunatus Cresson
Philanthus crabroniformis Smith
Philanthus gibbosus (Fabricius)
Philanthus inversus Patton
Philanthus multimaculatus Cameron
Philanthus pacificus Cresson
Philanthus pulcher Dalla Torre
Philanthus ventilabris Fabricius
Philanthus ventralis (Mickel)
Philanthus zebratus Cresson

FAMILY SPHECIDAE

SUBFAMILY AMMOPHILINAE

Ammophila aberti Haldeman
Ammophila azteca Cameron
Ammophila cleopatra Menke
Ammophila extremitata Cresson
Ammophila kareae Menke
Ammophila kennedyi (Murray)
Ammophila macra Cresson
Ammophila mcclayi Menke
Ammophila mediata Cresson
Ammophila placida Smith
Ammophila polita Cresson
Ammophila procera Dahlbom
Ammophila strenua Cresson
Podalonia argentifrons (Cresson)
Podalonia atriceps (Smith)
Podalonia clypeata Murray
Podalonia luctuosa (Smith)
Podalonia melaena Murray
Podalonia mexicana (de Saussure)
Podalonia mickeli Murray
Podalonia occidentalis Murray
Podalonia robusta (Cresson)
Podalonia sericea Murray
Podalonia sonorensis (Cameron)
Podalonia valida (Cresson)

SUBFAMILY CHLORIONTINAE

Chlorion aerarium Patton

SUBFAMILY SCELIPHRINAE

Chalybion californicum (de Saussure)

Sceliphron caementarium (Drury)

SUBFAMILY SPHECINAE

Isodontia elegans (Smith)

Palmodes californicus Bohart & Menke

Palmodes carbo (Kohl)

Palmodes hesperus Bohart & Menke

Palmodes laeviventris (Cresson)

Prionyx atratus (Lepeletier)

Prionyx canadensis (Provancher)

Sphex ichneumoneus (Linnaeus)

Sphex lucae Bohart & Menke

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