Whistler "BioBlitz"

24-25 July 2010, 4-7 August 2011 spider collections

SUMMARY

Spiders were collected by hand (primarily) and sweep-net during 2 days in 2010; by hand, sweep-net, and Berlese sampling during 4 days in 2011. Collections were made by Claudia Copley, Darren Copley, and Robb Bennett with help from Melanie Tardiff (2010, 2011) and Brent Matsuda (2011). Samples were sorted daily, then transported to the Royal BC Museum for identification and curation by Bennett and D. Copley. All adult specimens have been deposited as voucher specimens in the collection of the RBCM.

In 2010, 35 spider species were identified (at least 4 further taxa were unidentifiable to species) from samples collected at four sites: alpine/sub-alpine on Whistler and Blackcomb Mtns., and valley bottom and hillside remnant old growth patches within Whistler village. In 2011, five sites were sampled by hand/sweep-net (near Brandywine bungee jump, near Madeley Lk., Rainbow Lk. trailhead and lower trail, and Whistler alpine) and moss samples for Berlese extraction were collected at west end of Alpha Lk. as well as at the Rainbow Lk. trail, Madeley Lk., and Brandywine sites. In addition to species also recorded in 2010, a further 54 new records resulted from the 2011 sampling, a reflection of the wider range of habitats sampled in 2011 and the use of Berlese extraction techniques. The Whistler area now has 89 spider species (plus at least 6 unidentified species) positively identified and recorded (see Appendix).

Collection efforts in both years were concentrated on micro-habitats and taxa not likely to be sampled or encountered by general collectors. Thus, many relatively common species that almost certainly occur in the area are not represented in the Appendix.

SPECIES OF INTEREST

Although some are widespread Holarctic species, all of the species listed in the Appendix are believed to be native to BC (*i.e.*, none is an introduced species). A dozen significant species records are discussed here in the order in which they appear in the Appendix.

- *Zanomys aquilonia*. This very small cribellate amaurobiid is a Pacific Northwest endemic, restricted in BC to dry habitats of the Georgia Lowlands. The records came from Berlese extraction of dry moss samples collected on the ground at the south end of Alpha Lake and at Brandywine. Most other records of *Z. aquilonia* in BC are at much lower elevations (≤ 100m) and closer to salt water.
- *Parasyrisca orites*. The Whistler records for this relatively large gnaphosid ground spider are very significant. A Pacific Northwest endemic with a very small range restricted to high elevation sites in southwestern BC and adjacent parts of northwestern WA, in BC *P. orites* has been recorded at

only three other sites. The Whistler records came from underneath or on the underside of rocks in open scree.

- *Calymmaria nana*. Yet another Pacific Northwest endemic, this is one of two species of this hahniid genus found in coastal forests from southwestern BC to southwestern OR. *Calymmaria nana* has previously been recorded from only seven other sites in BC and is significantly less common than its congener.
- *Hahnia glacialis*. This hahniid species is broadly distributed at high elevations across the northern hemisphere but has been rarely recorded in North America. In BC *H. glacialis* is known from only three other sites. The Whistler records were from the underside of rocks in open scree.
- *Islandiana falsifica*. Another species that is broadly distributed across the northern hemisphere but rarely collected, this small linyphiid sheet-web spider is known from high elevation sites across the northern Nearctic region but has been recorded from only two other sites in BC. As with most of our high elevation records, the Whistler Peak collection of *I. falsifica* was from the underside of rock in open scree.
- *Meioneta manni*. This is another very significant record of a Pacific Northwest endemic with a very small range restricted to high elevation sites in southwestern BC and adjacent parts of northwestern WA. The Whistler record of this very small linyphiid is the first one verified for Canada. We also recorded *M. manni* from near Seton Portage this year. Both records were from the underside of rocks.
- *Sisus rotundus*. A very small linyphiid broadly distributed across forested areas of the northern Nearctic region, *S. rotundus* is rarely collected and is only known in BC from three other sites. The three Whistler-area records came from Berlese extraction of moss samples.
- *Tiso aestivus*. Another very significant find, *T. aestivus* is a very small linyphiid generally considered to be an arctic/subarctic species. *Tiso aestivus* has a northern Holarctic distribution but in the Nearctic had previously only been recorded from YT and Greenland. The Whistler Peak record (underside of rock in scree) is the first one for BC and “lower” Canada.
- *Walckenaeria vigilax*. Also a species with a broad northern Holarctic distribution, in the Nearctic this very small linyphiid is restricted to the west from AK to WA. Previously known in BC from only one other (high elevation) site, *W. vigilax* was found on the underside of rocks in scree at Whistler Peak.
- *Pardosa diuturna*. This lycosid wolf spider is endemic to high elevation sites of the west coast from the AK panhandle to southwestern BC. In BC *P. diuturna* has been recorded from only five other sites. The Whistler Peak specimens were actively running or hiding among rocks in scree.
- *Pardosa rainieriana*. Another Pacific Northwest endemic, this lycosid is associated with high elevation sites in southwestern BC south to OR. In BC *P. rainieriana* has been recorded from only three other sites. As with its congener *P. diuturna*, specimens of *P. rainieriana* were actively running or hiding among rocks in scree at Whistler Peak.
- *Enoplognatha intrepida*. Another high-elevation spider, this theridiid cobweb spider is broadly distributed above timberline throughout the Nearctic region. However, *E. intrepida* was previously unrecorded in BC. As well as the record from Whistler Peak, *E. intrepida* was collected in 2011 at two other high elevation sites in BC; all records were from the underside of rocks in scree.

INTO THE FUTURE

The preponderance of new and interesting records for the Whistler area produced by “rock-flipping” and from Berlese extraction of moss samples illustrates the fact that the spider fauna of British Columbia is poorly known relative to some other groups of

arthropods. We know of no concerted spider collection efforts in the Whistler area other than the work performed by Copley, Copley, and Bennett *et al.* in 2010 and 2011 and, although the provincial spider database contains many records from southwestern BC, few are from the Squamish/Whistler/Pemberton area, fewer still from high elevation sites. There is little doubt that many further species records await discovery in the Whistler area. Therefore, the following general guidelines are suggested to direct future spider collection efforts.

- *Alpine work*. Collecting above timberline will likely be the greatest source of new records. Other than access issues, this work is relatively easily accomplished through hand-collecting. Pitfall trapping (and, Berlese sampling where suitable habitat exists (*e.g.*, moss, litter)) will provide added spatio-temporal coverage certain to produce records missed by hand-collecting. However, pitfall trapping is relatively labour intensive and requires specialized (but inexpensive) equipment and a significant time investment.
- *Lower elevation work*. Berlese extractions, pitfall trapping, branch/foliage beatings, and sweep netting will produce the most significant and greatest number of additions to the current list. Moss and forest litter are probably the most important habitats to sample but coniferous and deciduous branches and foliage, as well as herbs and forbs have been undersampled in the area. As with alpine work, pitfall trapping is a very successful collection technique but requires a significant investment in time and materials.
- *Improving temporal coverage*. Accurate identification of spider species requires adult spiders; adults of many spider species are seasonal and present only at certain times of the year. Thus, collection efforts in the spring and fall will likely add significant numbers of records to the current Whistler species list.
- *Improving representation of common species*. Many common species, including introductions, can likely be added to the Whistler area species list by hand-collecting in and around buildings, gardens, and landscaping. Sweeping and beating vegetation in weedy areas, along roadsides, and in similar habitats will also be productive. A working list of common species expected to occur in the Whistler area can be developed from one or two days of careful review of the existing provincial spider database.

Robb Bennett, Ph.D
28 October 2011

APPENDIX

Whistler BioBlitz spiders
annotated species list & site data

(taxa listed alphabetically (*i.e.*, not phylogenetically))

24-25 July 2010, 4-7 August 2011

** indicated species of special significance

AMAUROBIIDAE

****Zanomys aquilonia** Leech: PNW endemic; in BC restricted to dry habitats (D-fir, Garry oak, arbutus, etc.) in Georgia Basin
Alpha Lk. Pk (s end), Brandywine Pr. Pk.

ARANEIDAE

Araniella displicata (Hentz): Holarctic; common & widely distributed in BC
Blackcomb Mtn (west slope), Brandywine Pr. Pk.

Cyclosa conica (Pallas): Holarctic; common & widely distributed in BC
Madeley Lk.

CLUBIONIDAE

Clubiona pacifica Banks: western Nearctic; widespread in western BC
Rainbow Lake Trail (lower), Madeley Lk.

Clubiona trivialis C.L. Koch: northern Nearctic; widespread in BC
Brandywine Pr. Pk.

CORINNIDAE

Phrurotimpus borealis (Emerton): southern Nearctic; widespread in southern BC
Brandywine Pr. Pk.

Scotinella pugnata (Emerton): central Nearctic; widespread in southern BC
Brandywine Pr. Pk.

CYBAEIDAE

Cybaeota shastae Chamberlin & Ivie: PNW endemic; widespread in coastal BC
Rainbow Lake trailhead, Alpha Lk. Pk (s end), Rainbow Lake Trail (lower)

Cybaeus eutypus Chamberlin & Ivie: PNW endemic; widespread in mid and south coastal BC
Whistler village (old growth patch on hillside), Whistler village (valley bottom old growth patch), Rainbow Lake trailhead, Rainbow Lake Trail (lower)

Cybaeus morosus Simon: western Nearctic; widespread in BC, especially on coast
Rainbow Lake Trail (lower)

Cybaeus reticulatus Simon: western Nearctic; widespread in coastal BC
Rainbow Lake Trail (lower)

DICTYNIDAE

Cicurina idahoana Chamberlin: PNW endemic; widespread in southern BC
Brandywine Pr. Pk.

Cicurina tersa Simon: PNW endemic; widespread in western BC, especially on coast
Brandywine Pr. Pk.

Dictyna major Menge: Holarctic; common & widely distributed in BC
Rainbow Lake Trail (lower)

Dictyna/Emblyna spp.: females, unidentifiable to genus in absence of males.
Brandywine Pr. Pk.

Emblyna borealis (O. P.-Cambridge): Holarctic; in BC apparently restricted to high elevation SW sites
Whistler Peak (summit)

Lathys alberta Gertsch: Holarctic; widespread in BC but apparently restricted to high elevation sites
Blackcomb Mtn (west slope), Whistler Peak (summit)

GNAPHOSIDAE

Gnaphosa muscorum (L. Koch): Holarctic; widespread in BC
Whistler Peak (summit)

Micaria constricta Emerton: Holarctic; widespread in BC
Blackcomb Mtn (west slope), Whistler Peak (summit)

Micaria pulicaria (Sundevall): Holarctic; widespread in southern half of BC
Rainbow Lake Trail (lower)

****Parasyrisca orites** (Chamberlin & Gertsch): PNW endemic with very restricted SW BC and adjacent WA range; in BC known from 4 high elevation sites
Whistler Peak (summit), Blackcomb Mtn (west slope), Whistler Peak (summit)

Zelotes fratris Chamberlin: Holarctic; widespread in BC
Blackcomb Mtn (west slope), Whistler village (old growth patch on hillside), Brandywine Pr. Pk.

HAHNIIDAE

****Calymmaria nana** (Simon): PNW endemic; in BC restricted to Georgia Basin
Brandywine Pr. Pk.

Cryphoeca exlineae Roth: western Nearctic; widespread in BC
Whistler Peak (summit), Rainbow Lake trailhead, Alpha Lk. Pk (s end), Rainbow Lake Trail (lower), Whistler Peak (summit)

****Hahnia glacialis** Sorensen: Holarctic; rarely collected in BC but may be common at high elevation sites
Whistler Peak (summit), Blackcomb Mtn (west slope), Whistler Peak (summit)

LINYPHIIDAE

unidentified erigonines: primarily females, some males; unidentifiable to genus
Whistler Peak (summit), Blackcomb Mtn (west slope), Brandywine Pr. Pk.

Agyneta sp.: genus closely related to *Meioneta* with many undescribed species
Alpha Lk. Pk (s end), Whistler Peak (summit)

Arcuphantes sylvaticus Chamberlin & Ivie: western Nearctic; widespread (but uncommon) in BC
Brandywine Pr. Pk.

Bathyphantes alascensis Banks: western Nearctic; relatively common in western half of BC
Rainbow Lake Trail (lower)

Bathyphantes brevipes (Emerton): Nearctic; widespread in BC
Madeley Lk.

Ceraticelus fissiceps (O. P.-Cambridge): Nearctic; rarely collected in BC but probably widespread
Brandywine Pr. Pk.

Ceratinella acerea Chamberlin & Ivie: west central Nearctic; apparently common in SW BC
Rainbow Lake trailhead

Ceratinops inflatus (Emerton): northwestern Nearctic; widespread in western half of BC
Rainbow Lake trailhead

Collinsia ksenia (Crosby & Bishop): northwestern Nearctic; widespread in BC (notable for being the spider responsible for the 2002 “McBride spider field”)
Whistler Peak (summit), Blackcomb Mtn (west slope), Whistler Peak (summit)

Erigone sp. females unidentifiable to species in absence of males
Whistler Peak (summit), Brandywine Pr. Pk. Whistler Peak (summit)

Incestophantes lamprus (Chamberlin): west central Nearctic; in BC restricted to high elevation southern sites
Whistler Peak (summit), Blackcomb Mtn (west slope)

****Islandiana falsifica** (Keyserling): Holarctic; rarely collected in BC – Whistler is one of only 3 known (all high elevation) BC

localities
Whistler Peak (summit)

Lepthyphantes "sp. 12": undescribed species apparently restricted to west central Nearctic; in BC known from relatively few localities but may be widespread
Blackcomb Mtn (west slope), Rainbow Lake Trail (lower), Madeley Lk.

Meioneta sp.: genus closely related to *Meioneta* with many undescribed species
Whistler Peak (summit), Alpha Lk. Pk (s end)

****Meioneta manni*** Crawford & Edwards: endemic to SW BC and NW WA; 2011 Whistler and Mission Ridge (Seton Portage) records first in Canada
Whistler Peak (summit)

Mythoplastoides erectus (Emerton): northwestern Nearctic; widespread in BC
Blackcomb Mtn (west slope), Whistler village (old growth patch on hillside), Rainbow Lake trailhead, Rainbow Lake Trail (lower)

Neriene digna (Keyserling): western Nearctic; widespread in BC, especially on coast
Whistler village (old growth patch on hillside), Whistler village (valley bottom old growth patch), Brandywine Pr. Pk.

Neriene litigiosa (Keyserling): western Nearctic; relatively widespread in BC
Brandywine Pr. Pk.

Neriene radiata (Walckenaer): Holarctic; widespread in BC, especially on coast
Brandywine Pr. Pk.

Oreonetides filicatus (Crosby): western Nearctic; widespread in western and southern BC
Rainbow Lake Trail (lower)

Pelecopsis sculpta (Emerton): northwestern Nearctic; apparently widespread in coastal and southern BC
Whistler Peak (summit), Whistler Peak (summit)

Pityohyphantes cristatus Chamberlin & Ivie: west central Nearctic; apparently widespread in southern half of BC
Rainbow Lake Trail (lower), Madeley Lk.

Poeciloneta lyrica (Zorsch): northwestern Nearctic; apparently widespread in western and southern BC
Blackcomb Mtn (west slope), Whistler Peak (summit)

Porrhomma convexum (Westring): Holarctic; rarely collected in BC – known from only 2 other southwest sites
Madeley Lk.

Scotinotylus alpinus (Banks): Holarctic: in BC apparently widespread but restricted to high elevation sites
Whistler Peak (summit), Whistler Peak (summit)

Scotinotylus patellatus (Emerton): western Nearctic; apparently widespread in western and southern BC
Blackcomb Mtn (west slope), Rainbow Lake Trail (lower)

Sisicottus nesides (Chamberlin): northwestern Nearctic; widespread in BC
Blackcomb Mtn (west slope)

Sisicottus panopeus Miller: eastern Palaearctic & northwestern Nearctic; apparently widespread in BC west of Rockies
Blackcomb Mtn (west slope), Whistler Peak (summit)

****Sisus rotundus*** (Emerton): Nearctic; rarely collected in BC – known from only 3 other localities in the province
Rainbow Lake trailhead, Alpha Lk. Pk (s end), Rainbow Lake Trail (lower)

Symmigma minimum (Emerton): northwestern Nearctic; apparently widespread in BC
Rainbow Lake trailhead, Alpha Lk. Pk (s end), Rainbow Lake Trail (lower)

Tachygyna ursina (Bishop & Crosby): northwestern Nearctic; uncommonly collected in BC but may be widespread on coast
Alpha Lk. Pk (s end)

Tachygyna vancouverana Chamberlin & Ivie: northwestern Nearctic; apparently widespread in BC
Alpha Lk. Pk (s end), Rainbow Lake Trail (lower)

Tenuiphantes zelatus (Zorsch): west central Nearctic; apparently widespread in BC
Whistler Peak (summit), Whistler village (old growth patch on hillside), Rainbow

Lake trailhead, Rainbow Lake Trail (lower), Brandywine Pr. Pk.

****Tiso aestivus** (L. Koch): Holarctic: subarctic species, first record in Canada outside of YT
Whistler Peak (summit)

Walckenaeria sp.: unidentified female
Whistler Peak (summit)

Walckenaeria columbia Millidge: PNW endemic; common in southwestern BC
Madeley Lk.

Walckenaeria cornuella (Chamberlin & Ivie): northwestern Nearctic; apparently widespread in BC
Rainbow Lake trailhead, Rainbow Lake Trail (lower), Madeley Lk.

Walckenaeria exigua Millidge: northern and central Nearctic; apparently widespread in BC
Alpha Lk. Pk (s end)

****Walckenaeria vigilax** (Blackwall): Palaearctic and northwestern Nearctic; only 2 localities in BC
Whistler Peak (summit)

Wubana pacifica (Banks): central Nearctic; widespread in southern BC, especially on coast
Blackcomb Mtn (west slope)

LYCOSIDAE

Arctosa alpigena (Doleschall): Holarctic; widespread in BC
Whistler Peak (summit), Blackcomb Mtn (west slope), Madeley Lk., Whistler Peak (summit)

****Pardosa diuturna** Fox: coastal endemic from AK panhandle to southwestern BC; known from only 5 other high elevation coastal sites in BC
Whistler Peak (summit)

Pardosa dorsuncata Lowrie & Dondale: western Nearctic; widespread in BC
Whistler Peak (summit), Blackcomb Mtn (west slope), Whistler village (old growth patch on hillside), Rainbow Lake Trail (lower), Brandywine Pr. Pk., Whistler Peak (summit)

Pardosa groenlandica (Thorell): Holarctic; widespread in BC
Blackcomb Mtn (west slope)

Pardosa metlakatla Emerton: coastal northwestern Nearctic; widespread in coastal BC
Whistler Peak (summit), Rainbow Lake Trail (lower), Madeley Lk.

****Pardosa rainieriana** Lowrie & Dondale: PNW endemic; in BC known only from 4 high elevation localities
Whistler Peak (summit), Whistler Peak (summit)

Pardosa wyuta Gertsch: western Nearctic; widespread in western and southern BC
Blackcomb Mtn (west slope), Whistler Peak (summit)

Pirata piraticus (Clerck): Holarctic; widespread in BC
Alpha Lk. Pk., Rainbow Lake Trail (lower)

PHILODROMIDAE

Philodromus alascensis Keyserling: Holarctic; widespread in BC
Blackcomb Mtn (west slope), Whistler Peak (summit)

Philodromus mysticus Dondale & Redner: northern Nearctic; in BC known from only 3 sites
Rainbow Lake Trail (lower)

Philodromus spectabilis Keyserling: central Nearctic; widespread in southern and coastal BC
Whistler Peak (summit), Alpha Lk. Pk.

Tibellus oblongus (Walckenaer): Holarctic; widespread in western and southern BC
Brandywine Pr. Pk.

PIMOIDAE

Pimoa altioculata (Keyserling): western Nearctic; widespread on Vancouver Is. and adjacent mainland
Whistler village (old growth patch on hillside), Madeley Lk.

SALTICIDAE

Evarcha proszynskii Marusik & Lugonov: Palaearctic and western Nearctic;

widespread in BC
Brandywine Pr. Pk.

Neon reticulatus (Blackwall): Palaearctic and western Nearctic; widespread in western BC
Brandywine Pr. Pk.

Pelegrina aeneola (Curtis): western Nearctic; apparently widespread in western BC
Brandywine Pr. Pk.

Sitticus ranieri (Peckham & Peckham): Holarctic; apparently widespread in BC at high elevations
Whistler Peak (summit), Whistler Peak (summit)

TETRAGNATHIDAE

Tetragnatha laboriosa Hentz) : Holarctic and Neotropical; widespread in BC
Blackcomb Mtn (west slope), Madeley Lk.

Tetragnatha versicolor Walckenaer: Holarctic and Neotropical; widespread in BC
Rainbow Lake Trail (lower), Alpha Lk. Pk., Madeley Lk. Brandywine Pr. Pk.

THERIDIIDAE

Canalidion montanum (Emerton): central Nearctic; apparently widespread in BC
Madeley Lk.

Crustulina sticta (O. P.-Cambridge): Holarctic; widespread in BC
Brandywine Pr. Pk.

***Enoplognatha intrepida* (Sorensen): Nearctic; in BC known only from 3 high elevation southwestern sites
Whistler Peak (summit)

Euryopis formosa Banks: west central Nearctic; apparently widespread in southern BC
Brandywine Pr. Pk.

Robertus vigerens (Chamberlin & Ivie): western Nearctic; widespread in BC
Blackcomb Mtn (west slope), Whistler village (old growth patch on hillside), Whistler village (valley bottom old growth patch), Rainbow Lake Trail (lower), Madeley Lk., Brandywine Pr. Pk.

Rugathodes sexpunctatus (Emerton): Nearctic; widespread in BC
Whistler Peak (summit), Rainbow Lake trailhead, Rainbow Lake Trail (lower)

Steatoda borealis Hentz: Nearctic; apparently widespread in BC
Brandywine Pr. Pk.

Theridion differens Emerton: Nearctic; widespread in BC
Brandywine Pr. Pk.

Thymoites camano (Levi): west central Nearctic; widespread in southwestern BC
Brandywine Pr. Pk.

THOMISIDAE

Misumena vatia (Clerck): Holarctic; widespread in BC
Brandywine Pr. Pk., Whistler Peak (summit)

Xysticus pretiosus Gertsch: west central Nearctic; widespread in southwestern BC
Rainbow Lake Trail (lower)