

S. Bruce Archibald, Ph.D. | Paleoentomology

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Ph.D. in Evolutionary Biology, [Harvard University](#), Cambridge, MA, USA. Dissertation: *Climate and Species Diversity: The Eocene Okanagan Highlands Insect View*, 2007. Faculty advisor, [Prof. Brian D. Farrell](#).

B.Sc. (1st Class, Honours), Simon Fraser University, Burnaby, BC, Canada, 1998.

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Public talk on my research: [YouTube](#) 

Talk for the Dragonfly Society of the Americas on the new odonate suborder Cephalozygoptera: [YouTube](#) .

[SFU paleontologist honours Indigenous culture through collaboration](#). *Simon Fraser University News*, June 18, 2021.

Associate:

- [Museum of Comparative Zoology](#) Entomology Department, Harvard University, Cambridge, MA, USA;

Research Associate:

- [Simon Fraser University](#), Department of Biological Sciences, Burnaby, BC, Canada;
- [Royal BC Museum](#), Victoria, BC, Canada;

Fellow:

- [Royal Canadian Geographical Society](#) .

How does climate affect biodiversity? Why are various plants and animals distributed across the globe as they are? Why do communities have particular compositions? I address these and other basic questions about ecosystems by comparing modern insect communities with the diverse and well-preserved insect communities of the early Eocene Okanagan Highlands series of fossil sites in British Columbia, Canada and northern Washington, USA.

Covers



Journal Publications

2021

- 56- Archibald, S.B., and Cannings, R.A. (2021) The head of Cephalozygoptera (Odonata). *Zootaxa*, **5047**(1): 97–100.
DOI: <https://doi.org/10.11646/zootaxa.5047.1.10>
- 55- E. Rubino, E, Leier, A., Cassel, E.J., Archibald S.B., Foster-Baril, Z., and Barbeau Jr., D.L. (2021) Detrital zircon U-Pb ages and Hf-isotopes from Eocene intermontane basin deposits of the southern Canadian Cordillera. *Sedimentary Geology*, **422** (2021), 105969.
DOI: <https://doi.org/10.1016/j.sedgeo.2021.105969>
- 54- Archibald, S.B., Aase, A., and Nel, A. (2021) The second North American fossil horntail wood-wasp (Hymenoptera: Siricidae), from the early Eocene Green River Formation. *Zootaxa*, **4999**(4): 325–334.
DOI: <https://doi.org/10.11646/zootaxa.4999.4.2>
- 53- Mathewes, R.W., Archibald, S.B., and Lundgren, A. (2021) Tips and identification of early Eocene *Fraxinus* L. samaras from the Quilchena locality, Okanagan Highlands, British Columbia, Canada. *Review of Palaeobotany and Palynology*, **293**: [in press].
DOI: <https://doi.org/10.1016/j.revpalbo.2021.104480>
- 52- Makarkin, V.N., Archibald, S.B., and Mathewes, R.W. (2021) New Protosmylinae (Neuroptera: Osmylidae) from the early Eocene of western North America, with taxonomic remarks. *Zootaxa*, **4980**(1): 142–156.
DOI: <https://doi.org/10.11646/zootaxa.4980.1.9>
- 51- Archibald, S.B., and Cannings, R.A. (2021) A new genus and species of Euphaeidae (Odonata, Zygoptera) from the early Eocene Okanagan Highlands locality at Republic, Washington, U.S.A. *Zootaxa*, **4966**(3): 392–400. DOI: <https://doi.org/10.11646/zootaxa.4966.3.11>

50- Archibald, S.B., and Makarkin, V.N. (2021) Early Eocene snakeflies (Raphidioptera) of western North America from the Okanagan Highlands and Green River Formation. *Zootaxa*, **4951**(1): 041–079.

DOI: <https://doi.org/10.11646/zootaxa.4951.1.2>

Selected media for Early Eocene snakeflies (Raphidioptera) of western North America from the Okanagan Highlands and Green River Formation:

- [Ancient snakefly fossil discovery ‘deepens mystery’ of species’ evolution](#). *The Independent*, April 7, 2021.

49- Archibald, S.B., Cannings, R.A., Erickson, R.J., Bybee, S.M., and Mathewes, R.W. (2021) The Cephalozygoptera, a new, extinct suborder of Odonata with new taxa from the early Eocene Okanagan Highlands, western North America. *Zootaxa*, **4934**(1): 1–133.

Free download at: <https://www.biotaxa.org/Zootaxa/issue/view/zootaxa.4934.1>

Selected media for The Cephalozygoptera, a new, extinct suborder of Odonata with new taxa from the early Eocene Okanagan Highlands, western North America:

- [B.C. paleontologists find new category of insect fossils related to damselflies](#). *CBC*, March 2, 2021.
- [Открыт новый вид вымерших стрекоз со странной формой головы](#). *Pravda*, February 25, 2021.
- [Paleontólogos descubren nuevo grupo de insectos fósiles tras 150 años de confusión](#). *Televisa*, February 25, 2021.
- [古生物学家解开困扰研究人员150年的谜团 并发现新的昆虫群体](#), *QQ*, March 6, 2021.

2020

48- Archibald, S.B., and Makarkin, V.N. (2020) A new genus and species of split-footed lacewings (Neuroptera) from the early Eocene of western Canada and revision of the subfamily affinities of Mesozoic Nymphidae. *The Canadian Entomologist*, **152**: 269–287.

DOI: <https://doi.org/10.4039/tce.2020.10>

2019

47- Archibald, S.B., and Cannings, R.A. (2019) Fossil Dragonflies (Odonata: Anisoptera) from the early Eocene Okanagan Highlands, western North America. *The Canadian Entomologist*, **151**: 783–816.

DOI: <https://doi.org/10.4039/tce.2019.61>

Selected media for Fossil Dragonflies (Odonata: Anisoptera) from the early Eocene Okanagan Highlands, western North America:

- [Rare dragonfly fossils could teach us about climate change](#). *CNN*, November 12, 2019.
- [First dragonfly fossils from B.C. receive scientific names](#). *CBC News*, November 10, 2019.
- [B.C. Dragonfly fossils given scientific names](#). Linda Aylsworth, *Global News TV*, November 5, 2019.

- [Fifty-million-year-old dragonfly species that once flew in B.C. identified for first time](#). Kevin Griffin, *The Vancouver Sun*, November 5, 2019.

46- Mayr, G., Archibald, S.B., Kaiser, G.W., and Mathewes, R.W. (2019) Early Eocene (Ypresian) birds from the Okanagan Highlands, British Columbia, Canada) and Washington State (USA). *The Canadian Journal of Earth Sciences*, **56**: 803–813. DOI: <https://doi.org/10.1139/cjes-2018-0267>

Selected media for Early Eocene (Ypresian) birds from the Okanagan Highlands, British Columbia, Canada) and Washington State (USA):

- [Rare Fossils Shed Light On B.C. Bird History](#). *Breakfast TV*, City TV, Vancouver, April 2, 2019.
- [Citizen paleontologists help fill in 50-million-year-old blanks in B.C.'s history](#). Randy Shore, *The Vancouver Sun*, April 6, 2019.


45- Makarkin, V.N., Archibald, S.B., and Jepson, J.E. (2019) The oldest Inocelliidae (Raphidioptera) from the Eocene of western North America. *The Canadian Entomologist*, **151**: 521–530. DOI: <https://doi.org/10.4039/tce.2019.26>

2018

44- Archibald, S.B., and Rasnitsyn, A.P. (2018) Two new species of fossil *Eomerope* (Mecoptera: Eomeropidae) from the Ypresian Okanagan Highlands, far-western North America, and Eocene Holarctic dispersal of the genus. *The Canadian Entomologist*, **150**: 393–403. DOI: <https://doi.org/10.4039/tce.2018.13>

Selected media for Two new species of fossil Eomerope (Mecoptera: Eomeropidae) from the Ypresian Okanagan Highlands, far-western North America, and Eocene Holarctic dispersal of the genus:


- [Scorpionfly Fossil Discovery](#). *Breakfast TV*, City TV, Vancouver. April 11, 2018.
- [53-Million Year Old Fossil Discovered in BC!](#) KKNW, The Jill Bennett Show, March 31, 2018.
- [Discovery of 53-million-year old scorpionfly shows ancient link between Canada and Russia](#). *The National Post*, April 3, 2018
- [B.C. scorpionfly discovery highlights prehistoric link between Canada and Russia](#). CBC, April 4, 2018.
- [B.C. researcher's identification of scorpionfly shows connection between Canada, Russia](#). *The Globe and Mail*, April 3, 2018.

43- Archibald, S.B., Rasnitsyn, A.P., Brothers, D.J., and Mathewes, R.W. (2018) Modernisation of the Hymenoptera: ants, bees, wasps and sawflies of the early Eocene Okanagan Highlands. *The Canadian Entomologist*, **150**: 205–257. [PDF](#)  DOI: <https://doi.org/10.4039/tce.2017.59>

Selected media for Modernisation of the Hymenoptera: ants, bees, wasps and sawflies of the early Eocene Okanagan Highlands:

- [New study validates SFU prof's long campaign to protect fossil beds](#). Stephen Hume, *The Vancouver Sun*, January 26, 2018.


2017


42- Archibald, S.B., and Makarkin, V.N. (2017) A new fossil green lacewing (Neuroptera: Chrysopidae) from the early Eocene Driftwood Canyon, Canada. *Zootaxa*, **4324**: 397–400. [PDF](#) 
DOI: <https://doi.org/10.11646/zootaxa.4324.2.13>

2016

41- Mathewes, R.W., Greenwood, D.R., and Archibald, S.B. (2016) Paleoenvironment of the Quilchena flora, British Columbia, during the Early Eocene Climatic Optimum. *The Canadian Journal of Earth Sciences*, **53**: 574–590.
DOI: <https://doi.org/10.1139/cjes-2015-0163>


2015


40- Archibald, S.B., and Makarkin, V.N. (2015) The second genus and species of the extinct neuropteroid family Corydasiidae, from early Eocene McAbee, British Columbia, Canada: do they belong to Megaloptera? *Zootaxa*, **4040**(5): 569–575.
[PDF](#) 
DOI: <https://doi.org/10.11646/zootaxa.4040.5.5>

39- Archibald, S.B., and Rasnitsyn, A.P. (2015) New early Eocene Siricomorpha (Hymenoptera: Symphyta: Pamphiliidae, Siricidae, Cephidae) from the Okanagan Highlands, western North America. *The Canadian Entomologist*, **148**: 209–228.
[PDF](#) 
DOI: <https://doi.org/10.4039/tce.2015.55>

Selected media for New early Eocene Siricomorpha (Hymenoptera: Symphyta: Pamphiliidae, Siricidae, Cephidae) from the Okanagan Highlands, western North America:

- [Fossil giant horntail wood-wasp discovered in B.C.](#) Laura Kane (Canadian Press), *CBC News*, Canada, November 18, 2015.


38- Archibald, S.B., and Bradler, S. (2015) Stem-group stick insects (Phasmatodea) in the early Eocene at McAbee, BC, Canada, and Republic, Washington, USA. *The Canadian Entomologist*, **147**: 744–753. [PDF](#) 
DOI: <https://doi.org/10.4039/tce.2015.2>



37- Archibald, S.B., and Makarkin, V.N. (2015) A new species of *Archaeochrysa Adams* (Neuroptera: Chrysopidae) from the early Eocene of Driftwood Canyon, British Columbia, Canada. *The Canadian Entomologist*, **147**: 359–369. [PDF](#) 
DOI: <https://doi.org/10.4039/tce.2014.53>

Selected media for A new species of *Archaeochrysa Adams* (Neuroptera: Chrysopidae) from the early Eocene of Driftwood Canyon, British Columbia, Canada:

- [Wet’suwet’en Nation Elders worked with Simon Fraser University and Russian Academy of Science researchers to name a new fossil species.](#) Debora Steel, *Aboriginal Multi-Media Society*, Edmonton, Canada, 2014.


2014

36- Archibald, S.B., Makarkin, V.N., Greenwood, D.R., and Gunnell, G.F. (2014) The Red Queen and Court Jester in green lacewing evolution: bat predation and global climate change. *PALAIOS*, **29**: 185–191. [PDF \(text + suppl. info\)](#) 
DOI: <https://doi.org/10.2110/palo.2013.089>


- 35- Makarkin, V.N., and Archibald, S.B. (2014) An unusual new fossil genus probably belonging to the Psychopsidae (Neuroptera) from the Eocene Okanagan Highlands, western North America. *Zootaxa*, **3838**: 385–391. [PDF](#) 
DOI: <https://doi.org/10.11646/zootaxa.3838.3.8>
- 34- Archibald, S.B., Morse, G.E., Greenwood, D.R., and Mathewes, R.W. 2014. Fossil palm beetles refine upland winter temperatures in the Early Eocene Climatic Optimum. *Proceedings of the National Academy of Sciences (USA)*, **111**: 8095–8100. [PDF](#) 
DOI: <https://doi.org/10.1073/pnas.1323269111>

Selected media for Fossil palm beetles refine upland winter temperatures in the Early Eocene Climatic Optimum:

- [Cache Creek fossil site is a window on climate change: beetle specimens add to our understanding of global warming](#). Stephen Hume, *The Vancouver Sun*, May 12, 2014.


- 33- Makarkin, V.N., and Archibald, S.B. (2014) A revision of late Eocene snakeflies (Raphidioptera) of the Florissant Formation, Colorado, with special reference to the wing venation of Raphidiomorpha. *Zootaxa*, **3784**: 401-444.
DOI: <https://doi.org/10.11646/zootaxa.3784.4.4>
- 32- Archibald, S.B., Kehlmaier, C., and Mathewes, R.W. (2014) Early Eocene Big Headed Flies (Diptera: Pipunculidae) from the Okanagan Highlands, western North America. *The Canadian Entomologist*. **146**: 429-443. [PDF](#) 
DOI: <https://doi.org/10.4039/tce.2013.79>

2013

- 31- Shi, C.F., Makarkin, V.N. Yang, Q., Archibald, S.B., and Ren, D. (2013). New species of *Nymphites* Haase (Neuroptera: Nymphidae) from the Middle Jurassic of China, with a redescription of the type species of the genus. *Zootaxa*, **3700(3)**: 393–410.
DOI: <http://dx.doi.org/10.11646/zootaxa.3700.3.4>
- 30- Archibald, S.B., Mathewes, R.W., and Greenwood, D.R. (2013). The Eocene apex of panorpoid scorpionfly family diversity. *Journal of Paleontology*, **87**: 677–695. [PDF](#) 
DOI: <https://doi.org/10.1666/12-129>

Selected media for The Eocene apex of panorpoid scorpionfly family diversity:

- [Fossils of extinct scorpionflies found in BC: Discovery may offer insight into effect of climate change on diversity](#), *CBC NEWS*, July 13, 2013;
- [Insect discovery sheds light on climate change](#), *The Times of India*, July 13, 2013.
- [Insect fossils found in BC could answer climate questions: researcher](#), *CTV News*, July 12, 2013.


- 29- Makarkin, V.N., and Archibald, S.B. (2013). A diverse new assemblage of green lacewings (Insecta, Neuroptera, Chrysopidae) from the early Eocene Okanagan Highlands, western North America. *Journal of Paleontology*, **87**: 123–146. [PDF](#) 
DOI: <https://doi.org/10.1666/12-052R.1>



28- Archibald, S.B., Greenwood, D.R., and Mathewes, R.W. (2013). Seasonality, montane beta diversity, and Eocene insects: testing Janzen's dispersal hypothesis in an equable world. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **371**: 1–8. DOI: <https://doi.org/10.1016/j.palaeo.2012.10.043>

Selected media for Seasonality, montane beta diversity, and Eocene insects: testing Janzen's dispersal hypothesis in an equable world:


- [50-million-year-old Canada rivaled tropics in diversity](#), CBS NEWS, February 22, 2013;
- [Canada rivaled tropics in diversity—50 million years ago](#), NBC NEWS, February 22, 2013.

2011



27- Archibald, S.B., Greenwood, D.R., Smith, R.Y., Mathewes, R.W., and Basinger, J.F. (2011). Great Canadian *Lagerstätten* 1. Early Eocene *Lagerstätten* of the Okanagan Highlands (British Columbia and Washington State). *Geoscience Canada*, **38**: 155–164. [PDF](#) 

26- Archibald, S.B., Johnson, K.R., Mathewes, R.W., and Greenwood, D.R. (2011) Intercontinental dispersal of giant thermophilic ants across the Arctic during early Eocene hyperthermals. *Proceedings of the Royal Society B*, **278**: 3679–3686. [PDF](#)  (Electronic supplementary information [PDF](#) ) DOI: <https://doi.org/10.1098/rspb.2011.0729>

Selected media for Intercontinental dispersal of giant thermophilic ants across the Arctic during early Eocene hyperthermals:

- [Giant ants spread in warm climes](#). BBC NEWS, London, UK, May 4, 2011;
 - [Ученые нашли древнего муравья размером с птицу](#), Pravda, Moscow, Russia, May 4, 2011;
 - ['Monstrously Big Ant' Fossil Found in Wyoming](#). MSNBC, USA, May 4, 2011;
 - [How Global Warming Caused the Attack of the Giant Ants](#). Discover Magazine, New York, USA, May 4, 2011;
 - [That's gigANTic: Fossil unearthed of 50 million-year-old insect the size of a hummingbird](#). The Daily Mail Online, London, UK, May 4, 2011;
 - [Giant ants once roamed Wyoming](#). Science News, Houston, USA, May 4, 2011.
- 25- Archibald, S.B. (2010) A revision of the scorpionfly family Holcorpidae (Mecoptera), with description of a new species from Early Eocene McAbee, British Columbia, Canada. *Annales de la Société Entomologique de France*, **46**: 173–182. [PDF](#)  DOI: <https://doi.org/10.1080/00379271.2010.10697654>




2010

24- Archibald, S.B., Bossert, W.H., Greenwood, D.R., and Farrell, B.D. (2010) Seasonality, the latitudinal gradient of diversity, and Eocene insects. *Paleobiology*, **36**: 374–398. [PDF](#)  (Online supplementary materials [PDF](#) ) DOI: <https://doi.org/10.1666/09021.1>


Selected media for Seasonality, the latitudinal gradient of diversity, and Eocene insects:

- [Tropical biodiversity can thank steady temps](#). *Scientific American podcast*, July 21, 2010;
- [Constant temps key to biodiversity](#). *The Harvard Gazette*, July 20, 2010;
- Evolutionary answers in McAbee fossil beds deserve protection. *The Vancouver Sun*, July 17, 2010.

2009

- 23- Archibald, S.B. (2009) New Cimbrophlebiidae (Insecta: Mecoptera) from the Early Eocene McAbee, British Columbia, Canada and Republic, Washington, USA. *Zootaxa*, **2249**: 51–62. [PDF](#) 
DOI: <https://doi.org/10.11646/zootaxa.2249.1.5>
- 22- Archibald, S.B., Makarkin, V.N., and Ansorge, J. (2009) New fossil species of Nymphidae (Neuroptera) from the Eocene of North America and Europe. *Zootaxa*, **2157**: 59–68. [PDF](#) 
DOI: <https://doi.org/10.11646/zootaxa.2157.1.4>
- 21- Makarkin, V.N., and Archibald, S.B. (2009) A new genus and first Cenozoic fossil record of moth lacewings (Neuroptera: Ithonidae) from the Early Eocene of North America. *Zootaxa*, **2063**: 55–63. [PDF](#) 
DOI: <https://doi.org/10.11646/zootaxa.2063.1.3>



2008

- 20- Lawrence, J.F., Archibald, S.B., and Slipinski, A. (2008) A new species of Prionoceridae from the Eocene of British Columbia. *Annales Zoologici (Warszawa)*, **58**(4): 689–693. [PDF](#) 
DOI: <https://doi.org/10.3161/000345408X396620>


2007

- 19- Archibald, S.B. (2007) *Climate and Species Diversity: The Eocene Okanagan Highlands Insect View*, vols. **1–2**. Ph.D. thesis, Harvard University, Cambridge, MA. 623 pp.

2006

- 18- Archibald, S.B., Cover, S.D., and Moreau, C.S. (2006) Bulldog Ants of the Eocene Okanagan Highlands, and the history of the subfamily (Hymenoptera: Formicidae: Myrmeciinae). *Annals of the Entomological Society of America*, **99**: 487–523. [PDF](#) 
DOI: [https://doi.org/10.1603/0013-8746\(2006\)99\[487:BAOTEO\]2.0.CO;2](https://doi.org/10.1603/0013-8746(2006)99[487:BAOTEO]2.0.CO;2)
- 17- Archibald, S.B., and Makarkin, V.N. (2006) Tertiary Giant Lacewings (Neuroptera: Polystoechotidae) revision and description of new taxa from western North America and Denmark. *Journal of Systematic Paleontology*, **4**: 119–155, 307 (errata). [PDF](#) 
DOI: <https://doi.org/10.1017/S1477201906001817>
- 16- Moreau, C.S., Bell, C.D., Vila, R., Archibald, S.B., and Pierce, N.E. (2006) Phylogeny of the ants: diversification in the age of angiosperms. *Science*, **312**: 101–104.
DOI: <https://doi.org/10.1126/science.1124891>


2005


- 15- Archibald, S.B. (2005) New Dinopanorpidae (Insecta: Mecoptera) from the Eocene Okanagan Highlands (British Columbia, Canada; Washington State, USA). *Canadian Journal of Earth Sciences*, **42**: 119–136. [PDF](#) 
DOI: <https://doi.org/10.1139/e04-073>
- 14- Archibald, S.B. and Greenwood, D.R. (2005) The Okanagan Highlands: Eocene biota, environments and geological setting, southern British Columbia, Canada and northeastern Washington, USA. *Canadian Journal of Earth Sciences*, **42**: 111–114. [PDF](#) 
DOI: <https://doi.org/10.1139/e05-012>
- 13- Archibald, S.B., Pigg, K.B., Greenwood, D.R., Manchester, S.R., Barksdale, L.L., Johnson, K.R., Sternberg, M.E., Stockey, R.A., DeVore, M.L., and Rothwell, G.W. (2005) Wes Wehr dedication. *Canadian Journal of Earth Sciences*, **42**: 115–117. [PDF](#) 
DOI: <https://doi.org/10.1139/e05-013>
- 12- Archibald, S.B., Rasnitsyn, A.P., and Akhmetiev, M.A. (2005) The ecology and distribution of Cenozoic Eomeropidae (Mecoptera), and a new species of *Eomerope* Cockerell from the Early Eocene McAbee locality, British Columbia, Canada. *Annals of the Entomological Society of America*, **98**: 503–514. [PDF](#) 
DOI: [https://doi.org/10.1603/0013-8746\(2005\)098\[0503:EADOCE\]2.0.CO;2](https://doi.org/10.1603/0013-8746(2005)098[0503:EADOCE]2.0.CO;2)
- 11- Greenwood, D.R., Archibald, S.B., Mathewes, R.W. and Moss, P.T. (2005) Fossil biotas from the Okanagan Highlands, southern British Columbia and northern Washington State: climates and ecosystems across an Eocene landscape. *Canadian Journal of Earth Sciences*, **42**: 167–185. [PDF](#) 
DOI: <https://doi.org/10.1139/e04-100>
- 10- Makarkin, V.N., and Archibald S.B. (2005) Substitute names for three genera of fossil Neuroptera, with taxonomic notes. *Zootaxa*, **1054**: 15–23. [PDF](#) 
DOI: <https://doi.org/10.11646/zootaxa.1054.1.2>
- 9- Moss, P.T. Greenwood, D.R., and Archibald, S.B. (2005) Regional and local vegetation community dynamics of the Eocene Okanagan Highlands (British Columbia-Washington State) from palynology. *Canadian Journal of Earth Sciences*, **42**:187–204. [PDF](#) 
DOI: <https://doi.org/10.1139/e04-095>

2004


- 8- Archibald, S.B., and Makarkin, V.N. (2004) A new genus of minute Berothidae (Neuroptera) from Early Eocene amber of British Columbia, Canada. *The Canadian Entomologist*, **136**: 61–76.
DOI: <https://doi.org/10.4039/n03-043>

2003

- 7- Archibald, S.B., and Farrell, B.D. (2003) Wheeler's Dilemma. Proceedings of the Second Paleoentomological Congress, *Acta Zoologica Crakoviensia*, **46**(supplement, fossil insects): 17–23. [PDF](#) 

- 6- Engel, M.S., and Archibald, S.B. (2003) An Early Eocene bee (Hymenoptera: Halictidae) from Quilchena, British Columbia. *The Canadian Entomologist*, **135**: 63–69.
DOI: <https://doi.org/10.4039/n02-030>
- 5- Makarkin, V.N., and Archibald, S.B. (2003) Family affinity of the genus *Palaeopsychops* Andersen with description of a new species from the Early Eocene of British Columbia, Canada (Neuroptera: Polystoechotidae). *Annals of the American Entomological Society*, **96**: 171–180. [PDF](#) 
DOI: [https://doi.org/10.1603/0013-8746\(2003\)096\[0171:FAOTGP\]2.0.CO;2](https://doi.org/10.1603/0013-8746(2003)096[0171:FAOTGP]2.0.CO;2)
- 4- Makarkin, V.N., Archibald, S.B., and Oswald, J.D. (2003) New Early Eocene Brown Lacewings (Neuroptera: Hemerobiidae) from Western North America, *The Canadian Entomologist*, **135**: 637–653.
DOI: <https://doi.org/10.4039/n02-122>

2000


- 3- Archibald, S.B., and Mathewes, R.W. (2000) Early Eocene insects from Quilchena, British Columbia and their paleoclimatic implications. *Canadian Journal of Zoology*, **78**: 1441–1462.
DOI: <https://doi.org/10.1139/z00-070>
- 2- Pulawski, W.J., Rasnitsyn, A.P., Brothers, D.J. and Archibald, S.B. (2000) New genera of Angarosphecinae: *Cretosphecium* from Early Cretaceous of Mongolia and *Eosphecium* from Early Eocene of Canada (Hymenoptera: Sphecidae). *Journal of Hymenoptera Research*, **9**: 34–40. [PDF](#) 

1999

- 1- Poinar, G. Jr., Archibald, B. and Brown, A. (1999) New amber deposit provides evidence of Early Paleogene extinctions, paleoclimates, and past distributions. *The Canadian Entomologist*, **131**: 171–177.

Invited Conference and Department Presentations

- Archibald, S.B. (2017) Geological Survey of Canada. Vancouver, BC. April 19.
- Archibald, S.B. (2016) Keynote talk: The Okanagan Highlands, an early Eocene Lagerstätten. [Muse[®]um Natur](#), Symposium: Mo-clay in the Danish Limfjord area-candidate to UNESCO World Heritage List, Skive, Denmark, November 2-4.
- Archibald, S.B. (2016) Fossil insects of McAbee: what they tell us. [Florissant National Monument](#), Florissant, Colorado, USA, August 30.
- Archibald, S.B. (2016) Current Research. The Royal British Columbia Museum, Victoria, BC, February 19.
- Archibald, S.B. (2016) Global patterns of diversity and distributions: what Eocene fossils of the Okanagan Highlands tell us about big picture biogeography. University of British Columbia Okanagan campus, Departments of Earth and Environmental Sciences and Physical Geography, Kelowna, BC, January 28.
- Archibald, S.B. (2015) Fifty Million-Year-Old BC Fossil Forests: The Dawn of the Modern World. Southern Interior Silviculture Committee (SISCO) Annual General Meeting, Kamloops, BC, February 10.

- Archibald, S.B. (2014) BC fossil site management: problems, solutions, and opportunities. Keynote talk, *Friends of Ecological Reserves*, University of Victoria, Victoria, BC, March 7.
- Archibald, S.B. (2014) Global patterns of biodiversity and climate: what fossil insects tell us. Simon Fraser University public lecture series: *Deep Time, Global Change and YOU: The past as a guide to the future*: A David and Celia Ting Endowment Fund Lecture Series, SFU Harbour Centre, Vancouver, BC, February 6. [video here](#) .
- Archibald, S.B. (2013) BC fossil site management: problems, solutions, and opportunities. Plenary talk, [BC Protected Area Research Forum \(BCPARF\)](#), Thompson Rivers University, Kamloops, BC, December 4.
- Archibald, S.B. (2013) Deciphering global patterns of biodiversity at the McAbee fossil beds. Faculty of Science, Thompson Rivers University, April 4.
- Archibald, S.B. (2013) Global patterns of biodiversity, climate, and Eocene insects. Department of Biology, University of San Diego, February 26.
- Archibald, S.B., Greenwood, D.R., Mathewes, R.W., Bossert, W.H., and Farrell, B.D. (2012) Climate, global patterns of biodiversity, and Eocene Insects. 34th International Geological Congress, August 5-10, 2012, Brisbane, Australia, session 3.5 - The silent majority: Cenozoic (Paleocene-Pliocene) records of climatic warmth.
- Archibald, S.B. (2011) Global patterns of biodiversity, climate, and British Columbia Eocene insects. Bulkley Valley Research Centre, May 27, 2011.
- Archibald, S.B., Greenwood, D.R., Mathewes, R.W., Bossert, W.H., and Farrell, B.D. (2011) Climate, global patterns of Cenozoic biodiversity, and Eocene Insects. 9th British Columbia Paleontological Alliance Symposium & Third Annual Peace Region Paleontological Symposium, May 20-23, 2011, Tumbler Ridge, BC.
- Archibald, S.B. (2011) Seasonality, diversity, and Eocene insects. Paleontology Group, University of Washington, Seattle, WA.
- Archibald, S.B. (2010) Seasonality, the latitudinal gradient of diversity, and Eocene insects. School of Resource and Environmental Management, Simon Fraser University, Burnaby, BC.
- Archibald, S.B. (2009) Global diversity patterns and seasonality: The Eocene insect view. University of Saskatchewan, Saskatoon, Saskatchewan.
- Archibald, S.B. Mathewes, R.W., and Greenwood, D.R. (2009) Were mountain passes higher in the Eocene?: preliminary results of insect beta diversity analysis across the Okanagan Highlands. Brandon University, Brandon, Manitoba.
- Archibald, S.B. (2009) Climate and global patterns of biodiversity: what fossil insects from McAbee, BC tell us. First Annual Peace Region Palaeontology Symposium in Tumbler Ridge, Tumbler Ridge, BC, May 23, 2009.
- Archibald, S.B. (2007-8) The latitudinal gradient of species diversity: the Eocene insect perspective. Given at:
- Thompson Rivers University, Kamloops, BC, September 25, 2008;
 - The Geological Survey of Canada, Vancouver, BC, June 18, 2008;
 - The University of Alberta, Edmonton, Alberta, February 25, 2008;

- Simon Fraser University, Burnaby, BC, November 29, 2007;
- Brandon University, Brandon, Manitoba, October 23, 2007.

Archibald, S.B. (2006) The latitudinal gradient of species diversity: the Eocene insect view. Department of Plant, Soil, and Insect Sciences, University of Massachusetts, Amherst.

Archibald, S.B. (2003) Scorpionflies and Hangingflies (Mecoptera) of the Eocene Okanagan Highlands (British Columbia, Washington State). Geological Society of America, Seattle.

Archibald, S.B. (2002) Eocene insects of "The Okanagan Highlands" of British Columbia / Northern Washington State: diversity and climate. Canadian Museum of Nature, Ottawa, Ontario.

Conference Presentations

Archibald, S.B., Rasnitsyn, A.P., Brothers, D., and Mathewes, R.W. (2018) Modernisation of the Hymenoptera: ants, bees, wasps, and sawflies of the Early Eocene Okanagan Highlands of western North America. 2018 Entomological Society of America, Entomological Society of Canada, and Entomological Society of BC Joint Annual Meeting, November 11–14, 2018, Vancouver, Canada.

Archibald, S.B., and Mathewes, R.W. (2014) Early Eocene insects of the Okanagan Highlands. Geological Society of America Meeting, October 19–22, 2014, Vancouver, BC, Canada.

Archibald, S.B., Morse, G.E., Greenwood, D.R., and Mathewes, R.W. (2014) Hindcasting upland winter temperatures fifty million years ago in the BC Interior with beetles. Tenth British Columbia Paleontological Symposium, sponsored by the British Columbia Paleontological Alliance and the Royal British Columbia Museum. May 9–12, Victoria, BC.

Archibald, S.B., Makarkin, V.N., Greenwood, D.R., and Gregg F. Gunnell (2014) The Red Queen and Court Jester in green lacewing evolution: bat predation and climate change. Tenth British Columbia Paleontological Symposium, sponsored by the British Columbia Paleontological Alliance and the Royal British Columbia Museum. May 9–12, Victoria, BC.

Archibald, S.B., Makarkin, V.N., Greenwood, D.R., and Gregg F. Gunnell (2012) Bats and Climate Change: the Red Queen and Court Jester in Green Lacewing Evolution. Geological Society of America Meeting, November 4-7, 2012, Charlotte, North Carolina, U.S.A.

Archibald, S.B., Greenwood, D.R., and Mathewes, R.W. (2012) Eocene fossil insect diversity, climate, and topography across southern BC and northern Washington. Entomological Society of BC Meeting, October 11-12, 2012, Summerland, BC.

Archibald, S.B., Greenwood, D.R., Mathewes, R.W., Bossert, W.H., and Farrell, B.D. (2012) Climate, global patterns of biodiversity, and Eocene insects. 4th International Geologica Belgica Meeting, September 11-14, 2012, Brussels, Belgium.

- Archibald, S.B. (2011) BC fossil site management: problems and solutions. British Columbia Protected Areas' Research Forum, University of British Columbia, December 7, 2011.
- Archibald, S.B., Greenwood, D.R., Mathewes, R.W., Bossert, W.H., and Farrell, B.D. (2011) Climate, global patterns of Cenozoic biodiversity, and Eocene insects. The World at the Time of Messel: Puzzles in Palaeobiology, Palaeoenvironment, and the History of Early Primates. 22nd International Senckenberg Conference, Frankfurt am Main, Germany, November 15th–19th, 2011.
- Archibald, S.B., Johnson, K.R., Mathewes, R.W., and Greenwood, D.R. (2011) Messel to Wyoming: Eocene giant ants, Arctic bridges and gates. The World at the Time of Messel: Puzzles in Palaeobiology, Palaeoenvironment, and the History of Early Primates. 22nd International Senckenberg Conference, Frankfurt am Main, Germany, November 15th–19th, 2011.
- Archibald, S.B., Greenwood, D.R., and Mathewes, R.W. (2011) Beta diversity, climate, and topography across an early Eocene landscape. 21st Canadian Paleontology Conference, Vancouver, BC, Canada, August 19-22, 2011.
- Archibald, S.B., Makarkin, V.N., and Greenwood, D.R. (2011) Cenozoic climates and the evolution of green lacewings (Neuroptera: Chrysopidae). 21st Canadian Paleontology Conference, Vancouver, BC, Canada, August 19-22, 2011.
- Archibald, S.B., Johnson, K.R., Mathewes, R.W., and Greenwood, D.R. (2011) Intercontinental dispersal of giant thermophilic ants across the Arctic during early Eocene hyperthermals. 21st Canadian Paleontology Conference, Vancouver, BC, Canada, August 19-22, 2011.
- Archibald, S.B., Greenwood, D.R., and Mathewes, R.W. (2011) Beta diversity, climate, and topography across an early Eocene landscape. Climate and Biotic Events of the Paleogene, Salzburg, Austria, June 5-8, 2011.
- Archibald, S.B., Makarkin, V.N., and Greenwood, D.R. (2011) Cenozoic climates and the evolution of green lacewings (Neuroptera: Chrysopidae). Climate and Biotic Events of the Paleogene, Salzburg, Austria, June 5-8, 2011.
- Archibald, S.B., Johnson, K.R., Mathewes, R.W., and Greenwood, D.R. (2011) Intercontinental dispersal of giant thermophilic ants across the Arctic during early Eocene hyperthermals. Climate and Biotic Events of the Paleogene, Salzburg, Austria, June 5-8, 2011.
- Archibald, S.B., Mathewes, R.W., and Greenwood, D.R. (2009) Were mountain passes higher in the Eocene?: Preliminary results of insect beta diversity across the Okanagan Highlands. Geological Society of America Annual Meeting, Portland, Oregon, USA, October 18-21, 2009.
- Archibald, S.B., Bossert, W.H., Greenwood, D.R., and Farrell, B.D. (2009) Seasonality and the latitudinal gradient of diversity: the Eocene insect perspective. Climate and Biotic Events of the Paleogene, Wellington, New Zealand, January 12-15, 2009.
- Archibald, S.B., Bossert, W.H., Greenwood, D.R., and Farrell, B.D. (2007) Seasonality and the latitudinal gradient of diversity: the Eocene insect perspective. Geological Society of America Annual Meeting, Denver, Colorado, October 27-30, 2007.

- Archibald, S.B. (2007) Species diversity and climate: the Eocene insect view. Fossils X3 Congress (Palaeoentomology, Amber and its Inclusions, and Palaearthropodology), Vitoria-Gasteiz, Spain, May 2007.
- Archibald, S.B., and Makarkin, V.N. (2005) Eocene giant lacewings (Neuroptera: Polystoechotidae) from the Okanagan Highlands (British Columbia, Canada and Washington state, USA), Florissant (Colorado, USA), and Denmark. Geological Society of America / Geological Association of Canada conference, Calgary, Alberta, August 8-11, 2005.
- Archibald, S.B. (2005) A diverse new Eocene Mecoptera (Scorpionflies, Hangingflies) fauna from the Okanagan Highlands (British Columbia, Canada and Washington State, USA). Fossils X3 Congress (Palaeoentomology, Amber and its Inclusions, and Palaearthropodology), Pretoria, South Africa.
- Archibald, S.B. (2003) Fossil Mecoptera (scorpionflies, hangingflies) of the Eocene Okanagan Highlands (British Columbia, Canada; Washington State, USA) Entomological Society of America, Cincinnati.
- Moss, P.T., Greenwood, D.R., and Archibald, S.B. (2003) Eocene microthermal highland plant communities from the Okanagan Highlands (British Columbia/Washington). Geological Society of America, Seattle.
- Archibald, S.B., and Farrell, B.D. (2002) Eocene Insect Fauna of the Okanagan Highlands: Species richness and assemblage response to seasonal equability. Geological Society of America. Denver, Colorado.
- Archibald, S.B., and Farrell, B.D. (2001) Climatic origins of the latitudinal diversity gradient: Eocene insects of the Okanagan Highlands. Entomological Society of America, San Diego.
- Archibald, S.B., and Farrell, B.D. (2001) Eocene insect fauna of the Okanagan Highlands: change in diversity through climate and time. Second International Paleontological Congress, Krakow, Poland.
- Archibald, S.B., and Farrell, B.D. (2001) Eocene insect fauna of the Okanagan Highlands: change in diversity and assemblage through climate and time. Paleogene Biota and Climate Conference, Powell, Wyoming.
- Archibald, S.B., and Farrell, B.D. (2000) Eocene insect fauna of the Okanagan Highlands: change in diversity and assemblage through climate and time. The Third British Columbia Paleontological Alliance Conference, Kamloops, British Columbia, 2000.

Professional Service / Activities

Lectures for the public:

- The [Princeton and District Museum and Archives](#), Princeton, BC, August 14, 2019;
- [KALs](#), Kamloops, British Columbia, September 25, 2017;
- The [Princeton and District Museum and Archives](#), Princeton, BC, August 14, 2017;
- The Village of Keremeos, British Columbia, August 13, 2017;

- The Kamloops Library, Kamloops, British Columbia, June 22, 2017;
- The Village of Cache Creek, British Columbia, June 20, 2017;
- The Village of Ashcroft, British Columbia, June 21, 2017;
- [The Princeton and District Museum](#), Princeton, BC, March, 2016;
- The [Stonerose](#) Interpretive Center, Republic, Washington, April 30, 2016;
- The Victoria Paleontology Society, Victoria, British Columbia, March 16, 2016;
- The [Vermilion Forks Field Naturalists](#), Princeton, British Columbia, March 8, 2016;
- The [Bonaparte Indian Band](#), Bonaparte Reserve, British Columbia, December 16, 2015;
- The [Village of Ashcroft](#), Ashcroft, British Columbia, December 17, 2015;
- The [Stonerose](#) Interpretive Center, [National Fossil Day](#) events, Republic, Washington, October 10, 2015;
- The [Princeton and District Museum and Archives](#), Princeton, BC, August 6, 2015;
- The [Stonerose Interpretive Center](#), Republic, Washington, April 25, 2015;
- The [Pascal Sherman Indian School](#), Omak, Washington, October 19, 2014;
- The [Stonerose](#) Interpretive Center, [National Fossil Day](#) events, Republic, Washington, October 17, 2014;
- The Vancouver Paleontological Society, Pacific Museum of the Earth, University of British Columbia, Vancouver, BC, September 17, 2014;
- **BC Interior Talk Tour 2014**
 - - The [Vermilion Forks Field Naturalists, Princeton](#), BC, September 9, 2014;
 - - The [Kamloops Naturalist Club, Kamloops](#), BC, June 19, 2014;
 - - The [Nicola Naturalist Society](#), Merritt, BC, April 17, 2014;
 - - The [South Okanagan Naturalists' Club](#), Penticton, BC, April 24, 2014;
- The Stonerose Interpretive Center, National Fossil Day events, Republic, Washington, October 14, 2013;
- **BC Interior Talk Tour 2013, major funding by BC Parks: Terrace, Hazelton, Kitimat, Smithers, Driftwood Canyon Provincial Park, Williams Lake, BC:**
 - - The Heritage Park Museum: Terrace, BC, September 18, 2013;
 - - The Hazelton Museum Society: Hazelton, BC, September 17, 2013;
 - - The Kitimat Museum and Archives: Kitimat, BC, September 16, 2013;
 - - The Bulkley Valley Naturalists, BC Parks, the Bulkley Valley Museum: Smithers, BC, September 14, 2013;
 - - Driftwood Canyon Provincial Park: BBQ and interactive fossil session (the Bulkley Valley Naturalists, BC Parks, the Bulkley Valley Museum), Smithers, BC, September 14, 2013;
 - - The Scout Island Nature Centre, hosted by the Williams Lake Field Naturalists, Williams Lake, BC, September 11, 2013;
- The Stonerose Interpretive Center, Republic, Washington, April 27, 2013;
- The Stonerose Interpretive Center, National Fossil Day events, Republic, Washington, October 17-21, 2012;

- The Bulkley Valley Museum and BC Parks, The [Old Church](#), Smithers, BC, June 12, 2012;
- The Williams Lake Field Naturalists, Williams Lake, BC, June 6, 2012;
- The Vancouver Paleontological Society, Science World, Vancouver, BC, May 16, 2012;
- Café Scientifique, The Railway Club, Vancouver, BC, March 27, 2012;
- National Fossil Day events (lectures, etc.), Stonerose Interpretive Center, Republic WA, Oct 12-16, 2011;
- The Bulkley Valley Naturalists, Smithers, BC, May 26, 2011;
- The Stonerose Interpretive Center, Republic, WA, April 30, 2011;
- The Northwest Paleontological Association, The Burke Museum, Seattle, WA, Jan 8, 2011;
- Driftwood school house, Smithers, BC, July 17, 2010;
- The Stonerose Interpretive Center, Republic, WA, June 27, 2009;
- The Stonerose Interpretive Center, Republic, WA, April 18, 2009;
- The Victoria Paleontological Society, Victoria, BC, November 19, 2008;
- The Kelowna Museum, Kelowna, BC, October 2, 2008;
- The Smithers Chamber of Commerce, Smithers, BC, August 21, 2008;
- The Courtenay and District Museum, Courtenay, BC, March 17, 2008.

Other service:

2011, December 7: coordinator, Special Session: Fossil Resources and Protected Areas, [British Columbia Protected Areas Research Forum](#).

2010–present: Scientific Advisory Committee, The Stonerose Interpretive Center, Republic, Washington, USA.

2010, July 17: BC Parks celebration of renovations at Driftwood Canyon Provincial Park, Smithers, BC.

2009 Session Co-chair, Paleontology: Environment & Evolution, Geological Society of America Annual Meeting, 18-21 October, Portland, Oregon, USA.

2007–2010 Member, International Scientific Committee, Fossils X3 Congress (5th International Congress of Palaeoentomology, 4th World Congress of Amber and its Inclusions, and 4th International Meeting of Palaeoarthropodology), Beijing, China, August 20-25, 2010.

2005–2009 Editorial board, *Alavesia*, the journal of the International Palaeoentomological Society

2005–2007 Member, International Scientific Committee, Fossils X3 Congress (4th International Congress of Palaeoentomology, 3rd World Congress of Amber and its Inclusions, and 3rd International Meeting of Palaeoarthropodology), Vitoria--Gasteiz, Spain, May 2007.

2005 Co-organizer/Session Chair (with D.R. Greenwood) of the Geological Society of America / Geological Association of Canada conference Earth System Processes 2, session T8: "Paleogene Biota and Climates of Western North America:

Atmospheric, Biological, and Geological Processes on a Warm World", 8-11 August 2005, Calgary, Alberta.

2003–2004 President, The Cambridge Entomological Club.

2003 Organizer / Session Chair of Geological Association of Canada Conference special session: "The Eocene Okanagan Highlands (British Columbia/Washington State): Paleoclimate and Evolutionary Response". Vancouver, British Columbia.

2002–2003 Vice President, The Cambridge Entomological Club.

2000–2005 Training and supervising undergraduates in fossil collection management (moving, modernizing, cataloging, databasing the Frank Morton Carpenter Fossil Insect Collection, the largest fossil insect collection outside of Moscow and largest compilation of fossil insect literature in the world), Museum of Comparative Zoology, Harvard University.

1995–1999 Director, The British Columbia Paleontological Alliance.

1994–1996 Founding President, The Vancouver Paleontological Society.

Teaching

Guest lectures

BISC 300, Evolution	Simon Fraser Univ.	Spring 2018
BISC 300, Evolution	Simon Fraser Univ.	Summer 2017
BIO 386, Entomology	Arizona State Univ.	Fall 2015
BISC 440, Biodiversity	Simon Fraser Univ.	Fall 2015
BISC 440, Biodiversity	Simon Fraser Univ.	Spring 2014
BISC 859, Special topics Paleoecology	Simon Fraser Univ.	Spring 2013
EOSC 425, Paleontology	Univ. of British Columbia	Fall 2010
BISC 102, Introductory Biology	Simon Fraser Univ.	Spring 2010
BISC 102, Introductory Biology	Simon Fraser Univ.	Fall 2009
Fossil Plants and Palaeoenvironments	Brandon Univ.	Fall 2009
Evolution	Univ. of Mass., Amherst	Spring 2006
BS53, Evolution	Harvard Univ.	Spring 2006
BS53, Evolution	Harvard Univ.	Spring 2005
OEB156, Tropical Insect Systematics	Harvard Univ.	Spring 2004
OEB156, Tropical Insect Systematics	Harvard Univ.	Spring 2002

Harvard University, Teaching Fellow

BS53 Evolution (<i>Distinction in Teaching award</i>)	Spring 2006
BS53 Evolution	Spring 2005
BS51 Organismal Biology	Fall 2005
BS51 Organismal Biology	Fall 2004
OEB156 Tropical Insect Systematics	Spring 2004
OEB156 Tropical Insect Systematics (<i>Distinction in Teaching award</i>)	Spring 2002
BS51 Organismal Biology	Fall 2000

Simon Fraser University, Teaching Assistant

Paleoecology and Palynology

Spring 1999

Guest lectures (high school, grade school classes)

Presenting to high school students, at [Desert Sand Community School](#), Ashcroft, British Columbia, June 21, 2017.

Presenting to high school students, [Curlew School](#), Curlew, Washington, April 28, 2017.

Presenting to high school students, as part of [National Fossil Day](#) events, [Stonerose](#) Interpretive Center, Republic, Washington, October 18-19, 2012.

Guest teaching paleontology to grade five-seven students of John Field Elementary School, Smithers, BC (photos [here](#)), June, 2012.

Guest teaching paleontology and entomology to grade five and six students of Muheim Elementary School, Smithers, BC (photos [here](#)), May, 2011.

Guest teaching entomology to grade six students at Curlew School (near Republic, WA) (photos [here](#)) and subsequent "future paleoentomologists" in Klondike Days parade in Republic, Washington (photos [here](#)).

Teaching sabrage in Republic, June 2010 (photos [here](#)).