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Royal BC Museum scientists catalogue more than 900 species of spiders in British Columbia

VICTORIA, BC —Royal BC Museum scientists have spent nearly two decades identifying and cataloguing more than 900 different species of spiders that occur in British Columbia. And one of the scientists, research associate Dr. Robb Bennett, has at long last published the final of 14 papers from his 1991 doctoral thesis describing the Nearctic species of cybaeine spiders—a large group of often overlooked forest floor spiders, many of which are currently under significant threat in western North America.

“They’re really well camouflaged, and blend in with their forest floor habitats,” says Bennett of the cybaeine spiders. “They’re not flashy like jumping spiders or garden spiders which partly explains why so many of the species have never been described before. American researchers worked on them in the 1950s, and I used their work as the foundation for my research when I began my PhD in 1985.”

In the early 2000s, Bennett connected with Royal BC Museum Entomology collection manager Claudia Copley and her husband, collection manager and bird and mammal preparator Darren—the research trio sharing an interest in spider taxonomy and ecology. Initially they focused on an ambitious project to determine as completely as possible the full diversity of British Columbia’s spider fauna, significantly addressing the Royal BC Museum’s mandate to document the province’s natural history.

At the same time, the Copleys were instrumental in encouraging Bennett to complete the publication of his cybaeine spider doctoral work and the two are co-authors on many of the 14 papers, eventually resulting in the formal description of 7 genera and 79 species.

“It is so great to see Robb’s PhD thesis completely published now,” says Claudia Copley. “His taxonomic work with forest floor cybaeine spiders has laid the foundation for other scientists conducting biodiversity inventories, ecological studies, and other biological research we haven’t even thought of yet. Importantly, many of these species should be factored in when conservation decisions, such as the establishment of new protected areas, are being made.”

Bennett says many of these often very small spiders—some are only a couple of millimetres long—can have incredibly tiny ranges, sometimes as small as 10 square kilometres. In some cases, a creek can be enough to completely separate two different but closely related species of cybaeine spiders.

“They’re extremely interesting on a conservation basis—many of these spider species are being seriously threatened, especially by the catastrophic wildfires that are currently happening in

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western North America,” he says. “We believe a number of the new species we’ve described no longer exist—they went extinct before they were even named.”

Bennett says this is primarily of concern in Oregon and California—fortunately, most of the cybaeine spiders found in the forests of BC and Washington have significantly larger ranges than do their close relatives to the south.

“There are species of conservation concern in our area, but most of our cybaeine spiders are fairly widespread, and therefore not in as much danger of being totally destroyed by a single wildfire event as are some of their much rarer cousins in Oregon and California. That said, we do have some other spiders that we’ve turned up in our BC spider diversity work that are at risk because of their tiny ranges. For instance, we are in the process of describing a new spider species that is found only in the south Okanagan in an area bounded by Oliver, Osoyoos, Richter Pass, and Kilpoola Lake, and that area was well burnt this summer,” Bennett says.

Since joining forces, Bennett and the Copleys have boosted the number of spider species known to occur in BC to more than 900, establishing the province as a global hotspot for spider diversity. In addition, they have clarified the taxonomy and distribution of North America’s cybaeine spiders, an important component of the northern hemisphere’s temperate forest floor spider fauna.

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About the Royal BC Museum: The Royal BC Museum explores the province’s human history and natural history, advances new knowledge and understanding of BC, and provides a dynamic forum for discussion and a place for reflection. The museum and archives celebrate culture and history, telling the stories of BC in ways that enlighten, stimulate and inspire. Located in Victoria on the traditional territory of the Lekwungen (Songhees and Xwsepsum Nations), we are a hub of community connections in BC—on-site, off-site and online—taking pride in our collective histories.

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