

## NATURAL HISTORY AND OBSERVATIONS

***Archilestes californicus* McLachlan (Odonata: Zygoptera: Lestidae): a damselfly new to Canada****ROBERT A. CANNINGS<sup>1</sup> & RUSSELL V. PYM<sup>2</sup>**

*Archilestes californicus* McLachlan (California Spreadwing) is a large damselfly native to western North America, ranging from Washington and Idaho south to New Mexico, Arizona and California and, in Mexico, to Sonora and Baja California Sur (Paulson 2011; Westfall and May 2006). This note records the species for the first time in Canada—from three sites in the southern Okanagan Valley, British Columbia (BC; Figure 1).

Russell Pym saw several males and females at a small, shallow, artificial pond at the end of an artificial stream near the entrance to the Liquidity Winery at 4720 Allendale Road, Okanagan Falls, BC (49.32553°N, 119.54993°W). He observed them from 13:00 to 14:00 PDT on 26 September 2016; one male was photographed (Figure 2). From 16:30 to 17:00 PDT the same day, he recorded a female in knee-high grass, three to four metres from the shore of a dugout pond across the road from Walnut Beach Resort, 4200 Lakeshore Drive, Osoyoos, BC (49.01825°N, 119.43580°W). Cattail (*Typha latifolia*) and willows (*Salix* spp.) lined the pond margins.

At the north end of Vaseux Lake the next day, 27 September 2016, Russell photographed a lone male (Figure 3) perched on cattails in a mixed willow swamp and cattail marsh (13:00 to 14:30 PDT). The site was along the boardwalk to the bird blind at 49.30348°N, 119.53696°W.

*Archilestes* (Stream Spreadwings) is a New World genus of eight species; two are North American, the others live from Mexico to Argentina (Paulson 2009). These damselflies are larger than the related *Lestes* (Pond Spreadwings) species, which are common and more familiar to Canadian observers.

*Archilestes californicus* is a large spreadwing (42–60 mm long) with eyes and labrum blue in males. The thorax is metallic brown dorsally, white laterally on the metepisternum and metepimeron, with a brown stripe on the metapleural suture dividing the white areas. The resulting white stripes are good field marks. The pterostigmas are white or tan. The abdomen is brown dorsally, slightly metallic and often with a green tinge; segments 9–10 are pruinose white in males (Figures 2 & 3). Paraprocts are short and parallel, visible from above. Females are coloured as males, but lack pruinosity; the eyes are dull blue to brown; the ovipositor reaches the tip of segment 10.

The flight season is late; in Washington, adults fly from July to November (Paulson 2009). Manolis (2003) records that the breeding season in California is mainly in September and October; this is probably the case in much of its range. *Archilestes californicus* lives along small, slow, often intermittent streams and associated ponds. River backwaters are also inhabited. Paulson (2009, 2013) notes that larvae often swim in open water like little minnows and he believes that waters lacking fish are important to this species. Adults mate and lay eggs where willows and alders line the shore. When not breeding, they often leave the water, flying out into open woodland, fields, and sagebrush grassland (Manolis 2003; Paulson 2009).

Individuals fly out from their perches in waterside shrubs to catch prey and return quickly. When disturbed, they dart into dense vegetation (Kennedy 1915; Manolis 2003).

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<sup>1</sup> Royal British Columbia Museum, 675 Belleville Street, Victoria, BC, Canada V8W 9W2; rcannings@royalbcmuseum.bc.ca

<sup>2</sup> 1027 Scottswood Lane, Victoria, BC, Canada V8Y 2V1; rpym@shaw.ca

Males often perch conspicuously on dead twigs, spreading their wings, defending small territories (Paulson 2009). Pairs oviposit in tandem in willow or alder branches about 0.5–1.0 cm thick, often up to 3 m above the water. The female inserts a group of six eggs into the cambium, then backs down the stem briefly and repeats the process, laying up to 180 eggs per session. The eggs apparently overwinter before hatching (Kennedy 1915; Manolis 2003; Paulson 2009).

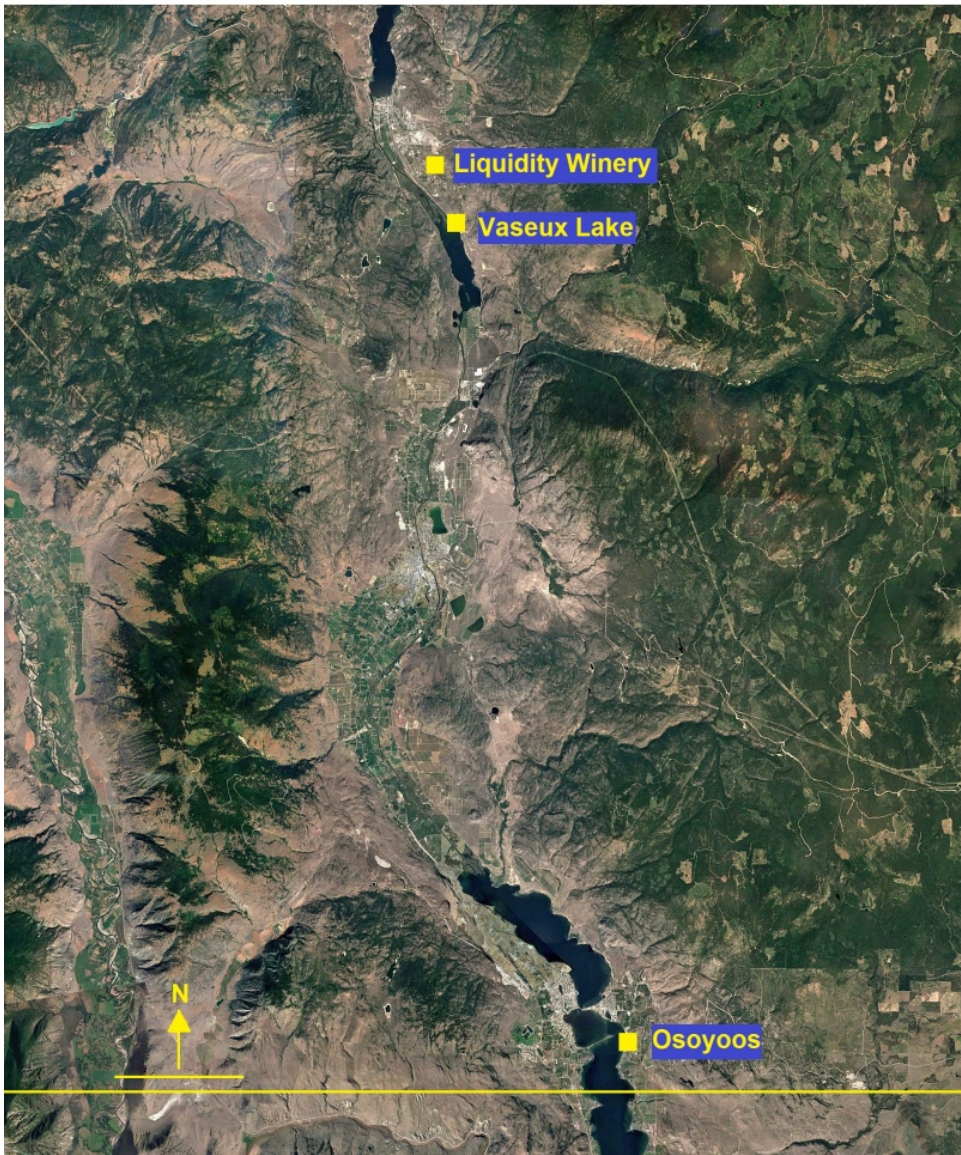
Kennedy (1915) found *Archilestes californicus* abundant at Satus Creek and at other locations in the Yakima Valley of south-central Washington in 1913 and noted that these were the only records north of California at the time. He also corrected an earlier record of *A. grandis* from Yakima that, as Paulson (1970) clarified, should be referred to *A. californicus*. Since then, the species has been recorded at many localities in Oregon and Washington. In Washington, west of the Cascade Mountains, first county records in the *OdonataCentral* website (Abbott 2006–2016) roughly indicate a northern movement: Clark County, 1997; Thurston County, 2009; King County, 2011. Jim Johnson (Abbott 2006–2016; pers. comm.) finds it commonly in Clark County near the mouth of the Columbia River. Dennis Paulson (pers. comm.) says that “it really is moving north. It’s common in parts of Seattle now, definitely consolidating its range in this state.” The assumption that this is a natural range extension is complicated by the possibility that some of the wetlands involved in Thurston and King counties are artificially constructed wetlands surrounded by planted willows, in which the eggs of *Archilestes* may have been introduced (Paulson 2013).

East of the Cascades, where the species was first reported in Washington, it is recorded in Adams, Benton, Douglas, Grant, Kittitas, Okanogan, Whitman and Yakima counties. There is a broad corridor of counties, from the Columbia River north to the Canadian border, in which the species has been found. Most relevant to the new Canadian records, Jim Johnson found it in the southwest corner of Okanogan County in a pond along Black Creek Canyon (48.07006°N, 120.01917°W) on 1 September 2002 (Abbott 2006–2016). This is 114 km southwest of the Osoyoos, BC, site.

Based on this history, it is not surprising that *A. californicus* has finally appeared in the Okanogan Valley in Canada. The Osoyoos locality is only 2 km north of the United States border. The Vaseux Lake site is 37.2 km north of the Osoyoos site and 2.5 km south of the Okanogan Falls locality. The number of sites reported and the significant distances between them suggest that *Archilestes* probably lives at additional locations in the area and may have been overlooked in the Canadian part of the valley for several years, or at least long enough for it to expand northward more than 40 km from the United States. Further observations will clarify the status of the damselfly in British Columbia and Canada.

*Archilestes grandis* (Rambur) (Great Spreadwing) is the only other North American species in the genus. It comes no closer to British Columbia than northern California, ranging from California east to New England and extreme southwestern Ontario, and south to Venezuela (Paulson 2009, 2011). It is larger than *A. californicus*; mature males are darker overall and have more extensive green highlights. The pterostigmas are dark. The pale lateral thoracic stripe is longer and usually yellow rather than white. The paraprocts are divergent under the cerci, and are difficult to see from above (Paulson 2009).

*Archilestes grandis* has also been on the move—and for a long time. It was first recorded and described from the southwestern states, but its spread to the east and northeast is well documented: it was recorded in Ohio as early as 1931 and, in Canada, at Windsor in 2002 (Pratt and Paiero 2004). Paulson (2011) postulates that this impressive range expansion might have been assisted by the damselfly’s tolerance of poor-quality streams, which makes it a successful competitor.



**Figure 1.** Localities of *Archilestes californicus* in the southern Okanagan Valley, BC, September 2016. See text for details. Yellow horizontal line represents the Canada–United States boundary (49° N). Scale line = 5 km.



**Figure 2.** Male *Archilestes californicus* photographed by Russell Pym at Liquidity Winery, Okanagan Falls, BC, 26 September 2016.



**Figure 3.** Male *Archilestes californicus* photographed by Russell Pym at the north end of Vaseux Lake, BC, 27 September 2016.

### ACKNOWLEDGEMENTS

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