

**NOTE****First records of the Lilypad Forktail (*Ischnura kellicotti*) (Odonata: Coenagrionidae) for the Canadian Maritimes and the Southern Pygmy Snaketail (*Lanthus vernalis*) (Odonata: Gomphidae) for Nova Scotia**

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The Odonata fauna of the Canadian Maritime provinces has received much attention in recent years. A comprehensive overview was presented by Brunelle (2010), and additions to the Maritimes or individual provinces were reported by Klymko (2011), Klymko and Robinson (2013), McAlpine et al. (2017), and Makepeace et al. (2017). Here we add to this body of work with the first reports of *Ischnura kellicotti* Williamson for the Canadian Maritime provinces and the first report of *Lanthus vernalis* Carle for Nova Scotia. Most of the occurrences documented in this note are based on specimens collected during a dragonfly exuvia survey of the St. Mary's River, Nova Scotia, in 2011 (Klymko and Robinson 2011) and a damselfly survey of southwestern New Brunswick lakes done in 2017 (Klymko and Weigensberg 2018). Voucher specimens have been deposited in the New Brunswick Museum (NBM) and the Canadian National Collection of Insect (CNCI).

***Ischnura kellicotti* Williamson 1898**

NEW BRUNSWICK: Carleton County: Benton Lake, 45.9778N 67.6404W, 26 July 2017, J. Klymko, M. Weigensberg, 1 adult male (NBM-068482); **Charlotte County:** South Oromocto Lake, bay south of Long Point, 45.3934N 66.6205W, 20 July 2017, J. Klymko, M. Weigensberg, 1 adult male (NBM-068487); Cranberry Lake, 45.3091N 67.2842W, 18 July 2017, J. Klymko, M. Weigensberg, 1 adult male, 2 adult females (NBM-068485, CNCI); King Brook Lake, 45.3383N 67.4084W, 19 July 2017, J. Klymko, M. Weigensberg, 1 adult male (NBM-068486); **Queens County:** Douglas Lake, 45.4644N 66.3689W, 10 July 2017, J. Klymko, M. Weigensberg, 2 adult females, 1 adult male (NBM-068488); 12 July 2017, J. Bell (photographic records, <https://inaturalist.ca/observations/7111621>, <https://inaturalist.ca/observations/7111956>, <https://inaturalist.ca/observations/7111622>, <https://inaturalist.ca/observations/7111620>); **York County:** McAdam Pond, 45.5846N 67.3281W, 19 July 2017, J. Klymko, M. Weigensberg 1 adult female (NBM-068483); Mud Lake, 45.8276N 67.1765W, 25 July 2017, J. Klymko, M. Weigensberg, 1 adult female, 1 adult male (NBM-068484)

Ischnura kellicotti, the Lilypad Forktail (Figure 1), is associated with waterlilies (Nymphaeaceae), on which adults perch, forage, mate, and lay eggs (Lam 2004). The species is widespread in the eastern United States, with a range along the Atlantic seaboard south to Florida, the Gulf of Mexico coastline west to Texas, and inland occurrences along the Mississippi River and elsewhere (Paulson 2011). It was first recorded in Canada at Point Pelee, Ontario, in 2001 (Pratt 2002). Until 2017, Point Pelee remained the only location for the species in Canada. In 2017, the species was found at the New Brunswick locations reported above, as well as at a second site in southern Ontario (C. Jones, personal communication). In New Brunswick, *Ischnura kellicotti* was found in small lakes, or bays of larger lakes, with extensive patches of emergent vegetation (e.g., *Nymphaea odorata* Aiton, *Nuphar lutea* L. Sm. (Nymphaeaceae), and *Brasenia schreberi* J.F. Gmel. (Cabombaceae)). It was found with other damselflies associated with emergent vegetation, including *Enallagma hageni* (Walsh), *Ischnura verticalis* (Say), *Enallagma vesperum* Calvert, *Enallagma signatum* (Hagen), and *Enallagma pictum* Morse.

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Figure 1. *Ischnura kellicotti* male. Photograph taken by John Klymko on 10 July 2017 at Douglas Lake, Queens County, New Brunswick.



In 2017, JK and MW surveyed 24 waterbodies for emergent vegetation-associated damselflies over 12 days in southwestern New Brunswick between 10 July and 1 August (Klymko and Weigensberg 2018). *Ischnura kellicotti* was documented in seven lakes, a clear indication it is widespread and relatively common in southwestern New Brunswick. It is not clear why the species was not detected before 2017. In 2016, 24 lakes in southwestern New Brunswick were searched for *Enallagma pictum* (McAlpine et al. 2017), a damselfly that co-occurs with *Ischnura kellicotti* on emergent vegetation. Perhaps *Ischnura kellicotti* was much less common in 2016 due to year-to-year population fluctuation, and therefore, eluded detection. Further survey work would be needed to document if such population fluctuations occur in New Brunswick.

McAlpine et al. (2017) proposed that climate change has allowed *Enallagma pictum*, a species with a habitat preference and life history similar to *Ischnura kellicotti*, to colonize southwestern New Brunswick in recent years. They suggest that *Enallagma pictum* is likely a recent arrival to the province because it had not been previously detected despite relatively intensive Odonata survey in southwestern New Brunswick, going as far back as 1919. It also appears the species only recently arrived in Maine, only being detected there for the first time in 1999. Perhaps climate change is responsible for an expansion of the *Ischnura kellicotti* range as well. If true, the expansion is less dramatic than that of *Enallagma pictum*. There are Maine records from Kennebec County from 1900 and 1904 (ADIP 2015).

***Lanthus vernalis* Carle 1980**

NOVA SCOTIA: Antigonish County: Fairmont, 45.6807N 61.9868W, 18 June 2011, 1 male, C.S. Blaney (<https://inaturalist.ca/observations/10602143>; Figure 2); **Guysborough County:** West Saint Mary's River, 45.2818N 62.3831W, 22 June 2011, 4 exuviae (NBM-068489), 45.2698N 62.2958W, 22 June 2011, 3 exuviae (NBM-068492), 45.2686N 62.3182W, 22 June 2011, 2 exuviae

(NBM-068494), 45.2674N 62.3248W, 22 June 2011, 1 adult female, 45.2666N 62.2583W, 14 July 2011, 1 exuvium (NBM-068490), 45.2677N 62.1673W, 14 July 2011, 1 exuvium (NBM-068491), 45.2665N 62.2381W, 14 July 2011, 3 exuviae (NBM-068493) (all collected by J. Klymko and S.L. Robinson).

Lanthus vernalis, the Southern Pygmy Clubtail, has an Appalachian distribution, occurring from northern Georgia to the Canadian Maritimes, and is very similar in appearance to its more common and largely sympatric congener *Lanthus parvulus* (Selys). *Lanthus vernalis* was first documented in Canada in 2007 in New Brunswick (Harding 2007). It is now known to be widespread in that province (ADIP 2015), but it has not been reported from any others (Canadian Endangered Species Conservation Council 2016). It is expected additional searching, or perhaps even the re-examination of existing exuviae collections, will show that this easily overlooked species is widespread in Nova Scotia.

Lanthus vernalis is considered a species of brooks and streams (Brunelle 2013; Paulson 2011), although Carle (1980) states it can also be found on "small rivers of high water quality". Brunelle (2013) posits that larvae encountered on rivers have been flushed, or drifted voluntarily, from smaller waterways during development. The West St. Mary's River could be a good location to test this idea, as *Lanthus vernalis* appears to be common there.

Figure 2. *Lanthus vernalis* male. Photograph taken by C. Sean Blaney on 18 June 2011 at Fairmont, Antigonish County, Nova Scotia.



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