

Note

Occurrence of the rare marine littoral millipede, *Thalassissobates littoralis* (Diplopoda: Nematosomatidae), in Canada

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Abstract

The first Canadian occurrence of the rare, marine littoral millipede, *Thalassissobates littoralis*, is reported from Campobello Island in the outer Bay of Fundy, New Brunswick. One of only a few North American occurrences, this is the most northerly to date from the continent.

Key words: New Brunswick; marine habitat; marine millipede; dispersal; anthropochorus species; *Thalassissobates littoralis*

World-wide, *Thalassissobates littoralis* (Silvestri, 1903) (no common name) is one of the few marine littoral millipedes and is considered rare (Blower 1985; Barber 2009). The species occurs under stones and seaweed, in rock crevices or shingle in or above the tidal zone, and sometimes in coastal caves (Enghoff 1987; Cawley 1997). *Thalassissobates littoralis* has a wide but scattered distribution, with reports (often single) from the coasts of Europe, the Balearic Islands, Algeria, and the eastern United States (Enghoff 2013). The centre of its distribution appears to be the western Mediterranean basin (Kime 1999), with Kime (1999) suggesting that *T. littoralis* may have been introduced to northwestern Europe. Reporting the first North American occurrences, Enghoff (1987) speculated that the species was of European origin, but was uncertain whether its ampho-Atlantic distribution was natural or the result of human introduction. He noted that all ampho-Atlantic millipedes previously reported from North America, with one possible exception, can be regarded as introductions to the continent and that the direction of the Gulf Stream is not conducive to the natural dispersal of *T. littoralis* from Europe to North America. Thus, not unreasonably, *T. littoralis* has been considered of anthropochorus origin in North America (Kime 1999; Golovatch and Kime 2009).

Previously, *T. littoralis* has been recorded in North America only from the southwest shore of Chincoteague Island, Virginia, in 1964, from an un-

known locale in Massachusetts (date unknown; Enghoff 1987), and, more recently (2005–2009), from six of the 34 islands that make up the Boston Harbor Recreation Area (Boston Harbor Islands 2014). Here, I document the first occurrence of *T. littoralis* from Canada and the most northerly to date on the North American continent.

On 24 September 2017, I found *T. littoralis* to be present, but patchily distributed, along a cobble shoreline at Herring Cove, in Herring Cove Provincial Park, Campobello Island, New Brunswick (44.85956°N, 66.93188°W), along the western shore of the Bay of Fundy. Millipedes were present under patches of decomposing Bladderwrack (*Fucus vesiculosus*) above and below the high-water mark (Figure 1a). Where present, millipedes were abundant (Figure 1b). In a sample of 104 specimens, 55 females and 49 males were present, close to a 1:1 sex ratio. The whole body of a single male (Figure 1c) and a series of views of the male peltogonopods, diagnostic for *T. littoralis*, are shown in Figure 1d–f. Voucher specimens have been deposited in the New Brunswick Museum (NBM 10776).

After the discovery of *T. littoralis* on Campobello Island, two other cobble beach sites in New Brunswick were searched along the western coast of the Bay of Fundy (Alma, 45.596739°N, 64.948728°W, and Browns Beach, West Quaco, 45.319236°N, 65.551114°W), for *T. littoralis* without success. Further field investigations will be required to determine

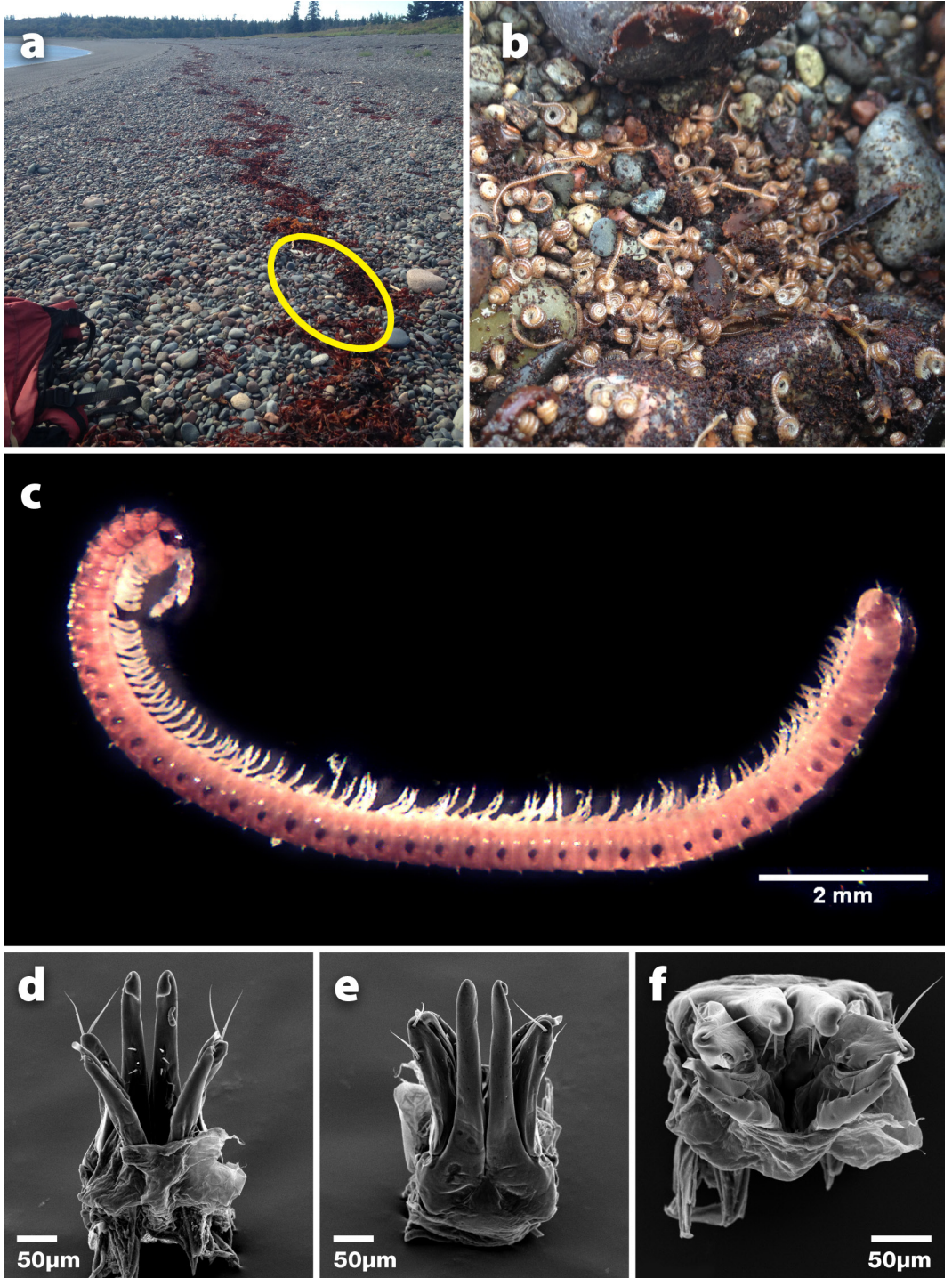


FIGURE 1. a. Shoreline at Herring Cove Provincial Park, New Brunswick, showing habitat for *Thalassiosobates littoralis*. b. Concentration of millipedes under Bladderwrack (*Fucus vesiculosus*). c. Habitus of male *T. littoralis*; scanning electron microscope images show d. superior, e. inferior, and f. distal views of the diagnostic peltogonopods. Photos: a–b. D.F. McAlpine. Photos: c–f. Nhu Trieu.

the full distribution and true abundance of *T. littoralis* in Atlantic Canada.

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