First Record of *Diacheila Arctica Amoena* (Faldermann) (Coleoptera: Carabidae) in Alberta, Canada

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SCIENTIFIC NOTE

FIRST RECORD OF Diacheila arctica amoena (Faldermann) (Coleoptera: Carabidae) in Alberta, Canada

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In North America, Diacheila arctica amoena (Faldermann, 1835) (Coleoptera: Carabidae) is currently only known from the extreme northern latitudes, limited to scattered records from Alaska, the Northwest Territories, and Labrador (Bousquet and Larochelle 1993). Although this subspecies is Holarctic in distribution (having been recorded from Russia, Mongolia, and Kazakhstan), it is very rarely collected due to its short activity period and limited distribution (Elias 1982). This rare species is believed to be cold-preferent (Lindroth 1985) and markedly hygrophilous, living on the margins of small lakes, bogs, and fens (Elias 1992). Herein we report the first record of D. arctica amoena in the province of Alberta, Canada.

We collected a single female specimen of D. arctica amoena from a flight intercept trap in the boreal mixed-wood forest approximately 85 km NW of Peace River, Alberta (56°41′22.36″N, 118°07′12.86″W). The specimen was identified using the species description of Lindroth (1961) and was subsequently confirmed by Dr. George E. Ball and Danny Shpeley from the University of Alberta. The presence of a pronotal latero-basal carina confirmed the identity of D. arctica, a character not shared by its close relative Diacheila polita (Faldermann, 1835). The sides of the pronotum are also markedly sinuate in D. polita (Lindroth 1985). The subspecies D. arctica amoena differs from the nominate subspecies of northern Europe in that it is more slender, parallel-sided, and less convex with less sinuate lateral pronotal margins (Lindroth 1961). This record is approximately 1,100 km south of Fort Confidence on Great Bear Lake in the Northwest Territories where it was reported by Lindroth (1961), a significant southern range extension. The specimen was collected between 27 May and 6 June 2008 in one of 66 flight-intercept traps set at 1.3 m height on dead trembling aspen (Populus tremuloides Michx., Salicaceae) as part of a saproxylic beetle biodiversity study for the Ecosystem Management Emulating Natural Disturbance project. Our study site was at an elevation of approximately 800 m, in a forest stand dominated by mature trembling aspen with an understory of wild rose (Rosa acicularis Rupr., Rosaceae), buffalo-berry (Shepherdia canadensis [L.] Nutt., Elaeagnaceae), and low-bush cranberry (Viburnum edule [Michx.] Raf., Caprifoliaceae). This site was adjacent to a small riparian area.

Despite the fact that arthropods have been extensively surveyed from the surrounding landscape over a period of 10 years with both pitfall and flight intercept traps, this is our first record of D. arctica amoena. It is unclear whether this range extension indicates the existence of a population nearby, given that we collected a single specimen. We cannot rule out the possibility of a long-distance dispersal as D. arctica amoena is macropterous. However, there are a number of disjunct species occurrences in the Peace River region of Alberta (Raup 1934; Layberry et al. 1998; Strong and Hills 2003). Targeted sampling of the preferred habitats of D. arctica amoena may improve our understanding of the species’ current range in Alberta.

Our specimen of D. arctica amoena was deposited in the insect collection of the E.H. Strickland Entomological Museum (UASM) at the University of Alberta, Edmonton, Alberta, Canada.

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