First records of ensign wasps (Hymenoptera: Evaniidae) and their cockroach host (Blattodea: Blatellidae) in Manitoba

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Abstract – We provide the first record of Evaniidae in Manitoba with the discovery of Hyptia harpyoides Bradley and the first published record of its host, Parcoblatta virginica (Brunner von Wattenwyl), in the province.

Introduction

Ensign wasps (Hymenoptera: Evaniidae) are solitary egg predators of cockroach oothecae (Blattodea). There are 21 extant genera and 580 extant described species of Evaniidae, with the majority of diversity occurring in tropical regions (Yu et al. 2011; Mullins et al. 2012). There are 65 known species of Hyptia in the New World, only ten of which are recorded from North America including Mexico (Deans 2005). Species of Hyptia attack a wide variety of cockroaches across different subfamilies, but are common predators of saprophagous wood cockroaches in the genus Parcoblatta (Blattellinae).

Only two species of Evaniidae have been reported from Canada: Hyptia harpyoides Bradley and Hyptia thoracica (Blanchard) (Mullins et al. 2012). The known distribution of these two species is vague, with H. thoracica reported from Ontario and H. harpyoides only specified as collected in Canada (Deans 2005). Evaniids have never been recorded specifically from Manitoba, which is not surprising given that native cockroaches are rarely collected in this region (Vickery and Kevan 1985). Recent field trips to Whiteshell Provincial Park in Manitoba led to the discovery of two specimens of H. harpyoides. Additionally, one of the known hosts of this species, Parcoblatta virginica (Brunner von Wattenwyl), was subsequently discovered in the Wallis-Roughley Museum of Entomology at the University of Manitoba, which is also a new record for the province.
Materials and Methods

Evaniids were collected from Star Lake Research Station using sweep nets and aspirators in August 2013 and 2014. The species of Evaniidae was determined using the key in Deans et al. (2013). All specimens are deposited in the Wallis-Roughley Museum of Entomology, Department of Entomology at the University of Manitoba.

New Manitoba records

EVANIIDAE

*Hyptia* Illiger 1807

*Hyptia harpyoides* Bradley, 1908

**Material Examined.** CANADA: MB: Star Lake; Whiteshell Provincial Park; 49.743140, -95.258295; 26.viii.2013, sweep net, 1♀; coll: Daniel L. Klassen. CANADA: MB: Star Lake; Whiteshell Provincial Park; 49.752718, -95.256714; 23.viii.2014, aspirator, 1♂; coll: S. Steinmann.

**Distribution.** This species is found in Canada (Manitoba and Ontario) and throughout the eastern and midwestern United States (Deans 2005).

BLATTELLIDAE

*Parcoblatta* Hebard, 1917

*Parcoblatta virginica* (Brunner von Wattenwyl, 1865)

**Material Examined.** CANADA: Manitoba, Great Falls Generating Station on the Winnipeg River near Pointe du Bois; 27.vi.1997; coll. D. Wytrykush.

**Distribution.** This species is found in northeastern United States (Vickery and Kevan 1985) and in Ontario (Vickery and Scudder 1987) and Manitoba, Canada.

Discussion

Hosts of *H. harpyoides* include *P. virginica*, *P. pennsylvanica* DeGeer and *P. uhleriana* (Saussure) (Edmunds 1952; Smith 1998). None of these species have been recorded west or north of North Dakota. Here we report the first record of an evaniid wasp, *H. harpyoides*, and its host, *P. virginica*, from Manitoba. This is the most northerly record
for both of these species. Although there has been extensive entomological research in Manitoba for over 120 years dating back to the time of Norman Criddle, these species have only been recently collected. *Parcoblatta virginica* is saprophagous, feeding on decaying organic matter, and is commonly found in ground litter, under rotting logs or residing in hollow trees. Thus, the boreal shield ecozone of Whiteshell Provincial Park provides suitable habitat for this cockroach. This species has been previously recorded from northern North Dakota, only a few hundred kilometres from the Whiteshell Provincial Park, and thus these new records may represent range expansions given the similarity in climate between North Dakota and Manitoba.

Finally, the discovery of *P. virginica* in the Wallis-Roughley Museum of Entomology, a relatively large university insect collection, highlights the importance of museums for both taxonomic and environmental research. This specimen was collected 18 years ago but this new record has not been published until the writing of this manuscript. Museums, including regional and university collections, provide important long term documentation of species, their habitats, and changes in species distributions through time and space (Wiggins et al. 1991). As climate and habitats continue to become altered through anthropogenic activities, museums become increasingly important to understand how these environmental changes affect extant organisms. Thus, long term funding of museums should be a high priority for governments interested in understanding the impacts of environmental change.

**Acknowledgements**

We thank Terry Galloway for his helpful guidance and advice. We also thank Jordan Bannerman for helping the students of the Entomology field course collect these specimens and properly preserve them. Funding was provided by an NSERC Discovery Grant to BJS.

**References**


