

**NOTE****New record of Brachininae (Coleoptera: Carabidae) in Nova Scotia**

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Majka et al. (2007) surveyed the Carabidae of the Maritime Provinces of Canada. Only two species of Brachininae (bombardier beetles), *Brachinus cordicollis* Dejean, 1826 and *Brachinus cyanipennis* Say, 1823, are known in the region, both reported from Saint John, New Brunswick (Erwin 1969; Lindroth 1969). No species of Brachininae have hitherto been reported from Prince Edward Island or Nova Scotia.

Recently, *B. cyanipennis* (Fig. 1) was discovered in Nova Scotia. On 18 August 2007 J. Gilhen visited a site on the Little West Branch Tidnish River in Cumberland County (44° 55.356' N, 64° 05.875' W) where the species was abundant. Voucher specimens have been deposited in the Nova Scotia Museum collection (NSMC). The site is a former pond, surrounded by a young mixed forest, whose water table had recently dropped, apparently as a result of nearby logging activities. Under pieces of sandstone in and around the site, specimens of *B. cyanipennis* were frequently encountered. Some rocks had as many as five individuals sheltering beneath. When exposed to sunlight the beetles became very active, moving rapidly on the exposed sediments. Also found under these rocks were individuals of the vivid metallic ground beetle, *Chlaenius sericeus sericeus* (Carabidae: Harpalinae) (Forster 1771) and red-spotted newts, *Notophthalmus viridescens viridescens* (Caudata: Salamandridae) (Rafinesque 1820).

Brachinus cyanipennis larvae are ectoparasites of pupae of whirligig beetles, *Gyrinus* sp. (Coleoptera: Gyrinidae). In Nova Scotia 18 species of *Gyrinus* have been recorded including three species in Cumberland County (C. Majka, Nova Scotia Museum (NSM), unpublished data). *Brachinus cyanipennis* is found along banks of rivers and brooks, lake-shores, flood-plains, borders of eutrophic marshes, and beaver ponds where its hosts are found. Adults are nocturnal, sheltering during the day under stones, and feed on dead or dying arthropods. They are macropterous but fly only occasionally. When alarmed or threatened adults emit a repugnant spray from their pygidial glands that serves to repel potential predators (Laroche and Larivière 2003), hence their popular name of “bombardier beetles”.

The present records establish the presence of this species and subfamily in Nova Scotia. Some species of beetles have apparently found the marshland areas of the Chignecto Isthmus, which separate New Brunswick from Nova Scotia, a barrier to dispersal and have not been found in the latter province (Majka et al. 2007). This discovery indicates that this has not been the case in relation to *Brachinus cyanipennis*. Other suitable sites in the Tidnish River watershed, which drains into the Northumberland Strait, and the neighbouring Missaguash and Nappan River watersheds, which drain into the Cumberland Basin, should be surveyed to ascertain the extent of this species' distribution in western Nova Scotia. Further fieldwork would also serve to ascertain if *Brachinus cordicollis* is also found in the province.

Received 18 December 2007. Accepted 8 January 2008. Published on the Acadian Entomological Society website at <http://www.acadianes.org/journal> on 10 January 2008

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ACKNOWLEDGEMENTS

We thank the Nova Scotia Museum and its Board of Governors for their support and Yves Bousquet (Agriculture and Agri-Food Canada, Ottawa, Ontario) for confirming the identification.

REFERENCES

Erwin, T.L. 1969. A reclassification of the Bombardier Beetles and a taxonomic revision of the North and Middle American species (Carabidae: Brachinidae). Unpublished thesis, University of Alberta, Edmonton, Alberta. 464 pp.

Larochelle, A., and Larivière, M.-C. 2003. A natural history of the ground-beetles (Coleoptera: Carabidae) of America north of Mexico. Pensoft, Sofia, Bulgaria. 583 pp.

Lindroth, C.H. 1969. The ground-beetles (Carabidae, excl. Cicindelinae) of Canada and Alaska, Part 6. Opus. Entomol. Suppl. 34: 945-1192.

Majka, C.G., Bousquet, Y., and Westby, S. 2007. The ground beetles (Coleoptera: Carabidae) of the Maritime Provinces of Canada: review of collecting, new records, and observations on composition, zoogeography, and historical origins. Zootaxa, 1590: 1-36.

Fig. 1. Adult *Brachinus cyanipennis* collected on the Little West Branch Tidnish River in Nova Scotia. Photo: C. Majka, Nova Scotia Museum.

