



The Ciidae (Coleoptera: Tenebrionoidea) of the Maritime Provinces of Canada: new records, distribution, zoogeography, and observations on beetle-fungi relationships in saproxylic environments

CHRISTOPHER G. MAJKA

Nova Scotia Museum, 1747 Summer Street, Halifax, Nova Scotia, Canada B3H 3A6. E-mail: c.majka@ns.sympatico.ca

Abstract

The Ciidae of the Maritime Provinces of Canada are surveyed. Fifteen species are now known to occur in the region, thirteen in Nova Scotia, six in New Brunswick, and two on Prince Edward Island. Ten new provincial records are reported. Seven species including *Ceracis sallei* Mellié, *Ceracis thoracicornis* (Ziegler), *Cis creberrimus* Mellié, *Cis pistoria* Casey, *Cis subtilis* Mellié, *Malacocis brevicollis* (Casey), and *Orthocis punctatus* (Mellié) are newly recorded in the Maritime Provinces as a whole. *Cis americanus* Mannerheim and *Cis levettei* (Casey) are newly recorded on Prince Edward Island, the first records of this family from the province.

Collecting effort on Cape Breton Island, Prince Edward Island, and in New Brunswick has apparently been insufficient to fully document the ciid fauna of these areas. Some local and regional distribution patterns of ciids in the mainland of Nova Scotia and in the Maritime Provinces are suggested from the present data, but further collecting is required to confirm these. Zoogeographically, most of the region's ciids are members of either a boreal fauna (9 species) with Holarctic affinities, or a southeastern North American Nearctic fauna (5 species). The Maritime Provinces ciid fauna has representatives of five of the six known ciid host-use groups. Records of host fungi indicate that there are suitable hosts for all species of ciids found in the region in all three Maritime Provinces, indicating that ciids in the region appear not to be limited by availability of suitable host-fungi. However, *Cis horridulus* Casey, *Cis striolatus* Casey, and *Cis subtilis* Mellié, the three species in the *Trametes* host-use group, are very infrequently collected and apparently rare.

Forests in Maritime Provinces have been greatly affected by forestry and disease, and such activities are known to impact fungal communities. Consequently such practices could have important repercussions for groups like the Ciidae that are reliant on fungi as both a food source and a habitat.

Key words: Coleoptera, Ciidae, Ciinae, *Cis*, *Ceracis*, *Dolichocis*, *Malacocis*, *Hadreule*, *Octotemnus*, *Orthocis*, fungus beetles, forest Coleoptera, saproxylic fauna, polypore fungi

Introduction

The works of Lawrence (1967, 1971, 1973, 1982) and Thayer & Lawrence (2002) established the biological and systematic foundations for an understanding of the family Ciidae (the minute tree-fungus beetles) in North America. Adults and larvae of ciids inhabit and feed on the fruiting bodies of basidiomycete fungi, primarily polypore or bracket fungi. Most ciids are restricted to a relatively small number of host species of fungi. These limitations are partly related to the hyphal structure of the fungi and/or the types of wood rot they produce, which in turn is related to their metabolic capabilities (Thayer & Lawrence 2002). This work was extended by Orledge and Reynolds (2005) who developed and refined the host-use groups first proposed by Lawrence (1971, 1973) adding considerable ecological detail. Through the use of cluster-analysis techniques, Orledge and Reynolds (2005) organized the species of Ciidae from Britain and Europe, North America, and