



## The Erotylidae and Endomychidae (Coleoptera: Cucujoidea) of the Maritime Provinces of Canada: New records, zoogeography, and observations on beetle-fungi relationships and forest health

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### Abstract

The Erotylidae and Endomychidae of the Maritime Provinces are surveyed. Fifteen species are now known from the region, fourteen in Nova Scotia, seven in New Brunswick, and four on Prince Edward Island. Thirteen new provincial records (seven from Nova Scotia, three from New Brunswick, and three from Prince Edward Island) are reported. Four erotylids, *Dacne quadrimaculata* (Say), *Triplax dissimulator* (Crotch), *Triplax flavicollis* Lacordaire, *Triplax macra* LeConte; and two endomychids, *Rhanidea unicolor* (Ziegler) and *Lycoperdina ferruginea* LeConte, are newly recorded in the Maritime Provinces as a whole. New records of the rare endomychid, *Hadromychnus chandleri* Bousquet & Leschen, are reported. The fauna is examined in a regional zoogeographic context, paying particular attention to the insular faunas of Cape Breton and Prince Edward Islands. Attention is also drawn to the number of species that have been very rarely collected. This apparent scarcity may be related to the long history of forest management in the region, in particular the effects of intensive forestry on the communities of forest fungi on which these species feed and depend. Attention is drawn to the importance of ongoing research to monitor their populations and assess how these species may be employed as indicators of the overall health forest ecosystems.

**Key words:** Coleoptera, Erotylidae, Endomychidae, Dacninae, Tritominae, Merophysiinae, Endomychinae, Stenotarsinae, Epipocinae, Lycoperdininae, Mycetainae, fungus beetles, forest Coleoptera, saproxylic fauna

### Introduction

Fungi are an important habitat for many groups of families beetles. In Canada in a study in Gatineau Park, Québec, Matthewman & Pielou (1971) recorded 44 species of Coleoptera from just one species of polypore, *Fomes fomentarius* (Fr.) Kickx, while Pielou & Verma (1968) recorded 39 species from another polypore, *Piptoporus betulinus* (Fr.) Kar. Benick (1952) recorded an astounding 246 species of beetles from *Polyporus squamosus* Fr. Two of the families of beetles associated with forest fungi are the Erotylidae (Pleasing Fungus Beetles) and Endomychidae (Handsome Fungus Beetles). These beetles take advantage of the different groups of fungi and the different microhabitats that they provide. In the Erotylidae, species in the Dacninae and Megalodacninae burrow in hard bracket fungi (Polyporaceae) while those in the Tritominae feed on soft polypores or other basidiomycetes (Skelley & McHugh 2002). Within the Endomychidae, some species feed on spores and hyphae of microfungi, others are specialists on puffballs, some are found in subcortical fungi and soft polypores, others are found on fleshy basidiomycetes, while still others are found on Zygomycete molds and mildews associated with the decomposition of vegetative matter (Bousquet 1990; Skelley & Leschen 2002; F. Shockley pers. comm.). As such, they are reflective of a variety of microhabitats in forest ecosystems.

In the Maritime Provinces of Canada a faunal list was compiled by Campbell (1991a, 1991b) which listed three species of erotylids and six species of endomychids in the region, four from New Brunswick, seven from