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Pupal cases of four Nearctic species of *Laphria* (Diptera: Asilidae)

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Abstract

The pupal cases of the Nearctic robber flies *Laphria canis* Williston, 1883: *L. ferox* Williston, 1883: *L. macquarti* (Banks, 1917): and *L. posticata* Say, 1824 are described and illustrated. A key is provided to the pupal cases of these and seven other species of *Laphria* previously described. A revised key also is included for the pupal cases of three genera of Laphriinae: *Andrenosoma, Lampria*, and *Laphria*.

Key words: *Andrenosoma*, Asiloidea, Brachycera, immature Diptera, Insecta, *Lampria*, Laphriinae

Introduction

Adults in the genus *Laphria* are generally robust flies and many species are known for their mimicry of bees. There are more than 150 species, and the genus has a wide distribution, occurring in all zoogeographic regions (Geller-Grimm 2012). In the Nearctic region there are 59 species of *Laphria* (Geller-Grimm 2012), but despite this relatively large number, the pupal cases of only seven species have been described in detail: *L. aimatis* McAtee, 1919; *L. flavicollis* Say, 1824; *L. index* McAtee, 1919; *L. sackeni* (Banks, 1917); *L. sericea* Say, 1823; *L. thoracica* Fabricius, 1805; and *L. virginica* (Banks, 1917) (Dennis *et al*. 2008a). In addition, Quentin (1948) provided illustrations and a brief description of the pupal case of *L. gilva* (Linnaeus), but because of insufficient detail it is not possible to compare and contrast with the other known Nearctic species.

Here we describe the pupal cases of four species of *Laphria*: *L. canis* Williston, 1883; *L. ferox* Williston, 1883; *L. macquarti* (Banks, 1917); and *L. posticata* Say, 1824.

In his unpublished dissertation, Bullington (1986) transferred *Laphria ferox* and *L. aimatis* to the mostly Palearctic and Oriental genus *Choerades* Walker, 1851. He placed *L. canis* and *L. index* in one assumed new genus, and *L. sericea* in another.

As far as we know, female *Laphria* deposit eggs in dead trees, stumps, and dead wood where the larvae and pupae also develop. The larvae are known to feed on the larvae and pupae of xylophagous insects in their galleries (Lehr 1977). *Laphria posticata* has been reared from larvae found in white pine stumps (Baker and Fischer 1975).

Materials and methods

The following descriptions are based on pupal cases and associated adults in the National Museum of Natural History, Washington, D. C. (USNM). The authors confirmed the identification of the associated adults.

Some of the specimen labels have a number, letter, and the notation “Hopk US” or “Hopk. U.S.” on them. This refers to the A.D. Hopkins Notes and Records System used by the U.S. Department of Agriculture from 1902 through the mid-1980s, for filing specimen data. This information was examined and there was nothing for *L. macquarti*, but observations recorded on the Hopkins cards for *L. canis* and *L. ferox* are provided here.

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