

Preimaginal development of *Cephalcia lariciphila* during an outbreak in the Czech Republic

Jaroslav HOLUŠA

Forestry and Game Management Research Institute, Frýdek-Místek, Czech Republic

Abstract

An outbreak of *Cephalcia lariciphila* (Wachtl) (Hymenoptera Pamphiliidae) occurred in a mature spruce-larch forests near the village of Větrný Jeníkov (15°30'E, 49°28'N) between 2001 and 2004, when there were from 122.2 ± 118.8 (mean \pm SD) to 276.6 ± 141.8 prepupae per m² of soil. The prepupae density declined to $23.0 \pm 21.2/m^2$ by the spring of 2006 and continued to decline to undetectable levels in 2007-2009. From 2002-2006, the percentage of larvae that were still conymphs in the autumn and spring ranged from 18 to 50%, and the percentage of prepupae parasitized by the wasps *Notopygus bicarinatus* Teunissen and *Ctenopelma lucifer* (Gravenhorst) (Hymenoptera Ichneumonidae) ranged from 4.5 to 10.5%. The number of eggs detected was similar in upper, middle, and lower parts of the tree crown. The average number of eggs per twig (length ca. 30 cm) was always < 1 . In the forest, the first larvae were observed on 15 May and the last on 10 June. In the laboratory at 20 °C, females laid 32.3 ± 7.6 eggs, most eggs hatched 8 days after oviposition, and no egg parasitoid was detected. Examination of larvae that developed in the laboratory and those found in the forest indicated the existence of four instars for males and five instars for females. Larvae live individually and spin and live in their own webs. At 20 °C, the duration of individual instars was shortest for L1 (3.2 ± 1.0 days) and gradually increased with each successive stage (3.4 ± 1.0 for L2; 4.3 ± 1.6 for L3; 4.8 ± 1.2 for L4; and 4.0 ± 0.0 for L5). The duration for entire larval development was ca. 16 days in the laboratory and ca. 20 days in nature. The period during which larvae were evident in the forest lasted about 25 days.

Key words: *Cephalcia lariciphila*, soil samples, density, larval development, parasitism, IPM.

Author's address: Jaroslav HOLUŠA (holusaj@seznam.cz),
Forestry and Game Management Research Institute, Office
Frýdek-Místek, Na Pustkách 39, CZ-73801 Czech Republic.
Received January 27, 2010. Accepted February 28, 2011.