A NEW SPECIES OF *LARICOBIUS* FROM CHINA (COLEOPTERA: DERODONTIDAE), A PREDATOR OF HEMLOCK WOOLLY ADELGID

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Abstract

In April 2002 an expedition was made to Sichuan Province, China to search for potential predators of the hemlock woolly adelgid (HWA). A second collecting trip is planned for 2004. New species of *Laricobius* are of particular interest because *Laricobius nigrinus* Fender (Coleoptera: Derodontidae), native to western North America, has been released in the eastern U.S. for control of HWA. Twenty-three larvae of a new species, *Laricobius* sp. n., discovered at the Luoxiba Deng Forestry Station, Kangding County in China, were imported to the Quarantine facility at Virginia Tech and reared on HWA-infested eastern hemlock. From these larvae, eight females and two males provided the founding generation for our lab colony.

Basic biological studies were initiated in fall 2002 and temperature-dependent development of the first entirely lab-reared generation was tested at 12 and 15° C, 12:12 h (L:D), in spring 2003. Mean (± SD) fecundity, activity period and ovipositional period was 196.4 ± 53.4 eggs, 219.5 ± 49.9 days, and 184.5 ± 49.9 days, respectively. Total development time (± SD) at 12°C was 97.2 ± 5.1 days and 64.5 ± 2.3 days at 15° C. These development times are comparable to L. nigrinus, although the new Chinese species develops significantly slower at 12° C but faster at 15° C. This suggests that Laricobius sp. n. may be better suited for warmer temperatures than L. nigrinus, and could work as part of a predator complex in the different climatic regions infested with HWA.

Future studies of Laricobius sp. n. will focus on host range testing and monitor temperature-dependent development at 6, 9, and 18° C to create a degree-day model for comparison with that of L. nigrinus. Balsam woolly adelgid, pine bark adelgid, eastern spruce gall adelgid, pine needle scale, elongate hemlock scale, and woolly alder aphid will be tested in choice and no-choice bioassays.