A new species of “Lithasia” (Mollusca: Caenogastropoda: Pleuroceridae) from the Harpeth River, Tennessee, U.S.A.

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Abstract

A species of pleurocerid snail, Lithasia spicula sp. nov., is described from two groups of specimens taken from the Harpeth River, Tennessee near Bellevue. The species resembles Li. armigera (Say, 1821) conchologically, but molecular analyses group it either with the polyphyletic assemblage currently considered Leptoxis or as a separate lineage in Pleuroceridae. The species also possesses a unique radula, and is the first known pleurocerid endemic to the Harpeth River.

Introduction

Lithasia armigera (Say, 1821) is one of seven species in the genus Lithasia as discussed in Minton and Lydeard (2003). The species historically occurred in the Cumberland, Ohio, and Tennessee River drainages, and now is limited to small populations in those basins (Burch and Tottenham 1980; Bogan and Parmalee 1983; Minton and Lydeard 2003). In a recent phylogenetic study of the genus using mitochondrial cytochrome oxidase I (COI) sequences, specimens of Li. armigera from throughout its range were seen as monophyletic, and the species was the only one recovered as such (Minton and Lydeard 2003). These specimens fell out in a larger, well supported clade the authors recognized as Lithasia, sister to Io, and not related to Leptoxis. This finding was interesting as Holznagel and Lydeard (2000) showed that Li. armigera was sister to Mobile Basin Leptoxis species based on 16S rDNA sequences. Even more interesting was that both studies used Li. armigera from the Harpeth River in Tennessee, although from different localities; those used in Holznagel and Lydeard (2000) were collected from a site near Bellevue, Davidson...