Systematic revision of the genus Everettia Godwin-Austen, 1891 (Mollusca: Gastropoda: Dyakiidae) in Sabah, northern Borneo

Abstract

The species of the snail genus Everettia in the Malaysian state of Sabah are superficially similar and difficult to distinguish by their shells. This paper presents new data on the taxonomy and distribution of Everettia in Sabah that have accumulated since the revision by Godwin-Austen in 1891. By using morphological and molecular phylogenetic approaches, we reveal at least seventeen species of Everettia in Sabah, of which eleven are new to science, namely: Everettia layanglayang sp. nov., Everettia lapidini sp. nov., Everettia paulbasintali sp. nov., Everettia occidentalis sp. nov., Everettia jasilini sp. nov., Everettia safriei sp. nov., Everettia interior sp. nov., Everettia jucundior sp. nov., Everettia planispira sp. nov., Everettia monticola sp. nov., and Everettia dominiki sp. nov., and one new subspecies, namely, Everettia corrugata williamsi ssp. nov. Phylogenetic analysis of mitochondrial COI and 16S, and nuclear ITS-1 sequences demonstrates the monophyly of most of the morphologically well-defined species. Our results show that certain aspects of classical morphology-based taxonomy for Everettia species, especially with regard to the unique combination of shell surface sculptures, animal head colour, and mantle pigmentation, are solid. A dichotomous key to the Sabah species and subspecies of Everettia is provided. © 2009 The Linnean Society of London.