

The Effects of Different Habitats and Morphological Variability on *Cryptozона siamensis* (Pfeiffer, 1856) in Chiang Mai Province

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<https://doi.org/10.12982/CMUJNS.2020.0053>

Received: August 29, 2019

Revised: December 10, 2019

Accepted: February 13, 2020

ABSTRACT

Cryptozона siamensis is a species of snail found throughout Thailand which represents a potential plant pest. This snail has adapted to survive in various habitats, which might have impacted its genetics and shell morphology. To investigate this, we performed a detailed analysis of the snail and its habitat associations using DNA fingerprint analysis based on high annealing temperature randomly amplified polymorphic DNA (HAT-RAPD), cytochrome c oxidase subunit I (COI) markers, genitalia and geometric morphometric analysis of shell shape. A total of 240 *C. siamensis* individuals were collected from two different habitats: limestone mountains and lowland. Geometric morphometric analysis of *C. siamensis* shell shape showed significant differences ($P < 0.05$) between the two habitat types. Moreover, HAT-RAPD, COI, and genitalia also showed significant differences. These results suggest that variation has occurred in *C. siamensis* snails from different habitats. This study may provide useful information for understanding the influence of ecology on genetic and morphological changes in some species of land snails.

Keywords: *Cryptozона siamensis*, Habitat, Phylogeny, Geometric, Morphometric