Snails found among herbarium specimens of Galapagos lichens and bryophytes, with the description of *Scolodonta rinae* (Gastropoda: Scolodontidae), a new species of carnivorous micro-mollusk

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**Abstract.** For the first time we document several species of micro-mollusks in the Galapagos inhabiting lichens and bryophytes, possibly using them as part of their diet. Eight species of micro-mollusks were found as a by-catch among 10% of 400 herbarium specimens collected throughout the archipelago. Nine species of lichens and 6 of bryophytes were inhabited. The endemic *Pupisoma galapagorum* was the most common micro-mollusk, particularly frequent among *Heterodermia*, occasionally found on *Cyphellostereum*, *Squamidium nigricans*, and among hepatics (*Frullania*, *Bryopteris*). Other micro-mollusks were *Tornatellides chathamensis*, *Pupisoma dioscoricola*, *Helicina* sp., and *Succinea* sp. Examination of the digestive tract of *P. galapagorum* detected green algae, hyphae, spores, and fragments of bryophyte leaves (possibly *S. nigricans*). This endemic micro-mollusk apparently uses lichens and bryophytes not only for shelter but also as food. Another snail found repeatedly is a predator, described here as *Scolodonta rinae* n. sp. It is a member of Scolodontidae, a Neotropical family considered endemic to continental South America, and here for the first time documented from the Galapagos. *Pupisoma galapagorum*, previously known from Floreana, Isabela, San Cristóbal, and Santa Cruz, is reported also from Pinta and Santiago. *Ambrosiella floreanae*, previously considered endemic to Floreana, is reported from Santa Cruz.

**Key words.** Ecological interactions, land snail, microhabitats, food-chain.

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**Introduction**

The Galapagos Islands support a heterogeneous group of terrestrial gastropods; nearly 120 species have so far been reported, although the majority, c. 100 species, belong to the Bulimulidae (Parent et al. 2014). Species of this family are generally medium-sized (about 10 mm); others, commonly called micro-mollusks, measure only 1–5 mm (Parent & Coppois 2009, Parent et al. 2014, Miquel & Herrera 2014).

The preferred habitat of terrestrial Galapagos snails is the ground, where they can be found beneath decomposing trunks, branches, and among fallen leaves. Generally, snails inhabit more humid habitats of the Galapagos; in drier areas they are occasionally also found under rocks or in hollows where the humidity is higher than in the immediate vicinity. Very few species have been collected on other substrates: *Tornatellides chathamensis* (Dall, 1892) has been reported from fern fronds (Dall & Ochsner 1928, Parent & Coppois 2009, Miquel & Herrera 2014), and *Pupisoma galapagorum* Pilsbry, 1934 inhabits nests of Darwin’s finches (Thraupidae: Geospizini; Miquel et al. 2015).

Field observations suggest that terrestrial gastropods are frequently associated with lichens and bryophytes, using them for shelter and occasionally as food (e.g., Lichens: Peake & James 1967, Coker 1967; Bryophytes: Pilsbry 1948, Williamson & Cameron 1976, Wiesenborn 2003). Some of the earliest observations interpret damage on crustose lichen thalli in Jamaica as grazing patterns caused by snails (Pillett 1934). In temperate (e.g., Ireland: Anderson 1997; Baltic region: Baur & Baur 1997) and Mediterranean climates (Negev Desert: Shachak et al. 1987, Yom-Tov & Galun 1971) snails have not only been observed to feed on lichens and bryophytes, but several studies experimentally confirmed snail