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From suspected to confirmed presence: evidence of two coastal slug species of the genus *Peronia* (Gastropoda: Onchidiidae) on Reunion Island (Indian Ocean)

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Abstract. Species of the genus *Peronia* Fleming 1822 are known from several islands in the Indian Ocean, including Mauritius, but none has been reported from Reunion Island. We searched three rocky shore areas on Reunion Island for semi-marine slugs belonging to this genus and found two species: *P. peronii* (Cuvier, 1804) and *P. verruculata* (Cuvier, 1830). The late detection of the genus *Peronia* on Reunion Island may be due to less extensive survey work compared to neighbouring islands.

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The genus *Peronia* Fleming, 1822 (Gastropoda: Onchidiidae) includes all onchidiid slugs with dorsal gills. A recent morphological and genetic study of onchidiids of the Indo-West Pacific region identified nine species and resolving any doubts about these cryptic taxa (Dayrat *et al.* 2020). Adults are terrestrial, breathe air, inhabit intertidal zones, and typically live on shores with rocks and coral rubble. Adults release larvae into the sea, meaning these species part of their lives in marine environments (Dayrat *et al.* 2020).

The Mascarene Archipelago in the south-west Indian Ocean is mainly composed of three volcanic islands: Rodrigues, Mauritius, and Reunion. Previous studies have indicated the presence of the genus *Peronia* on only Mauritius, despite surveys on neighbouring islands of the archipelago. Three species, *Peronia peronii* (Cuvier, 1804), *P. verruculata* (Cuvier, 1830), and *P. griffithsi* Dayrat & Goulding, 2020, are recorded from Mauritius (Semper 1880; Bergh 1884; Plate 1893; Griffiths & Florens 2006; Dayrat *et al.* 2020). However, the presence of *P. verruculata* remains uncertain on Mauritius, based on the study of historical samples (Dayrat *et al.* 2020). Biogeographic studies of flora and fauna have documented examples of common or phylogenetically related interisland species, especially on the Mascarene Archipelago (Flore des Mascareignes 1976–2023; Griffiths & Florens 2006; Cheke & Hume 2008), and it is reasonable to assume that *Peronia* slugs, with a marine life stage, could also be present on other islands in the Mascarenes, as suspected by Griffiths & Florens (2006). Evidence of the genus *Peronia* on other islands in the Indian Ocean, including the Chagos Archipelago (Dayrat *et al.* 2020), Madagascar (Odhner 1919; Dayrat *et al.* 2020), the Maldives (Marcus & Marcus 1960, 1970; Dayrat *et al.* 2020), and the Seychelles (Labbé 1934; Dayrat *et al.* 2020), supports our hypothesis that this genus occurs on Reunion Island.

As *Peronia* species primarily inhabit rocky shores and are mostly nocturnal (Dayrat *et al.* 2020), our surveys were conducted after sunset. We chose three promising areas on Reunion Island between 28 October and 2 November 2024: Boucan Canot (west; 21.0232°S, 055.2294°E), Bassin de Grand Anse (south-west; 21.3704°S, 055.5488°E), and Bassin de Manapany (south-west; 21.3732°S, 055.5883°E).

We confirm the presence of *P. peronii* and *P. verruculata* on Reunion Island. No specimens were collected. *Peronia peronii* was found in all three surveyed locations, while *P. verruculata* was only found at Bassin de Manapany. *Peronia peronii* is easily distinguished from the other eight species by its large dorsum, which exceeds 10 cm long, and is considered an island species (Dayrat *et al.* 2020; Fig. 1A). *Peronia verruculata* can be identified by several distinct features: a dorsum 5 cm long, a black dorsal notum (Fig. 1B), and a yellowish ventrum (Fig. 1C). *Peronia verruculata* is the most widespread species in a large variety of habitats on both continental and island coasts (Dayrat *et al.* 2020). The late detection of the genus *Peronia* on Reunion Island may be

Figure 1. *Peronia* species from Reunion Island. **A,** dorsal aspect of *P. peronii*. **B**, **C**, *P. verruculata*, dorsal and ventral aspect, respectively. Scale bars: A, B = 5 cm; C = 3 cm.

due to less extensive survey work compared to neighbouring islands (Griffiths & Florens 2006). Additional fieldwork would likely provide a more detailed inventory of the coastal, semi-marine mollusc species. In fact, only four such species were included by Griffiths & Florens (2006) on Reunion Island, but participatory online databases suggest the presence of at least four times as many species (GBIF 2024; iNaturalist 2024).

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