



## *Crepidomanes inopinatum* var. *tamonii* (Hymenophyllaceae), a new lowland variety endemic to semi-dry forests in La Réunion

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### Abstract

Unexpected populations of Hymenophyllaceae ferns were observed and collected at low to middle elevations as epilithic in wet ravines within the semi-dry forest in La Réunion Island. These populations would represent lowland ecotypes of the montane *Crepidomanes inopinatum*, which is usually restricted to humid rainforests at higher elevations. Because of this unexpected habitat and the dwarfed size of the specimens by comparison to typical populations, we thus describe a new variety for the island.

### Résumé

Des populations inattendues de fougères Hymenophyllaceae ont été observées et collectées à basses et moyennes altitudes en épilithes dans des ravines humides au sein de la forêt semi-sèche à la Réunion. Ces populations représenteraient des écotypes de basses altitudes de l'espèce de montagne *Crepidomanes inopinatum* normalement restreinte aux forêts humides d'altitude. Compte-tenu de cet habitat inattendu et de la taille naine des individus comparativement à celle des populations types, nous proposons donc de décrire une nouvelle variété pour l'île.

Filmy ferns (Hymenophyllaceae) are typical hygrophilous ferns that can only grow in the wettest places. The one-cell thick lamina and the absence of cuticle do not allow these plants to endure a long period of drought, even if many species are poikilohydric but only for a relative short period (see Dubuisson *et al.* 2013a). In the western Indian Ocean Mascarene archipelago (associating the islands of La Réunion, Mauritius and Rodrigues) the family is thus observed as restricted only to lowland and highland rainforests where annual rainfalls often exceed 3,000 mm (Grangaud 2010). The most opportunistic species appears to be *Didymoglossum cuspidatum* (Willdenow 1810: 499) Ebihara & Dubuisson (2006: 236) which is a dwarf colonial species growing in the forest understory or in wet ravines as epiphytic or epilithic on various substrates. It is also the single Hymenophyllaceae that occurs on Rodrigues where such rainforests are lacking (Lorence 1976).

Under the influence of trade winds from the South-East and because of the high relief with two volcanic massifs which exceed 2,500 m, the highest reaching more than 3,060 m (‘Piton des Neiges’), wet forest habitats in La Réunion are distributed from sea level up to 1,900–2,000 m on the eastern windward coast and appear above 750–800(1,000) m on the western leeward coast. On the western leeward coast, below 750–800(1,000) m, in addition to a coastal savanna, a semi-dry forest with sclerophyllous tree species is theoretically present but is currently highly degraded by human activities and only subsists as remnants in a few ravines (Strasberg *et al.* 2005). These habitats are *a priori* not suitable for Hymenophyllaceae. By revising the diversity and systematics of one Hymenophyllaceae genus (*Crepidomanes* Presl 1851: 258) in the Mascarene archipelago and more especially in La Réunion, some unexpected populations of filmy ferns were found as epilithic in wet ravines at low to middle elevations within the western semi-dry forest (Dubuisson *et al.* 2013b), mostly near waterfalls and basins. First restricted to one locality (‘La Grande Chaloupe’), additional populations were observed in other localities of the island in equivalent habitats (wet ravines in semi-xeric forests) from 100 to 900 m since 2005 (Figs. 1–2). This altitudinal distribution actually corresponds to the distribution of the semi-xeric forest. Equivalent populations were also found on the windward eastern coast in places associated to particular semi-xeric vegetation that

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