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Leprose and leproid lichens of the Galapagos, with a particular focus on *Lepraria* (Stereocaulaceae) and *Septotrapelia* (Pilocarpaceae)

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Abstract

As part of an ongoing species inventory for the Galapagos Archipelago, sterile leprose and leproid lichens have been revised. Differences between leprose vs. leproid growth forms are discussed in the light of significant recent advances in the taxonomy of *Lepraria*. Five species have a strictly leprose morphology: *Lepraria achariana*, *L.* aff. *incana*, *L. finkii*, and *L. vouauxii* (all new to Galapagos), and *L. lendemeri* sp. nov. A sixth species, *L. tenella*, forms minutely fruticose thalli, but its recent transfer from *Leprocaulon* into *Lepraria* confirms its close affinity to species with similar chemistry such as *L. vouauxii*. Even though *L. vouauxii* does not develop pseudopodetia, it forms thalli that closely resemble immature specimens of *L. tenella*. Fertile material of a seventh species, "*Lepraria*" *usnica*, also new to Galapagos, confirms that this species does indeed belong in the Pilocarpaceae as molecular studies previously indicated. Its apothecia are identical to those of a *Septotrapelia*. Consequently, the recently described genus *Nelsenium* is reduced to synonymy and the new combination *Septotrapelia usnica* proposed. Many other sterile lichens occur in Galapagos and several have a very similar, leproid or even leprose morphology. A key for all those taxa is presented, emphasizing their inconspicuous, though distinct morphological differences.

Key words: Census of Galapagos Biodiversity, Galapagos Lichen Inventory, Ecuador, South America, *Nelsenium*, *Leprocaulon*, *Septotrapelia usnica* comb. nov., *Lepraria lendemeri* sp. nov.

Introduction

The Galapagos Islands are unique for their importance in the history of biological sciences. Today they are one of the few examples of tropical island ecosystems, where much of the original biodiversity remains intact (Snell *et al.* 2002). This, in part, is a consequence of an unusually long isolation of the islands from human colonization, which in turn is a result of their extreme geographic isolation (Grenier 2007). The diverse topology of the archipelago in combination with the unusual climate has resulted in significant local habitat diversification, and these factors combined with the strong geographic isolation have resulted in unusually high rates of species diversification and thus endemism. In geological terms the islands are quite young, with the emergence of the youngest islands estimated to be as recent as 60,000 years ago, and the oldest, still unsubmerged islands up to 5,600,000 years old (Geist 1996). This means that the current map of the Galapagos has changed considerably over time. Species inhabiting the islands were, and still are subjected to, a continuously changing geography.

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