



A new endemic *Ramalina* species from the Canary Islands (Ascomycota, Lecanorales)

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Abstract

Ramalina alisiosae (Ramalinaceae), found on trees in the laurel forests of the Canary Islands is described as new to science. A description of the species is given together with notes on its chemistry, distribution, ecology, and taxonomy. Bayesian and Maximum Likelihood analyses of ITS sequences showed a close relation of the new species with *R. implectens* and *R. farinacea*. Morphological and anatomical differences with these related lichen taxa are discussed.

Key words: Biodiversity, endemism, Macaronesia, Ramalinaceae, taxonomy

Introduction

Ramalina Nylander in Luyken (1809: 95) is a large genus of cosmopolitan lichens with over 200 species currently recognised (Kirk *et al.* 2008). Nevertheless, the morphological characters commonly used in its taxonomy show a remarkable plasticity (Boucher & Nash 1990; Pintado *et al.* 1997) and, in addition, the chemistry is very complex (Krog & Swinscow 1973; Arroyo Cabeza & Manrique Reol 1989; Culberson *et al.* 1993). Often, no correlation between morphological variation and chemical variability can be found, leading to the description of a high number of infraspecific and specific taxa, currently treated as synonyms or chemicals strains (Arroyo *et al.* 2011). The genus is characterized by a fruticose thallus, erect or pendulous, pale yellow-green, strap-like branches, compressed or terete, solid or fistulose, rarely fenestrate, smooth or reticulate. Soralia, pseudocyphellae or striae are frequent in many species; the cortex is usually thin, supported by a chondroid tissue. The medulla is dense and opaque or more frequently lax and arachnoid. The apothecia are shortly stalked with elongate-clavate asci, which are of the *Bacidia*-type and 8-spored; ascospores are colourless, 1-septate, broadly ellipsoid or kidney-shaped. The conidiomata are pycnidia with pale or blackened ostiole, conidia bacilliform, colourless, and non-septate (Fletcher *et al.* 2009, Serusiaux *et al.* 2010).

The genus *Ramalina* has received considerable attention during the last decades and several regional monographic treatments have been published (Stevens 1987; Kashiwadani & Kalb 1993; Blanchon *et al.* 1996; Aptroot & Bungartz 2007; Aptroot & Schumm 2008), including the Canary Islands (Krog & Østhagen 1980a). The Canaries belong to Macaronesia, one of the 25 World Biodiversity Hotspots (Myers *et al.* 2000), a phytogeographical region that includes five Atlantic volcanic archipelagoes (the Azores, the Madeiras, the Savages, the Canary Islands and the Cape Verde Islands), as well as the Macaronesian Enclave (Báez & Sánchez-Pinto 1983; Jaén-Molina *et al.* 2009) on the African mainland. The lichen biota of the Canary Islands is very rich with more than 1600 species listed for an area of just 7447 km² (Hernández Padrón & Pérez-Vargas 2009). Nevertheless, new species continue to be described frequently from this region (e.g. Serusiaux *et al.* 2007; Pérez-Vargas & Pérez de Paz 2009; van den Boom 2010; Giralt & van den Boom 2011; Pérez Vargas *et al.* 2012) confirming that the lichen biota in this region with its many ecosystems, is still insufficiently known. In the present work we describe a new species of *Ramalina* from this Archipelago. Because lichens exhibit globally high dispersal capacities (Muñoz *et al.* 2004), they usually show widespread distributions and endemism is generally

The fertile *Ramalina implectens* is closely related to the new species. It is known from Macaronesia and the Southern part of the Iberian Peninsula. It is mainly a corticolous species, although rarely found on rocks. The main distinguishing feature is the absence of soralia in *R. implectens*. In addition, the laciniae do not develop branchlets; the cortex is thinner (10–15 µm vs 25–45 µm in *R. alisiosae*); apothecia are numerous and frequently in geniculate branches and spurred; moreover, the spores have a subterminal pseudoseptum (Krog & Østhaugen, 1980a) not seen in *R. alisiosae* and they are larger and wider in the new species.

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