

A new species of *Melanohalea* from the Andes Mountains in central Peru

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ABSTRACT. – *Melanohalea peruviana* is described from the state of Ancash in central Peru, where it was collected on angiosperm twigs at high elevation (4400 m). This new species is small and fertile, with superficial similarities to *M. trabeculata*, but differs by having only eight spores per ascus and by lacking secondary substances in the medulla.

KEYWORDS. – Andes Mountains, neotropics, biodiversity hotspots, South America

INTRODUCTION

The tropical region of the Andes Mountains has been recognized as one of the major hotspots for terrestrial biodiversity (Myers et al. 2000), with one of the highest numbers of both plant and vertebrate species, also including a very large percentage of endemic species in both groups. As with many of these hot spots, the tropical Andes region has been under-collected, especially when it comes to lichens and other fungi. Nevertheless, when a particular lichen group in the area receives attention, new taxa are almost inevitably discovered (e.g., Ahti 2000, Kurokawa & Moon 2000, Lindstrom 2007, Moberg 2011).

The large and diverse family Parmeliaceae is common in the tropical latitudes of South America, with a large number of genera and species known to occur there. *Melanelixia* and *Melanohalea*, the two recently erected brown parmelioid genera in this family (Blanco et al. 2004), are primarily north temperate however, and neither genus has been reported from northern South America. It was therefore particularly noteworthy when a small, fertile, undescribed species of *Melanohalea* was encountered among a small collection of Peruvian lichens sent to me for identification from the University of Uppsala. Although only a single collection is known, the taxon is quite distinctive and is here described as new.

MATERIAL AND METHODS

The specimen was studied in dry condition under an Olympus SZ40 dissecting microscope and all microscopic characters were measured in water mounts using a Nikon Alphaphot YS2 compound microscope. The photograph was taken with a Nikon Coolpix 8700 digital camera mounted on the dissecting microscope. Thin-layer chromatography with three solvent systems was carried out using the current modifications of the standardized methods of Culberson & Kristinsson (1970) and Culberson (1972).

THE NEW SPECIES

Melanohalea peruviana Essl. sp. nov.
Mycobank #802811.

FIGURE 1.

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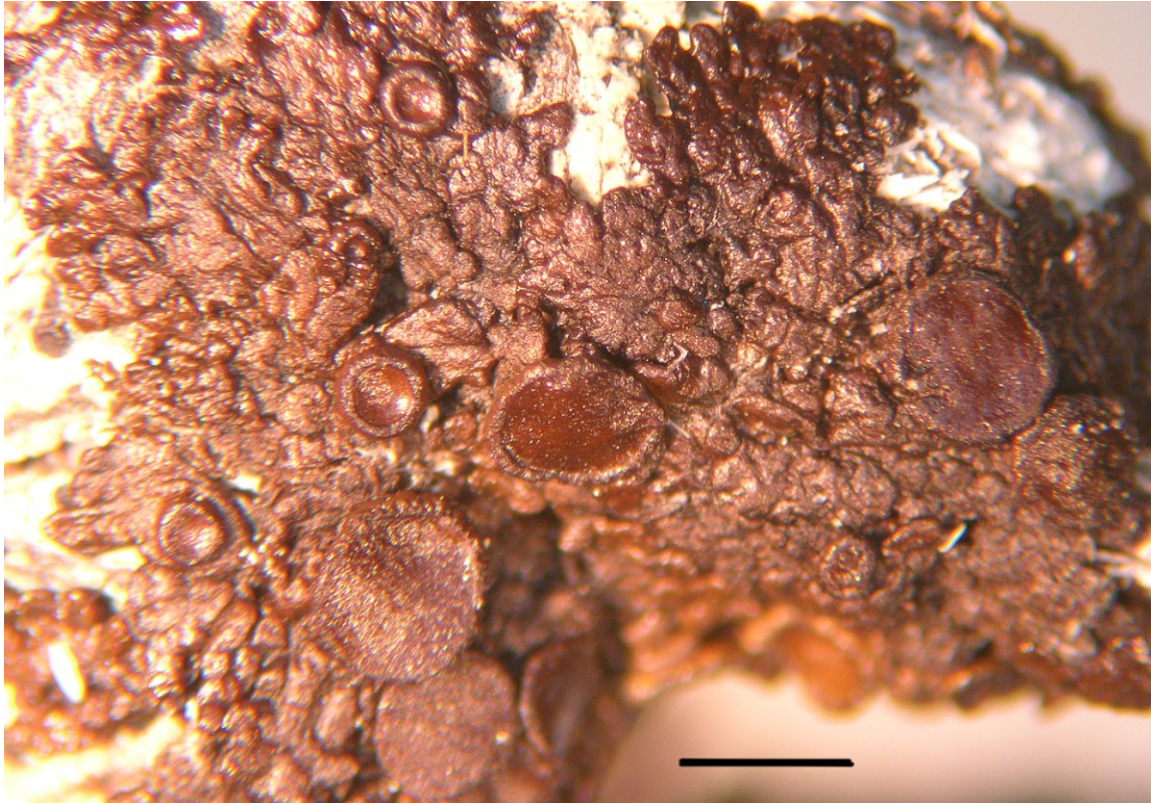


Figure 1, a portion of the holotype of *Melanohalea peruviana*. Scale bar = 1 mm.

TYPE: PERU. ANCASH: Huaraz, Laguna Llaca, ca. 27 km (road distance) NE of Huaraz,; 09°28S 77°28W, 4400 m., 28.ii.1981, on twigs, *R. Santesson & R. Moberg P60:52* (UPS!, holotype).

DESCRIPTION. – Thallus foliose, appressed and moderately adnate, up to ca. 1.5 cm in diameter. Lobes 0.4-1.0 mm broad, mostly flat to weakly convex, somewhat elongate and irregular, contiguous to somewhat imbricate. Upper surface brown to olive-brown, more or less smooth at edges but weakly rugose in older parts, epruinose and usually distinctly shiny, especially on the lobe ends; with sparse and very obscure pseudocyphellae (small and concolorous with the cortex); without soredia or isidia. Lower surface brown to dark brown, trabeculate more or less throughout, dull to somewhat shiny, moderately rhizinate, the rhizines more or less concolorous with the lower surface.

Apothecia common, sessile, concave when young but becoming weakly convex at maturity, up to 2 mm in diameter; margin entire to weakly crenate; hymenium 55-60 μm thick, subhymenium 28-48 μm thick; spores 8/ascus, globose or subglobose, 6-8 x 5-7 μm .

Pycnidia frequent, immersed and black; pycnoconidia cylindrical to weakly acerose or fusiform, 6-7 x ca 1 μm .

CHEMISTRY. – No substances detected by TLC. Spot tests: upper cortex and medulla negative with all spot test reagents.

ETYMOLOGY. – In honor of the country of origin, Peru.

DISCUSSION. - This new species is similar in general appearance to the North American endemic *Melanohalea trabeculata* (Ahti) O. Blanco et al., because of the small, fertile thalli with a distinctly trabeculate lower surface. However, *M. peruviana* is clearly distinguished by having eight spores per ascus rather than 16-32, a more appressed and rugose thallus, and by the lack of detectable secondary compounds in the medulla. Most specimens of *M. trabeculata* have norstictic acid in the medulla and react with both K

and PD, although the strength of the reactions indicates variable concentrations, and in a few specimens, no reactions or norstictic acid can be detected (Esslinger 1977). The North American taxon *M. subolivacea* (Nyl.) Blanco et al. is another fertile species lacking secondary compounds in the medulla, but that species is almost an order of magnitude larger (up to 11 or 12 cm), has larger spores (8-10.5 x 5-8 µm) and lacks a distinctly trabeculate lower surface. Similarly, the only other fertile species of *Melanohalea* known from South America (central Chile) is *M. zopheroa* (Essl.) Blanco et al., a much larger species (up to 7 cm), characterized by very conspicuous, more or less whitish pseudocyphellae, and larger spores (8-13.5 x 5.5-8 µm). Additionally the lower surface is not or only weakly trabeculate in that species.

As mentioned above, this is the first species of the primarily north temperate genus *Melanohalea* to be reported for tropical South America, although another highland tropical species was recently described from south central Mexico (Esslinger & Pérez Pérez 2010). Four species of *Melanohalea* and one species of *Melanelixia* are known from temperate South America, especially the far south (Esslinger 1977).

This is a small and inconspicuous species, known presently from only a single locality in a poorly collected region of South America. It should be searched for more broadly in high altitude areas of northern South America.

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