

**A new occurrence of a bryophilous fungus in Antarctica: *Lamprospora cashiae* (Ascomycota - Pezizales)**

**Uma nova ocorrência de um fungo briofílico na Antártica: *Lamprospora cashiae* (Ascomycota - Pezizales)**

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**Lilian Pedroso Maggio**

Doctoral student of the Universidade Federal do Pampa  
Av. Antonio Trilha, São Gabriel 97300-000, RS, Brazil  
lilianmaggio@yahoo.com.br

**Jair Putzke**

Professor - Universidade Federal do Pampa  
Av. Antonio Trilha, São Gabriel 97300-000, RS, Brazil  
jrputzkebr@yahoo.com

**Carlos E.G.R. Schaefer**

Professor - Universidade Federal de Viçosa, Departamento de Solos, Viçosa, Minas Gerais, Brazil  
reyshaeferr@yahoo.com.br

**Marisa Terezinha Lopes Putzke**

Professor – Universidade de Santa Cruz do Sul  
Av. Independencia, 2293, Santa Cruz do Sul, CEP 96815-900, Rio Grande do Sul, Brazil  
marisa@unisc.br

**RESUMO**

O gênero *Lamprospora* está pobremente representado nas regiões antárticas e subantárticas. Durante trabalho de campo realizado na Ilha Livingston, Arquipélago das Shetlands do Sul, foram coletados pequenos fungos apotecioides por entre musgos que foram identificados como *Lamprospora cashiae*. Encontrado previamente no Chile e Argentina, está é a primeira referência da espécie para a Antártica.

**Palavras chave:** musgos, Livingston, distribuição.

**ABSTRACT**

The genus *Lamprospora* is poorly represented in the Antarctic and Subantarctic regions. In a field survey done in Livingston Island - South Shetland Archipelago, a small apotheciid muscicolous fungi was collected and identified as *Lamprospora cashiae*. Found previously in Chile and Argentina, this is the first citation of this species to Antarctica.

**Keywords:** mosses, Livingston, distribution.

## 1 INTRODUCTION

The bryophilous fungi are poorly known from Antarctic areas, even being the ice-free places in this continent mostly vegetated by extensive moss fields. The most common hosts around the world are among the acrocarpous Bryophyte genera *Barbula*, *Bryum*, *Ceratodon*, *Funaria*, *Grimmia*, *Polytrichum*, *Pottia* and *Tortula*, all of them represented in the Maritime Antarctic and among the fungi Asco and Basidiomycota are involved (Benkert 2007, Ochyra et al. 2008, Jukić et al. 2018; Maggio et al. 2021).

The genus *Lamprospora* (= *Octospora*, Pezizales, Ascomycota) is represented in Antarctica by only one species, *L. miniatopsis* Spooner, reported to South Orkney and Elephant Island being considered common in the South Shetland Islands (Putzke and Pereira 1996, Olech 1990). *Lamprospora cashiae* Gamundi is found in the subantarctic islands of South Georgia, Argentina (Tierra del Fuego) and Chile (Magallanes Region) growing on a non-identified *Hepaticopsida* and on *Schistochila* sp. (Pegler et al. 1980; Gamundi et al. 2004).

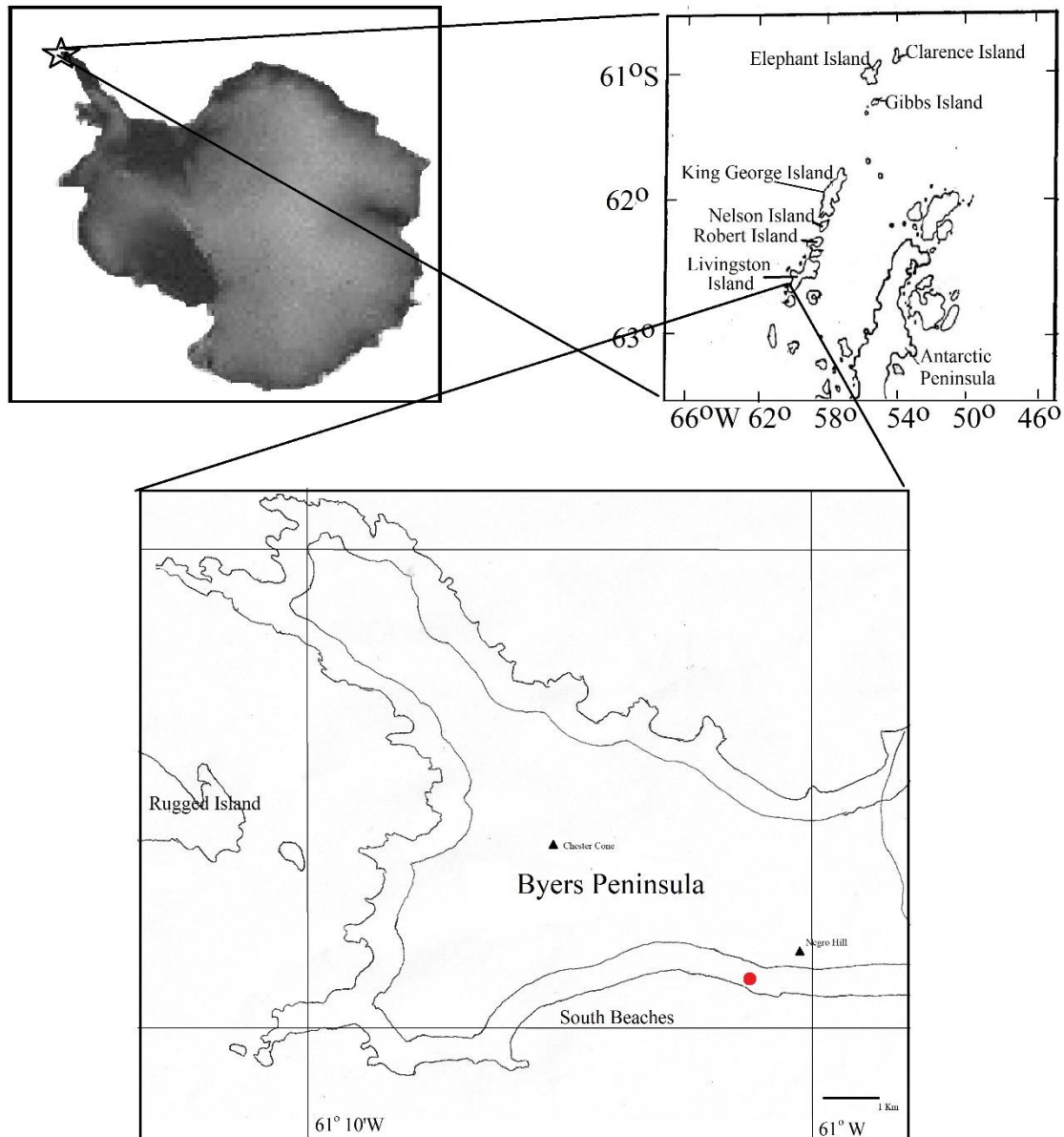
While searching for fungi in Livingston Island, in the maritime Antarctic, a *Lamprospora* was found and this sample represents the second collection of a species of this genus and a new reference to Antarctica.

## 2 MATERIAL AND METHODS

The sampling of macroscopic fungi was done in Byers Peninsula, Livingston Island – Antarctica, (62°36'S 60°30' and 62°36'S 60°30'W) in February 2010 (Figure 1).

The collection was done on a moss bank near a small stream using a knife and then it was transported to the laboratory in the field camp to preliminary data record. The microscopic studies were done in the Universidade Federal do Pampa laboratories for identification. The macro and microscopic studies were done using a Zeiss Axiostar Plus microscope and pictures were taken in Axiostar microscope.

Figure 1. Schematic map with location of the sample of *Lamprospora cashiae* (red dot).



### 3 RESULTS AND DISCUSSION

The sample collected was identified as *Lamprospora cashiae* Gamundi, first citation of this species to the Antarctica.

Species description:

*Lamprospora cashiae* Gamundi, Figure 2 and 3.

Bol. Soc. Arg. Bot. 15: 89 (1973).

Apothecia 1-1.5 mm diam., flat or somewhat convex in the beginning, with orange to red disc and margin slightly dentate, with teeth elevated at right angles from the disc. Asci hyaline to reddish, 190 - 210 x 25 - 30  $\mu$ m, with one series of eight spores.

Paraphyses straight, slightly inflated at apex, 180 – 190 x 5 – 8  $\mu\text{m}$ , reddish to reddish brown, sometimes septate. Ascospores 16-18  $\mu\text{m}$  diam., globose to subglobose, ornamented either with discrete warts or frequently with a sub-reticulate pattern, formed by the interconnection of warts at their bases.

The species was found growing on an acrocarpous moss cushion formation of *Bryum* sp. and *Polytrichastrum alpinum* (Hedw.) G. L. Smith (Bryophyta), associated to *Deschampsia antarctica* (Poaceae – the Antarctic Grass).

**Material examined:** Antarctica, Livingston Island, Byers Peninsula, Southern Beach, lat. 62° 39' 28,52" S and long 61°02' 10,68" W, leg. J. Putzke, Feb/2020, HCB (17550).

The characteristically round and ornamented ascospores associated to reddish apothecial disc are distinguishing features of this species. *Lamprospora miniatopsis* that is also found in the South Shetland Islands has orange apothecial disc and elliptical (rarely subglobose) ascospores.

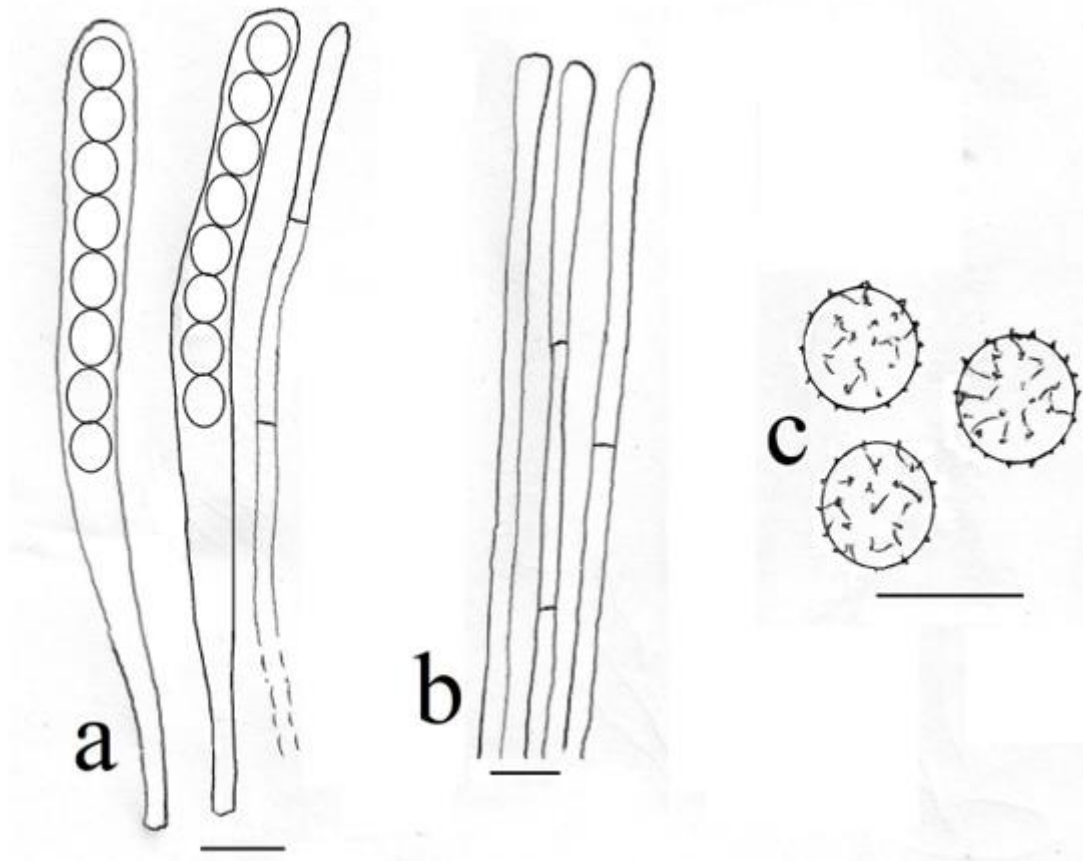
This species is reported to South Georgia (Sub-Antarctic area) by Pegler et al. (1980 – as *cf.*) growing in wet *Rostkovia magellanica* (Lam.) Hook.f. (Juncaceae)-moss bog beside a stream. It is also reported from Southern South America growing only on an Hepaticopsida species (Gamundi et al. 2004). Our specimen was growing on Bryopsida.

This is the first report of this species to Antarctica. The area of our sample was besides a small stream.

Figure 2. *Lamprospora cashiae* apothecia (scale = 1 mm).



Figure 3. *Lamprospora cashiae*: a- asci; b- paraphyses; c- ascospores (scale = 20  $\mu$ m).



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