



## ***Perichaena calongei* (Trichiales): a new record of Myxomycetes from Brazil**

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### **Abstract**

During the development of taxonomic and ecological studies of the myxobiota in the National Forest (Floresta Nacional - FloNa) of Silvânia, State of Goiás, Brazil, sporocarps of *Perichaena calongei* were found after 52 days of moist chamber incubation of decaying leaves and bark of living tree colonized by bryophytes. This species, described five years ago from the arid areas of Argentina, constitute the first record for Brazil and for the Cerrado biome.

**Key words** – Amoebozoa – Biodiversity – Brazilian Savannah – moist chamber culture – Myxobiota – slime molds

### **Introduction**

The order Trichiales (Myxomycetes) include around 170 species that have, in common, bright spores, and a solid or tubular capillitium, with single or branched capillitial threads, usually ornamented with spines, cogs, rings, half-rings, spiral bands or a reticulum (Martin & Alexopoulos 1969, Martin et al. 1983, Lado & Pando 1997).

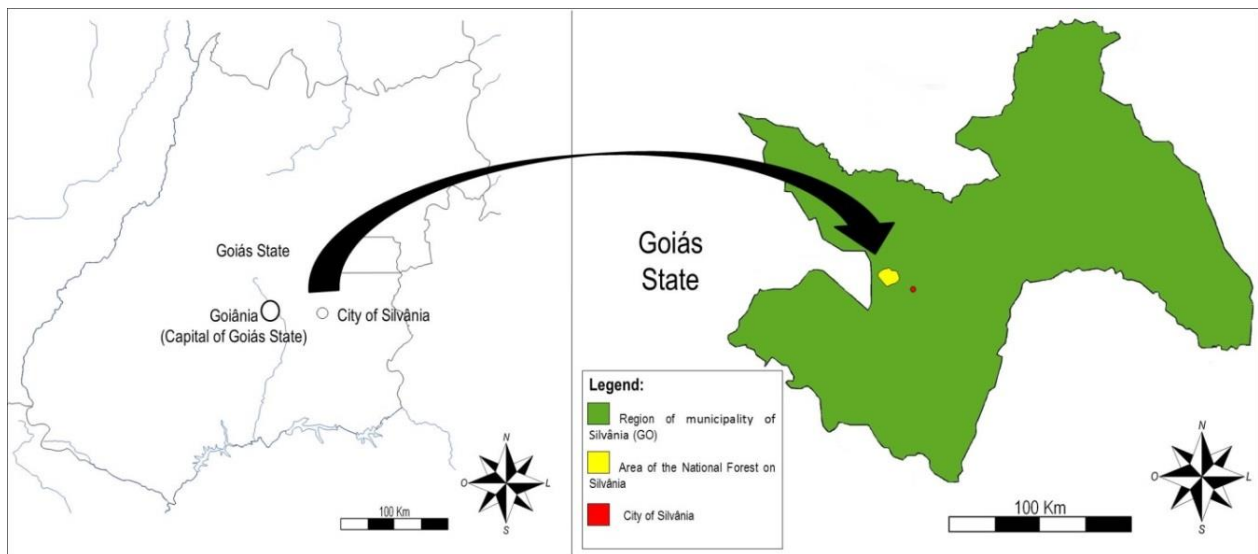
The genus *Perichaena* (Trichiaceae, Trichiales) was described by Fries in 1817, and currently includes 33 recognized species (Lado 2005-2015). For Neotropical region, there are reported the occurrence of 13 species (Lado & Wrigley de Basanta 2008, Lado et al. 2009, Mitchell et al. 2011, Rojas & Stephenson 2013, Lado et al. 2013). In Brazil, there are records of five of them [*Perichaena chryosperma* (Curr.) Lister, *P. corticalis* (Batsch) Rostaf., *P. depressa* Lib., *P. microspora* Penz. & Lister, and *P. vermiculares* (Schwein.) Rostaf.], distributed in the States of Bahia, Paraíba, Pernambuco, Rio Grande do Norte, São Paulo, Rio de Janeiro, Rio Grande do Sul and Santa Catarina (Cavalcanti 2015). This study reports the occurrence of *Perichaena calongei* Lado, D. Wrigley & Estrada, for the first time in Brazil and the second for the Neotropical Region.

### **Materials & Methods**

The National Forest (Floresta Nacional - FloNa) of Silvânia is a Conservation Unit of sustainable use under regional management of the Chico Mendes Institute for Biodiversity Conservation (ICMBio). It is situated in the east of the State of Goiás, in the municipality of Silvânia (Fig.1), in the area of the Brazilian Savannah (Cerrado). The FloNa occupies an area of 467 hectares

(Fig. 2) situated at an elevation of 885–900 m, shows an annual rainfall of 1,600 mm, an average of temperature of 26°C, with a maximum of 39°C, and a minimum of 2°C. It is characterized by the presence of various phytophysionomies of the Cerrado, such as Cerrado *strict sensu*, *Cerradão* and *Mata de Galeria* (gallery forest) (Plano de Manejo FloNa 2012).

Between the years 2011 and 2012, a taxonomic and ecological study of the myxobiota of the FloNa was done. Collections were obtained in areas of gallery forest, using five plots of 25 m<sup>2</sup> defined randomly. In these plots, samples of living or decaying substrates with possible occurrence of myxomycetes, such as tree bark, bryophytes, leaves, among others, were collected and subsequently placed at Petri dishes and incubated in moist chamber at the laboratory. These moist chambers were observed during three months, for detect the occurrence of myxomycetes, in accordance with the methodology of Lado et al. (2013).



**Fig. 1** – Map of the municipality of Silvânia in the State of Goiás, Brazil. In yellow, localization of the FloNa in the municipality of Silvânia. (Maps available at [www.D-maps.com](http://www.D-maps.com), modified by the authors).



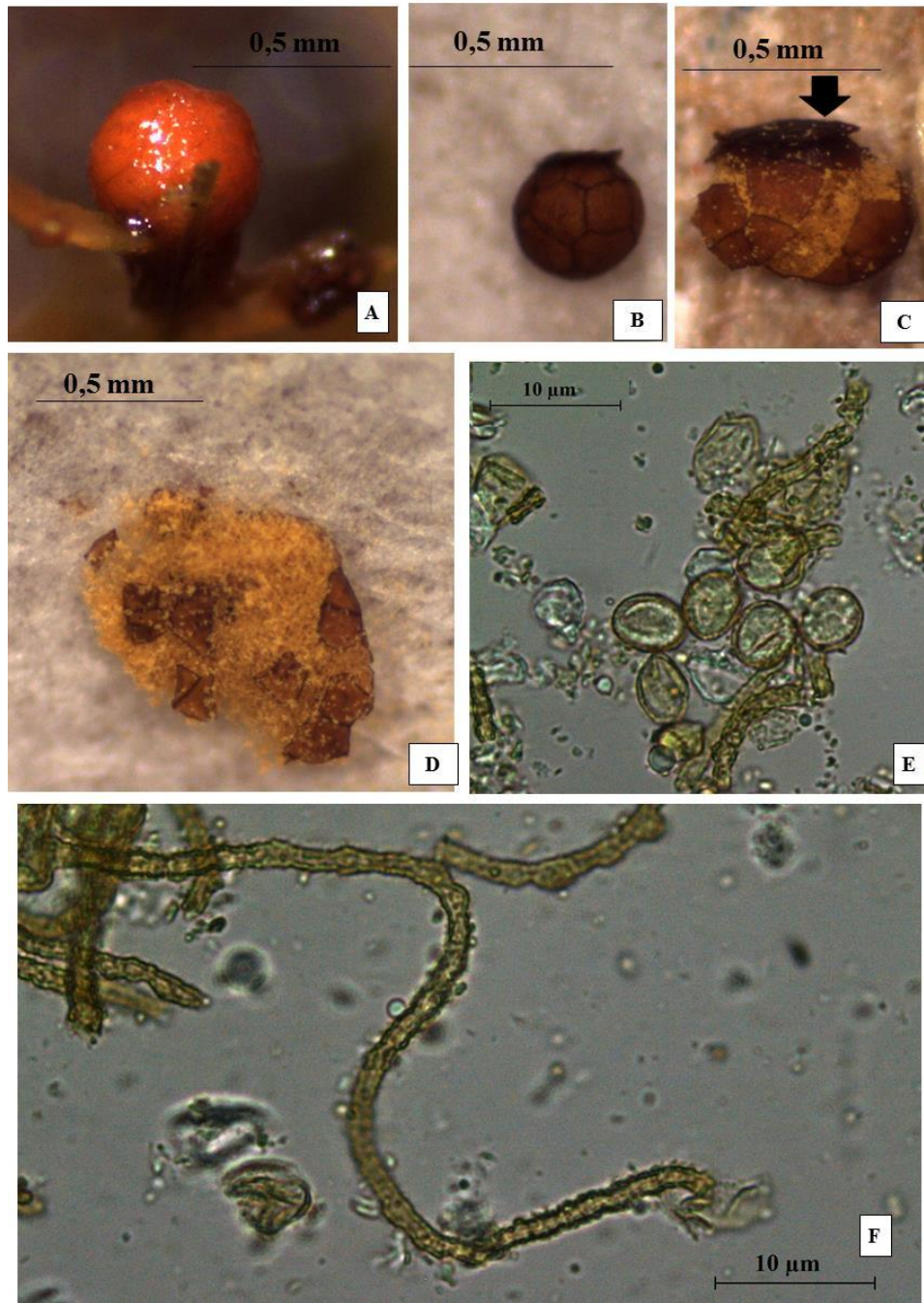
**Fig. 2** – Demarcation (yellow line) of the FloNa of Silvânia, seen by satellite (Source: Google Earth, on 08/08/2012, modified by the authors).

The specimens obtained were dried at room temperature (28°C), identified and included into the collection of the herbarium of the Universidade Estadual Goiás (HUEG 8717 and HUEG 8718), located in the Câmpus de Ciências Exatas e Tecnológicas (CCET, Anápolis/GO).

### Results and Discussion

Sporocarps of *Perichaena calongei* (Fig. 3) were observed after 52 days of incubation, both on decaying leaves and bark of living tree colonized by bryophytes. These specimens are described below.

*Perichaena calongei* Lado, D. Wrigley & Estrada, in Lado, Wrigley, Estrada, García Carvajal, Aguilar & Hernández-Crespo, Anales Jard. Bot. Madrid 66S1:63–70 (2009). Fig. 3



**Fig. 3 – A-F.** *Perichaena calongei*: A. Young sporocarp, B. Mature sporocarp showing the peridial plates, C and D. detail of the very short stalk (arrow) and peridial dehiscence after the releasing the spore mass, E. Spores and F. Capillitial threads.

Description – Sporocarps in small groups, shortly stalked or almost sessile. Sporotheca subglobose, 0.3–0.5 mm diam., orange yellow to brown, with black lines marking the edges of peridial plates. Hypothallus membranous, brown and discoid. Stalk very short, up to 0.1 mm height, sometimes inconspicuous, dark brown. Peridium double, outer layer with yellow granular material, inner layer membranous, strongly adhered to the outer layer, dehiscing into polygonal plates by dark lines. Columella absent. Capillitium tubular, irregular, sometimes with intercalated expansions, branched, forming a lax net, yellowish, with irregular ornamentation, some tubules with spines others with granules. Spores orange yellow in mass, yellowish by light microscope (LM), free, subglobose, 9–11 µm diam, warty.

Examined material – BRAZIL. State of Goiás: Silvânia, National Forest (Floresta Nacional FloNa), Gallery forest, 16°37'53"S 48°39'07"W, on unidentified decaying leaves, incubated the 20/11/2011, sporulated the 11/01/2012, Araújo, J.C (16), (HUEG 8717). *Ibidem*, on bark of living tree with bryophytes, sporulated the 17/02/2012, Araújo, J.C (22), (HUEG 8718).

Distribution – Previously only known from the arid areas of the Northwest of Argentina (Lado et al. 2009). First record for Brazil and for Cerrado (Brazilian Savannah) biome.

Commentaries – The examined specimens showed the characteristic black lines marking the edges of peridial plates of the species *P. calongei* (Lado et al. 2009). The occurrence of this specie in substrates collected in areas of Cerrado, demonstrates the importance of development of taxonomic and ecological studies of the myxobiota in the areas still little explored in the Central region of Brazil.

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