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A new species of *Psilocybe* (*Agaricales, Strophariaceae*) from southern Brazil

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Abstract— *Psilocybe rickii* is described as a new species from Rio Grande do Sul, Brazil. It belongs to the section *Cordisporae* and is characterized by the bulbous base of the stipe. The holotype was collected in 1908 by Rick.

Key words— Basidiomycota, hallucinogenic fungi, neotropical mycobiota

Introduction

In spite of recent studies on the genus *Psilocybe* (Fr.) P. Kumm. in southern Brazil (Guzmán & Cortez 2004; Cortez & Coelho 2004), an undescribed species was surprisingly found among the fungi collected by Johannes Rick. Several collections of *Psilocybe* by Rick were studied by Guzmán (1978, 1983) during his studies on the genus. The collection Fungi Rickiani is mainly deposited in the herbarium PACA (Instituto Anchietano de Pesquisas, São Leopoldo, Rio Grande do Sul, Brazil), but some specimens are deposited in North American and European herbaria (Fidalgo 1962). This paper deals with the description of another probable hallucinogenic fungus, a new species of *Psilocybe* collected by Rick in 1908, recently found in the Farlow Herbarium.

Materials and methods

Microscopic observations were made from sections mounted in 5% KOH solution, previously treated with ethanol for rehydration.

Description of the new species

Psilocybe rickii Guzmán & Cortez, **sp. nov.** FIGURES **1-4**

Pileus circa 38 mm latus in sicco, convexo subumbonatus, pallide brunneolus, irregulariter atrovinaceo-rufescens, glaber. Lamellae subadnatae, cinnamomeae. Stipes circa 50 x 4 mm in sicco, rubrobrunneus, fibrosus, base pseudorhizali, bulbosa, cylindrico-pyriformi, usque ad 15-8 mm, albida. Basidiosporae 8-10 x 6-8 (-8.5) x (5-) 5.5-7 µm, in aspectu frontali oblongo-subrhomboideae, in aspectu obliquo subellipsoideae, crassitunicatae, luteobrunneae. Cheilocystidia 11-24 x 5-7.5 µm, hyalina, sublaginiformia. Pileipellis subgelatinosa. In terra arenacea. Brazil, Rio Grande do Sul, São Leopoldo, 1908. Holotypus hic designatus: Rick 52 (FH).

Pileus about 38 mm diam. as dried, convex subumbonate, pale brownish, irregularly staining dark vinaceous reddish, smooth, possibly subviscid. ***Lamellae*** subadnate, cinnamon brown, with concolorous edges. ***Stipe*** about 50 x 4 mm as dried, including the pseudorrhizal bulbous base, this base measures 15 x 8 mm and is cylindrical-pyriform, the remaining stem is cylindrical and uniform, reddish brown, fibrous, the pseudorrhizal base is whitish.

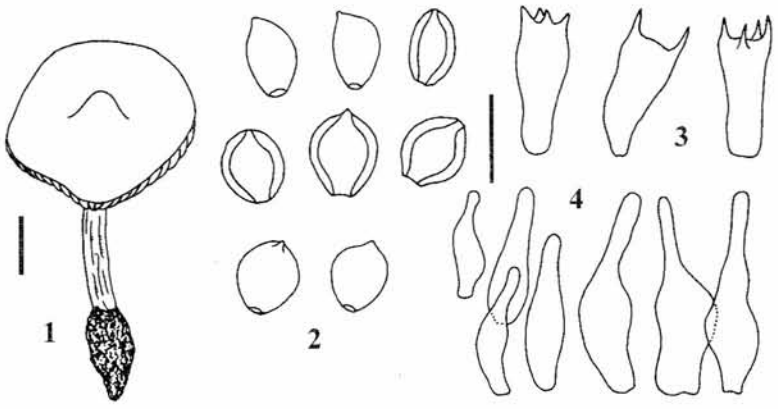
Basidiospores 8-10 x 6-8 (-8.5) x (5-) 5.5-7 µm, oblong-subrhomboid in face-view, subellipsoid in side-view, thick-walled, yellowish brown, with a distinct and broad germ pore on one end and a short apical appendage on the other. ***Basidia*** 13-18 x 6.5-7.5 µm, (2-)4-spored, hyaline, pyriform or subventricose. ***Pleurocystidia*** not observed (present?). ***Cheilocystidia*** 11-24 x 5-7.5 µm, hyaline, regularly or irregularly sublageniform, with a broad or narrow base. ***Subhymenium*** not differentiated. ***Hymenophoral trama*** regular, with hyaline hyphae 4-15 µm wide. ***Pileipellis*** subgelatinous, 15-25 µm thick, with hyaline hyphae 1.5-3 µm wide. ***Subpellis*** (hypodermium) collapsed. ***Context*** collapsed. ***Stipitipellis*** with yellowish prostrate hyphae. ***Mycelium*** in the bulbous base with hyaline hyphae, but yellowish in mass, 2-4 µm wide. ***Clamp connections*** present.

Habitat and distribution: On sandy soil, probably solitary. Known only from the type locality.

Material examined: BRAZIL. Rio Grande do Sul State: São Leopoldo, 1908, *Rick 52* (Herbarium F. Theissen at FH, without number, as *Psilocybe shafferi* Rick, *nomen nudum*, holotype).

Discussion: Because of its dark vinaceous tones when dried, this fungus is considered to be caerulescent. Dried specimens of *P. caerulescens* Murrill and *P. wrightii* Guzmán, both bluing fungi, are often similarly dark vinaceous, but not blue as dried. The hypogeous bulbous base of the stipe and the oblong-subrhomboid, thick-walled basidiospores are the main taxonomic features of *P. rickii*. For the form and structure of its basidiospores and its probable bluing feature, this fungus belongs to section *Cordisporae* Guzmán, where all the species belong to the hallucinogenic fungi, following the concept of Guzmán (1983, 1995).

Psilocybe rickii is related to *P. guatapensis* Guzmán et al. from Colombia (Guzmán et al. 1994) by the subbulbous base, but that species has shorter basidiospores [(5.5-) 6–6.5



Figures 1-4. *Psilocybe rickii* (holotype). 1) Basidioma. 2) Basidiospores. 3) Basidia. 4) Cheilocystidia. Scale bars: 10 mm for 1, 10 μm for 2-4.

(-7) μm long] and a conic to acute-campanulate pileus. The absence of pleurocystidia in *P. rickii* is doubtful, because these structures were probably not observed because tissues of the basidioma studied were collapsed

This new species is named in honor of the Priest Johannes Rick, considered the "Father of Brazilian Mycology" and who collected the specimen studied, for his long and important work on fungi from the State of Rio Grande do Sul in Brazil.

With the discovery of this new species, there are now 30 known species of *Psilocybe* in Brazil, 19 of which belong to the hallucinogenic group.

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