

***Pholiota spumosa* (Fr.) Singer (STROPHARIACEAE, BASIDIOMYCOTA):  
FIRST RECORD FROM RIO GRANDE DO SUL, BRAZIL**

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**ABSTRACT**

This paper is part of a taxonomic survey of Strophariaceae (Agaricales, Basidiomycota) from the region of Santa Maria, center of Rio Grande do Sul State, in southern Brazil. *Pholiota spumosa* (Fr.) Singer is recorded for the first time from the State of Rio Grande do Sul and for the second time in Brazil. Descriptions and line drawings of this species are presented.

**Key words:** lignicolous fungi, Basidiomycetes, Agaricales, Strophariaceae, Pholiotoidae, taxonomy.

**RESUMO**

***Pholiota spumosa* (Fr.) Singer (Strophariaceae, Basidiomycota): primeiro registro para o Rio Grande do Sul, Brasil.**

Este trabalho é parte de um levantamento taxonômico da família Strophariaceae (Agaricales, Basidiomycota) em Santa Maria, região central do Rio Grande do Sul. *Pholiota spumosa* (Fr.) Singer é registrada pela primeira vez no sul do Brasil e pela segunda vez no Brasil. São apresentadas descrições e ilustrações desta espécie.

**Palavras-chave:** fungo lignícola, Basidiomycetes, Agaricales, Strophariaceae, Pholiotoidae, taxonomia.

**INTRODUCTION**

*Pholiota* (Fr.) P. Kumm. belongs to the agaric family Strophariaceae Singer & A. H. Sm. (Basidiomycota), and is the type genus of the subfamily Pholiotoidae (Imai) Singer (SINGER, 1986). The genus is characterized by a cinnamon to ferruginous brown spore print, smooth (by light microscopy) and thick-walled spores with a variable germ-pore, the presence of cheilocystidia, pileipellis with prostrate, parallel hyphae which are frequently gelatinized, and by growing mainly on wood but also on litter, soil or mosses (SMITH; HESLER, 1968). According to Singer (1986), the genus comprises 75 species. Smith and Hesler (1968), in a wider sense of the genus *Pholiota*, but with a narrower species concept,

described 205 species only to North America, 75 of which were new to science.

In Brazil, the genus is poorly known: a checklist of the Brazilian agarics by Putzke (1994) lists only eight *Pholiota* species recorded from Brazil. Recently, Pegler (1997), who revised the Agaricales from the State of São Paulo, deposited at the Herbarium "Maria Eneida Pacheco Kauffman Fidalgo" (acronym SP), confirmed the occurrence of two new taxa: *P. spumosa* (Fr.) Singer, based in a Puiggari's collection published by Spegazzini (1889) as *Flammula spumosa* Fr., and *P. cubensis* Earle. From the State of Rio Grande do Sul, the only contributions were made by Rick (1907, 1938, 1961), who recorded some 40 species on the genera *Pholiota* and *Flammula* (= *Pholiota*). Singer (1953) revised several of Rick's types and collections

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deposited at the Herbarium PACA (“Fungi Rickiani”), but most of them were lost, badly preserved, or synonymized with species of other modern agaric genera such as *Gymnopilus* (Cortinariaceae), *Agrocybe* (Bolbitiaceae) and *Lepiota* (Agaricaceae).

During taxonomic studies on the Strophariaceae family from the region of Santa Maria, center of Rio Grande do Sul State, we collected an unrecorded *Pholiota* species from southern Brazil, which is described and illustrated in the present paper.

### **MATERIALS AND METHODS**

Fresh basidiomata were collected and their morphology (macro – and microscopic) analyzed following usual techniques for the study of agaricoid fungi. Twenty-five measurements of each micro-structure were taken, and the line drawings were prepared using camera lucida. Specimens identification were based mainly on the works of Jacobsson (1990), Noordeloos (1999), Pegler (1977, 1997), and Smith and Hesler (1968). Generic and infra-generic concepts are those of Jacobsson (1990). All collections are preserved at the Herbarium of the Departamento SMDBae)a

*P. chrysocystidiata* Singer ex Singer to *P. spumosa* var. *chrysocystidiophora*.

Cultural studies were performed with Northern European strains by Jacobsson (1989), who found this species to be tetrapolar, heterocytic and producing arthrospores, but no chlamydospores. Similar results were found by Garnica et al. (1997), who studied Chilean strains of *P. spumosa* in different culture media. Scanning electron microscopy studies on this species were performed by Farr (1985) and revealed a granulate ornamentation of the spore wall, which is not seen under light microscopy.

*Pholiota spumosa* is a widespread species, commonly recorded in Europe (BREITENBACH; KRÄNZLIN, 1995; HOLEC, 1996; JACOBSSON, 1990; MOSER, 1978; NOORDELOOS, 1999; PEINTNER et al., 1999), North America (MURRILL, 1912 – as *Gymnopilus spumosus* (Fr.) Murrill; SMITH; HESLER, 1968; GUZMÁN, 1970), and occasionally in Africa (PEGLER, 1977). In South America, *P. spumosa* was recorded from Chile by Valenzuela et al. (1994) and from Argentina and Chile by Singer (1969).

In Brazil, the only record of this species was made originally by Spegazzini (1889) from the State of São Paulo as *Flammula spumosa* (Fr.) P. Kumm., which was revised and confirmed by Pegler (1997). This species is recorded for the first time from the Rio Grande do Sul State and southern Brazil and for the second time in Brazil.

At the present time, the genus *Pholiota* is represented in Rio Grande do Sul State by the following species based on bibliographic data: *P. apiahyna* (Speg.) Singer, *P. polychroa* (Berk.) A.H. Sm. and H.J. Brodie (SINGER, 1953), and *P. spumosa* (Fr.) Singer. A reexamination and recollection of the Rick's *Pholiotas* are needed to confirm the occurrence of other species in Rio Grande do Sul.

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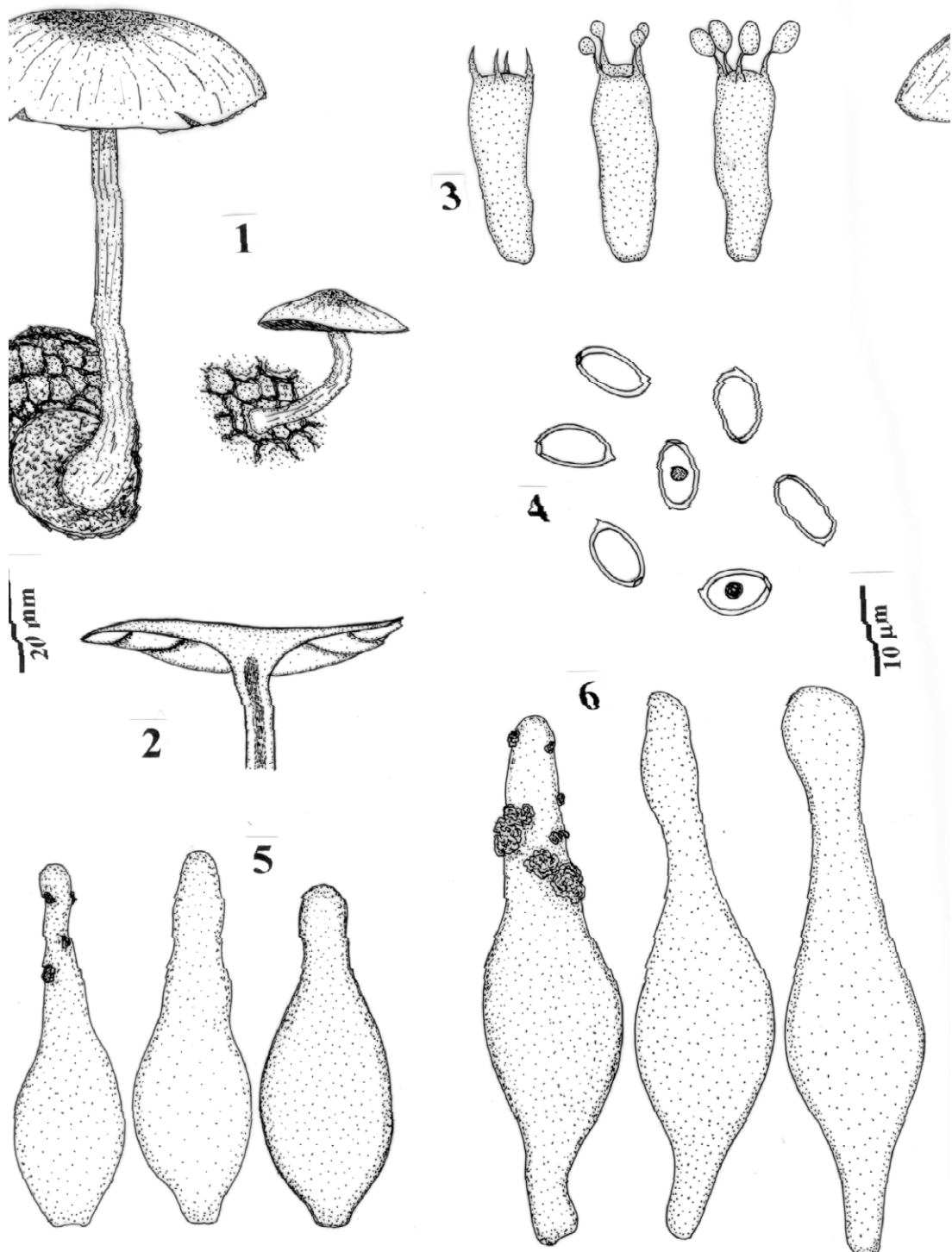
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**Figs. 1-6:** *Pholiota spumosa* (Fr.) Singer: 1. Habit. 2. Basidiome section. 3. Basidia. 4. Spores. 5. Cheilocystidia. 6. Pleurocystidia.