

PHALLUS MADERENSIS SP. NOV., FOUND IN MADEIRA, PORTUGAL

by

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Summary. F.D. CALONGE, M. MENEZES DE SEQUEIRA, T. FREITAS, E. ROCHA & L. FRANQUINHO (2008). *Phallus maderensis* sp. nov., found in Madeira, Portugal. *Bol. Soc. Micol. Madrid* 32: 101-104.

Phallus maderensis is described as a new species from Madeira, Portugal, which is characterized by its erumpent, white, basal indusium, emerging from the inside between the pseudostipe and volva, without any connection to the receptacle and for its flesh-pinkish colour, both on receptacle and volva. It was growing on the soil of a laurisilva forest.

Key words: *Basidiomycota*, *Phallales*, *Phallus*, ecology, taxonomy, laurisilva, Madeira, Portugal.

Resumen. F.D. CALONGE, M. MENEZES DE SEQUEIRA, T. FREITAS, E. ROCHA & L. FRANQUINHO (2008). *Phallus maderensis* sp. nov., encontrado en Madeira, Portugal. *Bol. Soc. Micol. Madrid* 32: 101-104.

Se describe *Phallus maderensis* como especie nueva para la ciencia, el cual fue colectado en Madeira, Portugal. Los caracteres diferenciales de este hongo son la presencia de un indusio errumpente basal, que se desarrolla a partir de un espacio situado entre la volva y el pseudoestípite, sin mostrar conexión alguna con el receptáculo; así como por presentar receptáculo y volva de un color rosado tenue. Se encontró creciendo en suelo de un talud, dentro de un bosque de laurisilva.

Palabras clave: *Basidiomycota*, *Phallales*, *Phallus*, ecología, taxonomía, laurisilva, Madeira, Portugal.

INTRODUCTION

The genus *Phallus* has been an attractive target for numerous mycologists, due to its morphological features, smell and colour, since more than a century ago. Thus, LLOYD in 1909 published a synopsis of the known Phalloids. Several more contributions have been done since then, mainly during the last six years describing

new species, e.g., CALONGE & KREISEL (2002), *Pallus minusculus*; BASEIA & al. (2003), *Phallus pygmaeus* and CALONGE & al. (2005), *Phallus atrovolvatus*.

Regarding the number of species of *Phallus*, it varies according to the species concept of each author. KREISEL (1996) recognized 31 species, CALONGE (2005) accepted 25 and KIRK & al. (2001) only 18.

We have followed the CALONGE's key (2005), and arrived to the conclusion that the material studied here does not match with any of the already described species.

The terminology used here follows that published by CALONGE (1998). The four photographs included in this article have been done by one of us, E. Rocha.

DESCRIPTION

Phallus maderensis Calonge, sp. nov. Figs. 1-4. Etym.: *maderensis*, refers to the island of Madeira, place where it has been found.

Ovum 35 mm diametrum, roseolus, pallidus. Basidioma mature cum pseudostipite cylindraceo, 100-120 x 15-20 mm, album, spongioso. Receptaculo trunco-conico cum apice perforato, 40 mm alto et 30 mm ad basim, reticulato, roseolo, pallido. Gleba brunneo-olivacea, foetida. Indusium erumpente. Volva roseola, pallida. Sporae cylindraceae, 4-5 x 1.8-2.2 µm, infirmiae chlorini-hyalinae. Non gregarius ad terram.

PORTUGAL: Madeira, Santana, Pico das Pedras, rich soil in a laurisilva forest, 14-X-2007, leg. T. Freitas, E. Rocha & L. Franquinho. **Holotypus:** MA-Fungi 75799.

Three basidiomata, growing isolated on soil of a laurisilva forest. Unexpanded basidioma ovoid, 30-40 x 20-30 mm, pale rose (Fig. 1). Exoperidium membranous, endoperidium gelatinous, hyaline. At maturity a cylindrical pseudostipe develops up to 100-120 x 15-20 (25) mm, white, spongy, somewhat increased at the base, where it reaches up to 25 mm diam. (Figs. 2-4). Receptacle conical-truncate with a reticulate surface, 30-40 mm high and up to 30 mm wide at base, perforate apex with a hole up to 13 mm diam. Gleba dark olivaceous, foetid. With the disappearance of the gleba the receptacle surface shows a reticulate, pale rose colour. Indusium expanded to midway, erumpent, since it appears attached to the base of the pseudostipe and free from the receptacle, in all the samples examined (Figs. 2-4). The indusium is white, up to 40 mm high, consisting of a latticed,

pseudoparenchymatous membrane (Figs. 2-4), perforate with holes 1-2 mm diam. Spores ellipsoid, 4-5 x 1.8-2.2 µm, cylindrical to ellipsoid, smooth, hyaline with a drop at each end and a weak greenish tint. Volva pale rose.

DISCUSSION

According to KREISEL (1996) this material fits well within the section *Dictyophora*, which embraces 5 species: *Phallus hadriani* Ventenat, *P. macrosporus* Liu, Li & Du, *P. duplicatus* Bosc, *P. indusiatus* Ventenat and *P. rubrovolvatus* (M. Zang, Ji & Liu) Kreisel. On the other hand, it also shows relationships with *P. galericulatus* (A. Möller) Kreisel (KREISEL, pers. comm.), but this taxon lacks of an indusium, shows an imperforate apex and white colour in all the basidioma, without pigments.

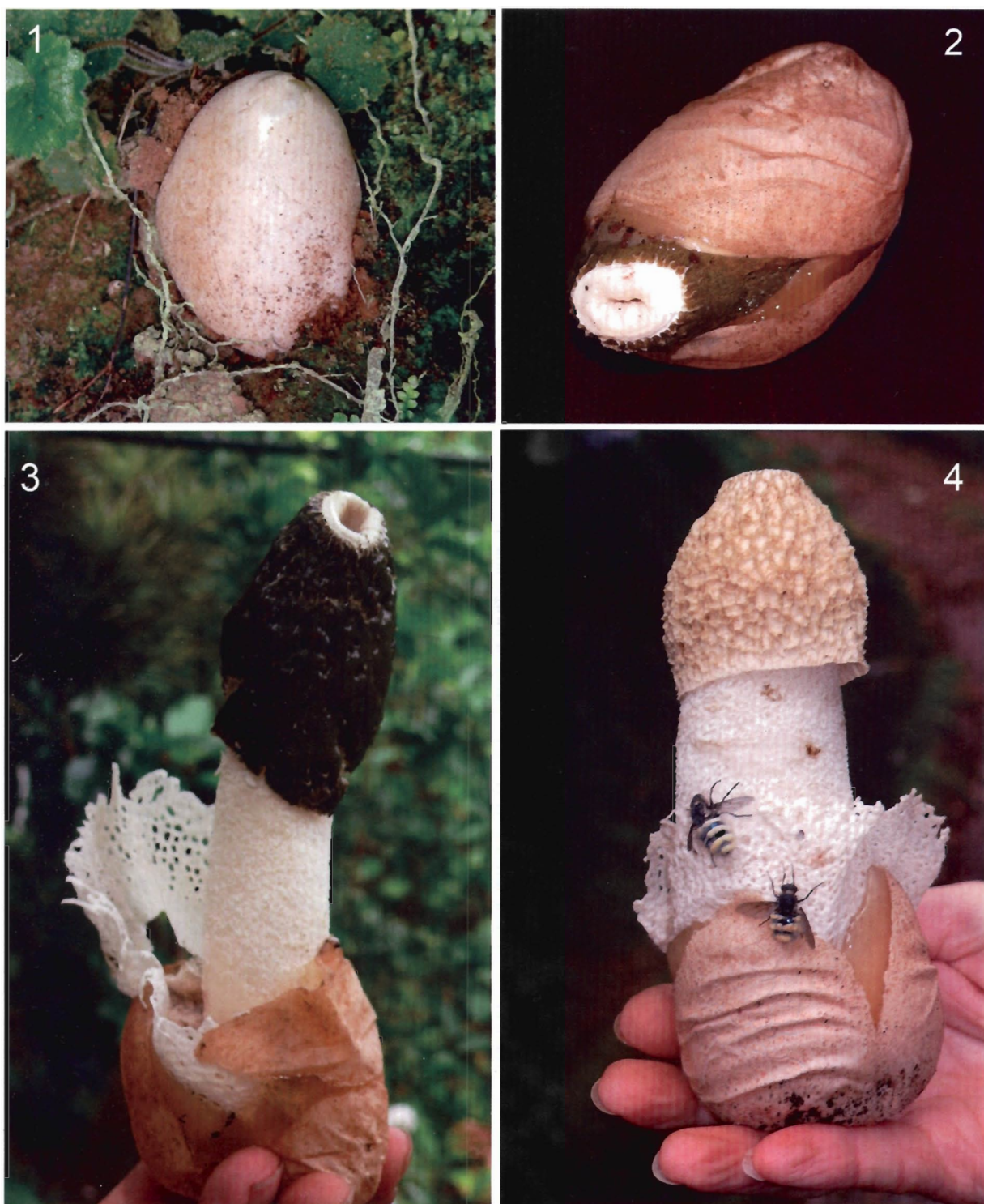
Someone may think that the presence of a basal, erumpent, indusium could be due to an abnormal development, but the fact that all the three found basidiomata have the same feature induced us to believe in something natural.

The proposed species, *Phallus maderensis*, is close to *P. rubrovolvatus*, but there are enough differences to maintain separated both species. Thus, in *P. maderensis* the white indusium is not hanging from the receptacle, it appears erumpent; secondly, volva and receptacle shows a pale rose colour. On the other hand, in *P. rubrovolvatus* the indusium is hanging from the receptacle, volva has a reddish colour and receptacle surface is white.

None of the rest of taxa accepted by CALONGE (2005) matches with this new proposed species. Thus, the combination of characters such as a well-developed, erumpent, indusium united to the pseudostipe base, instead to the receptacle, volva and receptacle surface showing a pale rose colour, award *Phallus maderensis* as a new species.

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Figs. 1-4. 1. *Phallus maderensis*. Egg initiating development in its habitat. Note the rose colour of the peridium. 2. Opening of the egg to allow the exit of the receptacle. 3. Complete developed basidioma, showing receptacle with olivaceous dark gleba, white pseudostipe with indusium and rose volva. 4. Basidioma lacking the gleba, already eaten by the insects, showing a typical rose coloured receptacle. MA-Fungi 75799.

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