Melanogaster minysporus sp. nov., a new sequestrate member of the Boletales from Mexico

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Melanogaster minysporus sp. nov. un nuevo miembro secuestrado de los Boletales de México

Resumen. Se describe una nueva especie *Melanogaster minysporus* recolectada en el norte de México, en el estado de Nuevo León. La especie se distingue por presentar un peridio amarillo brillante que se mancha de rojizo cuando se maltrata y por las esporas pequeñas.
Palabras clave: Paxillaceae, hipogeos, *Quercus*.

Abstract. *Melanogaster minysporus* is described as a new species from northern Mexico (Nuevo Leon). It is distinctive in the genus in having a bright yellow peridium that stains reddish where bruised in fresh and small spores.
Key words. Paxillaceae, hypogeous, *Quercus*.

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Introduction

Carl Lumholtz, a Norwegian explorer, collected *Melanogaster variegatus* var. *mexicanus* Farlow *nom. nud*. (= *M. umbrinigleba* Trappe & Guzmán) while exploring the Chihuahuan mountains in northern Mexico (Lumholtz, 1902). This was the first record of a sequestrate fungus from Mexico. Cázares *et al.* 1992 described *Melanogaster variegatus* found in oak forests in northern Mexico. Here we describe another new *Melanogaster* species from northern Mexico. It is notable for its bright yellow peridium and small spores.

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Materials and methods

The methods of Castellano *et al*. (1989) were used for the morphological description. Hand-cut sections were mounted in 5% KOH and Melzer's reagent for examination by compound- and stereomicroscopy.

Results

Melanogaster minysporus Cázares, Guevara, García & Trappe, sp. nov.
Figures 1-3
Basidiomata 13-35 x 10-27 mm, globosa vel subglobosa-lobata. Peridium flavissimum, ubi contusum rubescens, 160-240 µm crassum, hyphis intertextis. Gleba solida, gelatinosa-catilaginea, maturitate brunneola vel brunnea venis albis vel

REVISTA MEXICANA DE MICOLOGÍA 28: 67-69, 2008

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Figures 1-3. *Melanogaster minysporus.* 1: Basidiomata (bar = 1 cm), 2: Basidiomata in cross section (bar = 1 cm), 3: Basidiospores (bar = 10 µm).

flavis marmorata. Sporae subfusiformes vel obovoideae, (5-) 5.5-6.5 x (3-) 4-5 *µm, laeves, avellaneae vel brunnea.*

Holotypus hic designatus: Mexico, Nuevo Leon, Santiago, El Barro, Guevara 907, ITCV.

Basidiomata hypogeous, 13-35 x 10-27 mm, globose to subglobose-lobed, depressed at the base, the surface smooth to finely fibrillose, bright yellow, staining reddish where bruised when fresh. Gleba solid, gelatinous-rubbery, pale brown in youth, at maturity dark brown with white to yellow, sterile veins. KOH reddish brown on fresh peridium and black on dried specimens. $FeS0_4$ black on dried specimens.

Peridium 160-240 µm thick. Epicutis of appressed, hyaline, thick-walled up to 1 µm thick, interwoven hyphae upto 4 µm in diam with clamp connections, orange-brown to yellow-brown in KOH and Melzer's reagent. Subcutis of interwoven hyphae, thin- to thick walled, hyphae hyaline in KOH and yellowish in Melzer's reagent. Spores (5-) 5.5-6.5 x (3-) 4-5 µm, subfusoid to obovate, smooth, thick-walled, up to 1 µm thick, the sterigmal attachment distinct, in KOH and Melzer's reagent yellow brown to brown singly, dark brown to black in mass.

Etymology: Greek, *miny-* (small) and *spora* (spores).

Habitat and season: Hypogeous to subhypogeous, single to gregarious, in mixed *Pinus-Quercus* forests, under *Quercus canbyi and Q. rhyzophylla*. August through September.

Collections examined: HOLOTYPE: Mexico, Nuevo Leon, Santiago, El Barro, camino al paraje del oso, 6 August, 2007, *Guevara 907* (ITCV, isotype OSC). PARATYPES (all ITVC): Nuevo Leon, Sierra Madre Oriental, Mpio. Santiago, Cañon de Puerto Genovevo, 11 September 1983, *García 3802*; 7 September 1983, *García 3803*; 7 August 1983, *García 3804*; 7 August 1983, *García 3805*; 29 September 1983, *García 3814*; Mpio. Guadalupe, La Pastora, 20 June 1984, *G. Valencia s.n.*

Discussion. This species is distinguished by its bright yellow peridium that stains reddish where bruised when fresh, KOH and $FeSO_4$ black on dried peridium, and small spores. *Melanogaster ovoidisporus* Y. Wang, described from China (Wang *et al.,* 1995) is a similar species with small spores (5-) 5.5-6.5 (-7) x (3.5-) 4-5 (-5.8) µm, but its peridium is brown. They also described *M. ovoidisporus* var. *angustatosporus* K. Tao, Chang & Liu with narrower spores 5.5-6.5 (-7) x 3-4 µm.

Alpova microspora (Velen.) Trappe, has a yellow peridium and a rubbery-gelatinous gleba, but its spores are fusiform to oblong, (4-) 4.5-6 (-7) x 2-3 (-4) µm and its gleba stains red when exposed; this species was described from central Europe (Trappe, 1975).

Acknowledgments

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