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gerardo.mata@inecol.edu.mx
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Guzmán, Gastón

The known non-hallucinogenic species of *Psilocybe* in Mexico and description of two new species
(Basidiomycotina, Agaricales, Strophariaceae)

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Sacc. This report is based in the studied material by the author in Murrill's specimens in NY [1]. Thirty-one years later in 1949 Singer [9] recorded the second species of *Psilocybe* in Mexico, the hallucinogenic *P. cubensis* (Earle) Singer. In 1977 Guzmán *et al.* [6] studied the non-hallucinogenic species of Mexico, reporting 4 species and a new species, *P. borealis*. Later, the first world monograph on the genus was published, where 144 species were accepted and 53 being non-hallucinogenic, but only 6 of these were reported from Mexico. Up to now, 12 species of non-hallucinogenic *Psilocybe* had been recorded from Mexico (Table 1) by the author and his colleagues [2, 3, 4, 5].

Following the criteria of Guzmán (1983), it is consider a non-hallucinogenic species, when the basidioma is not bluing or it has not black stains. Even in fresh condition, the basidioma has not a farinaceous taste and odor.

Psilocybe argentina, *P. coprophila* and *P. montana* are the most common non-hallucinogenic species. The two first are fimicolous, *P. argentina* in alpine meadows and *P. coprophila* in temperate and tropical meadows. *Psilocybe montana* is common on mosses in temperate forests.

Description of new species

Psilocybe castillotovarrii Guzmán, sp. Nov.

Figs. 1-4

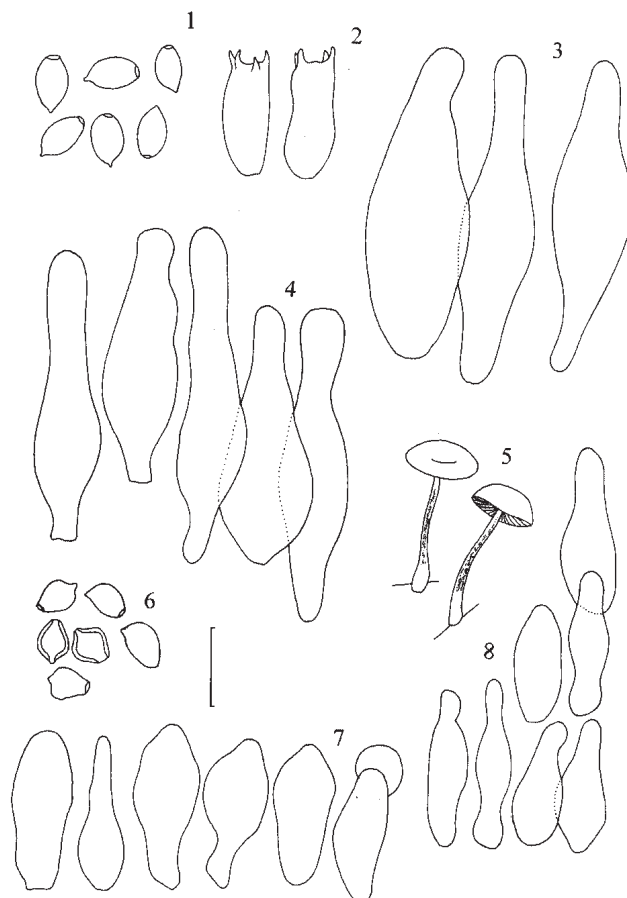
Pileus 20-25 mm latus, convexus vel planus, laevis, pallide luteobrunneolus, subhygrophanus. Lamellae subadnexae. Stipes 35-40 x 1-2 mm, aequalis, rufobrunneus. Velum debiliter evolutum. Basidiomata haud caerulescentia. Sporae (7-) 8-9 (-9.5) x (4-) 4.5-5.5 (-6) μ m, a fronte et latere subellipsoidae, parietibus tenuibus, luteobrunneae. Pleurocystidia (30-) 43-53 (-60) x (8-) 11-17 μ m, rara vel communia, hyalina, ventricos-rostrata vel sublageniformia. Cheilocystidia (22-) 35-55 x 10-14 (-16) μ m, hyalina, forma eadem est ac pleurocystidia. Pileipellis subgelatinosa. Subpellis hyphis hyalinis. In terra in prato in sylva pinus. Holotypus hic designatus: Mexico, Los Sauces, in regione Valle de Bravo, Guzmán 21874 (ENCB).

Pileus 20-25 mm diam, convex to plane, smooth, pale yellowish brown, subhygrophanous. Lamellae subadnexed, dark violaceous brown, edges concolorous.

Table 1. Non-hallucinogenic species of *Psilocybe* reported from Mexico through 2004 (only the oldest reference is given for each) *.

1. *P. alpina* Guzmán, F. Tapia & P. Navarro (Veracruz) [5].
2. *P. argentina* Speg. (Coahuila, Distrito Federal, State of Mexico, Hidalgo, Morelos, Nuevo León, Puebla, Veracruz) [6].
3. *P. borealis* Guzmán (Durango) [6].
4. *P. bulbosa* Peck (Veracruz) [5].
5. *P. coprophila* (Bull.: Fr.) P. Kumm. (Chiapas, Distrito Federal, Durango, State of Mexico, Guerrero, Hidalgo, Jalisco, Michoacán, Morelos, Nuevo León, Oaxaca, Querétaro, Veracruz, Zacatecas) [7].
6. *P. inquilina* (Fr.: Fr.) Bres. (Jalisco) [2].
7. *P. luteonitens* (Vahl: Fr.) Park-Rhodes) (State of Mexico) [2].
8. *P. montana* (Pers.: Fr.) P. Kumm. (Coahuila, Distrito Federal, State of Mexico, Morelos, Oaxaca, Puebla) [6].
9. *P. panaeoliformis* Murrill (Veracruz) [2].
10. *P. pegleriana* Guzmán (Jalisco, Veracruz) [4] (as *P. merdaria* (Fr.) Ricken in Guzmán *et al.*, 6; *P. pseudobullacea* (Petch) Pegler in Guzmán [1].
11. *P. tuxtensis* Guzmán (Veracruz) [1].
12. *P. zoncuanlensis* Guzmán & Ram.-Guill. (Veracruz) [5].

* Those names in parenthesis after the species, are the federal states of the country from where the species were reported.



Figs. 1-8. 1-4: *Psilocybe castillotovarrii*, 1 spores, 2 basidia, 3 pleurocystidia, 4 cheilocystidia. 5-8: *P. josecastilloa*, 5 basidiomata, 6 spores, 7 pleurocystidia, 8 cheilocystidia (all from the types). Scale bar 20 mm in 5, 12 μ m in the others.

sublecythiform, some subventricose, others ventricose-rostrate. Subhymenium subcellular, with 6-13 μ m broad, incrustated elements with pigment dark brown. Hymenophoral trama regular, with normal to inflated hyaline hyphae, 3-17 μ m broad, hyaline or incrustated. Pileipellis a thin subgelatinous layer, with (1-) 2-3 μ m broad, hyaline hyphae. Subpellis (hypodermium) not differentiated. Context with incrustated hyphae, 3-14 μ m broad, thin- to thick-walled. Clamp connections present.

Habitat. Gregarious on soil, in a *Pinus-Quercus* forest, at 2600 m elev. Known only from the type locality.

Studied material. State of Mexico, Valle de Bravo region, road Toluca to Temascaltepec, S of Los Sauces, Sept. 16, 1984, *R. Valenzuela* 4066 (holotype ENCB; isotype XAL).

Discussion. *Psilocybe josecastilloa* belongs to section *Psilocybe*, in the new sense by the author, for their subrhomboid thick-walled spores, presence of pleurocystidia and lack of bluing of its basidioma. It is close to *P. februararia* Singer [10], described from Argentina, and to *P. latispora* Murrill from the U.S.A. [1], but these two species have not pleurocystidia. *Psilocybe februararia* has cheilocystidia