Leratiomyces tesquorum
Leratiomyces tesquorum Adamčík & Vizzini, sp. nov.

Etymology: The specific epithet is the genitive plural of the Latin word *tesquum* (= desert place) and refers to the growing of the fungus in desert and arid areas.

Classification — Strophariaceae, Agaricales, Agaricomycetes.

*Basidiomata* pleurotus, with lamellar hymenophore. *Pileus* 14–18 mm wide, plano-convex, without or with low indistinct umbo in the centre, margin not striated (not even when wet), long involuted, surface hygrophanous, matt and shiny when wet, not viscid, near the pileus margin smooth and becoming rugulose towards centre, when wet Sahara-brown (6D5; Körnerup & Warschner 1974) to yellowish brown (5D8) and dark brown towards centre (6F8), dry uniformly pale yellowish (more reddish than 4A3–4A4), no veil remnants observed. *Lamellae* adnate-emarginate, L = 32–46, I = 1–3, c. 3 mm broad, first ivory-yellow (4B3), later grey-brown (6E3) to brown (6E4). *Stipe* 30–40 × 3.5–6 mm, tapering towards base and rooting deep (20–30 mm) in substrate (sandy soil), often fusiform, surface strongly fibrillose especially near lamellae, without out veil remnants, interior hollow, above yellowish brown (4C5 – chamois to 4B6 – amber-yellow), towards base darker brown (6E5). *Context* elastic, concorinous with surface, not changing after bruising or air-exposure, without distinctive odour (or faint radish like). *Spore-print* not obtained, probably dark brown. *Spores* (n = 32) (11)–11.5–12.4–13–13.5 × (6)–6.5–6.9–7.5–(8) µm, Q = (1.63)–1.7–1.79–1.90–(2.01), ellipsoid, oblong or amygdaloidal, in frontal view ellipsoid, smooth, dark brown in 10 % KOH solution, walls 1 µm thick, truncate with large germ pore (1–1.5 µm wide), hilum appendage inconspicuous and hyaline. *Basidia* (31)–32.5–34.5–36.5–(39) × (9.5)–10–11–11.5–(12) µm broadly clavate, mainly 4-spored, occasionally 2- or 3-spored, mainly thin-walled but occasionally with slightly thickened walls, basidiole first cylindrical, then clavate, c. 3.5–10.5 µm wide. *Subhymenium* 25–30 µm thick, of 2–5 µm wide, intricate hyphae forming a pseudoparenchymatic structure, sharply delimited from parallel hyphae of lamellae trama, composed of < 50 µm long and c. 3–10 µm wide elements, often anastomosed and occasionally branched. *Cheilocystidia* abundant, (19.5–)25.5–31.7–37.5–(40) × (4.5–)5–6.6–6.5–(7) µm, thin-walled or with slightly thickened walls (< 0.5 µm), narrowly lageniform to subcylindrical, often moniliform, apically mainly subcapitate rounded, occasionally tapering. *Pileipellis* absent. *Pileipellis* ixocutis, c. 20–30 µm thick, composed of densely packed, horizontally oriented hyphae with intracellular yellow pigments, with mainly slightly or distinctly thickened walls, near the surface gelatinised and strongly incrusted by yellow-brown pigments, terminal elements near the pileus margin dispersed, narrowly lageniform, or subcylindrical, apically often attenuated or constricted, occasionally with nodules or lateral branches, often flexuous, (32–)44–62.2–80–(91) × (4.5–)6–8.7–11–(12.5) µm; hyphal terminations near the pileus centre embedded in thick gelatinous matter that does not colour in Congo red, more attenuated, narrower and more nodulose-branching than those near the pileus margin, terminal elements look like ixohyphidia of *Flammulina velutipes*, measuring (32–)38.5–52.7–67–(92) × (2.5–)3–4.1–5–(5.5) µm. *Pileitrama* composed of irregularly oriented, branched, loose, intricate hyphae composed of c. 40–120 × 2–25–(30) µm elements, often nodulose. *Caulocystidia* present and abundant on stipe surface near just under the lamellae, (22–)32–47.3–62.5–(92) × (2.5–)3.6–4.4–5–(6) µm, often fasciculate in dense cluster, repent or ascending, subcylindrical, apically often constricted, occasionally nodulose or with lateral branches, towards apices usually flexuous, thin-walled or with slightly thickened walls, with yellow intracellular pigments and brownish yellow incrustations; caulocystidia completely disappear in lower part of the stipe. *Stipititrama* of parallel hyphae composed of c. 30–100 × 4–10–(15) µm large elements that are often nodulose, branched or anastomosed, often with thickened walls. Clamp connections present everywhere.

Habit, Habitat & Distribution — Solitary or gregarious, in arid and semi-arid grasslands, associated with *Poaceae* (*Bouteloua dactyloides*, *B. gracilis*, *Stipa hymenoides*). So far known only from USA, viz. Colorado (based on the presence of basidiomes), New Mexico and Utah (based on environmental sequences).


Notes — A phylogenetic estimation using Maximum likelihood (ML) on the nrITS sequences revealed that a major clade, here named as the *Leratiomyces laetissimus* complex, is highlighted within the genus *Leratiomyces*. This clade encompasses the minor clades 1–3 and the *Psilocybe calongei* lineage. Clade 1 consists of environmental sequences of an uncultured root-associated (endophyte) fungus of *Bouteloua gracilis* (USA, New Mexico; Porras-Afarro et al. 2008); clade 2 of *L. tesquorum*, two sequences of an uncultured mycorrhizal fungus (endophyte) of *Stipa hymenoides* (USA, Utah; Hawkes et al. 2006) and several sequences of an uncultured root-associated (endophyte) fungus of *Bouteloua gracilis* (USA, New Mexico; Porras-Afarro et al. 2008); clade 3 of *L. laetissimus* and *Leratiomyces* sp. SC05F2-1.

For supplementary information see MycoBank.