

Entoloma kruticianum



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Entoloma kruticianum O.V. Morozova, M.Yu. Dyakov, E.S. Popov & A.V. Alexandrova, sp. nov.

Etymology. The epithet refers to the type locality – Krutitsy Village in the Tver Region of Russia.

Classification — *Entolomataceae*, *Agaricales*, *Agaricomycetes*.

Basidiomata small-sized, mycenoid. *Pileus* 5–12 mm diam, hemispherical to convex, not hygrophanous, not translucently striate, with appendiculate margin, radially fibrillose to slightly squamulose in the centre, deep violet (15E7–8; Kernerup & Wanscher 1978), darker in the centre (15F6–8). *Lamellae* moderately distant, adnate-emarginate or almost free, ventricose, reddish lilac (14C3–4, 14D3–4), becoming greyish pink, with paler entire edge. *Stipe* 20–70 × 1–2 mm, cylindrical, longitudinally fibrillose-striate, deep blue to deep violet (19D8–E8, 18D8–E8), clearly different from the pileus, white tomentose at base. *Context* concolorous with the surface. *Smell* indistinct, taste not reported. *Spores* (7.5–)8.5(–10.5) × (5.5–)6(–7) μm, Q = (1.3–)1.5(–1.8), heterodiametrical, with 5–7 angles in side-view. *Basidia* 22–25 × 8–12.5 μm, 4-spored, narrowly clavate to clavate, clamped. *Lamellae* edge fertile or heterogeneous. *Cheilocystidia* 24.5–37.5 × 4.5–9.5 μm, cylindrical, lageniform or irregularly shaped, intermixed with basidia, in some basidiomata rare or absent. *Pileipellis* a plagiotrichoderm to trichoderm in the centre, of cylindrical to slightly inflated hyphae 10–20 μm wide with swollen terminal elements and bluish-violaceous intracellular pigment. *Clamp-connections* present.

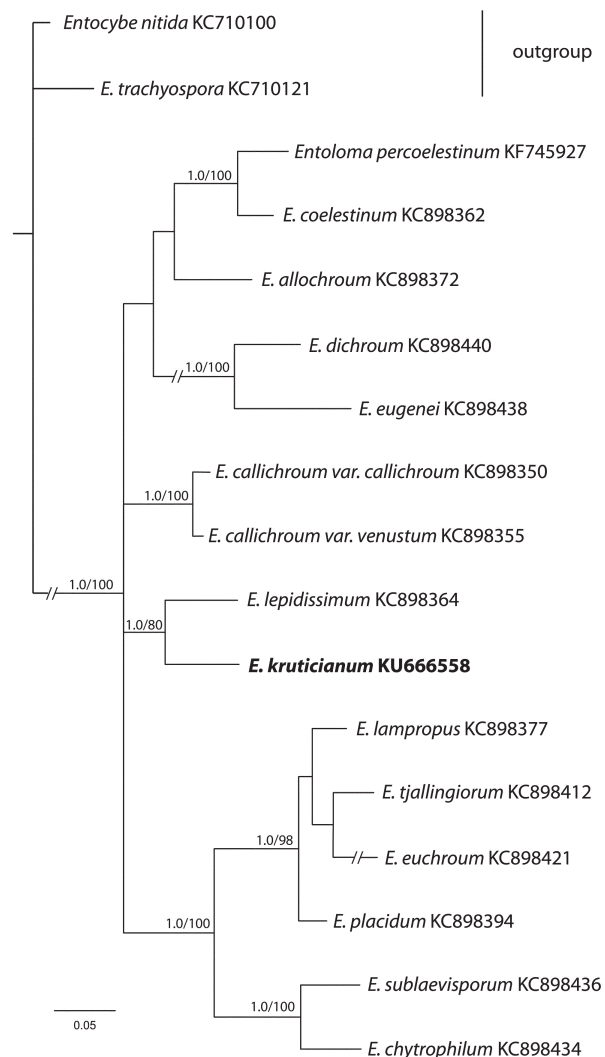
Habit, Habitat & Distribution — In a small group among *Sphagnum* in *Picea abies* forest. Known from European Russia.

Typus. RUSSIA, Tver Region, Staritsa District, vicinities of the Krutitsy Village, N56°18'35.2" E34°52'07.7", 13 Sept. 2015, M. Dyakov, O. Morozova, E. Popov & A. Alexandrova (holotype LE 311767, ITS sequence GenBank KU666558, LSU sequence GenBank KU710222, MycoBank MB815745).

Notes — *Entoloma kruticianum* represents a species of the subgenus *Leptonia* due to the presence of clamp-connections, absence of brilliant granules and plagiotrichoderm to trichoderm pileipellis. It resembles *E. lepidissimum* by its small-sized mycenoid basidiomata with deep blue and violet colours, including coloured lamellae. Microscopically, the scattered cheilocystidia also make them similar. However, *E. kruticianum* can be recognized by the colour of the pileus, which is clearly different from the stipe, the presence of the reddish lilac tint in the lamellae, as well as smaller spores with pronounced angles and attenuate hilum. The ITS1-5.8S-ITS2 region of the newly described species has been compared with those of the other *Leptonia* species (mostly derived from the type material, data from Morozova et al. 2014). Molecular data support their differences (p-distance from the closest species *E. lepidissimum* – 8 %). The similar dark blue species distinguish (except for the colour of the pileus): *E. coelestinum* – by the white lamellae, smaller

Colour illustrations. Russia, Tver' Region, Staritsa District, vicinities of the Krutitsy Village, type locality; pileipellis, spores, cheilocystidia, basidiomata (all from holotype). Scale bars = 1 cm (basidiomata), 10 μm (spores, cheilocystidia and pileipellis).

spores and more conical pileus, *E. chytrophilum* possesses white lamellae, nodulose spores and more applanate pileus. Both varieties of *E. callichroum* are characterized by the similar coloration of the basidiomata, but their spores are larger and cheilocystidia (if present) are broadly clavate, never lageniform. One more species with coloured lamellae – *E. euchroum* – usually is more robust and possesses larger spores with rather blunt angles.



Phylogenetic tree derived from Bayesian analysis, based on nrITS1-5.8S-ITS2 data. Analysis was performed under GTR model, for 3 M generations, using MrBayes v. 3.2.1 (Ronquist et al. 2012). The ML analysis was run in the RAxML server (<http://phylobench.vital-it.ch/raxml-bb/index.php> (Stamatakis et al. 2008)). Posterior probability (PP > 0.95) values from the Bayesian analysis followed by bootstrap values from the Maximum Likelihood (BS > 70 %) analysis are added to the left of a node (PP/BS).

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