

*Entoloma isborscanum*



Fungal Planet 1244 – 13 July 2021

***Entoloma isborscanum*** O.V. Morozova, Noordel., Dima, G.M. Jansen & Reschke, *sp. nov.*

*Etymology.* Named after Izborsk (*Izborscum*, Lat.), a village in the Pskov Region of Russia, one of the oldest Russian towns, type locality and *Entoloma* hot spot.

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

*Basidiomata* medium-sized, collybioid. *Pileus* 15–35 mm diam, hemispherical, with slightly depressed centre, then expanding to convex or plano-convex with slightly umbilicate centre, with deflexed then straight margin, not hygrophanous or in the pileus margin only, not translucently striate or up to 1/3 of radius, radially fibrillose-squamulose all over, more densely in the centre, white background is visible between fibrils, brownish yellow, yellowish brown or light brown, darker in centre (5C5–8, 5D5–8; Kornerup & Wanscher 1978), in old and drying specimens radially cracking, showing white underground. *Lamellae* moderately distant, adnate-emarginate, decurrent with short tooth, whitish, pale or greyish, becoming pinkish grey, with irregular, concolorous, whitish or brownish edge. *Stipe* 20–70 × 2–3 mm, cylindrical or slightly broadened towards the base, minutely distinctly longitudinally striate, completely greyish blue (20B3–4, 20C3–4), greyish brown, bluish on the base only or completely yellow-brown, concolorous with the pileus (5C5–8, 5D5–8), white tomentose at the base. *Context* white, brownish under the surface. *Smell* pleasantly sweet or indistinct, *taste* unpleasant, nitrous. *Basidiospores* 8–12 × 6–7.5 µm, av. 9–10.5 × 6–7.5 µm, Q = (1.15–)1.3–1.7, Q<sub>av</sub> = 1.35–1.5, heterodiametrical, with 5–7 distinct angles in side-view, sometimes with some large spores up to 14 × 7 µm with indistinct angles from 1–2-spored basidia. *Basidia* 32–35.5 × 9.5–10.5 µm, 1–4-spored, narrowly clavate to clavate, sometimes with broadened walls, clampless. *Lamella edge* sterile of the ‘serrulatum’-type. *Cheilocystidia* 40–90 × 9–25 µm, as terminal elements of the hyphae arising from the subhymenium, clavate, broadly clavate or cylindrical, sometimes septate, sometimes with intracellular pigment, brownish in KOH. *Hymenophoral trama* regular, 4–20 µm wide, cylindrical hyphae. *Pileipellis* a cutis with transition to a trichoderm of cylindrical hyphae, 5–12 µm wide with cylindrical or inflated to ellipsoid or ovoid terminal elements, 48–105 × 12–32 µm, and intracellular, sometimes agglutinate pigment, brown in KOH. *Caulocystidia* as ascending bundled, cylindrical to slightly inflated terminal elements of the stiptipellis hyphae. *Clamp connections* absent.

*Habit & Distribution* — In small groups on soil on calcareous grasslands. Known from Denmark, Germany, the Netherlands, and Russia (European part).

*Colour illustrations.* RUSSIA, Pskov region, Pechorsky district, Izborsk village, foot of the Truvor hillfort, calcareous grassland (type locality). Spores, cheilocystidia, pileipellis, caulocystidia (all from holotype); basidiomata *in situ* (holotype). Scale bars = 1 cm (basidiomata), 10 µm (spores and microstructures).

*Typus.* RUSSIA, Pskov region, Pechorsky district, Izborsk village, foot of the Truvor hillfort, on calcareous grassland, N57.717702° E27.854764°, 24 Aug. 2011, O. Morozova (holotype LE 302088, ITS and LSU sequences GenBank MW934566 and MW934253, MycoBank MB 839225).

*Additional materials examined.* DENMARK, Jylland, Begtrup Røn, 26 Aug. 2011, R. Ejrnæs (C, DMS167798, ITS sequence GenBank MW934570). – GERMANY, Baden-Württemberg, Heimberg, near Schloßböckelheim, 27 Oct. 2017, W. Prüfert (M-0141378, ITS sequence GenBank MW934565). – RUSSIA, Pskov region, Pechorsky district, Izborsk village, foot of the Truvor hillfort, on calcareous grassland, 24 Aug. 2011, O. Morozova, LE 312486, ITS sequence GenBank MW934564; *ibid.*, 12 Sept. 2020, O. Morozova, LE 312679, ITS sequence GenBank MW934569. – THE NETHERLANDS, Prov. Limburg, Nijswiller-Noord, 14 Aug. 2019, F. & R. Salzmänn, L0607743, ITS sequence GenBank MW934568; *ibid.*, 21 Aug. 2019, L0607927, ITS sequence GenBank MW934567; *ibid.*, 2 Oct. 2019, L0607719, ITS sequence GenBank MW934563; *ibid.*, 16 Oct. 2019, L0607718, ITS sequence GenBank MW934562.

*Notes* — *Entoloma isborscanum* is characterised by a squamulose yellowish brown pileus, a bluish or brownish blue, longitudinally striate stipe, rather small spores with distinct 5–7 angles, and a sterile lamella edge consisting of large clavate cheilocystidia arising from the subhymenium. Superficially it resembles *E. griseocyanum*, which differs by the absence of cheilocystidia and smaller spores, or *E. glaucobasis*, which possesses larger, almost nodulose spores (Noordeloos 1992). The holotype specimen was published in Morozova et al. (2015) as *E. exile*, but this species is sufficiently more slender with distinct greenish glaucous tinges in the stipe. Also see the phylogenetic tree for *E. ammophilum* in Supplementary material FP1240.

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