

diagnosis: “Differs from the type in its *olivaceous colour*. Horse dung.” No authentic herbarium material could be traced but there is little doubt that this variety is identical with *B. variicolor*. The epithet *olivaceus* has priority in the rank of variety, as Watling (1982) suggested before.

For a concise description of *B. titubans* var. *olivaceus* and full references to other descriptions and plates one is referred to *Flora agaricina neerlandica* vol. 6 (Arnolds, 2003).

2. *Bolbitius lacteus* J.E. Lange — Fig. 1, 2

Bolbitius lacteus J.E. Lange, Fl. agar. dan. 5, Appendix (1940) II.

Excluded — *Bolbitius lacteus* sensu Watling & Knudsen, Svampe 4 (1981) 78. (= *B. reticulatus* var. *pluteoides*); *Bolbitius lacteus* sensu Watling, Nordic J. Bot. 3 (1983) 265. (= *B. reticulatus* var. *pluteoides*); *Bolbitius lacteus* sensu Bon, Mushr. Toadst. (1987) 261. (= *Conocybe apala* (Fr.: Fr.) Arnolds var. *albipes* (Oth) Arnolds (= *C. albipes* (Oth) Hauskn. = *C. lactea* J.E. Lange).

Pileus 8–15(–20) mm, conico-convex at first, then plano-convex to flattened, milk white (K. & W. 1A1/A2) with cream-coloured (2A2) centre at first, then from the margin becoming isabella to pale brown, centre retaining pale colour, smooth, then sulcate-striate up to 3/4 of the radius, viscid, soon deliquescent. Lamellae, L = 24–34, l = 1–3, free, crowded, segmentiform, very thin, whitish at first then brownish orange to orange-brown, with white fimbriate edge, occasionally weeping hyaline droplets, soon deliquescent. Stipe 27–50 × 1–2(–3) mm, cylindrical, fistulose fragile, white to cream-coloured, entirely pruinose-flocculose. Context submembranaceous, fragile, in pileus white, in stipe pale yellow. Smell and taste weak, not distinctive. Spore print not recorded.

Spores (10.0–)10.5–14.0(–14.5) × (5.5–)6.0–7.5 μm , on average 11.5–12.4 × 6.6–6.8 μm , Q = (1.5–)1.6–1.9, av. Q = 1.7–1.8, not to distinctly flattened, in front-view ellipsoid- to ovoid-oblong, in side-view ellipsoid-oblong to subamygdaliform, rarely subphaseoliform, orange-brown in alkali (6C8, 6D8), fairly thick-walled (0.5–1.0 μm) with central to slightly eccentric germ pore, 1.7–2.5 μm wide. Basidia 17.5–25 × 10.5–13 μm , clavate, 4-spored, often surrounded by pseudoparaphyses. Lamella edge heterogeneous. Cheilocystidia 23–37 × 11–18 μm , clavate, utriform or broadly lageniform with neck 6.0–7.5 μm broad. Pleurocystidia absent. Pseudoparaphyses broadly clavate to spherical, 10–22 μm broad, often difficult to find in older basidiocarps. Hymenophoral trama subregular, made up of slender, cylindrical hyphae, 4.0–12 μm broad. Pileipellis an epithelioid hymeniderm, made up of clavate cells, 28–50 × 10–22 μm , with thin hyaline wall, covered by a thin gelatinous layer, not well visible in exsiccata. Pileocystidia absent. Stipitipellis a dry cutis of slender, hyaline hyphae, 2.0–6.0 μm broad, with clusters of caulocystidia. Caulocystidia 13–50 × 6.5–13 μm , subcylindrical, clavate, utriform or broadly lageniform, sometimes in short chains or with irregular projections. Clamp-connections not seen.

Habitat & distribution — Saprotrophic, solitary or in small groups, on dead culms of grasses or on soil, in grasslands on dry, calcareous, loamy soil and along forest edges. Rarely collected in the Netherlands but probably often overlooked. July–Sept. Also recorded from Denmark, Germany and Italy.

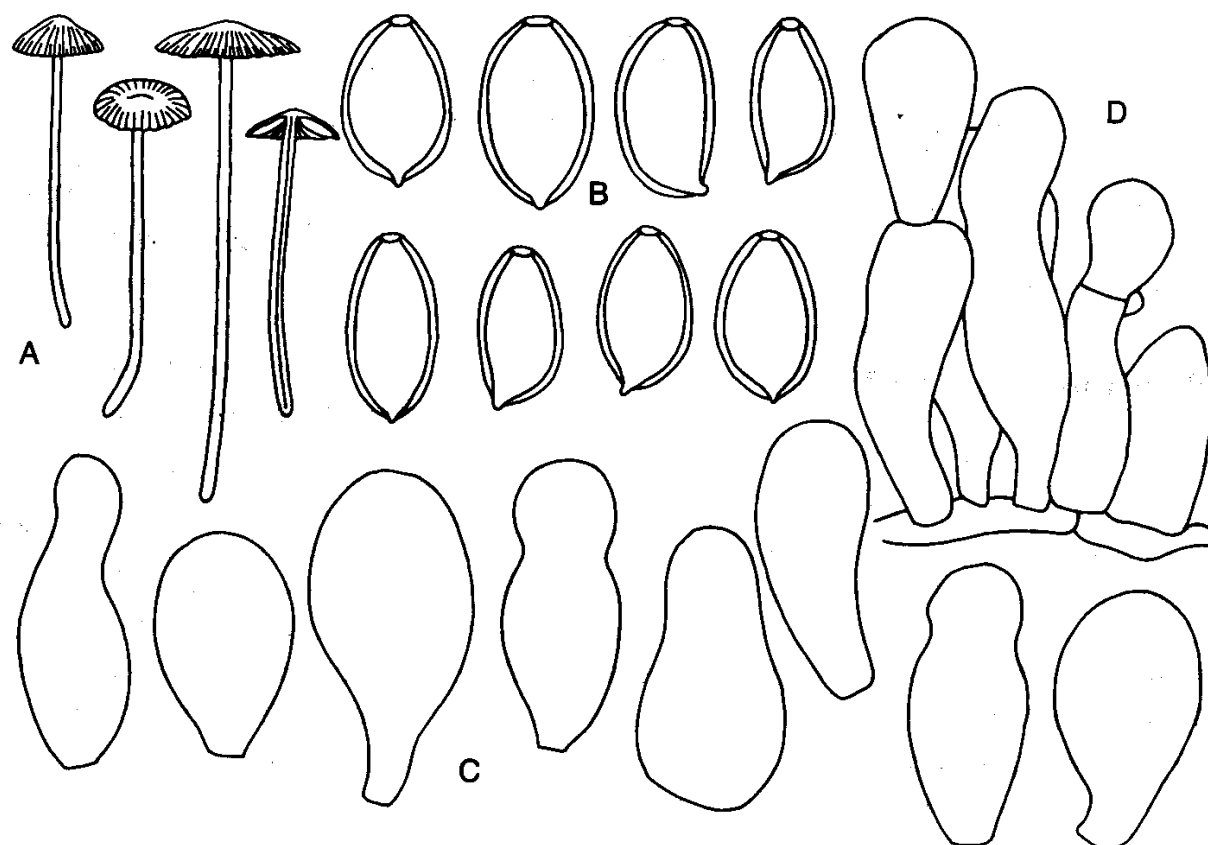


Fig. 2. *Bolbitius lacteus*. A. basidiocarps ($\times 1$); B. spores ($\times 1500$); C. cheilocystidia; D. caulocystidia (all $\times 1000$). (A–D from E. Arnolds 01–5).

Collections examined. THE NETHERLANDS: prov. Drenthe, Beilen, Holthe, 'Schepping', 5.IX.2000, Arnolds 00–77 (L); prov. Flevoland, Lelystad, 'Jagersveld', 11.X.1982, P.B. Jansen 82–241 (L); prov. Limburg, Wittem, Nijswiller, 21.VII.2001, Arnolds 01–5 (L). — GERMANY: Eifel, Gerolstein, 'Felsenhof', 15.IX.1990, P.B. Jansen 90–173 (L).

Bolbitius lacteus is a little-known species and subject of both taxonomic and nomenclatural confusion. After its introduction by Lange (1940) it was not redescribed until Watling & Knudsen (1981) and Watling (1983), based on a single collection from Denmark. Watling claimed that his material agrees with the original diagnosis in every way, but in fact it differs considerably in spore size (Watling $8.5\text{--}10.0\text{--}(11.0) \times 5.0\text{--}6.0\text{--}(6.5) \mu\text{m}$; Lange $10.5\text{--}11.5 \times 6.0\text{--}6.3 \mu\text{m}$). Moreover the collection was not made in grassland, as Lange did, but in a shady place under *Sambucus nigra*. In my opinion *B. lacteus* sensu Watling is identical with *B. reticulatus* var. *pluteoides*. Several Dutch collections, labelled as *Bolbitius lacteus*, appeared also to belong to *B. reticulatus* var. *pluteoides*. The two taxa can be easily separated by differences in spore size and colour and thickness of the spore wall, and usually also by habitat. *B. reticulatus* var. *pluteoides* occurs in forests, usually on decayed wood but sometimes on soil, whereas *B. lacteus* grows on dead grass remains or soil in meadows and roadside verges.

In nomenclatural respect *Bolbitius lacteus* has been confused with *Conocybe apala* (Fr.: Fr.) Arnolds, until recently better known as *C. lactea* J.E. Lange. *C. apala* is placed by some authors in the genus *Bolbitius*, for instance by Bon in (1992). The plate of *B. lacteus* in Bon (1987) erroneously represents *Conocybe apala*, readily recognized by the elongated, campanulate pileus and microscopically by the lecythiform cheilocystidia.