

A SYNOPSIS OF THE WOOD-DECAY GENUS *LAXITEXTUM* (HERICIACEAE, RUSSULALES, BASIDIOMYCOTA) AND A NEW SPECIES FROM CAMEROON

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Descriptions of and a key to the globally known species of the genus *Laxitextum* are provided. A new species from Cameroon, *Laxitextum globisporum*, is described.

Keywords. Cameroon, new species, Russulales, tropical rain forest, wood-decay fungi.

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Introduction

Laxitextum Lentz (Hericiaceae, Russulales, Basidiomycota) is a small genus of stereoid fungi originally erected by Lentz (1956 [1955]) to accommodate three species: *L. bicolor* (Pers.) Lentz, as the generic type, and *L. crassum* (Lév.) Lentz and *L. roseocarneum* (Schwein.) Lentz. The latter two species are currently excluded from *Laxitextum* and accepted as *Phlebiopsis crassa* (Lév.) Floudas & Hibbett and *Corticium roseocarneum* (Schwein.) Hjortstam, respectively. Two more species of *Laxitextum* were subsequently described from tropical Africa (Hjortstam & Ryvarden, 1981).

Laxitextum species can be differentiated from those of other stereoid genera with resupinate to bracket-like basidiomata by their smooth, pale-coloured hymenophores, enclosed gloeocystidia, and echinulate amyloid basidiospores. Our recent fieldwork from 2014 to 2019 has focused on ectomycorrhizal fungi associated with monodominant forests of the ectomycorrhizal canopy tree *Gilbertiodendron dewevrei* (De Wild.) J.Léonard in Cameroon. Wood-decay fungi have also been collected during this time. Here, we provide a global synopsis of known species of *Laxitextum* and describe a new Cameroonian species as *L. globisporum*, based on its globose basidiospores.

Genus description

Laxitextum Lentz., U.S. Dept. Agric. Monogr. 24: 18 (1956 [1955]). – Type: *Laxitextum bicolor* (Pers.) Lentz.

Basidiomata resupinate or subpileate, rather soft and pliable, upper side brown, tomentose or when older with adpressed hairs, sometimes slightly zonate; *hymenium* white in fresh specimens; *margin* finely fibrillose in the resupinate state, smooth or somewhat tomentose

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in pileate ones; *hyphal system* monomitic; *hyphae* thin-walled; *cystidia* smooth; *basidia* clavate, tetrasterigmate, with a basal clamp connection; *basidiospores* thin-walled, ellipsoid to globose, echinulate, amyloid.

Laxitextum, although a species-poor genus as currently known, is well characterised by its combination of stereoid basidiomata with brown trama and a white or pale-coloured subhymenial layer, enclosed or partly projecting gloeocystidia, and amyloid, echinulate basidiospores.

Key to the known species of *Laxitextum*

- 1a. Pileus dark brown and velutinate _____ 1. *L. bicolor*
 1b. Pileus absent, or if present, glabrous and cream to deep yellow _____ 2
- 2a. Basidiospores 4–5 × 3–3.5 µm, hyphae encrusted, gloeocystidia non-amyloid
 3. *L. incrustans*
 2b. Basidiospores smaller, hyphae smooth, gloeocystidia amyloid _____ 3
- 3a. Spores elliptic, 3.5–4 × 3–3.5 µm, pileus yellowish brown _____ 4. *L. lutescens*
 3b. Spores globose, 3–3.5 µm in diameter, pileus ochraceous _____ 2. *L. globisporum*

Species descriptions

1. *Laxitextum bicolor* (Pers.) Lentz., U.S. Dept. Agric. Monogr. 24: 19 (1956 [1955]). [Figure 1](#). *Thelephora bicolor* Pers., Syn. Meth. Fung. 2: 568 (1801); Mycol. Eur. I: 122 (1822), *nom. sanct.* (Fr., Syst. Mycol. I: 438 [1821]).

Basidiomata resupinate or subpileate, upper side brown, in young specimens finely tomentose, in old specimens with more adpressed hairs, often indistinctly zonate and radially striate; *hymenium* in young fresh basidiomata pure white, darkening slightly to cream, then pale brownish, glabrous, cracking when dried, in section about 1 mm thick, the upper part of the trama (i.e. the subiculum of resupinate specimens), brown, the subhymenial part whitish; *margin* white and finely fibrillose in young specimens.

Hyphal system monomitic; *hyphae* of the brown trama distinct, with thin or somewhat thickened walls, light brown in the microscope, usually 2.5–4 µm wide; *subhymenial hyphae* thin-walled, in old basidiomata partly collapsed and forming a hyphal net with irregular meshes, penetrated by very thin-walled, cytoplasm-filled generative hyphae, these 1–3 µm wide.

Gloeocystidia present, in the young state fusiform, subulate, often with a moniliform apical appendix, more or less projecting, in old specimens tube-like, mostly obtuse, of highly varying length, 40–100 µm or longer, 5–10 µm wide, consistently filled with a yellowish oily substance.

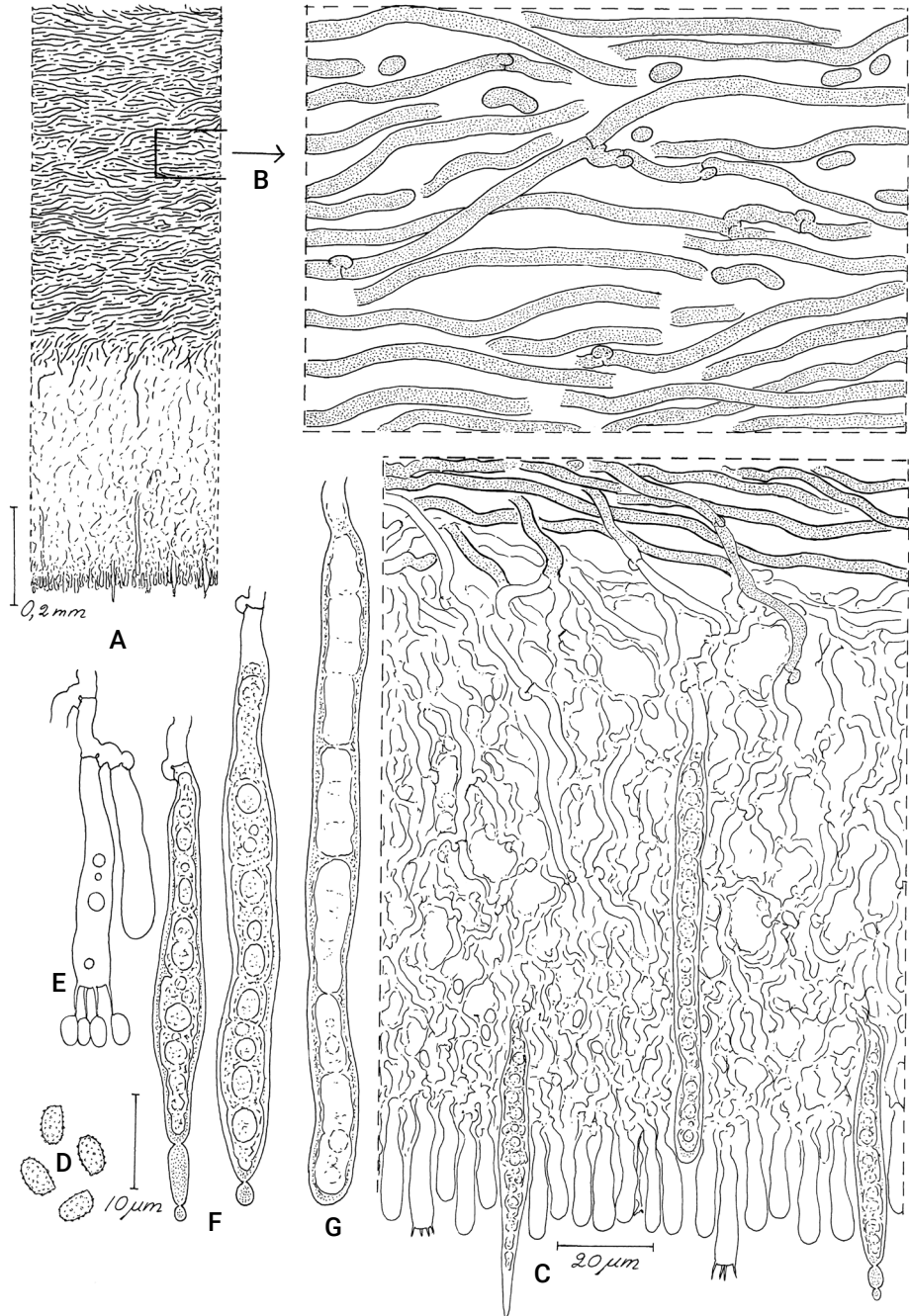


Figure 1. Microscopic features of *Laxitextum bicolor*. A, Section through the basidioma; B, tramal hyphae; C, subhymenium, cystidia, basidioles and basidia; D, basidiospores; E, mature basidium; F, young cystidia; G, older cystidium. Drawn from Eriksson 9318 (O) by J. Eriksson.

Basidia narrowly clavate, 20–30 × 3.5–5 µm, tetrasterigmate.

Basidiospores oblong-ellipsoid, thin-walled, finely echinulate, 4.5–5 × 2.5 µm, amyloid.

Substratum. On decayed hardwoods.

Distribution. Cosmopolitan to 70°N in Norway.

Laxitextum bicolor is rather easy to recognise because of the contrasting brown upper and white lower colours and soft consistency.

2. *Laxitextum globisporum* T.W.Henkel & Ryvarde, sp. nov.

Differs from all other *Laxitextum* species in its combination of ochraceous pileus and small, globose basidiospores. – Type: Cameroon, Region 3 East, Dja Biosphere Reserve, 3 km S of Somaloma village, 26 viii 2018, on stump of unknown hardwood tree, leg. T.

Henkel 10753 (holotype YA; isotype HSC, O). Index Fungorum 556984. **Figures 2, 3.**

Basidiomata flabelliform, semicircular, 20 × 30 mm, about 0.5 mm thick, flexible; *pileus* ochraceous, subzonate, smooth when fresh, when dry slightly radially wrinkled, bent, and curled; *hymenial surface* smooth, pale wood-coloured; *hymenium* in section dense, about 30 µm deep; *subhymenium* distinct, pale ochraceous, 50–80 µm thick; *trama* rather loose and cottony, c.400 µm thick.

Hyphal system monomitic; *hyphae* with clamps; *tramal hyphae* loosely interwoven, pale yellow, 3–5 µm wide; *oleiferous hyphae* abundant in subhymenium and trama, yellow, distinctly amyloid, 4–6 µm wide.

Gloeocystidia present, 60–120 × 4–8 µm, yellow, acuminate, distinctly amyloid.

Basidia 18–25 × 4–6 µm, narrowly clavate, tetrasterigmate.

Basidiospores globose, 3–3.5 µm in diameter, a few subglobose, thin-walled, finely echinulate, amyloid.

Substratum. On decayed tropical hardwood stump.

Distribution. Known only from the type locality in the Dja Biosphere Reserve, Cameroon.

The ochraceous pileus and the small, globose basidiospores make *Laxitextum globisporum* a distinct species in the genus.

3. *Laxitextum incrustans* Hjortstam & Ryvarde, Mycotaxon 13: 35 (1981). **Figure 4.**

Basidiomata resupinate, widely effused, often loosening from substratum along the margin; *hymenial surface* smooth, cream to ochraceous, more or less cracked in dry condition.

Hyphal system monomitic; *hyphae* with clamps, loosely interwoven, golden yellow, encrusted, 3–6 µm wide with thickened walls; *oleiferous hyphae* scattered to common, slightly amyloid.

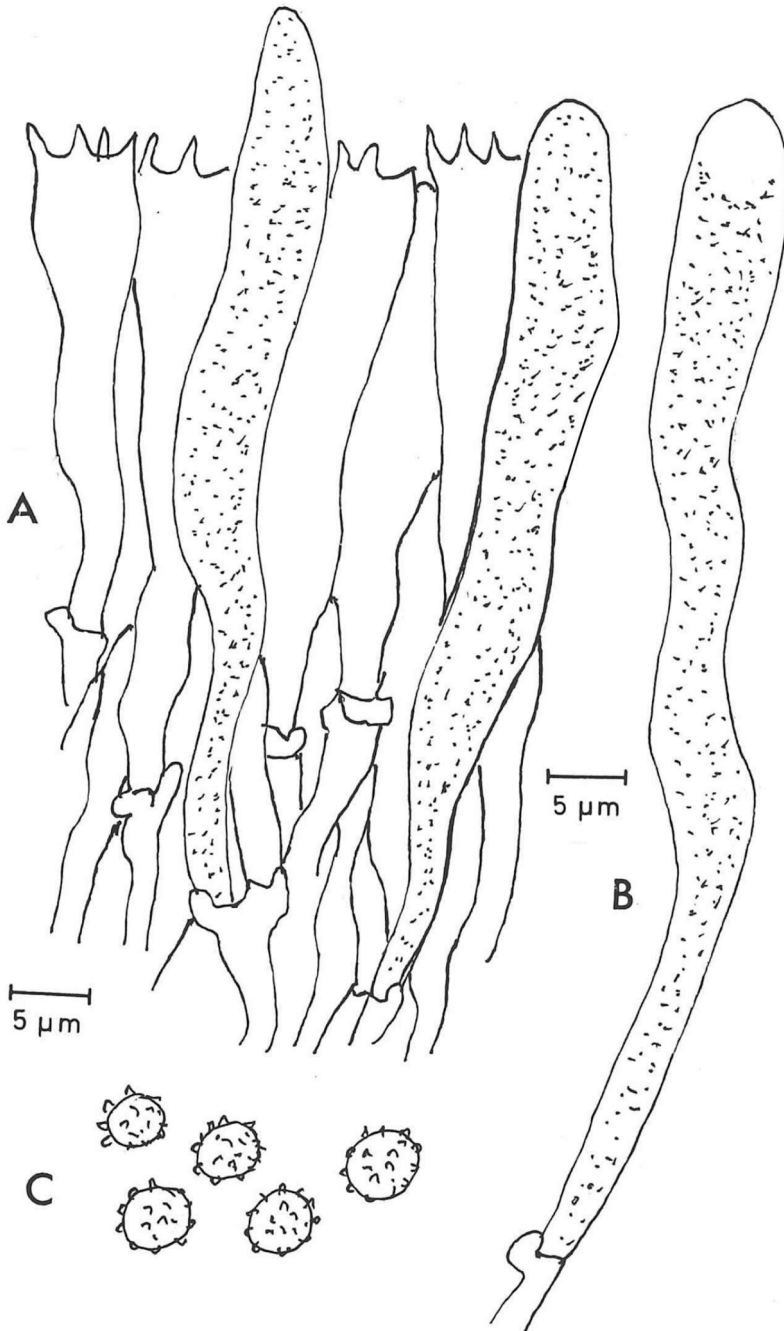


Figure 2. Microscopic features of *Laxitextum globisporum* T.W.Henkel & Ryvarden, sp. nov. A, Basidia and gloeocystidia; B, mature gloeocystidium; C, basidiospores. Drawn from the holotype, *Henkel* 10753, by L. Ryvarden.

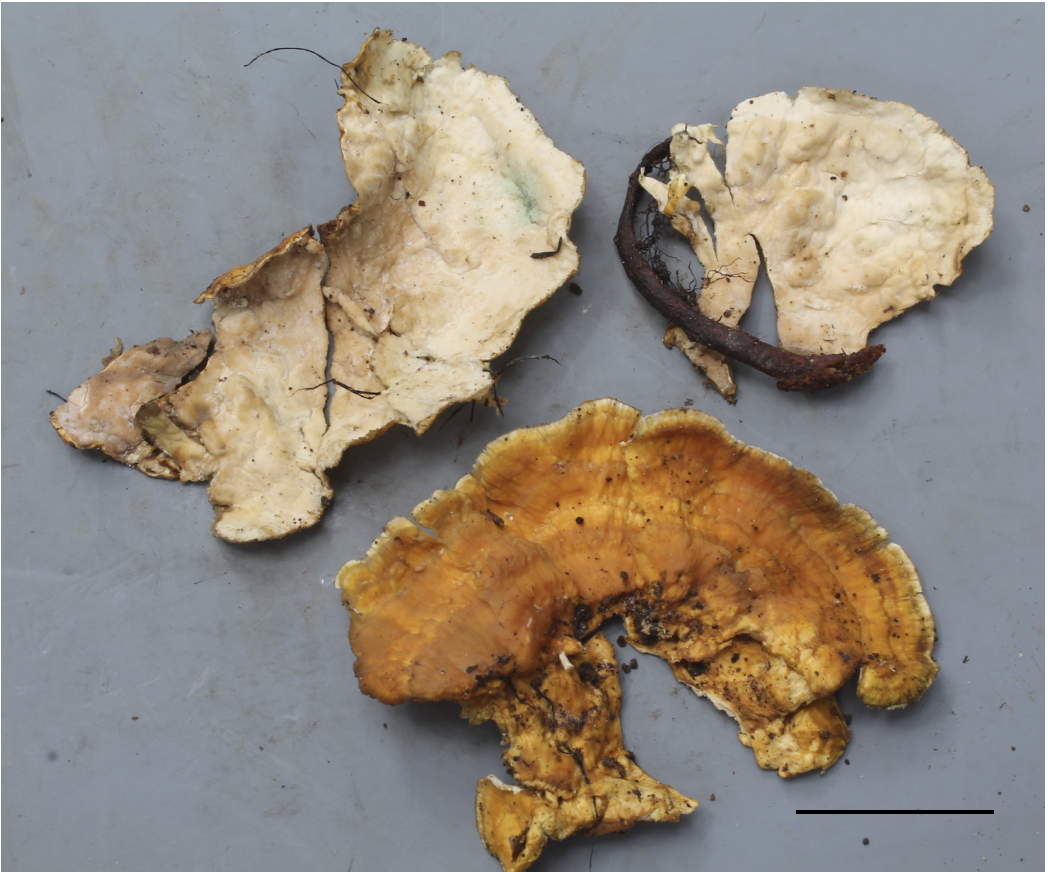


Figure 3. *Laxitextum globisporum* T.W.Henkel & Ryvardeen, sp. nov. Photograph of the holotype, Henkel 10753. Scale bar, 10 mm. Photograph by T. W. Henkel.

Gloeocystidia present, in the young state fusiform, subulate, often with a moniliform apical appendix, more or less projecting, in old specimens cylindrical, mostly obtuse, $70\text{--}80 \times 4\text{--}6 \mu\text{m}$.

Basidia narrowly clavate, $15\text{--}25 \times 4\text{--}5 \mu\text{m}$, tetrasterigmate.

Basidiospores $4\text{--}5 \times 3\text{--}3.3 \mu\text{m}$, subglobose to ellipsoid, echinulate, strongly amyloid.

Substratum. On decayed hardwoods.

Distribution. Brazil, Cameroon, Ethiopia, Kenya, Tanzania, USA.

The resupinate basidioma shape and encrusted hyphae characterise this species.

4. *Laxitextum lutescens* Hjortstam & Ryvardeen, Mycotaxon 13: 40 (1981). [Figure 5](#).

Basidiomata resupinate to pileate, 0.4–0.6 mm thick, pileus deep yellow to pale brown,

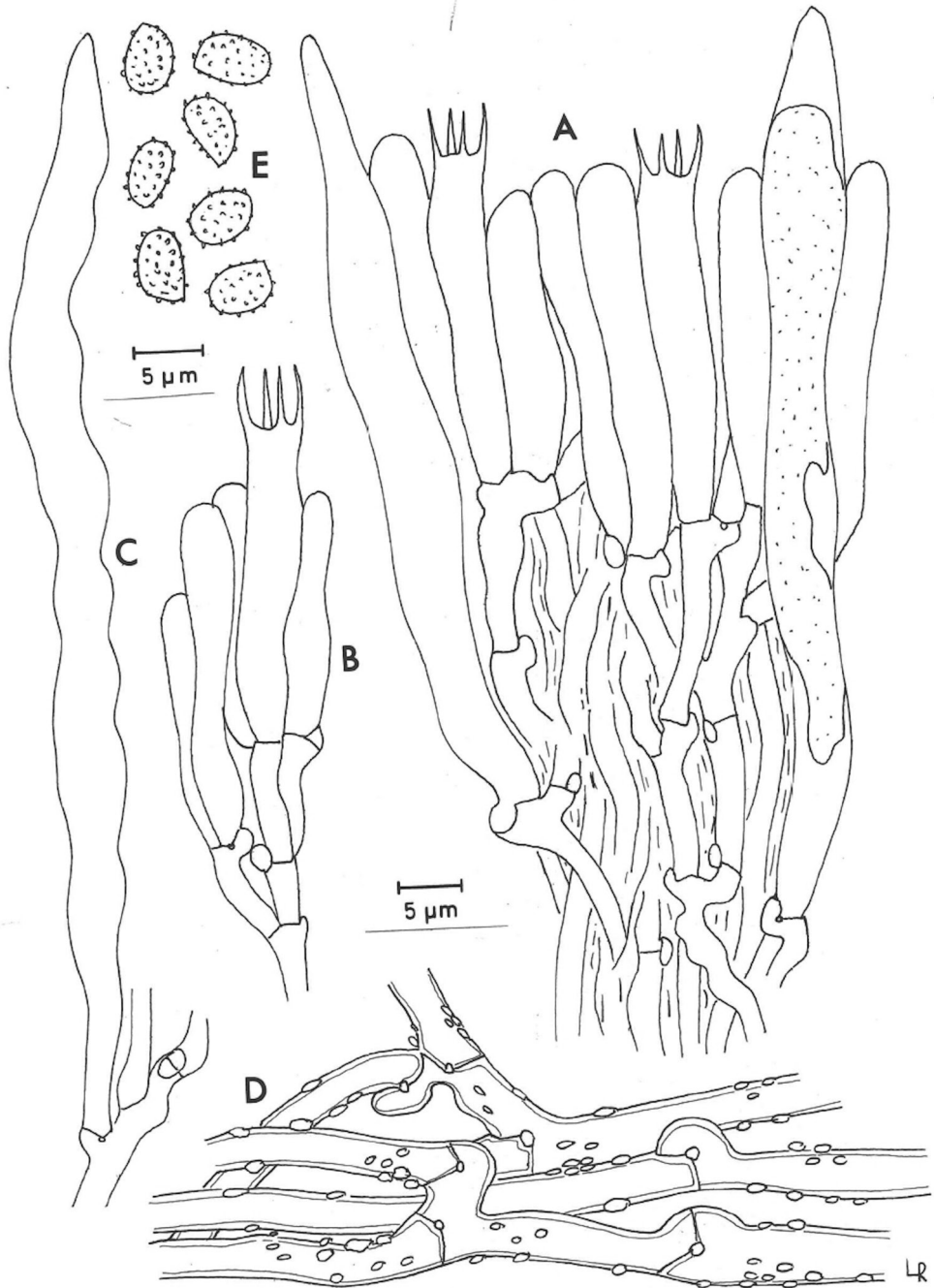


Figure 4. Microscopic features of *Laxitextum incrustans*. A, Section of the hymenium; B, basidioles and basidium; C, gloeocystidium; D, encrusted, clamped tramal hyphae; E, basidiospores. Drawn from the holotype, Ryvarden 10108 (O), by L. Ryvarden.

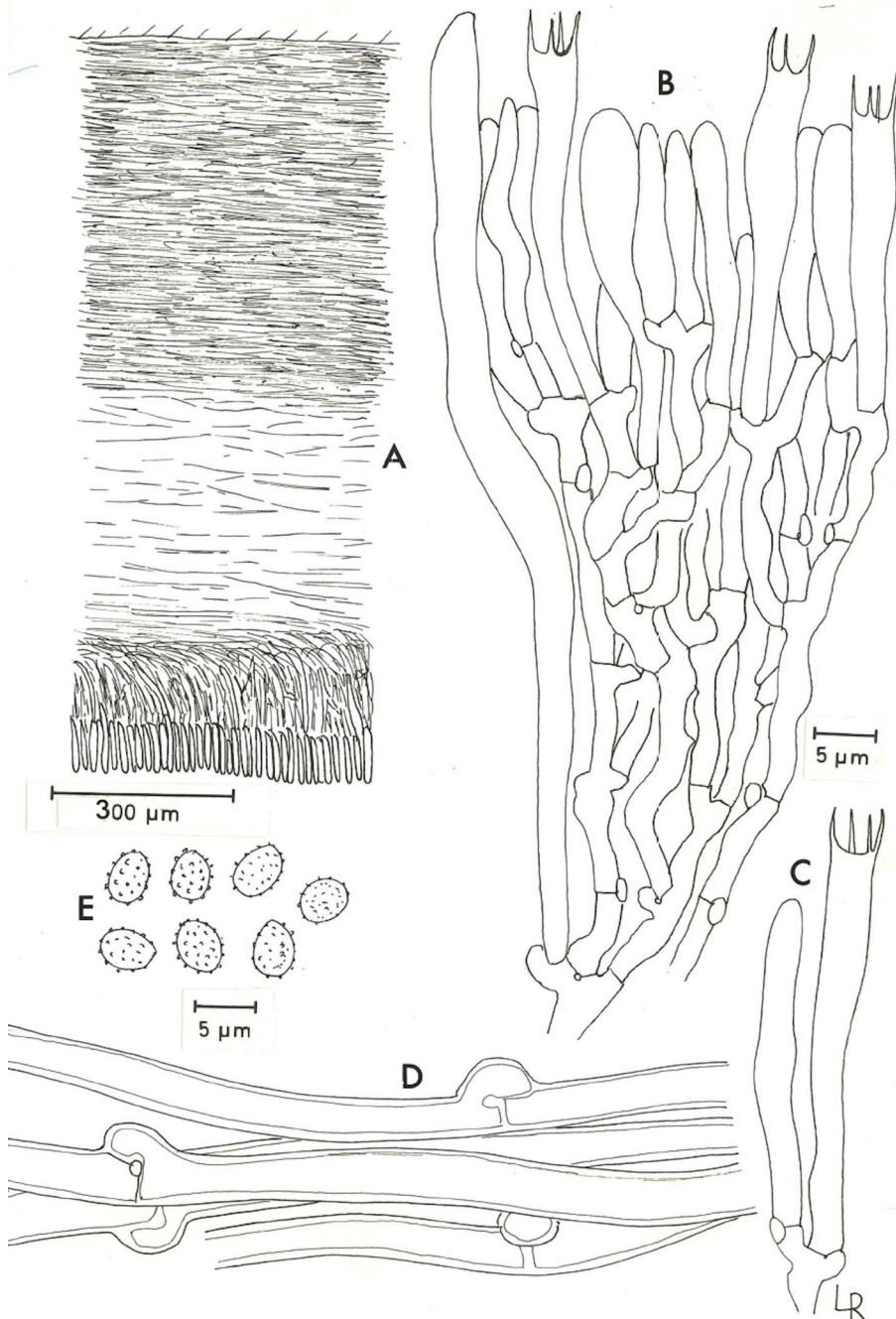


Figure 5. Microscopic features of *Laxitextum lutescens*. A, Section through the basidioma; B, section of the hymenium; C, basidiole and basidium; D, clamped subicular hyphae; E, basidiospores. Drawn from the holotype, Ryvar den 12875 (O), by L. Ryvar den.

velutinate, azonate; *hymenial surface* cream-yellow to straw-coloured with a notably pale purplish brown tint; *trama* well developed, pale yellowish brown.

Hyphal system monomitic; hyphae with clamps; *tramal hyphae* loosely interwoven, pale yellow, 3–5 µm wide; *oleiferous hyphae* abundant in subhymenium and trama, distinctly amyloid, 4–6 µm wide.

Gloeocystidia present, 90–120(–200) × 6–9 µm, in the young state fusiform, subulate, often with a moniliform apical appendix, occasionally up to 200 µm long, distinctly amyloid.

Basidia narrowly clavate, 20–25 × 4–5 µm, tetrasterigmate.

Basidiospores 4 × 3–3.3 µm, subglobose to broadly ellipsoid, thin-walled, finely echinulate, amyloid.

Substratum. On decayed hardwood.

Distribution. Cameroon, Ghana.

The species is similar to *Laxitextum bicolor* but differs in its deep yellow upper surface, amyloid gloeocystidia, and smaller basidiospores.

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