

Thelephora pyrolae

(Ellis & Halst.) Køljalg, I. Saar & Svantesson

Figures 1–15

Zygodesmus pyrolae Ellis & Halst. 1890 [1 : 34] \equiv *Tomentella pyrolae* (Ellis & Halst.) M.J. Larsen 1968 [3 : 105] \equiv *Thelephora pyrolae* (Ellis & Halst.) Køljalg, I. Saar & Svantesson 2024 [2 : 81]

Basidiome effused, adherent or loosely adherent, rare parts may become somewhat pellicular and detached from the substrate, tufted to soft membranaceous, up to 0.2 (0.3) mm thick.

Hymenophore at first discontinuous, araneous, tufted, reticulate or porulose, then almost continuous, granulose to colliculose, some parts becoming smooth, light brown (10YR 6/3–4) to brown or greyish brown (10YR 5/3–4), when fresh often with a faint reddish tint (5YR 5–4/3–4), infrequently with very small spots up to dark brown (10YR 3/3)..

Subhymenium thin or thickening, not compact, 1-layered, up to 0.1 (0.2) mm thick.

Subiculum indistinct, araneous to hypochnoid, seldom loosely fibrous, mostly thin or rarely up to 0.1 mm thick, yellowish-brown to light brown (10YR 6–5/4).

Margin mostly indistinct, shortly to indefinitely thinning out, pruinose, tufted, pubescent, white to concolour with the hymenial surface when fresh, concolour or rarely lighter (10YR 8/3) when dry.

Rhizomorphs normally present, rare and often difficult to find, occasionally in subiculum as thin strands, more frequently at the margin or in cracks of the substratum if well decayed, becoming compact, subceraceous, smooth, up to 0.1 (0.2) mm wide ochraceous to brownish.

Hyphal system monomitic; all hyphae with mostly fibulate primary septa; simple and rare adventitious septa scattered in subicular and rhizomorphal hyphae.

Subicular hyphae regular, (3) 3.5–5.5 (6.5) μm wide, rarely straight and long-celled near the substratum, walls 0.4–0.8 (1) μm thick, often

branching at some distance from septa, sometimes with simple and short anastomosis, without localized thickenings, subhyaline to pale yellowish brown.

Subhymenial hyphae regular or almost so, (3.5) 4–6 (7) μm wide, relatively short-celled, thin-walled, normally branching from clamps, hyaline to subhyaline, in deep subhymenium often with thickening walls and yellowish.

Rhizomorphs simple or slightly differentiated when well formed, with a core of wider and straighter hyphae up to 8 (10) μm diam, surrounded by regular, tightly packed ones, (4) 4.5–6.3 (7) μm diam, becoming thinner on surface of well formed rhizomorphs, (2.2) 3–4.5 (5) μm diam, sinuous, often with elbow-like bends, sometimes branched without septa at/near ramifications, walls up to 0.8 (1.2) μm thick, without localized thickenings, subhyaline to yellowish or light ochre, lighter inside, progressively more coloured toward the surface, ochraceous in mass.

Cystidia on surface rare or common, hyphoid, cylindrical or slightly tapering, 23–58 μm long, 1.5–4 μm wide at top, 3–5.5 μm at the base, mostly thin-walled, some with thickening wall toward the base, hyaline to yellowish.

Cystidia present, arising from subhymenial hyphae, enclosed at same level as basidia or embedded in the thickening subhymenium, mostly cylindrical, sometimes clavate or ventricose, with thin or thickening walls (sometimes with a peculiar localized thickening about 10 μm from top), 30–70 (80) μm long, 7–12 (15) μm in the widest part, aseptate or rarely with 1–2 septa, hyaline or with ochraceous-brownish content.

Basidia when immature clavate to cylindrical and sinuous, sometimes obclavate; at maturity narrowly clavate, subcylindrical-sinuous to somewhat utriform-sessile, (32) 35–55 (62) μm long, (6.5) 7–8.5 (9.5) μm wide at top, (4.5) 5.5–8 (9) μm wide at the lower middle, hyaline to subhyaline, often with ochre or brownish homogeneous content, rarely guttulate; 4 sterigmata, 4–6.5 (7) μm long and (1.2) 1.5–2 (2.5) μm wide at the base.

Basidiospores mostly well lobed, rarely also regular, echinulate, crowns often present, without guttulae, walls 0.3–0.6 (0.7) μm thick, light yellowish brown to ochraceous, some brown or dark brown;

– in the **type specimen**¹: (7.2) 7.6–[8.8]–9.8 μm long, **lateral** face ellipsoid to 2–3-lobed dorsally, adaxial side flattening, 5.2–[6.4]–7.5 (7.7) μm diam, $Q = 1.2$ –[1.39]–1.5 (1.54); **frontal** face triangular to 3-lobed,

¹The holotype collection of *T. pyrolae* contains two leaves and fragments of petioles. The fungus is very small and immature, growing on petioles only (seen in April 1999): three pieces of about 5 x 2 mm, with hymenium developed only on a part of one of these. Wakefield studied the specimen in July 1958 and annotated «Indeterminable - sterile. Probably mycelium of a *Thelephora*». In fact, apart from the larger size of the spores of about 1 μm , there are no structural differences compared to the other specimens studied: rhizomorphs are only subicular and, by consequence, have no cystidia on surface.

(6.3) 6.5–[7.4]–8.0 (8.2) μm diam, $Q = 1.1$ –[1.17]–1.27 (1.38); in **polar** view irregularly globose to 3-lobed.

– in the **European specimens** with same shape and ornamentation but smaller: (6.0) 6.2–[7.0]–8.0 (8.6) μm long (means ranging from 6.3 to 7.7), **lateral** face (4.3) 4.8–[5.4]–6.0 (6.4) μm diam, $Q = (1.14) 1.2$ –[1.3]–1.4 (1.5); **frontal** face (5.3) 5.6–[6.4]–7.2 (7.4) μm diam, $Q = 1.0$ –[1.1]–1.2 (1.26).

Aculei (0.5) 0.9–2.0 (2.4) μm long and 0.4–0.8 μm wide at the base, terete, sometimes slightly curved, tapering, single or rarely paired at the base, unevenly distributed.

Apiculus lateral near the base or rarely subcentral in side view, 1.0–1.8 (2.0) μm across; hilum mostly indistinct.

Macrospores rare, about 10–11.5 μm long.

Chlamydospores absent.

Incrustation: some granules or unshaped resinous yellow to dark brown or reddish brown matter present at top of some cystidia and hymenial elements. Cystidia on surface of rhizomorphs sometimes with a distinct brown cap.

Chemical reactions: IKI—. CB: thin-walled elements more or less cyanophilous, spores not or with only a thin cyanophilous wall layer. KOH—

Specimens examined

FRANCE — **Mayenne** – Levaré, La P.te Cointrie, on lying, decayed wood of *Quercus* sp., leg. Maurice Gérard, 29.IX.1992 (em-6532, mg-576) — **Moselle** – Etang de Waldeck, on lying, rather hard bark of *Salix* sp., leg. Maurice Gérard, 28.X.2009 (em-10993, mg-2674) — **Seine-et-Marne** – Fontainebleau, on lying, decayed wood of a deciduous tree, leg. E. Fichet, 2.VIII.2003 (em-8319, rh-0326)

SWITZERLAND — **Ticino** – Cevio, Consorzio, on wood of a lying, decayed branch of *Pinus sylvestris*, leg. E. Martini, 2.IX.2017 (em-13173) – Gordevio, Saleggio, on bark of a lying, decayed trunk of *Quercus* sp., leg. E. Zenone, 29.IX.2006 (em-9681) – *ibid.*, on wood of a lying, strongly decayed branch of *Pinus sylvestris*, leg. E. Zenone, 5.X.2006 (em-9680) – Ritorto, Dréom (Valle Bavona), on wood of a lying, decayed twig of *Tilia cordata*, leg. E. Martini, 4.IX.1994 (em-3770) – St. Antonino, Copera, on bark of a lying branch of *Metasequoia glyptostroboides*, leg. E. Zenone, 9.XI.1996 (em-5998, TAA M005998, UDB000262)

USA — **New Jersey** – New Brunswick, on petioles of *Pyrola rotundifolia* L., leg. B.D. Halsted, 17.VII.1889, holotype of *Zygodesmus pyrolae* Ellis & Halst. (NY: B.D.Halsted 13)

Materials and methods

Specimens sampling and methodological details are described separately in this issue:

Excerpts from *Crusts & Fells*, n° 0



Fig. 1: Basidiome (fresh). Image width = 70 mm [em-13173]



Fig. 2: Basidiome (fresh). Image width = 22 mm [em-13173]



Fig. 3: Detail of the hymenophore (fresh). Image width = 9 mm [em-13173]



Fig. 4: Basidiome (dry). Image width = 9 mm [em-6532, mg-576]



Fig. 5: Detail of the hymenophore and margin (fresh). Image width = 9 mm
[em-13173]

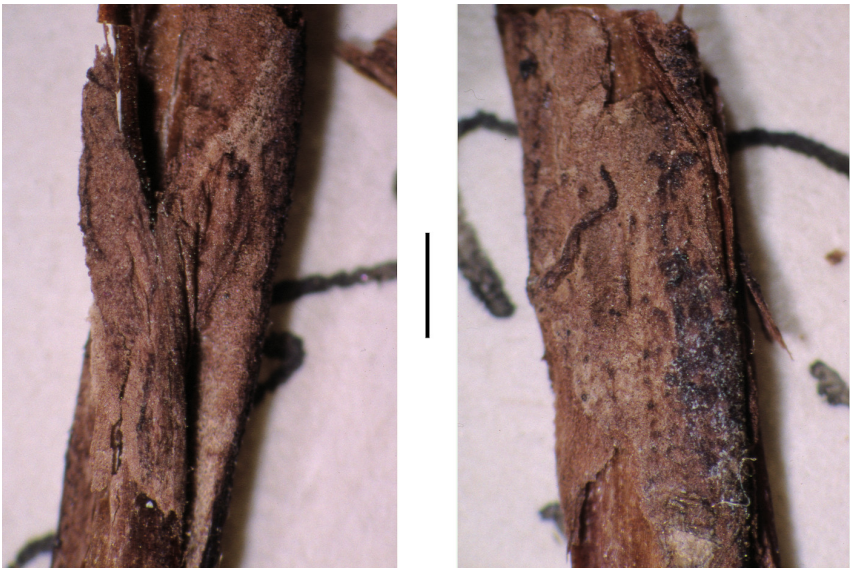


Fig. 6: Basidiomes; ex holotype of *Zygodermus pirolae* Ellis & Halst. Bar = 1 mm
[NY: B.D.Halsted 13]

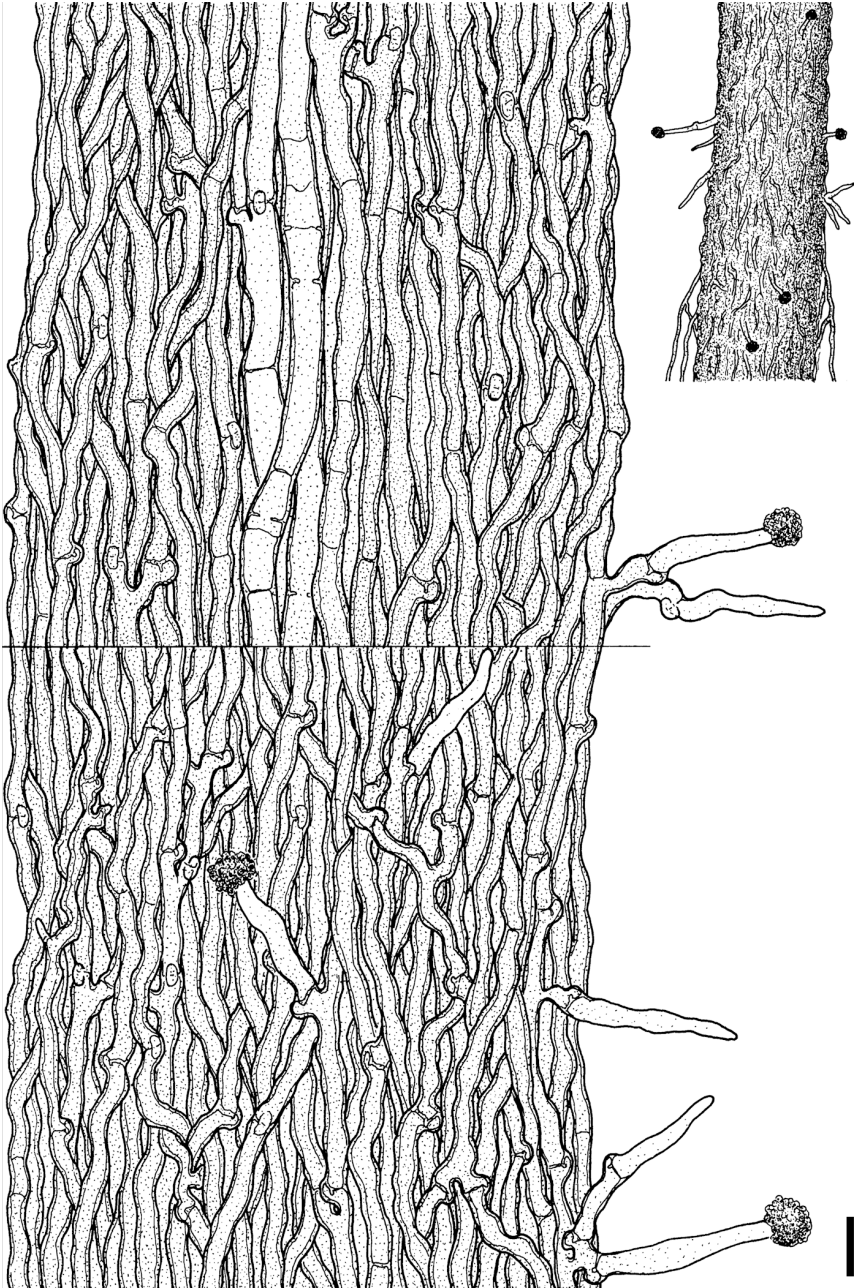


Fig. 7: Rhizomorph. Bar = 10 μm [em-6532, mg-576]

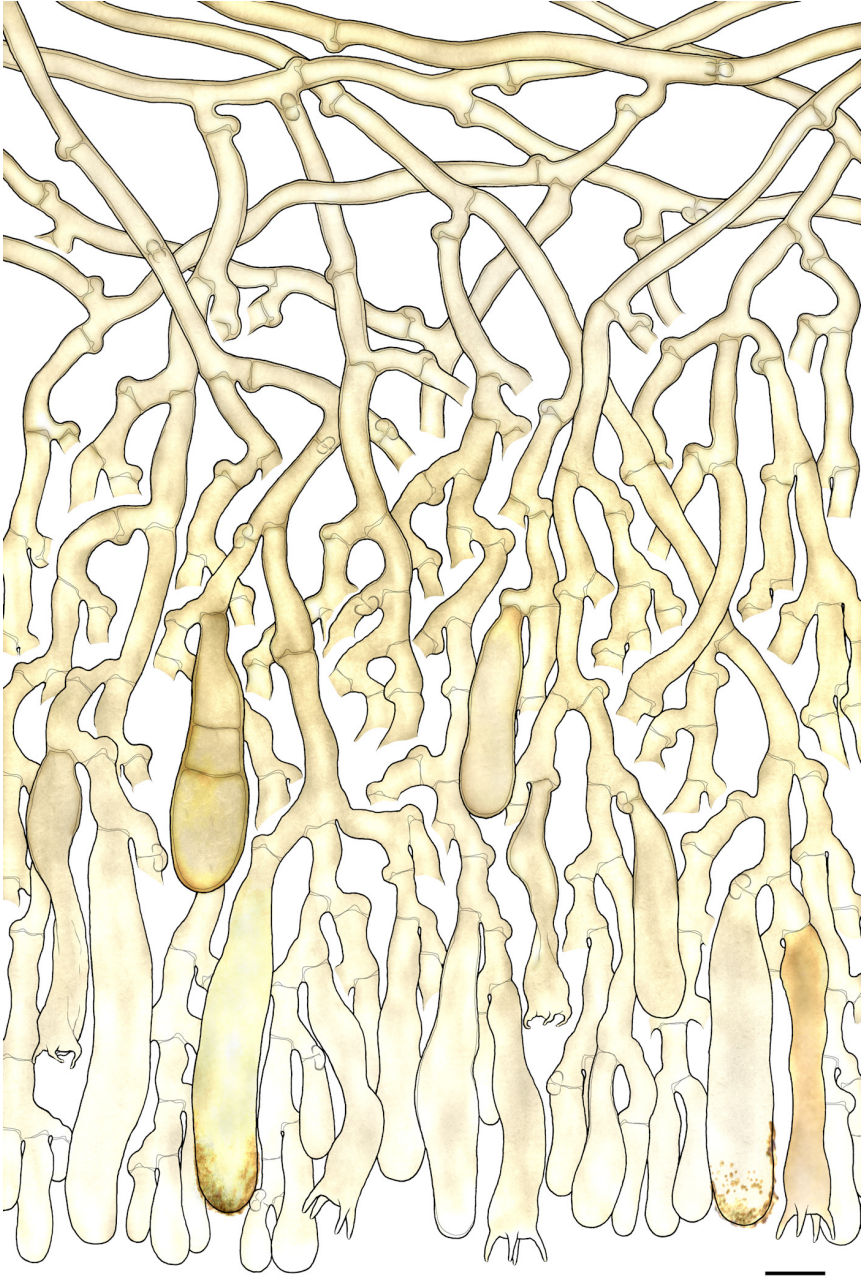


Fig. 8: Simplified vertical section through the basidiome. Bar = 10 μm [em-6532, mg-576]

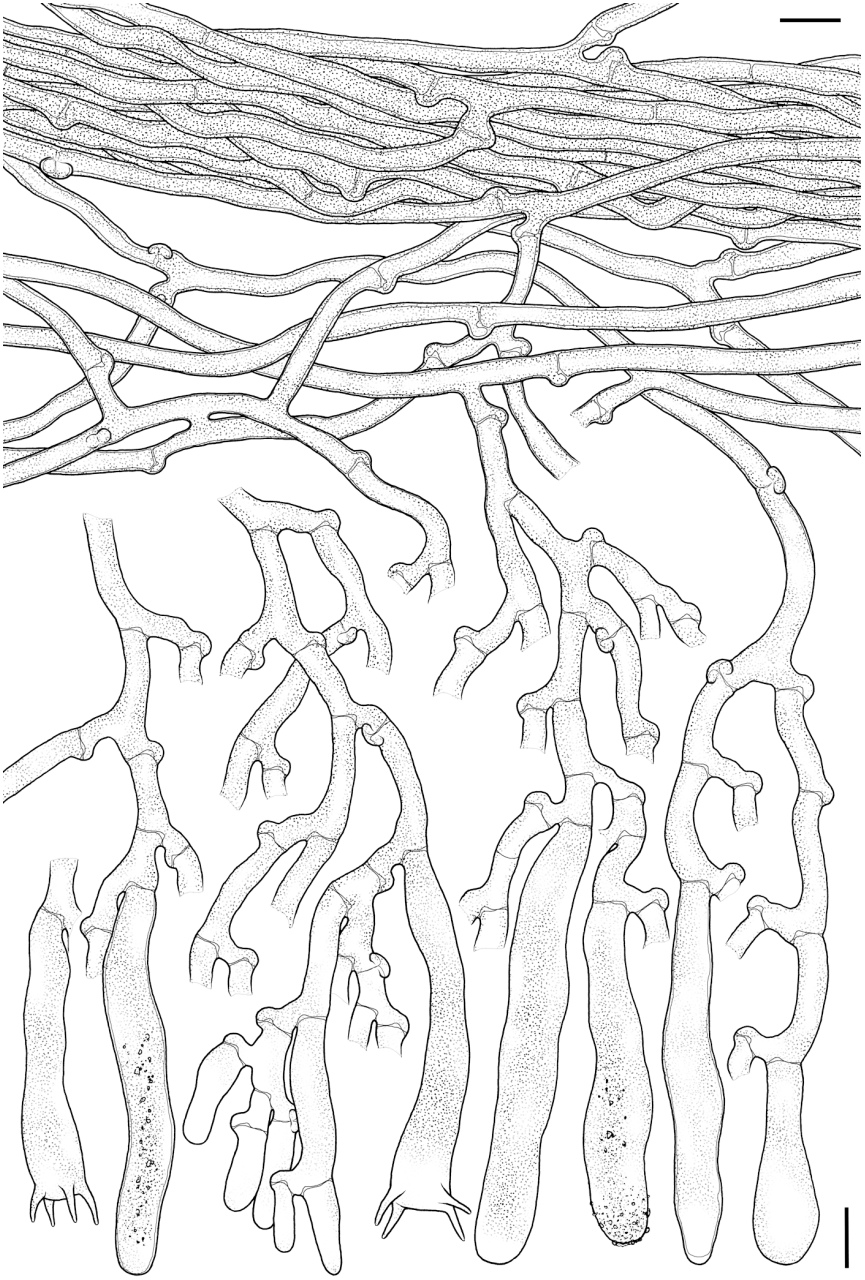


Fig. 9: Basidia, cystidia, subhymenial and subicular hyphae; ex holotype of *Zygodermus pirolae* Ellis & Halst. Bar = 10 μ m [NY: B.D.Halsted 13]

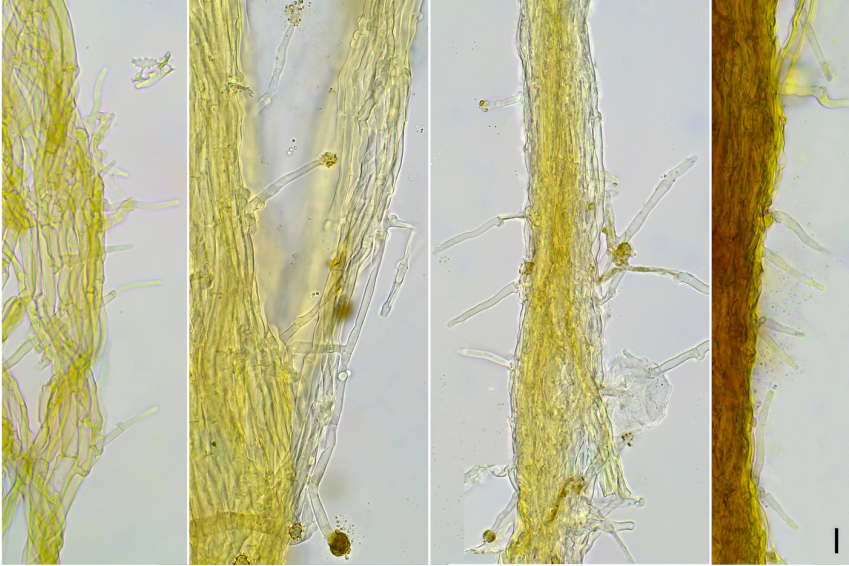


Fig. 10: Cystidia on rhizomorphs from em-6532, 6980, 6981, 10993. Bar = 10 μ m

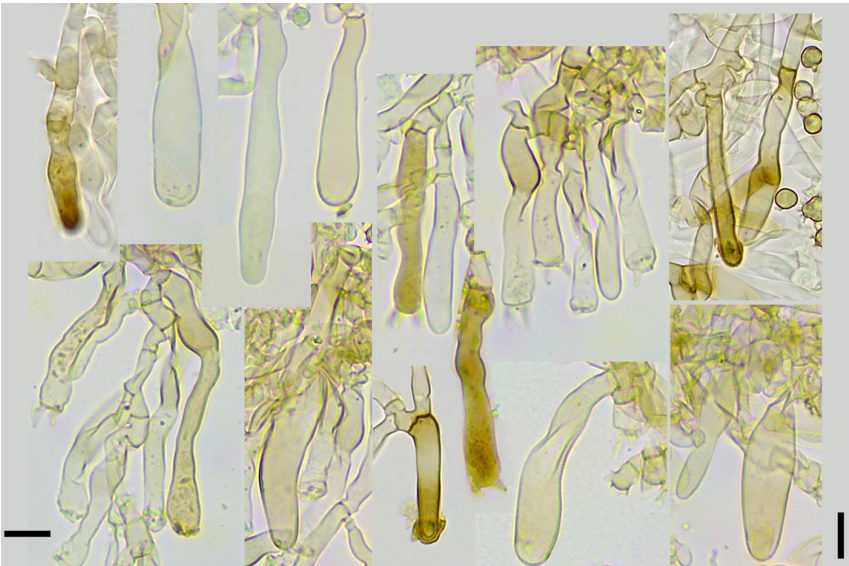


Fig. 11: Cystidia and basidia; mix from em-6532, 9680, 9681, 13173. Bar = 10 μ m

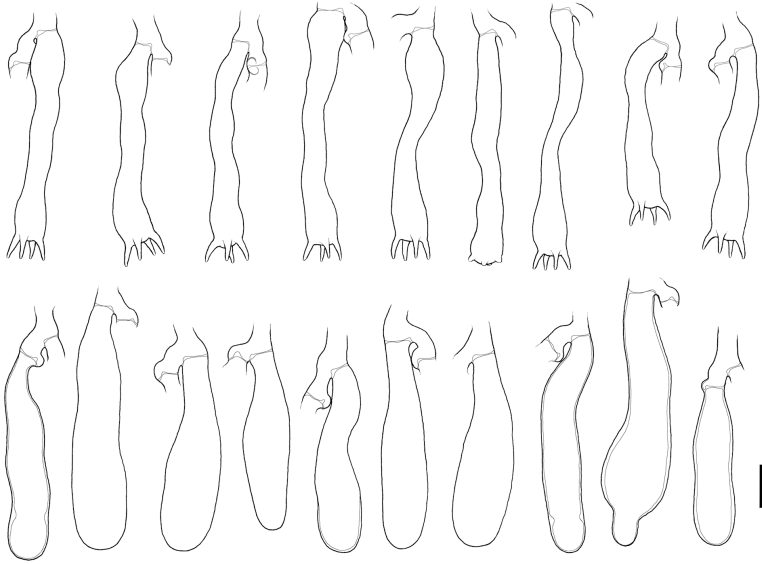


Fig. 12: Basidia and cystidia. Bar = 10 μm [em-6532, mg-576]

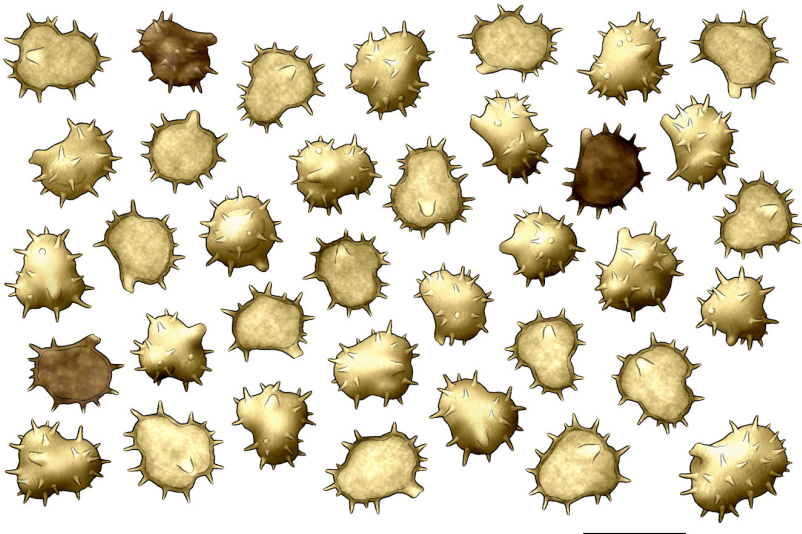


Fig. 13: Basidiospores. Bar = 10 μm [em-6532, mg-576]

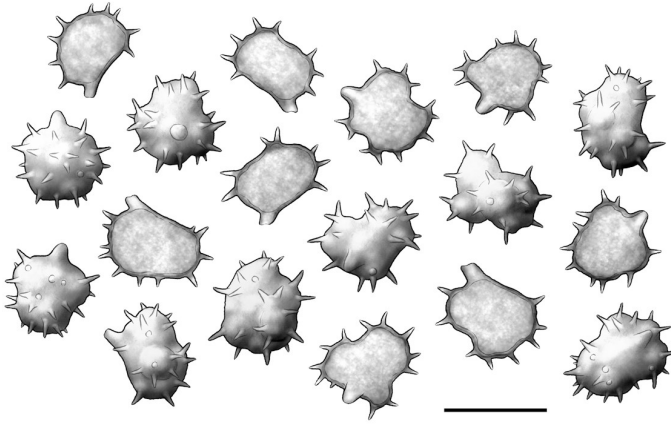


Fig. 14: Basidiospores; ex holotype of *Zygodesmus pirolae* Ellis & Halst. Bar = 10 μm [NY: B.D.Halsted 13]

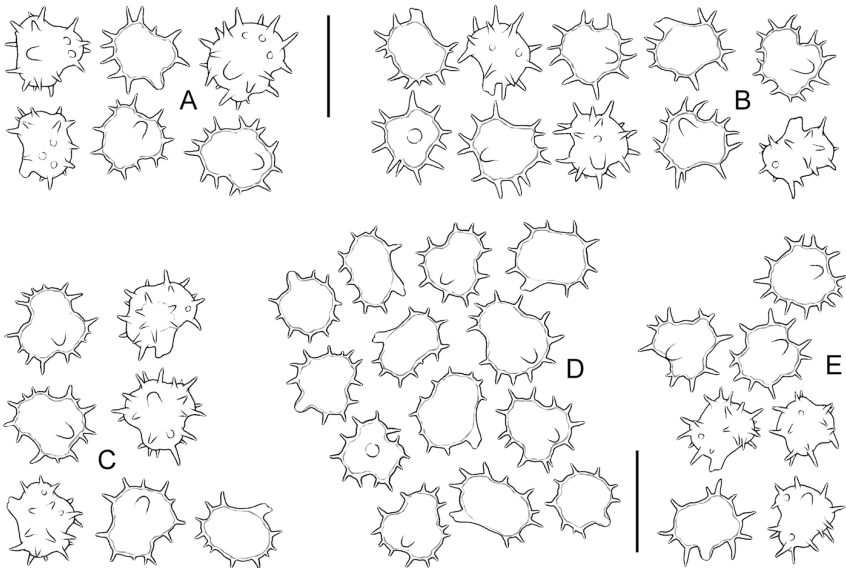


Fig. 15: Basidiospores from different collections: A) em-10993. - B) em-13173. - C) em-6532. - D) em-5998. - E) em-9681. Bar = 10 μm

References

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Excerpts from *Crusts & Tells*

Descriptions and reports of resupinate Aphyllophorales and Heterobasidiomycetes

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