

Sistotrema epiphyllum



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Sistotrema epiphyllum Stalpers, Stielow & B. de Vries, *sp. nov.*

Etymology. Growing on leaves: *epi* = on, *phyllon* = leaf.

Basidiome resupinate, effused, arachnoid to pellicular and separable, 70–100 µm thick. *Hymenium* even, smooth, becoming more or less continuous, white to slightly greyish. *Margin* not differentiated, hyphal strands absent. *Subiculum* very loose. *Subicular hyphae* hyaline to slightly yellowish brownish, thin-walled, 3.5–7(–8) µm wide, contents hyaline to granular, individual cells sometimes swollen. *Subhymenial hyphae* hyaline, thin-walled, 3.5–4.5(–5) µm wide. All septa with prominent clamps. *Cystidia* absent. *Basidia* in small clusters, originating from a sprouting clamp, typically urniform, 18–25 × 4.5–5.5 µm, with 4–6(–7) sterigmata. Sterigmata 3–4 µm long. *Spores* hyaline, thin-walled, ellipsoid, sometimes slightly pip-shaped, flattened at the apical side, (5.4–)5.7–6.5(–7) × 3.3–4(–4.3) µm, not amyloid, not dextrinoid, not cyanophilous. *Apiculus* short but distinct.

Habitat & Distribution — On the underside of brown, fallen leaves of *Fagus sylvatica*, which were heaped up in a depression in the terrain. The affected leaves were not directly on the surface of the leaf stack, but lower down.

Typus. NETHERLANDS, Duivekate, park forest, 20 Apr. 2013, J.A. Stalpers (holotype CBS H-21517; leg. B. de Vries, paratype BdV 7510; ITS sequence GenBank KM401576, MycoBank MB809154).

Notes — *Sistotrema epiphyllum* is characterised by the combination of even and pellicular hymenium and the ellipsoid-flattened spores in the range of 5.5–7 × 3.3–4.3 µm, while also the substrate is uncommon for *Sistotrema* spp., which are usually found on wood, or on old *Ganoderma* basidiomes. The impression here is that the species is actually soil-bound and fruits on more solid material, a situation also found in *Tomentella*. Molecular data have proven *Sistotrema* to be a heterogeneous genus, a situation which has only been partly resolved yet. Based on the available sequences, the closest relative of *S. epiphyllum* is *S. hypogaeum* (Warcup & Talbot 1962), repeatedly isolated from soil in Adelaide, Australia. It differs in the cylindrical to subnavicular spores, (5–)7–9 × 2–2.5 µm.

Remarkably, the closest relatives to the *S. epiphyllum* clade belong to the genera *Minimedusa* and *Burgoa*, athelioid species with cylindrical, 4-spored basidia and characterised by the production of bulbils or sclerotoid bodies in culture. Such bodies (yellowish irregular sclerotium-like mass) are also reported for *S. hypogaeum* (Warcup & Talbot 1962). Unfortunately, cultures of the present species could not yet be obtained.

Weresub & LeClair (1971) mentioned a connection of *Burgoa* with the *Sistotrema brinkmannii* complex, based on the occurrence of swollen cells strongly resembling those of *Sistotrema brinkmannii*. *Minimedusa* was considered related, but not congeneric. The type species of *Sistotrema* is *S. confluens*.

ITS. Based on a megablast search against the INSDC (GenBank) nucleotide database, the closest hits using the generated ITS sequence are several environmental (clone) sequences only (e.g. DQ309120; Identities = 581/593 (98 %), Gaps = 8/593 (1 %) and KF617443; Identities = 562/591 (95 %), Gaps = 8/591 (1 %)); the closest voucher-derived sequence is of *Sistotrema coronilla* AFTOL-ID 618 (DQ397337; Identities = 513/550 (93 %), Gaps = 13/550 (2 %)). Amplification of the large subunit D1/D2 (28S nrDNA) failed.

Colour illustrations. Leaves of *Fagus sylvatica* in beech park; basidia, spores, clamps, basidiome on leaf. Scale bars = 5 µm.