

Cryptothele rhodosticta new to Scandinavia from Norway

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The crustose cyanobacterial lichen *Cryptothele rhodosticta* is reported from Norway being the first record of this lichen from Scandinavia. The lichen grows partly submerged at a lake shore very close to the sea in Hordaland, SW Norway. *Cryptothele rhodosticta* is very similar to *Pyrenopsis subareolata* but differs in the structure of the apothecia, hymenium and paraphyses.

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The genus *Cryptothele* Th.Fr. currently contains seven species worldwide, five of which occur in Europe (*C. granuliforme*, *laatokkaensis*, *neglecta*, *permiscens*, *rhodosticta*). *Cryptothele* is characterized by very thin, crustose-areolate or granulose thalli of blackish colour often with a dark reddish tinge. The photobiont is a *Gloeocapsa*-like, single-celled cyanobacterium with reddish gelatinous sheaths. The asci contain 8–32, simple, hyaline ascospores. Thus, *Cryptothele* superficially resembles members of *Pyrenopsis* (Nyl.) Nyl. However, *Cryptothele* differs from *Pyrenopsis* in the perithecioid apothecia with periphysoids, the highly gelatinous hymenium with only sparse and gracile paraphyses and usually slender asci often having pointed tips. In contrast, *Pyrenopsis* has apothecia with punctiform to opened discs lacking periphysoids, the hymenium is not highly gelatinous and contains numerous paraphyses which are usually rather robust and often become moniliform at the tips. Finally, the asci are usually broadly clavate, thick-walled and may possess a thickened, strongly amyloid apex.

During a recent revision of selected *Pyrenopsis* species kept at BG and HBG a

specimen from Hordaland, Norway labelled “*Pyrenopsis* cf. *subareolata*” was found to distinctly deviate from other specimens of that species and *Pyrenopsis* in general. Though being rather similar to *Pyrenopsis* spp. in external thallus appearance, thin sections of the small, perithecioid apothecia revealed conspicuous periphysoids around the ostiole, a highly mucilaginous hymenium with only few, branched, thin to disappearing paraphyses and 8-spored asci with partly pointed tips lacking any amyloid structures. These characteristics fit the genus *Cryptothele* (Henssen 1980[‘1979’], Henssen & Büdel 1984, Henssen & Jørgensen 1990). Using a working key for the species of the genus compiled by the author from various sources, the Hordaland material was identified as *Cryptothele rhodosticta*, a species so far unknown to occur in Scandinavia.

Cryptothele rhodosticta (Taylor) Henssen

Henssen & Jørgensen (1990) showed that the type of *Pyrenopsis rhodosticta* represents a species of *Cryptothele*. However, the name *Pyrenopsis rhodosticta* has been used in a wide

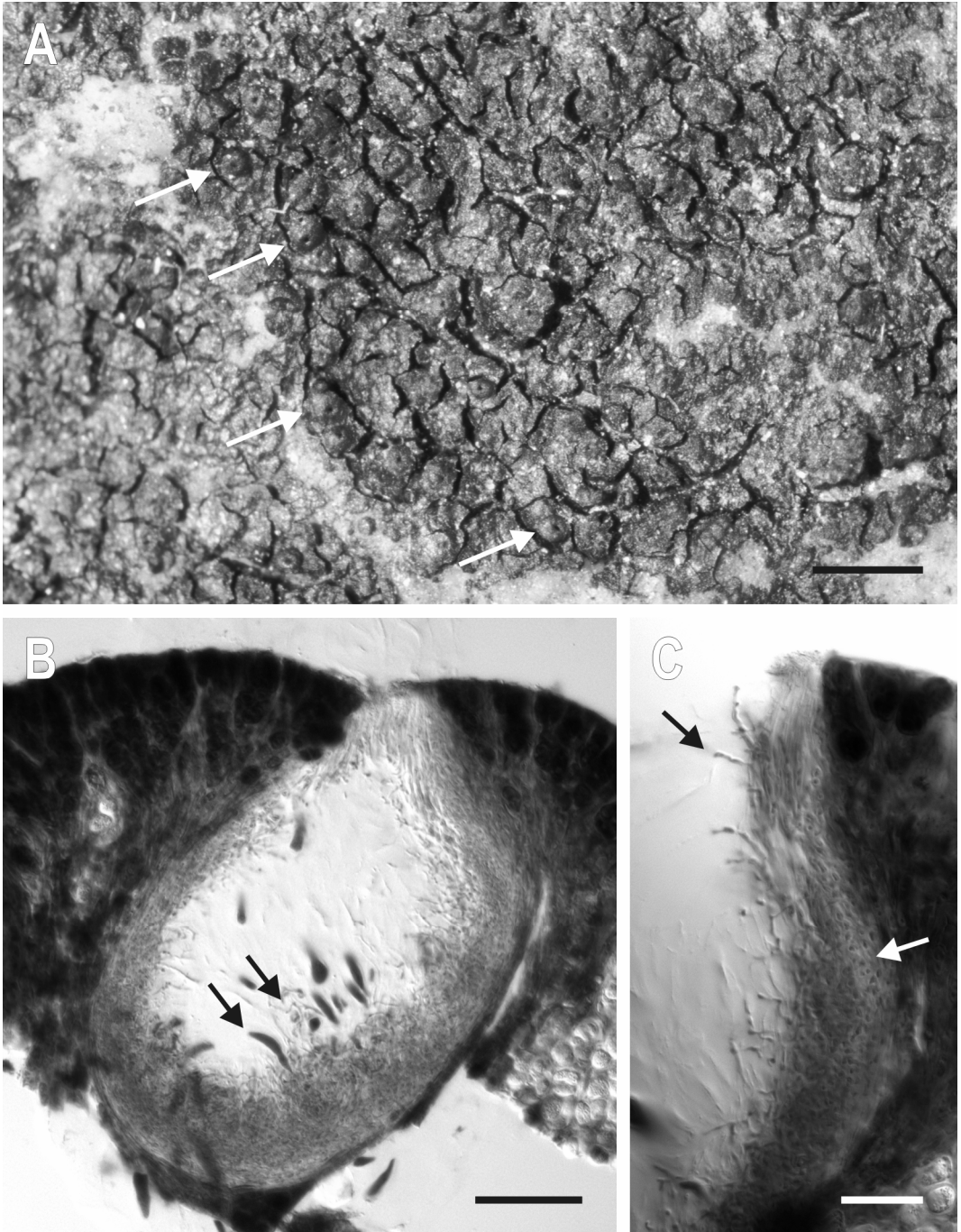


Figure 1. *Cryptothele rhodosticta*, Øvstedal (BG L-34197). A. Thallus rimose-areolate with perithecioid apothecia (arrows) immersed in slightly to almost hemispherical areoles. B. Almost median section of apothecium showing highly gelatinous hymenium with sparse paraphyses and narrow cylindrical asci (arrows). C. Excipulum proprium and periphysoids at the ostiole (arrows). Bars in A = 1 mm, B = 50 μ m, C = 25 μ m.

sense for a long time. Therefore, the species' descriptions provided by Coppins et al. (1992) and Wirth (1995) should be used cautiously since several discordant elements might be involved (Coppins et al. 1992). *Cryptothele rhodosticta* forms blackish brown crusts with a slight dark reddish tinge. The thallus is very thin, rimose-areolate to eventually areolate. The margins of larger areoles may become lifted up from the substrate giving these areoles an almost subsquamulose appearance. The areoles are plane with a smooth surface, angulose, slightly glossy, 0.2–0.4 mm wide and 0.1–0.15 mm thick (Fig. 1A). The marginal areoles are not effigurate (as they are for example in *Cryptothele granulosa*). The thallus anatomy is rather compact and small-celled paraplectenchymatous. The photobiont is a single celled cyanobacterium with dark reddish gelatinous sheaths. The apothecia are perithecioid with a blackish, punctiform, roundish disc or ostiole resembling a pin hole (Fig. 1A). There are 2–3 apothecia per areole. Juvenile apothecia are immersed to semi-immersed. Mature apothecia eventually resemble almost hemispherical swellings ± in the center of the areoles. The hymenium is IKI+ blue, conspicuously gelatinous and contains only sparse, very thin, branched paraphyses which seem to desintegrate rather soon (Fig. 1B). There are conspicuous short periphysoides around the ostiole (Fig. 1C). The proper exciple is hyaline, 12.5–15 µm thick with paraplectenchymatous to subparaplectenchymatous texture (Fig. 1C). The asci are narrowly clavate. Juvenile asci have pointed tips whereas the tips are ± rounded in mature asci. The ascus wall is thin throughout and reacts completely IKI– but the ascus tips usually have a distinct gelatinous, IKI– cap. The asci are sub-biseriate containing 8, simple, hyaline, globose to broad ellipsoid ascospores 7.5–10 × 5–7.5 µm in size. Pycnidia have not been observed in the material studied.

Cryptothele rhodosticta was found on partly submerged siliceous rock at a lake shore in southwestern Norway very close to the coast

of the North Sea. In the British Isles the lichen is known from upland areas in Scotland extending to N Wales and SW Ireland (Coppins et al. 1992). *Cryptothele rhodosticta* prefers moist to semi-aquatic rocky habitats with oceanic climate. It thus should be expected from suitable habitats in coastal Norway. Material from inland areas with less oceanic climate should be studied carefully. Such collections might belong to *Pyrenopsis subareolata*.

Specimen examined: Norway. Hordaland: Fjell, Sotra, Solsvik, on rock at shore of lake, partly submerged, 12.V.1978, Øvstedal (BG L-34197).

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