

# *Xerotrema megalospora* – a remarkable ascomycete new to Scandinavia

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Norsk tittel: *Xerotrema megalospora* – en bemerkelsesverdig sekksporesopp ny for Skandinavia.

*lосpora* fits into a biogeographical element known as the Trøndelag phytogeographic element.

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## SAMMENDRAG

*Xerotrema megalospora* er en sjelden sekksporesopp som vokser på død ved av bartrær og lauvtrær. Arten ble funnet for første gang i Skandinavia på en avbarket høg stubbe av gran i sumpskog i Trøndelag på senhøsten 2009. Ellers i Europa er arten bare registrert fra Skottland og Irland. Utenfor Europa er den bare kjent fra vestlige Nord-Amerika. *Xerotrema megalospora* ser ut til å tilhøre et biogeografisk element kalt Trøndelagselementet.

## KEYWORDS

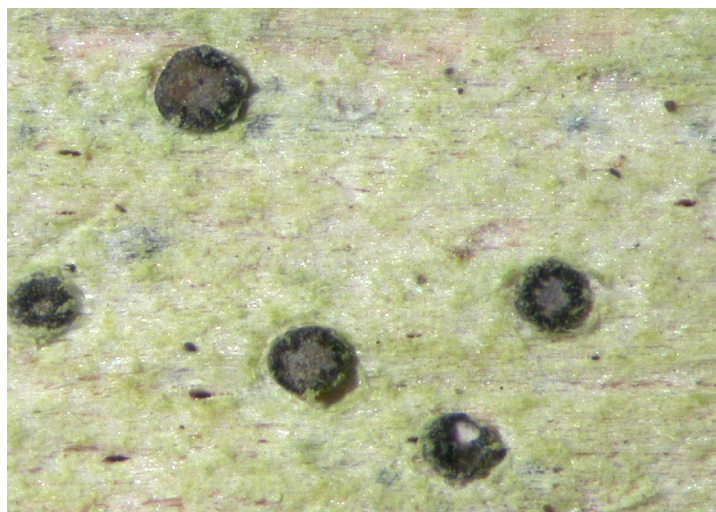
Decaying wood, distribution, Scandinavia, Trøndelag phytogeographic element, *Xerotrema megalospora*

## NØKKELOORD

Død ved, Skandinavia, Trøndelagselementet, utbredelse, *Xerotrema megalospora*

## ABSTRACT

*Xerotrema megalospora* is a rare ascomycete growing on wood of coniferous and deciduous trees. The species was found new to Scandinavia on a decorticated snag of *Picea abies* in Trøndelag, Central Norway, in late autumn 2009. Elsewhere in Europe it has been recorded only from Scotland and Ireland. Outside Europe it is known only from western North America. *Xerotrema megalospora*



**Figure 1.** *Xerotrema megalospora*. Habitus showing mature apothecia and associated green algal crust (Holien 12566).



Figure 2. Entirely closed young apothecium.

## INTRODUCTION

The genus *Xerotrema* was introduced by Sherwood & Coppins (1980) to accommodate a single species, *Xerotrema megalospora*, in the family *Odontotremataceae*, which is similar to *Odontotrema* in appearance, but differing by monosporous asci with very large muriform ascospores. It was thought to be a monotypic genus until recently when another species, *Xerotrema quercicola*, was described (Coppins & Aptroot 2008). At present the genus consists of two species worldwide. They both grow on wood of coniferous or deciduous trees.

## THE SPECIES

*Xerotrema megalospora* Sherwood & Coppins is characterized by black, urceolate (pitcher-like), cleistohymenial apothecia 0.3–0.6 mm diam., with a distinctly dentate margin and coarse radial striations on the outside and with a brownish disc (Fig. 1). Young apothecia are entirely closed (cleistohymenial), Fig. 2. The excipulum is brownish or with a greenish tinge, the inner lateral layer is covered by periphyses, and the lower part reacts blue-violet in  $KI_3$  (Lugol's reagent) after pre-treatment with 5% KOH, see Fig. 3. The asci are monosporous with a very large muriform ascospore, 90–150 x 35–40  $\mu$ m,

see also Sherwood and Coppins (1980) and Sanderson and Hawksworth (2009). The ascospores do not give a blue reaction with  $KI_3$ , contrarily to *Xerotrema quercicola*, see Coppins and Aptroot (2008).

The Norwegian specimen was growing on a decorticated and rather well decomposed snag of *Picea abies* in swampy Norway spruce forest close to an ombrotrophic mire. The species covered a large part of the trunk with lots of apothecia, which were surrounded by a well developed associated greenish algal crust (Fig. 1) consisting of *Trentepohlia* algae. According to Sanderson and Hawksworth (2009) the nature of the association between *Xerotrema megalospora* and the algae is not quite clear.

*Xerotrema megalospora* is here reported as new to Scandinavia. Elsewhere in Europe the species is known only from Scotland and Ireland where it is regarded as rare by Sanderson and Hawksworth (2009). According to Coppins and Aptroot (2008) *X. megalospora* is not uncommon on dry, standing decorticate trunks of *Pinus* in the native pinewoods of the Scottish Highlands. Outside Europe the species is known only from western North America (Oregon) where it has been found on decorticate wood of shrubby *Arctostaphylos* (Sherwood and Coppins 1980). The species therefore fits into a biogeographic element comprising oceanic species of both lichenized and non-lichenized fungi with a western European - western North American disjunction including, e.g., *Arthothelium norvegicum*, *Biatora hypophaea*, *Cavernularia hultenii* and *Rinodina disjuncta* (Holien and Tønsberg 1996, Printzen and Tønsberg 1999, Tønsberg and Williams 2006) and *Dactylospora aeruginosa* (Ihlen et al. 2004). This biogeographic element has been treated as the Trondelag phytogeographic element, see Holien and Tønsberg (1996).



**Figure 3.** Section of apothecium in  $KI_3$  showing large muriform ascospores and the blue-violet reaction in the lower part of the excipulum (Lugol just penetrating the upper hymenium and the lateral excipulum).

Specimen examined: Norway, Nord-Trøndelag, Steinkjer, between Okstadmyra nature reserve and river Døla, UTM: PR 2921 9546, 63°57.73'N, 11°38.33'E, alt. ca. 90 m, 15.10.2009, H. Holien 12566 (TRH and herb. Diederich).

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Continue from page 117

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