



## SWEDISH TAXONOMY INITIATIVE RESEARCH REPORT

Project period: 2005–2007

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LICHENS:

# Revision of the lichen genus *Aspicilia* in Sweden

The Swedish representatives of the lichen genus *Aspicilia* have been revised.

The species have been studied in the field in different parts of the country, and material has been collected, altogether c. 500 samples. Herbarium material from Uppsala (UPS) and a number of additional herbaria has also been studied.

Total DNA has been extracted from c. 250 collections not older than 10 years. Morphology and chemistry have been studied with traditional methods, including HPLC.

Of the 74 species recorded in Sweden only about 45 remain, including a number of undescribed species, two of which have been described (Nordin et al. 2011). The decreased number is a result of synonymizations (Nordin et al. 2007, Nordin 2013, 2015) and disclosure of incorrect determinations, and one species, *Aspicilia moenium*, is not an *Aspicilia* but belongs in Acarosporaceae (Nordin et al. 2009).

From the extracted DNA, ITS sequences have been produced from all samples, and from a reduced number also nuLSU and mtSSU sequences. The ITS sequences have been used for evaluation of species delimitations. Sequences from specimens resembling the types of the species known from one or a few collections have been of particular importance.

ITS sequences have also been used for phylogenetic analyses. The groups resulting from these are robust and are largely supported by analyses of the nuLSU and mtSSU sequences.

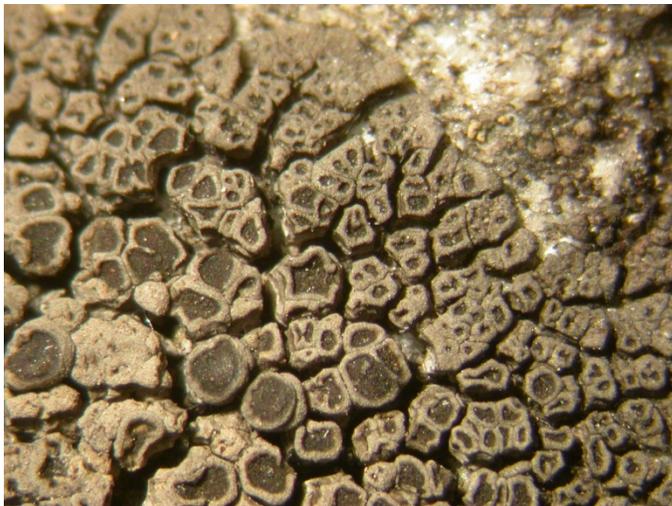
The latter were used in a study of the phylogeny at family level (Nordin et al. 2010), where the *Aspicilia* species were subdivided into *Aspicilia*, *Circinaria*, and *Sagedia*, all with Swedish representatives.

The genus *Megaspora* was found to be closely related to *Circinaria*, but the correct use of the name *Megaspora* was later reconsidered (Arcadia & Nordin 2012). *A. recedens* (Fig. 1) was transferred to the basal group *Lobothallia*, earlier only comprising species with lobate thallus.

Further study is needed for some of the groups, e.g. the species with soredia (except for *A. mashiginensis*), the *calcareo*-group and even for *A. cinerea* s.l. (Fig. 2). These groups need an extensive sampling that is outside the possibilities of this study. The *cinerea*-group was shortly discussed in Roux et al. (2011).

Nine papers have been published so far, including two conservation proposals (Nordin & Jørgensen 2008; Arcadia & Nordin 2012),

Determination keys including all Swedish species will be published in a new version of Foucard, Svenska skorplavar (in preparation).



**Fig. 1** *Lobothallia recedens*, formerly *Aspicilia recedens*

Foto: Anders Nordin



**Fig. 2** *Aspicilia cinerea*, type species of *Aspicilia*

Foto: Anders Nordin

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## LITERATURE

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