



## New synonyms and lectotypes in *Aspicilia* (Megasporaceae, Ascomycota)

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The genus *Aspicilia* A.Massal. *s.l.* (Megasporaceae Pertusariales Ascomycota) has a worldwide distribution and the species are common components in the lichen vegetation on exposed rocks in a wide variety of biomes from hot deserts to Arctic tundras. The genus has a reputation of being taxonomically extremely complicated, which is partly caused by the extreme morphological variation and phenotypic plasticity of the species (Nordin 2013; Nordin *et al.* 2007, 2008, 2010; Owe-Larsson *et al.* 2008, 2011; Roux *et al.* 2011). The only existing taxonomic treatment of the genus with a wide scope was published by Magnusson (1939), who applied very narrow species circumscriptions in most cases. Here a number of new synonyms are presented and discussed, most of which are names introduced by Magnusson (*loc. cit.*), and lectotypes of *Lecanora griseopallida* and *Sagedia laevata* are designated.

### *Aspicilia aquatica* (Fr.) Körber (1855:165)

Basionym:—*Parmelia cinerea* var. *aquatica* Fries (1831: 144). Type:—NORWAY. Troms: Storfjord, by the river Gustavsvingen, 7 August 2003, Owe-Larsson 8938 (neotype, designated by Nordin & Jørgensen 2008: 989, UPS!).

= *Lecanora griseopallida* Vainio (1878: 59). *Aspicilia griseopallida* (Vain.) Hue (1910: 112). Lectotype (**designated here**):—RUSSIA. “Fennia, Viipuri (Viborg), in vallo”, 1875, E. Wainio (TUR-VAIN 5702!). *syn. nov.*

The original material of *Lecanora griseopallida* at TUR-VAIN has been divided and placed in two separate packets numbered 5702 and 5702a, each containing a small piece of rock, but there is just one original label, which indicates that the separation of the material was not made by Vainio himself but later by a curator at the museum. Thus both should be regarded as part of the lectotype. It cannot be ruled out that original material can also be found elsewhere. Both the general appearance and the size of spores and conidia agree with *Aspicilia aquatica*, which like many other *Aspicilia* species is quite variable in colour, areolation and the appearance of the apothecia.

### *Aspicilia cinerea* (L.) Körber (1855: 164)

Basionym:—*Lichen cinereus* Linnaeus (1767a: 709, 1767b: 132). Type:—SWITZERLAND. In m. Belpberg. Schaerer, Lich. Helv. exs. 127 (neotype, designated by Jørgensen *et al.* 1994:374, UPS!).

= *Lecanora delimitata* Magnusson (1952: 188). Type:—SWEDEN. Torne lappmark: Jukkasjärvi par., Abisko, Jebrenjokk, 16 July 1919, A. H. Magnusson 3303 (holotype UPS!). *syn. nov.*

*Aspicilia cinerea* is very variable, both in terms of morphology and DNA sequence variation in the Internal Transcribed Spacer, and is most probably to be regarded as a species complex, but there is poor correspondence between morphological and molecular variation (Roux *et al.* 2011). The type of *Lecanora delimitata* differs from most other specimens mainly by its partly shiny, yellow-brown thallus, with slightly elongated marginal areoles. In other respects it does not differ significantly from other *A. cinerea* specimens, although the surrounding, black, slightly effigurate prothallus is unusually conspicuous. In addition to the type specimen there are two more collections in UPS determined to *L. delimitata* by Magnusson, but the yellow-brown parts of these are not as dominant as in the type. One of these is from the same area as the type, the other from the province of Möre and Romsdal in Norway.

### *Aspicilia indissimilis* (H.Magn.) Räsänen (in Huuskonen 1949: 19)

Basionym:—*Lecanora indissimilis* Magnusson (1939: 68). Type:—NORWAY. Finnmark: Varanger, 22 July 1957, *Th.M. Fries* (holotype UPS!).

= *Lecanora contraria* Magnusson (1939: 80). Type:—SWEDEN. Lycksele lappmark: Tärna par., Björkfors, Kvarnbäcken, 14 July 1924, *A. H. Magnusson 8221* (holotype UPS!). *syn. nov.*

= *Lecanora hultingii* Magnusson (1939: 36). Type:—SWEDEN. Dalsland: Forsbacka, 1870, *J. Hulting* (holotype GB!). *syn. nov.*

= *Lecanora stenholmii* Magnusson (1939: 36). Type:—SWEDEN. Jämtland: Åre par., Mörvikshummeln, in lower slope, 7 July 1936, *C. Stenholm* (holotype UPS!). *syn. nov.*

Apart from the type there is only one additional collection referred to *Lecanora contraria* by Magnusson. It has the same collection number and is from the same area but the label reads “Björkfors, by a torrent” and it dates from 17 July. Both specimens have a thin, dark brown thallus, and the rim of the apothecia is darker and more prominent than usual. Otherwise it agrees well with more typical representatives of *Aspicilia indissimilis*, which has turned out to be very variable both in external morphology and colour when studied in the field.

Only the type collection is known of *Lecanora hultingii*. It has a whitish to pale dirty yellowish thallus, like several other *Aspicilia indissimilis* specimens growing in shaded situations at shores of lakes and rivers. This is probably also the habitat for this specimen, according to Magnusson (1939). This collection is one of very few of the species from S Sweden. It was originally labelled *Lecanora gibbosa* by Hulting.

Also *Lecanora stenholmii* is only known from the type collection. It contains two intermixed species, *Aspicilia indissimilis* and *Sagedia zonata*. Magnusson combined apothecia of the former with pycnidia of the latter and named this “hybrid species” after the collector. The main part is the former species, and there are also pycnidia with distinctly longer conidia (c. 16–21.5 µm long vs. 8–9 µm of *L. stenholmii*) agreeing with those of *A. indissimilis*. Both species are still present at the type locality.

### *Aspicilia laevata* (Ach.) Arnold (1887: 98)

Basionym:—*Sagedia laevata* Acharius (1809:164). *Lecanora laevata* (Ach.) Nylander (1866:137). Lectotype (**designated here**):—SWEDEN. Uppland: Carlberg, Swartz (UPS!).

= *Lecanora holmiensis* Magnusson (1939: 123). Type:—SWEDEN. Uppland: Stockholm, Roslagstull, August 1859, *P. T. Cleve* (holotype UPS!). *syn. nov.*

*Lecanora subobscura* Magnusson (1939: 122). Type:—SWEDEN, Bohuslän: Naverstad par., Torp, 27 July 1923, *A. H. Magnusson 7541a* (holotype UPS!). *syn. nov.*

Only one locality and collector was cited by Acharius in the protologue of *Sagedia laevata*. Corresponding material could not be found at H-ACH or UPS-ACH, nor at S, SBT or UPS-THUNB, where many of Swartz’ collections are housed. The material selected as lectotype was found in the general herbarium of UPS. The label of the lectotype is in the handwriting of E. Fries and reads: “*Parmelia cinerea* v. *laevata*, *Sagedia laevata* Ach. e loco primitivo, Carlberg. Swartz.” and Th. M. Fries has added: “Th.Fr. Scand. p. 276.” It contains a small piece of rock (c. 1 cm<sup>2</sup>), covered by a thin thallus with plenty of apothecia, possibly originating from a larger collection, but no such collection was found.

Both *Lecanora holmiensis* and *L. subobscura* are only known from the types. The former is in poor condition and does not really look like a typical *A. laevata*. The thallus is areolated, some of the apothecia are unusually protruding and the black rim of the apothecia is not very distinct. Nonetheless, the spore and conidial measurements, as given by Magnusson, as well as the chemistry (occurrence of stictic acid) agree with *A. laevata*. Consequently it should just be regarded as a deviating specimen. It should be noted that the type locality is situated less than 2 km ENE of the type locality for *Aspicilia laevata* in the northern part of the city of Stockholm.

The thallus of *Lecanora subobscura* is areolated, and it is rather thick, but in other respects it agrees with *A. laevata*. In UPS there are similar collections that were determined to *A. laevata* by Magnusson.

## *Aspicilia verrucigera* Hue (1910: 48)

Type:—FINLAND. Savonia media: Pieksämäki, 1880, *J. P. Norrlin*. Norrlin, Herb. Lich. Fenn. 241 (holotype PC, isotype UPS!).  
*Lecanora trunciseda* Magnusson (1939: 117). Type:—SWEDEN. Blekinge: Yttre Vämö, 1874, *H. Falk* (holotype UPS!). *syn. nov.*  
*Lecanora uplandica* Magnusson (1939: 165). Type:—SWEDEN. Uppland: Uppsala, Halmbyboda, 12 July 1852, *Th. M. Fries* (holotype UPS!). *syn. nov.*

The lignicolous *Lecanora trunciseda* is known only from the type collection. The thallus is paler than usual and some of the apothecia are slightly compressed end elongated, but in other respects it agrees well with other specimens of *Aspicilia verrucigera*. At UPS there are at least a couple of other collections with lignicolous material of this species.

It is not uncommon for other normally saxicolous species of the Megasporaceae to occur both on lignum and bark.

*Lecanora uplandica* is another example of a name based on only one collection. Magnusson (1939) placed it among the “*Radiantes*”, i.e. species with radiating elongated marginal areoles. This is a bit surprising. Compared to other species in this group, the radiating marginal areoles in *L. uplandica* are quite indistinct and not really more than can be found in other specimens of *A. verrucigera*. It is true that the specimen has a rather odd appearance. The thallus has an unusual blue-green tint and the apothecia are relatively large and protruding. The erroneous information about conidium length provided by Magnusson (1939: 166) made it difficult to interpret. The measurements given by him, (17)20–25 µm, agree with the conidia of *Protoparmeliopsis muralis*, which also grows on the same piece of rock. Fortunately, a single pycnidium undoubtedly belonging to the right thallus was found. This contained conidia with a length of 13.5–17 µm, which agrees with the conidium length of *A. verrucigera*.

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