svenska artprojektet

SWEDISH TAXONOMY INITIATIVE PROJECT REPORT
Project period: 2006–2007

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FUNGI:

Taxonomy, nomenclature and phylogeny of Ostropalean fungi in Sweden, with focus on Stictidaceae and Odontotremataceae

This is the final report on a project on the taxonomy, nomenclature and phylogeny of Ostropalean fungi in Sweden, with focus on Stictidaceae and Odontotremataceae.

The funding has been utilized as a postdoc salary for Elisabeth Baloch, for substantial amounts of travel, herbarium visits, and fieldwork in Sweden, and a minor amount for lab consumables. Additional support from MW's other sources of funding were also utilized, in particular to cover lab costs.

The aims with the project as defined in the original application were:

- to collect ostropalean fungi from all over Sweden and deposit these in public herbaria
- to publish floristic reports based on these collections and on material present in Scandinavian herbaria
- to revise the taxonomy and nomenclature of Swedish ostropalean fungi, including revising species delimitations and describing new taxa, and prepare manuscripts for publication in international journals
- to, partly in collaboration with collegues, conduct investigations on molecular phylogeny of the Ostropales s. lat. to facilitate studies of the delimitations of orders, families and species
- to contribute to MWs continued studies of 'optional lichenization' in Stictidaceae

Field work was conducted in the Swedish provinces Skåne, Öland, Södermanland, Pite Lappmark, Torne Lappmark, Uppland, and Östergötland. Collections have been deposited in NRM in Stockholm (herbarium S).

We have so far found 7 new species for science, one additional new to Sweden, coined four new combinations, and suggested substantial revisions of generic and family circumscriptions; including new concepts of *Cryptodiscus* (two genera synonymized with *Cryptodiscus*) and *Odontotrema*, of both Stictidaceae and Odontotremataceae, and of Ostropales as such.

During the project Elisabeth and I worked mainly with three sub-projects:
1. A revision of *Cryptodiscus* in Sweden based on morphology, molecular phylogeny, and a thorough nomenclatural revision and study of types. This was published in *Fungal Diversity* (Baloch et al. 2009). Briefly, *Cryptodiscus* was shown to be another genus including both saprotrophic and lichenized species. In our new delimitation, Cryptodiscus has 5 species (one newly described and one new to Sweden), two genera were synonymized with *Cryptodiscus* (two non-Swedish species also combined), and finally four species were shown not to be *Cryptodiscus* and will most likely need new genera to be described.

2. A molecular phylogeny of Ostropales s. lat., to discuss the circumscriptions of families and orders within the group. This developed into a large manuscript where Elisabeth was first author, and it was published in Taxon (Baloch et al. 2010). Briefly, the new family Sagiolechiaceae was described and the genera *Belonia* and *Pachyphiale* were shown to be nested within *Gyalecta*. Names resulting from that study were published in 2013.

3. A revision of Odontotremataceae in Sweden based on morphology, molecular phylogeny, and a thorough nomenclatural revision and study of types. We show that Odontotremataceae s. lat. is polyphyletic, with one group belonging to Stictidaceae, and Odontotremataceae s. str. including the type species and some related species. Here we resurrect an old generic name for the group in Stictidaceae and describe three new species, and synonymize some genera currently accepted in Odontotremataceae with *Odontotrema*. We worked on a manuscript during Elisabeth Baloch's SYNTHESYS visit to MW in June 2011, which was finally published in 2013.

In addition to these main sub-projects remains a number of smaller floristic and taxonomic "notes" to be made. MW will be responsible to produce a semi-popular key to the Ostropales s. str. (Stictidaceae and Odontotremataceae) in Sweden. One new species of *Schizoxylon* och two species of *Stictis* (Stictidaceae) needs description, and 3-4 species formerly in *Cryptodiscus* remains without a proper generic placement. It is somewhat unclear when we can finalize this.

A summary of papers and presentations resulting from the project, and various planned manuscripts.

Poster presentation:
Baloch, E., Gilenstam, G., Döring, H. & Wedin, M. 2006. The Ostropales (Ascomycota) of Sweden, focussing on Stictidaceae and Odontotremataceae. Systematikdagarna 2006, Göteborg.

Lectures:

Baloch, E., Lücking, R., Lumbsch, H.T. & Wedin, M. 2008. The major clades and phylogenetic position of the Ostropales. The 6th IAL Symposium Abstract volume, Asilomar, Californien.

Schmitt, I., Wedin, M., Baloch, E., Parnmen, S., Papong, K., Rivas Plata, E., Lücking, R., Healy, R.A. & Lumbsch, T. 2012. Punctual evolution and recently accelerated diversification: insights into the evolution of Ostropomycetideae. IAL7 Symposium abstract 3A-O3

Elisabeth also gave seminars at the NRM, Stockholm and at Uppsala University during 2008.

Web-publication:

Baloch, E. & Wedin, M. 2008. Småsvampar på död ved i svenska skogar – släktet *Cryptodiscus*. Månadens kryptogam november 2008. http://www.nrm.se/sv/meny/faktaomnaturen/vaxter/kryptogamer/manadenskryptogam/svampar/slaktetcryptodiscus.8022.html

Publications:

Baloch, E., Gilenstam, G. & Wedin, M. 2009. Phylogeny and classification of *Cryptodiscus*, with a taxonomic synopsis of the Swedish species. *Fungal Diversity* 38: 51-68.

Baloch, E., Lücking, R., Lumbsch, H.T. & Wedin, M. 2010. Major clades and phylogenetic relationships between lichenized and non-lichenized lineages in Ostropales *Taxon* 59: 1483-1494.

Baloch, E., Gilenstam, G. & Wedin, M. 2013. The relationships of *Odontotrema* (Odontotremataceae) and the resurrected *Sphaeropezia* (Stictidaceae) – new combinations and three new *Sphaeropezia* species. *Mycologia*105: 384-397.

Baloch, E., Lumbsch, H.T., Lücking, R. & Wedin, M. 2013. New combinations and names in *Gyalecta* for former *Belonia* and *Pachyphiale* species. *Lichenologist* 45: 723-727.

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