



# LIAS – A Global Species Database for Lichens

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LIAS was initiated in 1993. It is a multi-authored information system for the collection and distribution of descriptive and other biodiversity data on lichens and non-lichenized Ascomycetes.

The goal is

- to establish a multi-authored worldwide database on descriptive data of all Ascomycetes
- to design user-friendly web tools for an easier access and remote editing of database records via internet
- to offer an online database system for multiple usage and dissemination of expert knowledge
- to provide public access to database generated identification keys and natural language description of Ascomycetes
- to promote common standards on descriptive data connected with taxonomic names of Ascomycetes
- to facilitate interoperability and data exchange

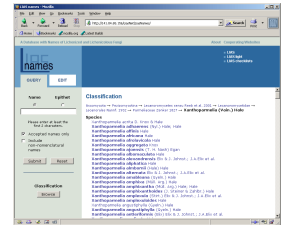
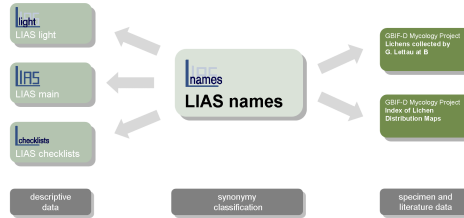
Currently it comprises three subsystems with taxon-based data (LIAS main, LIAS light, LIAS checklists) interlinked with the central taxonomic database LIAS names.



## LIAS names – Content

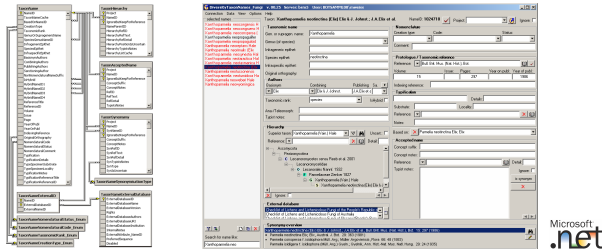
LIAS names was set up in 2003 primarily for structural optimization of LIAS. It stores all names used by the LIAS subsystems and up to now mainly focuses on names of lichens and lichenicolous fungi. The database is curated by several lichenologists and mycologists. It delivers accepted names and synonyms not only for the LIAS subsystems but also for associated lichen projects within the frame of the German GBIF Node for Mycology. Up to now, the database comprises about 21,000 lichen names (including accepted names, obligate and facultative synonyms as well as so-called non-nomenclatural names).

The taxonomy at genus and higher levels follows the concept of the MYCONET project (see Eriksson et al. 2004 and <http://www.umu.se/myconet/Myconet.html>) and is online accessible by a special browse mode for classification.



## Database model and implementation

The database application DiversityTaxonNames underlying LIAS names is designed as module of the Diversity Workbench framework (Hagedorn et al. 2005) and implemented using MS SQL Server as the database engine and .Net as a client. The browser-independent .Net client is currently used for online editing of names and classification. It might thus become the central working platform for LIAS participants. Within the Diversity Workbench Framework, DiversityTaxonNames is dynamically linked with the other modules like DiversityCollector (see Hagedorn 2002).

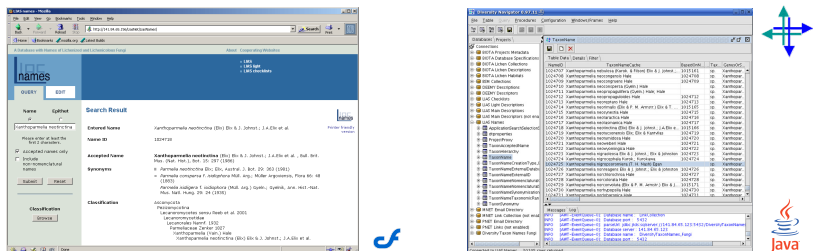


## Services to access data

Currently two main services to access LIAS names data are established: A ColdFusion based web client allows public and user-friendly database queries for checking accepted names, synonyms, non-nomenclatural names as well as the taxonomic concepts used (<http://liasnames.lias.net>).

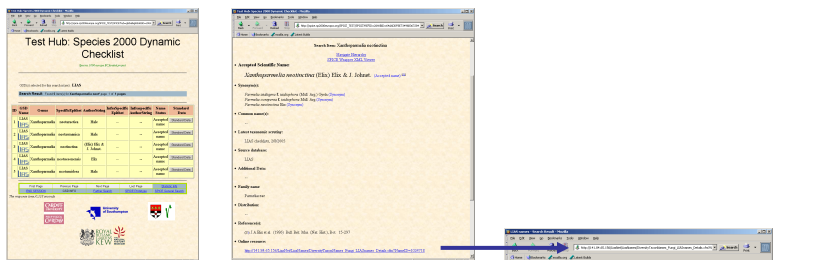
For flexible and browser-independent remote access of those data in connection with data of other research databases a new Java Rich Client "DiversityNavigator" is used.

In 2005, a Memorandum of Cooperation between LIAS and the Index Fungorum Partnership was signed. In this context a web service for data exchange is planned.



## Service for Species 2000 and GBIF

As part of the Species 2000 Europa project, LIAS was peer-reviewed and evaluated as global species database (GSD) for lichens. Within the last few months a SPICE wrapper program for data exchange with Species 2000 and thereby with GBIF was written by one of the LIAS software developers. Thus, the Species 2000 standard data are now accessible via the Species2000 Test Hub.



## Literature

- Eriksson, O.E., Baral, H.-O., Currah, R.S., Hansen, K., Kurtzman, C.P., Rambold, G. & Laessle, T. (eds) 2004. Outline of Ascomycota – 2004... Myconet 10: 1–99.
- Hagedorn, G. 2002. Diversity Workbench: A biodiversity component framework. Draft Version 0.3. - [http://www.DiversityCampus.net/Workbench/Framework/DW\\_Framework03.pdf](http://www.DiversityCampus.net/Workbench/Framework/DW_Framework03.pdf), 1–19. Berlin.
- Hagedorn, G., Weiss, M. & Triebel, D. 2005. DiversityTaxonNames (version 1.0, 29. March 2005): Documentation of the information model. - <http://www.diversitycampus.net/Workbench/Taxonomy/Model/2005-03-29/DiversityTaxonNames.html>. Berlin.
- LIAS 1995–2005. A Global Information System for Lichenized and Non-Lichenized Ascomycetes: [www.lias.net](http://www.lias.net).