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 therewith dissemination of expert knowledge, especially by providing 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

As part of the umbrella project “German GBIF node for mycology”, LIAS will be enlarged by establishing a LIAS names server and expanding the Descriptors Workbench.

**Introduction**

LIAS is a multi-authored information system for the collection and distribution of descriptive and other biodiversity data on lichens and non-lichenized ascomycetes.

**Data entry, maintenance and natural language description output**

LIAS promotes the gathering, furnishing and administration of data by experts in a standard database system which has an information depot for individual species only to e.g. for formulation and - set appointments - the public access to the data via Internet. For the local administration the database system Diversity Descriptions, a module of the Diversity Workbench, is used. Data entry and revision is possible online via html-based text with natural language description, e.g. for usage in Arctos or morphograph project, or provided in HTML, RTF or PDF formats as an additional service. These descriptions are accessible via Internet as well.

**Definition of Characters (Descriptors)**

LIAS includes a large character set (more than 750 descriptors) for ascomycete morpho-anatomical data. In accordance with DEEMY (see poster) these descriptors will be evaluated and decomposed into character states, ranked on the basis of a revised structure-property-nomenclature concept and reorganized in a hierarchical structure. Definitions, explanations and illustrations for all descriptors will be given in the context, the Diversity Workbench, and Thesaurus of Geographic Names. The checklist information is based on literature data and actually restricted to Europe, continental Africa, South East Asia, North America, Australia, and Antarctica. LIAS checklists share layout standards and nomenclatural compatibility with the LIAS core module. Data maintenance is possible using the database client Diversity Navigator (written in Java and developed within the frame of BOTA S04).

**Data set based on a restricted number of characters**

The restriction of this submodule to a set of only 70 characters allows a more rapidity of description data so that the majority of ascomycete species will be covered in the next year. Data selection is optimized for the identification of lichen groups. As for description data of the LIAS core module (see below), Nardy and DAP are used as web interfaces as for the descriptive data of the LIAS core module (see below).

**Web Interfaces Navikey and DAP**

LIAS presents interactive keys for online identification of ascomycetes. For this purpose two web interfaces are under further development. The web interface Navikey, a java-based application and DAP, which is a Perl script. Currently, a core key for all lichenized and lichenicolous genera (845) as well as various species level keys for 3000 species of 11 families of ascomycetes are available.

**Checklists: Spatial data**

Query and visualisation of checklist data of Lichens and Lichenicolous Fungi

The goal of the LIAS submodule checklists is to supply databases access to spatial information on lichens and lichenicolous fungi of all 193 countries of the world and of 300 additional geographical units at the subnational level, e.g., islands and states of large countries. The geographic division follows its part the World Geographical Scheme for Recording Plant Distributions as prepared by TDWG and the Getty Thesaurus of Geographic Names. The checklist information is based on literature data and actually restricted to Europe, continental Africa, South East Asia, North America, Australia, and Antarctica. LIAS checklists share layout standards and nomenclatural compatibility with the LIAS core module. Data maintenance is possible using the database client Diversity Navigator (written in Java and developed within the frame of BOTA S04). Visualisation of taxon distribution is realized by a web service in OGC protocol, using the GSI system (GSI) and the tileable package S for the generation of maps. (An example of the spatial distribution of ascomycete, e.g. morphology, data is given on the project of BOTA S04/LIAS.)