

Digitalization of Fungal Specimen Data in the Context of the GBIF-D Mycology Node

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Currently four projects digitize fungal and lichen specimen data as part of the umbrella project on establishing the GBIF-D Node for Mycology () Three further are considered as associated () because they are already linked with GBIF International using the node specific IT architecture. All collections are housed in major German herbarium institutions that have curators in lichenology or mycology. The data will therefore be accessible on the foreseeable future.

The collections differ in age of the specimens and the taxonomic and geographic scope, but all are important reference collections. The material mainly originates from Germany and adjacent countries. Four collections are well documented historical collections (e.g., the lichen collection of G. Lettau and the collection of phytopathogenic fungi by H. & H. Doppelbaur). They represent a useful set of data appropriate for data analyses concerning the biodiversity of an ecologically defined group of fungi and lichens within a given region and time period. Other projects focus on actively curated, taxon-group-specific subcollections of larger general herbaria. Collections such as Eumycota in Görlitz (GLM) and Myxomycetes in München (M) continue to acquire new specimens and support biological research in the national and international context.



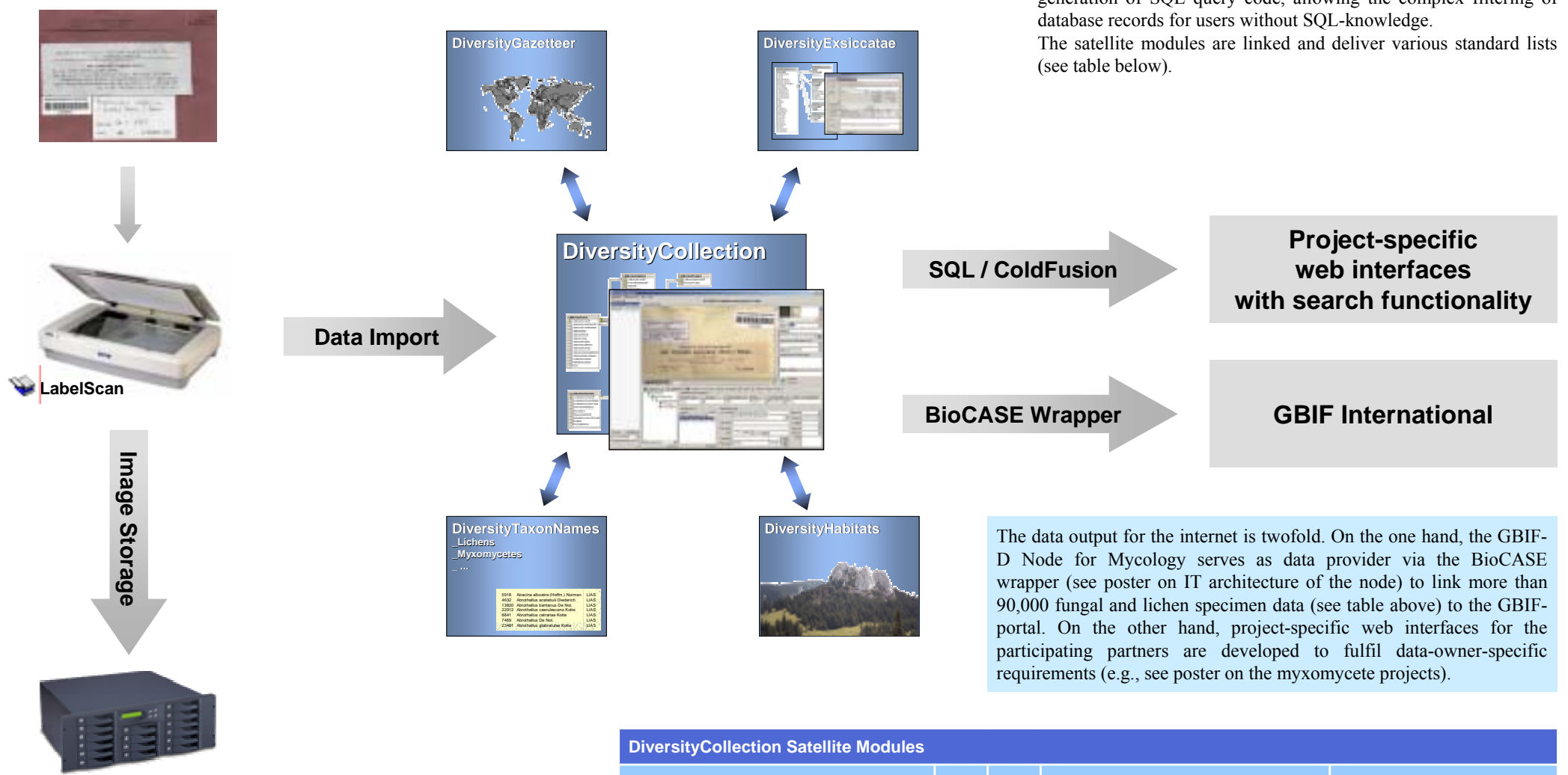
Projects	Partners	Specimens	Taxa	Geographic Focus	Time Frame
Fungal Collection at GLM	Museum f. Naturkunde Görlitz	55,000	4,400	Europe, Germany	1960–
Myxomycetes Collection at M Collection Schnittler General Collection	Univ. Greifswald, Bot. Staatssammlung München	12,923 10,000 2,923	691 400 291	Worldwide, Europe	1830– 1985– 1830–
Lichens of the Black Forest collected by G. Lettau at B	Bot. Museum Berlin-Dahlem	7,500	300	Germany	1902–1945
Erysiphales Collection at M	Bot. Staatssammlung München	5,748	240	Worldwide, Europe	1840–
Phytopathogenic Fungi collected by H. & H. Doppelbaur at M	Biol. Bundesanstalt Berlin, Bot. Staatssammlung München	4,992	921	Germany	1950–1970
Macrofungi collected and illustrated by F. Wohlfarth at M	Bot. Staatssammlung München	1,899	800	Central Europe	1952–1977
Fungi collected and illustrated by K. Schieferdecker at M	Bot. Staatssammlung München	1,256	873	Germany	1941–1963

Total ~ 90,000 ~ 6,700

Currently, all but one collection mentioned above capture their specimen data by using *DiversityCollection* with the satellite modules *DiversityGazetteer* and *DiversityExsiccatae*. Within the digitalization process special characteristics of the single collections became evident. Thus, *DiversityCollection* 1.0 was extended to fulfil user-specific requirements especially concerning the databasing of old collections in B and M.

The collections of M. Schnittler and the collections at GLM have special demands on recording ecological and habitat data. For this purpose the module *DiversityHabitats* was created.

For *DiversityCollection* 2.0 (MS SQL-Server), which is currently beta-tested, a completely new client is written in C#. This version exhibits a wide range of new features, e.g. a routine for the recognition of bar codes (to replace LabelScan) and automatic generation of SQL query code, allowing the complex filtering of database records for users without SQL-knowledge. The satellite modules are linked and deliver various standard lists (see table below).



For the historical collections in M the original specimen labels are scanned using LabelScan software which provides automated recording of barcode labels and a simplified import of image files. The file information is imported in the *Diversity Workbench* database application *DiversityCollection* 1.0 (MS Access) for easy and direct way of data transcription from digital label images.

The data output for the internet is twofold. On the one hand, the GBIF-D Node for Mycology serves as data provider via the BioCASE wrapper (see poster on IT architecture of the node) to link more than 90,000 fungal and lichen specimen data (see table above) to the GBIF-portal. On the other hand, project-specific web interfaces for the participating partners are developed to fulfil data-owner-specific requirements (e.g., see poster on the myxomycete projects).

DiversityCollection Satellite Modules				
Module	v1.0	v2.0	Module Function	Data Provider
<i>DiversityGazetteer</i>	x	x	standard lists for geographic names	several geographic thesauri
<i>DiversityExsiccatae</i>	x	x	names of exsiccatae	IndExs
<i>DiversityTaxonNames_Lichens</i>		x	standard lists of taxonomical names	LIAS names
<i>DiversityTaxonNames_Myxomycetes</i>		x	standard lists of taxonomical names	NomenMyx
<i>DiversityHabitats</i>		x	standard lists of ecological entities	EUNIS