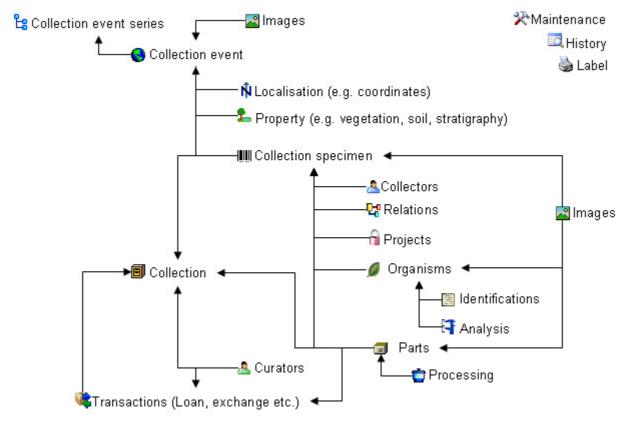
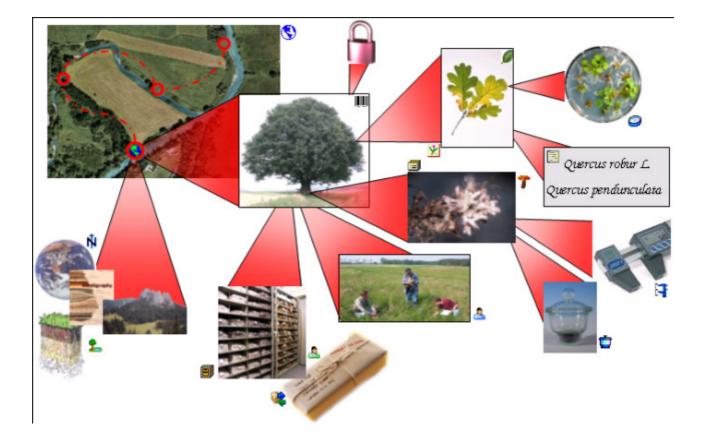


DiversityCollection (Version 2) is part of the database framework <u>Diversity Workbench</u>. Within this framework the application DiversityCollection is confined to the management of specimens in scientific collections. In this context it is designed to documente any action concerning the collection, storage, exchange and treatment of specimens in a collection and is also appropriate to store observation data. DiversityCollection is distinguished from other collection management systems by its focus on biological relations between organisms collected together as one or more specimens ( e.g. host, parasite and hyperparasite, symbionts etc.). Any module within the Diversity Workbench is focused on a specific data domain. DiversityCollection keeps only data connected with the handling of collection specimens and observations. Data of other realms like e.g. taxonomy are handled in separate modules. For an overview of the available modules see <u>Diversity Workbench</u>. DiversityCollection might also be used as a stand-alone application.

The image below gives you an overview of the main parts, relations and functions of DiversityCollection



The image below gives an overview for some typical data depicted in DiversityCollection together with the symbols used throughout the program. A typical specimen IIII may have been collected at a collection event I during an expedition S. The site of the collection event may be localized and characterized L. The colletors Collected twigs of the plant and fungi T from the roots. They store the samples as herbarium sheets and specimen I in a collection I. The curator collected as part of a project C. Certain parts were cultivated C, analysed collected times. Images were taken for the event series, the collection event, the Collection specimen as well as organisms and part of this specimen.



DiversityCollection 2 is based on <u>Microsoft</u> SQL-Server 2005 and the .Net Framework, Version 2.0.

Copyright: Diversity Workbench 1999 - 2008.

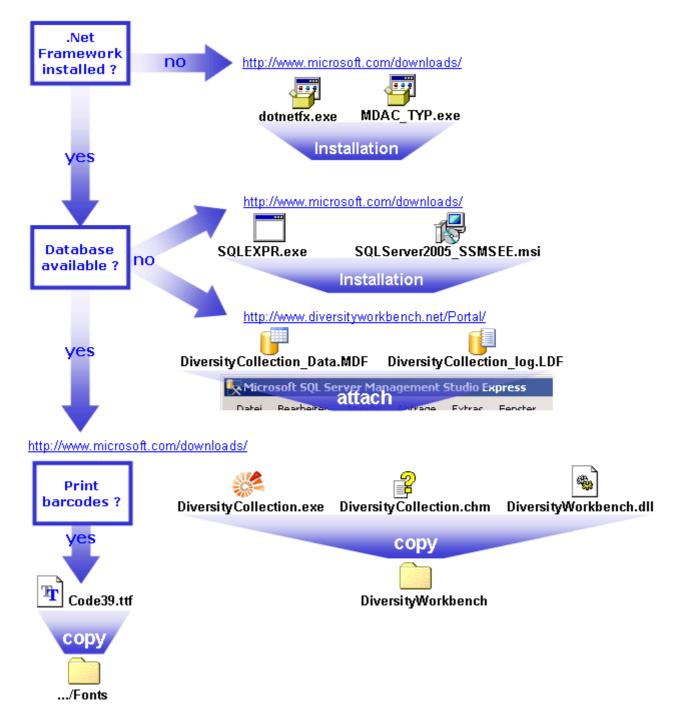
Author: Markus Weiss.

Licence: GNU General Public License

# Installation

To run DiversityCollection, you need the database and the client. All parts are free and can be downloaded from <a href="http://www.microsoft.com/downloads/">http://www.microsoft.com/downloads/</a> and <a href="http://www.diversityworkbench.net/Portal/">http://www.diversityworkbench.net/Portal/</a>.

The image below gives an overview of the installations and files needed.



### Database

DiversityCollection uses Microsoft SQL-Server 2005 as database engine. If you do not have a database server with DiversityCollection already available, you have to install the database engine first. Download the free version of Microsoft SQL Server Express

(SQLEXPR.exe resp. the version of you preferred language, e.g. SQLEXPR\_DE.exe) and

Microsoft SQL Server Managment Studio Express (SQLServer2005\_SSMSEE.msi ) from <u>http://www.microsoft.com/downloads/</u>. Start the program and follow the installation instructions.

Download the database files DiversityCollection\_Data.MDF U

DiversityCollection\_log.LDF **I** from <u>http://www.diversityworkbench.net/Portal/</u> and copy them into your database directory. You have to attach the database to the database engine using the Microsoft SQL Server Managment Studio Express. In the **Object-Explorer** select databases and choose attach from the context menu as shown below.

🍢 Microsoft SQL Se	rver Mar	nagemen	it Studio B	xpress	
Datei Bearbeiten	Ansicht	Extras	Fenster	Community	?
2 Neue Abfrage	👌   💕	8	B 🗎	🕨 🎉 者	Ŧ
Objekt-Explorer			÷ 9	× Zus	ammenfa
📑 👬 🔳 🖉 🔟	,			🔁 🛛	2 孝 🕤
<ul> <li>Image: Book of the second secon</li></ul>		5 (SQL Ser	ver 9.0.13	99 -	s ,
🛨 🣴 System	Neue I	Datenbani	<		
🕀 🧰 Sicherheit	Anfüg	en			
🛨 🚞 Serverobje		bank wied	erherstellei	n	
⊕	Datele	n und Dat	eigruppen	wiederherstel	len
	Aktual	isieren			

A form will open where you can choose the file DiversityCollection\_Data.MDF and attach it to the database engine.

#### Client

The client is based on the .Net framework from Microsoft. If not already present, you have to install the following components first:

Microsoft .NET Framework Version 2.0. Download (dotnetfx.exe ), start the program and follow the installation instructions.

Microsoft Data Access Components (MDAC) 2.8. Download (MDAC\_TYP.exe ), start the program and follow the installation instructions.

(see <a href="http://www.microsoft.com/downloads/">http://www.microsoft.com/downloads/</a> for the latest versions)

Download the files for DiversityCollection from <a href="http://www.diversityworkbench.net/Portal/">http://www.diversityworkbench.net/Portal/</a>

Copy all files (DiversityCollection.exe 🧱, DiversityCollection.chm Ĕ

, DiversityWorkbench.dll () into your DiversityWorkbench directory. To print barcodes the

font for Code 39(Code39.ttf 🛄 ) must be copied to the folder C:\WINNT\Fonts.

After the installations make shure to get the latest updates from <u>http://v4.windowsupdate.microsoft.com/</u>.

### Menu

Overview of the menu in DiversityCollection

#### Connection

📴 Database	Choose one of the databases available on the server. Only those databases will be listed to which the user has access permission.
Transfer previous settings	Transfer the settings of a previous version.
Quit	Quit the application and stop all processes started by the application.
Query	
Show query	Show or hide the query list
Predefined queries	Under this menu entry all predefined queries will be listed
ሼ Scan mode	Change to the scan mode to open the dataset of a specimen by scanning the barcode
Data	
衫 Import	
Specimen scans	Import scans of specimen labels
Import list	Import tab separated lists
🕩 Export	
Export list	Export a tabulator separated file with the data of the specimen
XML	Export date as a XML-file according to ABCD
Administration	
🖣 Analysis	Administration of the analysis methods used for the collection specimen
Collections	Administration used for the collections.
⊁ Maintenance	Maintenance of database entries especially if connected to other modules.
Material categories	Administration of the material categories that should be visible when creating a new part for a specimen.
草 Processing	Administration of the processing procedures applied in the collection.
<b>7</b> Queries	Creating and editing predefined queries.
Taxonomic groups	Administration of the taxonomic groups that should be visible for creating a new identification unit.
💐 Transactions	Administration of the transactions, e.g. loans, exchange etc.
Expired loans	Administration of expired loans. This menu entry will appear when there are expired loans in collections where the current user is a curator.
Å User	Administration of the user and their permissions in the database.
Å Curators	Administration of the curators, responsible for the administration of the transactions.
Help	
🔮 Manual	Opens the online manual
Info	Show the version and corresponding information
🖄 Feedback	Opens a form for sending feedback

## Manual

The online manual DiversityCollection.chm investing must be placed in your application folder, together with the application DiversityCollection.exe and the library DiversityWorkbench.dll.To get information to any topic in the application DiversityCollection and open this manual, just click on the field you need information about and press F1.

# Tutorial - first steps

This tutorial will guide you through the first basic steps to enter a single dataset in DiversityCollection. After the <u>installation</u>, make sure, you have <u>access</u> to the database. If you

have the rights to enter any data, click on the button in the upper left panel (see point 1 in image below). If there are accession numbers in the database, a dialog will appear if you want to take the next free number. In the end you will find a new entry in the specimenlist on the left and the trees for the specimen (see point 2 in image below) and the storage as shown below.

🚅 DiversityCollection, Databas	e: DiversityCollection_Test			
Connection Query Data Adm	ninistration Help			
	Acc.Nr.		ID Version With 182872 1	hold reason
Query results		-	2 – select da	taset
order by: 1 - create I	new dataset			
T TL -				
Query conditions Specimen	Ш <u>Ш [ID: 182872]</u>		1	
Acc.Nr. * ~				
Event				
Locality * ~				
Project				
Project				

If you did not specify an accession number the entries will look like in the image above, otherwise the accession number will be shown. To enter your data for the specimen, click on the entry in the upper tree as shown below. This will open the fields where you can enter the details for the specimen in the area right from the tree.

🚰 DiversityCollection,Database: Div	ersityCollection_Test v. 2	2.5.1.7 Server: 141.84.65.107 Port: 5432 User: 🔳 🗖 🔀
Connection Query Data Administrat	ion Help	
📴 🔲 🖘 🗅 🖻 🗙 🗹 🧮 - Query results	Acc.Nr.	ID Version Withhold reason III 182872 1
ID: 182872	<b>III</b> [ID: 182872]	Collection specimen
		Number: 9 C Find next
		Q Date:
		S Depositor: 🗸
		Dep.Nr.
order by: Specimen Acc.Nr. 🗸		Collection: Vithhold, reason: V
<ul> <li>T</li> <li>T</li> <li>T</li> </ul>		Ref. V
Query conditions		
Specimen		Projects
Acc.Nr. • ~		Originat
Event		Additionat Problems:
Locality • ~		Exsiccatal series
Project		
Project 🗸 🗸		

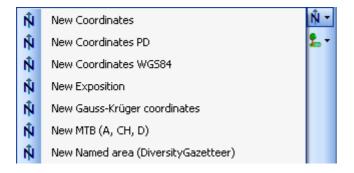
In the panel right of the tree, several buttons will appear where you can enter additional informations to this specimen. To enter information about the <u>collection event</u> (when and where the specimen was collected) click on the **O** button. This will add an entry for the collection event in the upper tree as shown below. Select this entry in the tree, to open the fields for the collection event. To see the projected contents of the fields, simply place you mouse in the field. A explanation will appear like for the field **Description of the locality**:

Locality description of the locality, exactly as written on the original label (i.e. without corrections during data entry)

See the event part for further details.

📽 DiversityCollection,Database: Div	ersityCollection_Test v. 2.5.1.	7 Se	erver: 141.84.65.107 Port: 5432 User: 🔳 🗖 🔀
Connection Query Data Administrat	ion Help		
📴 🔲 🗠 🗅 🖻 🗙 🛛 🧮	Acc.Nr.		ID Version Withhold reason
ID: 182872	😑 🌎 [D: 212439]	3	Collection event
	III: 182872]	۲	Date: Suppl: Category:
		Ň -	Nr.: Time: T.span:
		2-	Ref.: 💌
order by: Specimen Acc Nr.		×	Country: Withhold.R.:
T <b>T -</b>			Notes:
Query conditions			Col.meth.:
Specimen			Description of the locality Description of the habitat
Acc.Nr. • ~			Description of the locality Description of the habitat
Event	[ID: 182872]		
Locality • ~			
Project			
Project 🔽 🗸			

To enter coordinates, named places etc. select an option from the  $\mathbb{N}$  list.



In the example below, the coordinates were selected - the fields for the data entry are located in the lower part at the right. You can add any additional details from the list above. See the <u>geography part</u> for further details.

Solution DiversityCollection, Database: D	iversityCollection_Test v. 2.5.1.7	Server: 141.84.65.107 Port: 5432 User: 🔳 🗖 🔀
Connection Query Data Administr	ation Help	
📴 🔲 🗠 🗅 🖻 🗙 🛛 🕁	Acc.Nr.	ID Version Withhold reason
10: 182872 N	I □ ● (ID: 212439)	
		Ref.: V
order by: Specimen Acc.Nr.		Country: Withhold.R.:  Notes:
Query conditions		Col.meth: Description of the locality
Specimen		
Acc.Nr. 👻 ~	< >	Localisation of the collection event
Event Locality • •		EW New Coordin NS Ext v Accuracy: Dist.: Direct.:
Project		Notes: Date: V Respons: Lat: Cong.:

To enter the <u>organism</u>, choose the specimen entry in the tree. Then select the organism from the  $\square$  list.

7	New fungus	0-
r	New lichen	<u>a</u>
1	New bacterium	많
	New bryophyte	臣
۵	New other	

This will enter an entry for the organism unterneath the entry of the specimen as shown below. To enter details for this organism, select the entry in the tree.

🍜 DiversityCollection,Database: Div	versityCollection_Test v.	2.5.1.7 Server: 141.84.65	.107 Port: 5432	User: B0 🔳 🗖 🔀
Connection Query Data Administra	tion Help			
📴   🔜 🖘 🗋 🖻 🗙   🗹 🗮	Acc.Nr.	bird	ID Version Wi	thhold. reason 🖂 🕺 🥏
D: 182872		Ø · bird		<b>/</b>
0	Coordinates EW: N	Tax. group: bird	Vr. of units:	Only obs.
order by: Specimen Acc.Nr.		Gender:	<ul> <li>Life stage:</li> </ul>	*
		Family:	Order:	/
		Substr.rel:	Circumst.:	×
Query conditions		Colon. part		
Acc.Nr. • ~		Notes:		
Event	<			
Locality • ~		Further transferr		
Project		Exsiccata series: 💌		
Project 🗸 🗸		Exsiccata ident.:		Exs. Nr.:

To enter an <u>identification</u>, click on the buttom. This will enter a dataset for the idenfication of the organism underneath the organism as shown below. Select this entry to enter the details of the identification.

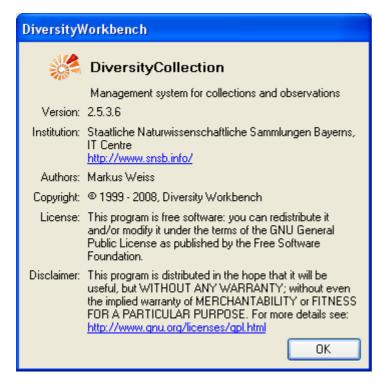
DiversityCollection, Database: D	iversityCollection_Test v. 2.	5.1.7 Server: 141.84.65.107	Port: 5432 User: BOTSA	🗖 🗖 🔀
Connection Query Data Administr	ration Help			
📴 🔲 🗠 🗅 🗞 🗙 🖂 🔚 🚽	Acc.Nr.	bird	ID Version Withhold reasons 182872 1/1	🖏 🗔 🎽 👷
<ul> <li>Query results</li> <li>D: 162672</li> </ul>	🕺  😑 (ID: 212439)	bird		× ×
	Coordinates EW: New	C X Tax. group: bird	Vr. of units:	Only obs.
	ID: 182872] □ 2 2 bird	Gender	<ul> <li>Life stage:</li> </ul>	*
order by: Specimen Acc.Nr.	bird [det. by ]	/ Identification / Name changes		
• • •		Tax.name: 💟 bird		<u></u>
Query conditions		Verniterra	Qualifier:	~
Acc.Nr. * ~		Date:	Suppl: Category:	determinatio 💌
Event	<	Type notes:	Type stat.:	~
	IIIIII [ID: 182872]	Respons.: 💌	💌 Date cat.:	~
		Reference: 💙		
Project 🗸		Notes:		

As a last step, enter the data connected with the <u>storage</u> of the specimen. In the bottom tree, select the entry for the specimen and than select a material category from the list. This will enter a dataset for a specimen part underneath the specimen as shown below. Select this entry to edit the data for the collection, the storage location etc.

🎏 DiversityCollection, Database: Dive	rsityCollection_Test v. 2.5	.1.7 Server: 141.84.65.10	7 - Port: 5432 - User: BOTSA 🔳 🗖 🔀
Connection Query Data Administratio	in Help		
📴 🔲 🗠 🗅 🛍 🗙 🗹 🚍 👘	Acc.Nr.	bird	ID Version Withhold reason
Cuery results	😑 🚱 [ID: 212439]	Specimen part	
D: 182672	🕅 Coordinates EW: New I	Acc.Nr.:	Part
	□-₩ [ <u>ID: 182872]</u> □- <i>↓</i> bird	Collection: SAPM	Date:
order by: Specimen Acc.Nr.	- Generative bird	Preparat.: 🗸	
• • •		Stor. loc.: 💌 bird	
Query conditions Specimen	<	Mat. cat: specimen	Stock:
Acc.Nr. • ~	□ IIII [ID: 182872]	Notes: 💌	
Event	😑 🗐 bird	Display order	
Locality • ~	· 🗶 DEO	Convertise of parts	Show in label: Hide:
Project		× ≥	>
			▲ <b>▼</b>

## Version

For information about the version of the client application choose Help, Info...



The current version in the example above is 2.5.3.6

# License

This manual is <u>copyrighted work licensed under a Creative Commons License</u>.

All material in this manual is the property of the contributing authors and fully copyrighted. By choosing this way of publication, the contributing authors have agreed to license the work under a Creative Commons License permitting reproduction, distribution, and derivative works, requiring attribution, notice, and share-alike, and prohibiting commercial use.

For information about the license of the client software choose Help, Info...

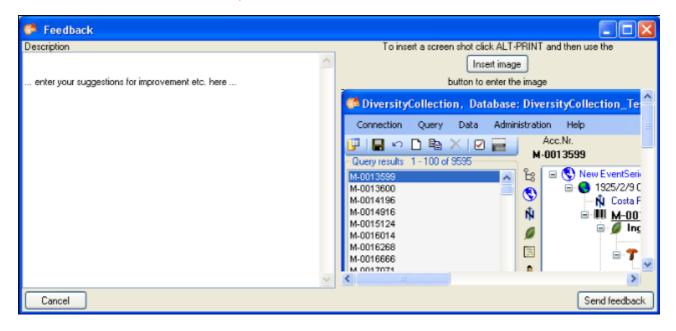
Diversity	Vorkbench
	DiversityCollection
	Management system for collections and observations
Version:	2.5.3.6
Institution:	Staatliche Naturwissenschaftliche Sammlungen Bayerns, IT Centre <u>http://www.snsb.info/</u>
Authors:	Markus Weiss
Copyright:	© 1999 - 2008, Diversity Workbench
License:	This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation.
Disclaimer:	This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. For more details see: http://www.gnu.org/licenses/gpl.html
	OK

The client software is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation.

The client software is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the <u>GNU General Public License (GPL)</u> for more details.

## Feedback

If you have suggestions for improvement, need any changes in the programm or encouter an error you can give a feedback to the administrator. Click the **[ALT]** and **[PRINT]** buttons to get a screen shot of your current form. <u>After</u> creating the screen shot choose **Help** - **Feedback** Sfrom the menu to open the feedback form as shown below.



		button to insert			-	•	
problem. The	n click on t	he Send feedback	button to	send your	feedback to t	he administrat	tor.

## **Error logging**

If any error messages show up through working with the application you can find further details concerning the part of the application where the error happend and the parameters involved in the file DiversityCollectionError.log located in your application directory .

## **Queries - Overview**

To search for specimen in the database you can choose 3 options:

Query conditions
Acc.Nr. 👻 ~
Ori. notes 💌 ~
Event
Coll.Date 🔻 = 📃 📃 📃
Locality 👻 ~
Identification
Taxon 🝷 ~
Taxon.
Substrate
Taxon 🔻 ~
Storage
Collection
Project
Project BSMeryscoll

With the <u>user defined</u> queries, you can define any query

condition.

Query Data View Adminis	ration Help
Show query	Abarem
Predefined queries	1 - BlettauColl many plants
	2 - Blettaucoll missing fungus name
	3 - Blettaucoll missing Gazetteer
	4 - BSMeryscoll missing fungus name
	5 - BSMeryscoll missing Gazetteer The predefined queries are defined

by the system administrator and are accessible via the menu.

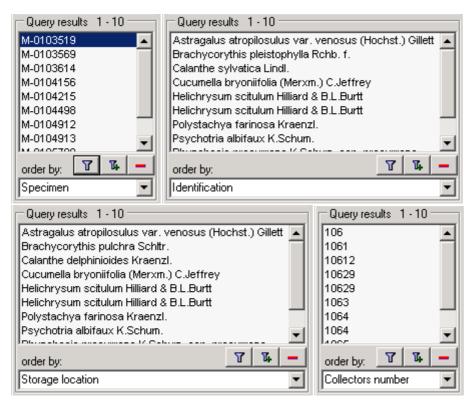


With the scan mode you can use a barcode scanner to search for your

specimen

# **Specimen list**

The specimen list displays the collection specimen found in a query.



The specimen can be shown with their accession number, their identifications or their storage location as shown in the images above. You can restrict the maximal number of specimen

together with the <u>query options</u> (click on the button), for example if you have a slow connection to the database. As a default the maximal number is set to 100. If the number of datasets according to your query is higher than the maximal value set in the query options this will be indicated in the header of the list.

To search for specimen, enter the restrictions in the fields for the search conditions and click on the Dutton. The specimen found in the database will be shown in the specimen list. To add specimen with differing search conditions click on the button. If the list of items is longer than your maximal number of returned items you can browse the next items with the button. If you want to remove entries from the selected list, choose them in the list and

click on the button. This will not delete the data from the database, but remove them from your query result.

<u>AccessionNumber</u>: One entry is shown for each collection specimen with its corresponding accession number

<u>Identification</u>: The last identification for every unit in a collection specimen is shown in the list. As there can be several units in one specimen several entries for one collection specimen may appear in the list.

<u>Storage location</u>: The storage location of every sample of a specimen stored in the collections is shown in the list. As a specimen can be stored in several collections under different names several entries for one collection specimen may appear in the list.

<u>Collectors number</u>: The number of a collector of every sample of a specimen is shown in the list. A specimen can have several collectors each with different number. Therefore several

entries for one collection specimen may appear in the list.

# Query

There are two ways to search for specimen in a collection. The options for a fast search are displayed in the main form beneath the list of the items. You can change this arrangement

using the  $\mathbf{i}$  /  $\mathbf{I}$  button to place the query options on the left side of the item list.

Query conditions Specimen
Acc.Nr. 👻 ~
Ori. notes 💌 ~
Event
Coll.Date 🔻 = 📃 📃
Locality 👻 ~
- Identification
Taxon 🝷 ~
Taxon.
Substrate
Taxon 🔻 ~
Storage
Collection
Project
Project BSMeryscoll

To search for specimen, enter the restrictions in the fields for the search conditions and click on the ibutton. The specimen found in the database will be shown in the specimen list. To add specimen with differing search conditions click on the button. To clear all entries in the query fields use the ibutton. If the list of items is longer than your maximal number of returned items you can browse the next items with the button. To move back to the previous block of items click on the button. If you want to remove entries from the selected list, choose them and click on the button. This will not delete the data from the database, but remove them from your query result.

Within the query options you have several possibilities to specify your search restriction. Use the drop down button to change between the operator. The available operators are shown in the table below.

Operator	Meaning	Example
Text		
~	search for an entry like	Pinus s[iy]lvestris % (you can use <u>wildcards</u> )
=	search for an entry exactly equal to	Pinus silvestris L.
$\neq$	search for an entry not like	Pinus s[iy]lvestris % (you can use <u>wildcards</u> )

Ø search for an entry where a value is missing ...

-	search for an entry between and	2000 - 2005
Numeric		
=	search for an entry exactly equal to	2006
<	search for an entry lower than	2006
>	search for an entry bigger than	2006
-	search for an entry between and	2000 - 2005
Ø	search for an entry where a value is missing	
F		
Date		
=	search for an entry exactly equal to	20.3.2006
<	search for an entry lower than	20.3.2006
>	search for an entry bigger than	20.3.2006
Hierachy		
=	search for an entry exactly equal to	M-Fungi
$\neq$	search for an entry that is not equal to	M-Fungi
Ø	search for missing entry	M-Fungi
Ψ	search for missing only	
$\Delta$	search including childs in a hierarchy	M-Fungi
To hide th	he area containing the search fields click on the	hutton. If the search area is

To hide the area containing the search fields click on the 🗾 button. If the search area is hidden and you want to start a new search, just click on the 🛋 button.

To change the displayed fields for searching specimen click on the  $\square$  button to change the <u>query</u> <u>options</u>.

### Scan mode

To search for a specimen with the help of a barcode-scanner select the **Scan mode** from the Query menu. The query part will be hidden and the field for the accession number will then be accessible for the entry with the scanner. If the field for the entry of the accession number Acc.Nr.: Acc.Nr.: Is not activated, move the mouse to the field to activate it. Than scan the barcode and the program will search the specimen from the database

# **Query options**

The maximal number of items shown in a query result can be set in the form for the query options. The default value is set to 100. If you have a fast connection to your database or need to see more or less results, you may change this value to any number you like.

To change the displayed fields for searching specimen click on the  $\bowtie$  button. This opens a form where you can select and deselect the fields you want to be shown for searching specimen. Here you can change the maximum numbers of items that will be shown in the list. If you want certain fields to appear in the query options select or deselect them in the list.

Set query options	
maximal number of results:	100
🖃 🔽 Project	~
🔤 🔽 Project	
🖨 🔲 Specimen	
- 🗹 Accession number	
CollectionSpecimenID	
Accession date	
Depositor	
Depositors accession nu	mber
Reference	
- Original notes	
Additional notes	
Problems	
Data withholding reason	a datasat
The date when the data	
Transcription state	~
<	>
Table: CollectionSpecimen	
Column: Problems	
Description of a problem that occurre	
data editing. Typically these entries s deleted after help has been obtained	
enter scientific problems here; use	D D HOV
AdditionalNotes for such permanent p	problems!
Cancel	ОК ,

After editing the query options click OK so the new selection will become active for the next query.

# Wildcards in SQL

There are 4 different possibilities for wildcards in SQL:

**%** any string consisting of no, one or many characters, e.g. Pinus **%** will find anything like Pinus, Pinus sylvestris, Pinus strobus etc.

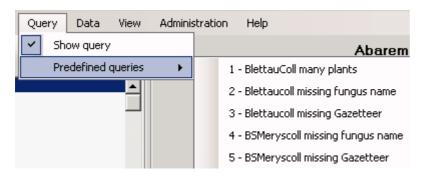
a single character, e.g. Pinus s\_lvestris will find Pinus sylvestris and Pinus silvestris etc.

[] any character out of a given range like **[abcde]** or **[a-e]**, e.g. Pinus s**[iy]**lvestris will find Pinus sylvestris and Pinus silvestris.

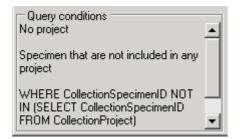
[^] any character not in a given range like [^**abcde**] or [^**a-e**], e.g. Pinus s[^**i**]lvestris will find Pinus sylvestris but not Pinus silvestris

## **Predefined queries**

Next to the query for specimen via the query options you can define separate queries for each user. These are listed under the menu topic **Query - Predefined queries**.



If you choose one of these predefined queries, the query options will be hidden and the command of the query will be shown at the base of the <u>specimen list</u>. The first line shows the name of the query as choosen from the menu, the next lines contain the description followed by the part of the query command that restricts the selection of the datasets (= WHERE-clause of the SQL-statement).



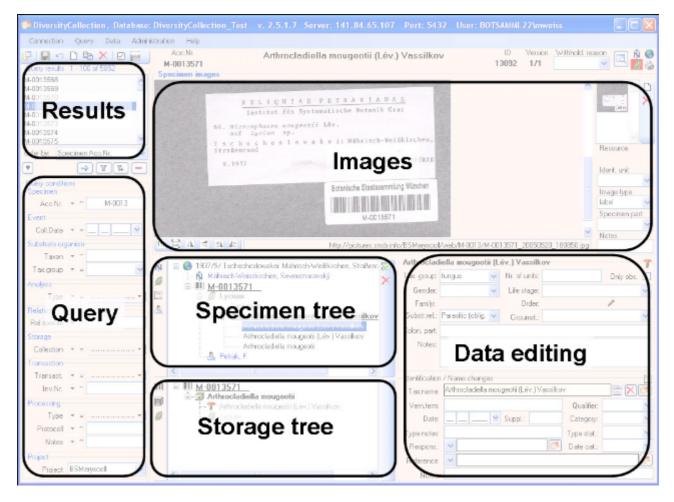
If you are an administrator you can create new queries for users. To create a predefined query choose **Administration - Queries...** from the menu. A form as shown below will open, where you can create, edit and test your queries.

	the search strings to		I Bass Table	ODLOVing			Description			
	UserName	SQLStringIdentifie		SQLString			Description			
	triebel	Neubert missing	CollectionSpecim			CT CollectionSpecimenII				
	sebek	Neue Belege	CollectionSpecim			CT CollectionSpecimenII				
	BSM1\triebel	No project	CollectionSpecim	WHERE CollectionSp	ecimenID NOT IN (	SELECT CollectionSpeci	Datasets that	are not attributed to	ary project	
	dbo	No project	CollectionSpecim	WHERE CollectionSp	ecimenID NOT IN (S	SELECT CalectionSpeci	Datasets that	are not attributed to	any project	
	sebek.	No project	CollectionSpecim	WHERE CollectionSp	ecimenID NOT IN [3	SELECT CollectionSpeci	-			
	dbo	Schieferdecker d.	CollectinoSpecim	WHERE Collectionsp	ecimenID IN (SELEC	T CollectionSpeciment.				
	sebek.	Schieferdecker d.	CollectineSpecim	WHERE Collectionsp	ecimenID IN (SELEC	T CollectionSpeciment.				
	tristrel	Schieferdecker d.	CollectinoSpecim	WHERE Collectionsp	ecimenID IN (SELE)	T CollectionSpeciment.				
	dbo	Schieferdecker m.	. CollectionSpecim	WHERE CollectionSp	ecimenID IN (SELE)	CT CollectionSpecimentI	L			
	trichal	Colsisferdaduer m	Collection Species							
0				Incline SpecimenID FR		<u>CL CollectionSpeciment[</u> ()				
	Datasets I Count SELECT C	CollectionSpecimentC holp are not attributed COUNT(1) 9	NOT IN (SELECT Co							
Test	IK WHERE O Dataests I Count SELECT O FROM Collection Collection	CollectionSpecimen/D half are not attributed COUNT(1) 9 Specimen FRDM	NOT IN (SELECT Co	lector/SpecimenID FR		a)	ccessionNumber	AccessionDate	AccessionDay	Access
Teal	Datasets I Count SELECT O FROM Colection SELECT O	CollectionSpecimen/D half are not attributed COUNT(1) 9 Specimen FRDM	NOT IN (SELECT Col	lector/SpecimenID FR	IDM CollectionProjec	t)   CollectionID   A		AccessionDate	Accession D ay	Access
Teal	IK WHERE O Dataests I Count SELECT O FROM Collection Collection	CollectionSpecimen/D half are not attributed COUNT(1) 9 Specimen FRDM	NOT IN (SELECT Colline of the set	lector/SpecimenID FR	DM CollectionProjec	t) CollectionID A	ccessionNumber	AccessionDate	Accession D ay	Acoss

In the upper field you define the WHERE-Clause of the SQL string of your query. Keep in mind that the queries can refer to different tables, depending on the order column choosen by the user. So Queries in DiversityCollection should start with the reference to the primary key of the main table (ColletionSpecimenID in table CollectionSpecimen and depending tables). In the lower field the description for the query as shown in the user interface. To test a query use the [Test count] and [Test Query] buttons.

# Editing the data

The main form of DiversityCollection contains two main areas. At the left you find the query and the results of this query. In the left part the data of a dataset selected in the result list is shown. The upper part of the data area shows the images, labels etc. In the lower part you find two trees that give you an overview and access to the data. The data of an entry selected in one of the trees are shown in the data editing part.



## Event

Specimen stored in a collection are gathered during a collection event. This collection event keeps information about the geographic locality, the habitat, the date etc. During an collection event, several specimen may have been collected. If the specimen is not assigned to a collection event, you can assign the specimen to an existing event with a click on the Q button. To create a new event for the specimen click on the Obutton. If you assign the specimen to an existing event, a form will open as shown below where you can search for the events provided in the database. Choose an event and click OK to assign the specimen to this event. In the tree, the collection event is symbolized with an S icon as shown below.

😑 🌏 1976/11/20 Hilbersdorf b. Görlitz S, Mengelsdorfer Forst, Forst-Mischbestar	nd
😤 Geographic regions - Königshainer Berg- und Hügelland	
<u> </u>	
😑 💋 Populus tremula	
Trametes multicolor (Schaeff.) Jülich	

To edit the data of the collection event, choose it in the tree to open the detail fields as shown below. If the collection date does not correspond to a certain day, you may use the **Suppl.** field to enter e.g. a range or a series of dates or the **T.span** field to document a certain timespan.

Collection e	event				0
Date:	20 11 1976 👻	Suppl.:		Category:	~
Nr.:		Time:		T.span:	
Ref.:	~			(	1
Country:	Germany		Withhold.R.:		~
Notes:	00011				
Coll.meth.:					
Description	of the locality	[	Description of t	the habitat	
Hilbersdorf I Mengelsdor Forst-Misch	fer Forst,		Substrat: Popu Stamm.	lus tremula, liegender	

The text shown in the tree is composed of the date, the description of the locality. For each collection event you can enter several <u>geographical localisations</u> and <u>properties</u>. To see the locality according to the coordinates stored in the database you can check the <u>Maps</u>. For each collection event you can enter <u>images</u> related to this event.

If other specimens were collected during the same collection event, this will be visible if you show the whole hierarchy of the event series. To do this click on the button in the panel on the left of the tree. See <u>event series</u> for further details. Here you can move a specimen to an other event by drag and drop.

Data are stored in the table <u>CollectionEvent</u>.

## **Collection event series**

If you need a hierarchical order of your collection events respectively to organise your collection events, you can do this with a collection event series. For a better differentation between events and collection event series you have a blue text in the hierarchy and the editing part and a different icon (S). A collection event series can contain other collection event series and collection events. Information about the geographic locality, properties of the collection site, the date etc. are stored in the <u>collection event</u>. To show or hide the collection event series you have two options. In the panel of the right of the tree the S button will show the superior event series of the current collection event as shown below.



The Button will show the whole hierarchy of the event series as in the image below.



To edit the data of an event series, select it in the tree to display the fields with the details as shown below.

Event series	۲
Date	_
04.02.1986	
Description	
Australia New South Wales Barrington Tops National Park.	
Code	
Notes	

To insert a new collection event series click on the  $\bigcirc$  button. If there are no collection event series so far, the collection event will be placed within the new collection event series. If there are collection event series present, the new collection event series will be placed below the selected collection event series. To assign an collection event to an existing collection event series already available in the database click the  $\bigcirc$  icon.

To move an item within the hierarchy, just drag it with the mouse to whatever position it should be placed. Keep in mind, that specimen can only be placed in events and events only in collection event series.

If you want to delete an expedition or an event, remove all depending collection event series,

events and specimen and click on the  $\times$  button. A specimen can not be deleted here. If you want to remove an event from an event series, click on the button to open the form for

selecting an event series. Then select nothing but simply click OK to remove the link to the event series.

The images for an event series are shown below the data of the event series as shown

below. To add images to an event series, click on the  $\Box$  button, to remove an image use the  $\times$  button.

Event series		(2)
Code:	Elbe07 Date	e:
Description:	Elbsandsteingebirge, 25.9 4.10.2007	
Notes:		
Images of	the collection event series	
SS.	MERCAL OV	
	CONTRACT	<u> </u>
EX	and the second	Image type
		map 💙
Mr.		Notes
SIL		
<		Withhold.reas.
11 🖾 🖊	http://www.um	×

To zoom a sector of the image, just drag the mouse over the image. A red square will indicate the zoomed area. To set the size of the image to the original resolution click on the <sup>11</sup> button. To adapt the size of the image to the available space in the form click on the <sup>22</sup> button. To change the orientation of the image use the appropriate buttons ( <sup>14</sup> flip horizontal, <sup>24</sup> flip vertical, <sup>24</sup> rotate right, <sup>16</sup> rotate left). To view the image in a separate form, click on the <sup>11</sup> button. If the image should not be published e.g. on the internet, enter any reason in the **Withhold. reason** - field.

If you want to change to another specimen listed in the collection event series select it in the hierarchy and click on the H button.

The current specimen together with the event and all superior collection event series will be highlighted .

The data about the collection event series are stored in the table <u>CollectionEventSeries</u>.

## **Event images**

Specimen stored in a collection are gathered during a <u>collection event</u>. To insert an image related to a collection event click on the  $\square$  button. If you want to delete an image, click on the  $\Join$  button.



To zoom a sector of the image, just drag the mouse over the image. A red square will indicate the zoomed area. To set the size of the image to the original resolution click on the <sup>11</sup>button. To adapt the size of the image to the available space in the form click on the <sup>22</sup>button. To change the orientation of the image use the appropriate buttons ( <sup>A</sup>flip horizontal, <sup>2</sup>flip vertical, <sup>A</sup>rotate right, <sup>A</sup>rotate left). To view the image in a separate form, click on the <sup>3</sup>button. If the image should not be published e.g. on the internet, enter any reason in the **Withhold. reason** - field.

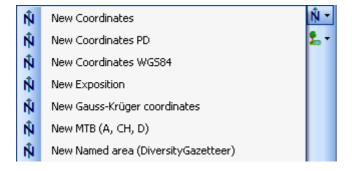
Data are stored in the table <u>CollectionEventImage</u>.

## Geography

In an addition to a description of the locality you can give several localisation systems for the collection event. These entries are marked with an  $\hat{N}$  icon in the tree as shown below.

	🖃 🔇 1986/2/4: Australia New South Wales Barrington Tops National Park. 4.2.1986
I	🖕 🔇 1986/2/4: Australia New South Wales Barrington Tops National Park, Gloucester Tops, Negrohead Beech Forest Walking Trail. Alt
I	🚊 🌏 1986/2/4 Australia New South Wales Barrington Tops National Park, Gloucester Tops, Negrohead Beech Forest Walking Trail.
I	
I	— Ñ Greenwich Coordinates Long. (EW): 151*35' E Lat. (NS): 32*05' S
	IIII <u>GR04228</u>

To add a new entry choose the localisation system from the drop down list as shown below. If a localisation should be removed, select it from the list and click the  $\times$  button.



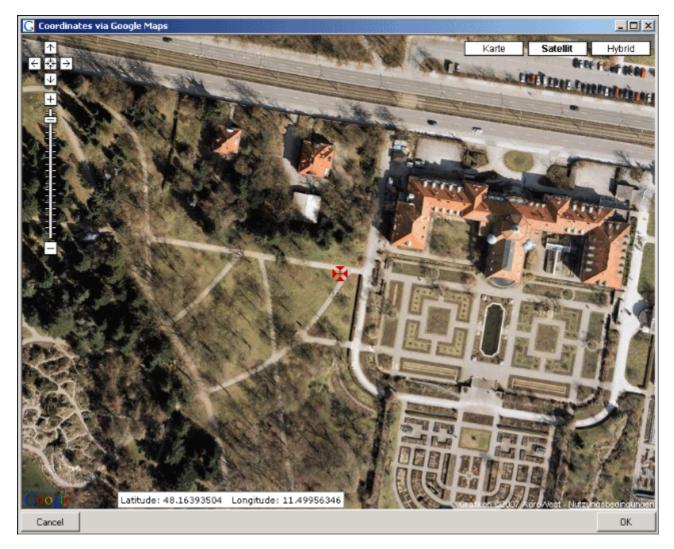
To edit the details of an entry, select in the list to open the fields in the form on the right. The localisation system DiversityGazetteer is linked to the module DiversityGazetteer within the Diversity Workbench, providing information on geographical names as shown below.

Localisation of the collection event				
Agrigento, Sici	ilia		http://	
Accuracy:	Dist.:	Direct.:	Alt.: 0	
Notes:	province	Date: 10.04.2001 👻	Lat.: 37,45	
Respons.:	*	<b>*</b>	Long.: 13,5	

If the localisation system contains coordinates (Coordinates, Coordinates PD, Coordinates

WGS84), a button 🔛 will appear, that will provide you with the possibility to set the

coordinates via Google Maps. Just click on the button, and a window will open where you will see the a map provided by Google Maps as shown below. If there are allready coordinates provided by a different localisation e.g. by the DiversityGazetteer, these will be taken as a starting position. So you may use an entry for a named area (DiversityGazetteer) as a approximate localisation and than additional coordinates as the more accurate localisation.



If you start with existing coordinates in your data, the system will use these as starting point. You can zoom the map, drag it to another position and change from map to satelite mode. The actual position is symbolized by the  $\mathbf{H}$  symbol in the middle of the map. The current coordinates are shown in the field at the buttom of the map. To take these coordinates in your data, just click OK.

The values for any localisation system are stored in two text fields. You can enter your vales as simple text. This may prevent any calculations with your values. So you should prefer to enter your values according to the measurement units available. Whatever antique measurement units like feet or Fahrenheit there may exist, within the Diversity Workbench measurement data are stored in units according to the <u>The International System of Units (SI)</u>. For those who still need to use antique units DiversityCollection provides a possiblity to convert them into their modern counterparts. To enter a numeric value choose the unit you prefer from the list. The form will change as shown below.

You can than edit the values and click the 🗐 button to take the changed values in your data. The system will then calculate the corresponding value for storage in the database together with the default accuracy. Correct this accuracy if you have more exact values. To indicate that the shown values are calculated from the values in the database the fields have a green background.

The altitude, the exposition or the slope may be entered as one value or as a range of two values. If you use the conversion function and have only one value, make sure, that the

second field is empty.

Alt.from	500	Alt.to	550	Available units: meter and feet.
Exp. from	NNE	to North.	NE	Available units: Orientiation (N, NE,
·	_			
Slope from	10	to	15	Available units: degree and

percent.

The accuracy resp. uncertainity will be calculated as an approximation in parts derived from Wieczorek, J. 2001 (MaNIS/HerpNet/ORNIS Georeferencing Guidelines. University of California, Berkeley: Museum of Vertebrate Zoology) and in parts according to Wieczorek, J., Q. Guo, and R. Hijmans. 2004 (The point-radius method for georeferencing locality descriptions and calculating associated uncertainty. International Journal of Geographical Information Science. 18: 745-767). The unit of the accuracy will allways be the unit stored in the database according to the *Système international d'unités* (SI) resp. degrees for angles.

The data for the geography are stored in the table <u>CollectionEventLocalisation</u>.

## **Event - Maps**

If there are coordinates available for your collection site of your locality using



To use this service, you need access to the internet. Click on the  $\mathbb{N}$  button in the  $\mathbb{N}$  solution in the solution in the solution is part of a series the  $\mathbb{S}$  button to see all locations of the event series. The site can be displayed either as a satellite image



or a geographical map. If you click on one of the needles marking the locations of the events, a window will show you the description of the event.



To generate a map you need coordinates stored in the table CollectionEventLocalisation.

To show a distribution map as shown below of all the specimen found in your query, use the Subutton. This functionallity is limited in the number of specimen that can be depicted, so it may be neccessary to restrict your query.

🚰 🖶 🗠 🗅 🛍 🗙 🗹 🧮	Acc.Nr.	Erysiphe aquilegiae var. ranunculi (Grev.) R. Y.	
Query results 1 - 24	M-0014011	-, , , ,	
Delphinium x cultorum Voss. Delphinium x cultorum Voss. Erysiphe aquilegiae var. ranunculi (Grev.) R. Y. Zher Erysiphe aquilegiae var. ranunculi (Grev.) R.	Brote en Contester	Belgie Veno Koin Deutschland Dresden Webruch	
Event Country • ~ Germany	e Haven Reminis	Rems Viesbadeno Frankfurt Česka Republika Luxembourg Mannheim Nürnberg Metz Karleruneo Pfelborn Inpoletadt Bino Strasbourgo Stuttent Münghen Linz Wien	
Taxon • ~ Erysphe aquilegiae var. ranunculi Substrate organism Taxon • ~ Delphinium	Le Marrieans roweetnes Coogleurz	00 Meilen of Schweiz 00 km Laskestendaren 62006 AND, Geocentre Consulteg: PPWK, Te	

## Habitats and properties of the collection site

For the description of the habitat select the collection event Sor an existing collection site property **L**. The description is entered in the section Description of the habitat.

Description of the habitat
Substrat: Alnus, liegend.

To enter a new property of the collection site, select the collection event Sor an existing collection site property and than choose the type of the property you want to enter.

٤.	New entry of European Nature Information System (EUNIS)	2-
٤.	New entry of Geographic regions	×

The list is dependent on the availability of terminologies for site descriptions. Details for the property can be entered if you choose the item in the hierarchy. The person responsible for the entry as well as notes can be entered in the corresponding fields as shown below.

Geographi	c regions 👷		
Oberlausitzer Heide- und Teichgebiet			
Hierarchy:	Oberlausitzer Heide- und Teichgebiet		
Respons.:	▼		
Notes:			

To delete entries use the  $\times$  button. You can enter a value by either typing the name of the collection site property or by selection from the module DiversityScientificTerms. To search for

properties from this module click on the <sup>CA</sup> button. As responsible user the name of the current user will be inserted. You may change this by either typing or selection from the module DiversityAgents.

The data concerning the habitats are stored in the table <u>CollectionEventProperty</u>.

# Specimen

Specimen are the entities stored in a collection. For handling the data use the appropriate

buttons (new specimen  $\Box$ , copy 1, delete  $\times$ ). See the <u>data</u> section for further details. Directly attached to the specimen are the data about <u>accession</u>, <u>label</u>, <u>exsiccatae</u>, notes, <u>reference</u> and the <u>availability</u>. A specimen may be composed of several <u>units</u>. Any problems concerning the specimen should be entered into the problems field.

The header of the main form shows some important parameters of the selected specimen. On the left side the **accession number** is shown. In the center you find the last <u>identification</u> of first the <u>identification unit</u> within the <u>display order</u>. The next field shows the internal **ID** (field CollectionSpecimenID in table CollectionSpecimen) and the **Version**. For details about the version of a dataset see the <u>version</u> topic. The <u>availability</u> of a specimen can be changed by entering an appropriate reason in the field **Withholding reason**.

Acc.Nr. M-0038370	Placidium squamulosum (Ach.) Breuss	ID 107306	Withhold. reason	

To inspect the history of a specimen click on the 🔟 button. For further details see the history section.

With the buttons you can control the upper part of the form with the maps  $\hat{\mathbb{N}}$ , the images for the collection event and the specimen as well as the label print . The buttons with the corresponding sector visible in the form are depicted with a red background. If there are images available and they are hidden, the backgroud will turn to yellow  $\mathscr{D}$ .

The data are stored in the table <u>CollectionSpecimen</u>.

### Data

The controls to handle datasets in the database are located in the left upper part of the form as shown in the image below. A step-by-step introduction for the creation of new datasets is provided in the <u>tutorial</u>.

DiversityCollection, Database: DiversityCollection							
Connection	Query	Data	Adminis	stration			
📴  🔛	D 🖻	×   ⊘					

To **save** the changes in a dataset click on the button. If you change to another dataset, the current changes will be saved automatically.

To **undo** the changes in a dataset click the <sup>12</sup> button. This will recover the original data unless the changes had been saved or changes were done in certain tables or hierarchies were the data must be stored to display the hierarchy.

To create a **new** entry in the database, click on the  $\Box$  button below the search result listbox. This will create an entry with the specimen and show it in the list.

To **copy** a specimen, choose it from the list and click on the button <sup>1</sup> . If the specimen you want to copy is linked to a collection event, a form will open and provide you with several possibilities for the copy as shown below.



If the field for the new accession number contains a string like Copy of ..., use the **[Find next** ...] button to search for the next free number for the string in the second field. If the program finds a free number, it will be used as shown below.

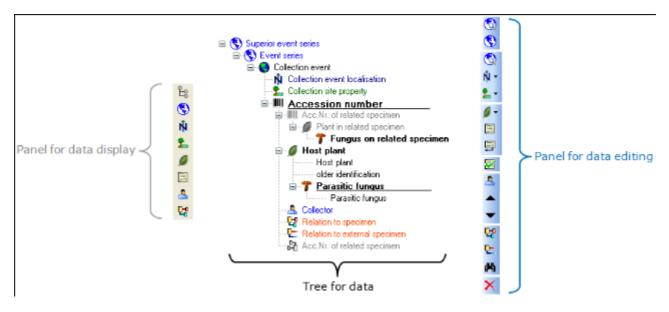
🗈 Copy dataset	
New Acc.Nr.: M-0014481	Find next free accession number M-0014444
The specimen was collected during the SAME event	I960/11/5 China: Sichuan: Guanxian           Image: M-0013610           Image: M-0014481
Copy the data of the collection event in a NEW dataset	<ul> <li></li></ul>
Copy only the specimen WITHOUT the collection event	⊡ 🚱 1960/11/5 China: Sichuan: Guanxian 

The first option will take the new dataset in the same collection event as the original data, so no new data for a collection event will be generated. The second option will create a copy of the original data for the collection event and connect the copy of the specimen with the new event. The last option will only copy the specimen data and establish no connection to an collection event.

To **delete** a dataset click on the button imes.

# Tree for the specimen

The upper tree in the form provides an overview for all the data linked with the specimen. With the buttons in the left panel you can hide or show certain nodes in the tree. So if for example you do not want to see the collectors, just click on the Abutton and they will be hidden in the tree. The button will change to a grey version Aband the background will turn to yellow, to show you that there are hidden data of the collectors. If the specimen is part of a collection event and this collection event is part of a collection event series than with the first two buttons you can switch between two modes for the event series. If you click on the Sutton only the superior event series will be shown. To shown the whole hierarchy of the event series, click on the Button.



The panel on the right of the tree is for editing the data, like for example the  $\triangle$  button will insert a new collector. For further details see the special sections.

# Display order

The display order defines the sequence in which the units within this specimen will appear on e.g. a <u>label</u>. The first unit will be printed in the header of the label, others are included in the text below. You can change the display order by using the  $\checkmark$  buttons. If a unit should not appear on the label, transfer it to the hide list using the  $\geq$  button. The  $\leq$  button returns it to the list that will be shown in a label. The first unit can not be transferred to the hide list.

Display order Units not in part:		Show in label:		Hide:
		Arthrocladiella mougeotii (Lév.) Vassilkov Lycium halimifolium	< >	Cystotheca lanestris (Harkn.) Sacc.
	_	▲ ▼		

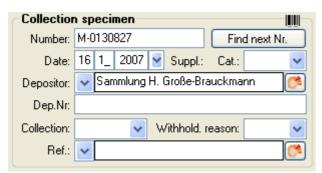
For a part of a specimen in addition to the display order you can specify if an organsim is present within the part.

Display order				
Units not in part:		Show in label:		Hide:
Lycium halimifolium	<	Arthrocladiella mougeotii (Lév.) Vassilkov	<	
Cystotheca lanestris (Harkn.) Sacc.				
		▲ ▼		



## Accession

The accession of a specimen in a collection is documented with its accession number and if available the date of the accession.



If the specimen was received from an other collection or collector, this may be documented with the name of the collector (Depositor) and the number in the original collection (Dep.Nr).

If a new specimen is entered you can use the Find next button the search for the next free accession number. A form will open as shown below, where you can search for a free number. The search will start with the number you give as a starting point.

M Accession number	
Searching for the next free accession nur	nber after a given start
Start search for the next accession number after:	M-0130827
Start	
Next free accession number:	M-013828
Cancel	ОК

The system will try to find the next free number on the basis of the accession numbers available in the database. Click OK to use the new number for you specimen.

Data concerning the accession and deposition are stored in the table CollectionSpecimen.

Categories of the date:

actual = The given date is the real date collection date = The date when the specimen was collected estimated = The given date was estimated by the user system = The given date was generated by the system

# **Specimen Image**

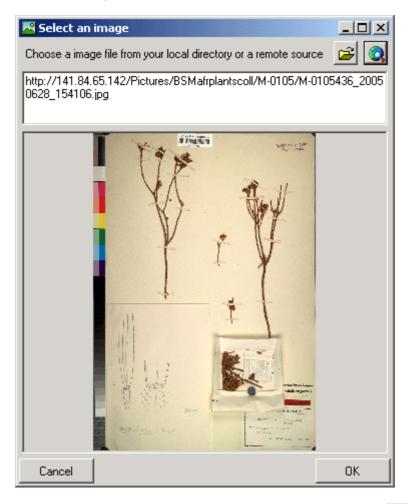
To see the specimen images activate the *s*icon in the image selector *s*. If you choose the option **View - Show existing images** from the menu, the images will automatically be shown. Each specimen may be documented with several images. The images may be stored local with its path or as a reference to the module DiversityResources within the Diversity

ŵ 😔

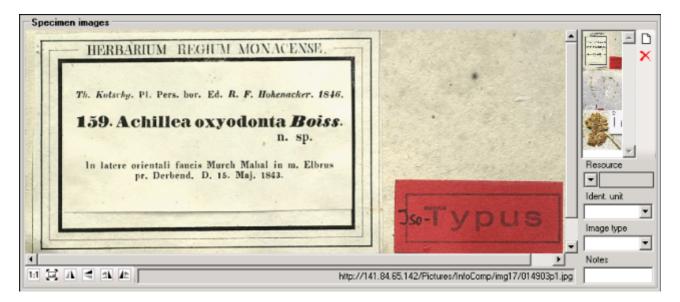
Workbench. To enter a new image, click on the D button. A window will open where you can

enter the path and file name of the image. Click on the 🖾 button to search in your local

directories or on the solution to search for a web address. The selected image will be shown in the preview.



To delete an image, select it from the list and click the imes button.



To zoom a sector of the image, just drag the mouse over the image. A red square will indicate the zoomed area. To set the size of the image to the original resolution click on the button. To adapt the size of the image to the available space in the form click on the button. To change the orientation of the image use the appropriate buttons ( flip horizontal, flip vertical, rotate right, rotate left). To view the image in a separate form, click on the button. If the image should not be published e.g. on the internet, enter any reason in the **Withhold. reason** - field.

Data are stored in the table <u>CollectionSpecimenImage</u>.

# Projects

Every collection specimen can be assigned to any number of projects. To assign a specimen to a project click on the  $\Box$  button. To remove it from a project, select the project from the list and click the  $\times$  button.

Projects	
BSMeryscoll	
BSMschiefcoll	
	- 1
ļ	_
r 🗙 🧭	

If there are projects, where you have no access to, these will be listed in a separate list at the top as shown below.

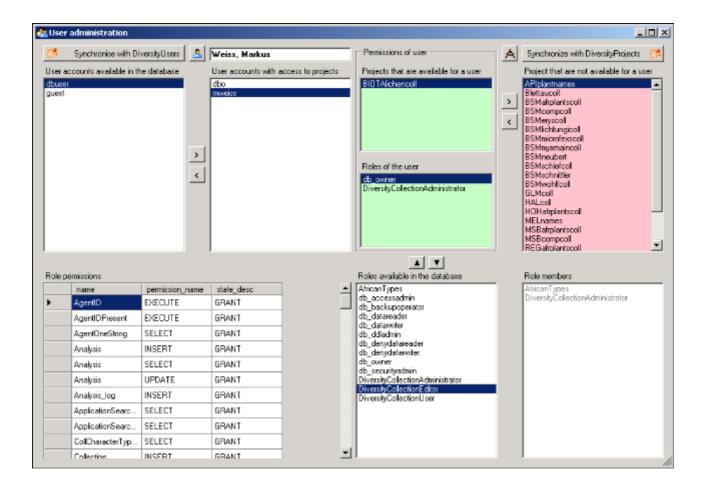


Data are stored in the table <u>CollectionProject</u>.

Details upon the projects within the DiversityWorkbench are stored in the database

DiversityProjects. To open a project to see further information upon a project click on the button. To edit details in the projects you need the application **DiversityProjects.exe** in your application directory and access to the database DiversityProjects. To synchronize the projects listed in DiversityProject you can use the synchronize functionality in the <u>user</u> administration form as shown below. If DiversityProjects is not available you can create a new

project with the button. If DiversityProjects is available, use the synchronize functionality



## **Notes and Problems**

To enter notes or problems connected with the specimen select it in the hierarchy. The data form will then open the corresponding fields. The **Original** notes are the notes found on the label of the specimen, made by the original collector or from a later revision. **Additional** notes are those made by the editor of the specimen record, e. g. doubtful identification or locality.

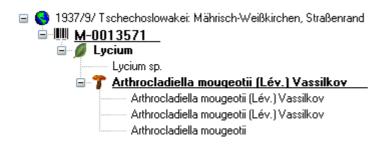
In the **Problems** area enter the description of a problem that occurred during data editing. Typically these entries should be deleted after help has been obtained. Do not enter scientific problems here. Use Additional notes for such permanent problems!

Notes	
Original:	
Additional:	
Problems:	

The data are stored in the table <u>CollectionSpecimen</u>.

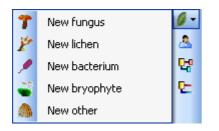
# **Organisms and Identifications**

Each specimen can contain several <u>organisms</u> where each organism may have been <u>identified</u> several times as shown in the image below.



# **Identification unit**

The items or organisms in one collection specimen are regarded as identification units. One specimen can contain several identification units, e.g. an insect (1) feeding on a fungus (2) growing as a parasit on a plant (3). To add a new organism choose from the taxonomic group this new organism belongs to from the drop down menu as shown below.



The taxonmic groups shown in the drop down menu are specified under Administration - Taxonomic groups  $\dots$ . A form as shown below will open where you can specify which groups should be shown.

💋 Taxonomic groups 🔳 🗖 🔀
Choose the taxonomic groups that should be visible in the menu for creating new units in a specimen
♥       virus         ●       bacterium         ♥       alga         ●       bryophyte         ♥       slime mould         ♥       plant         ♥       ichen         ♥       fungus         ●       mammal         ●       other
Cancel OK

The organisms within the specimen are shown in the tree. To edit the relations between the organisms just do this by drag and drop. The name of the organism under which the specimen is stored in the collection is <u>underlined</u>. To delete an organism select it in the tree and click on

the X button.

Schwarzwald: Belchen, Südhang, 1100 m
 B 60 0000790
 Fagus
 Microglaena muscorum (Fr.) Th. Fr.
 Nephroma parile (Ach.) Ach.
 Nectria lecanodes Ces.

To enter details about the organisms like the taxonomic group, select it in the tree. The form show at the left of the tree provides the fields related to the organism as shown below.

Golovinon	yces sordidu	s (L. Junell)	) V. P. Gelyu	ta 👘 📍
Tax. group:	fungus 🛛 🗸	Nr. of units:		Only obs. 📃
Gender:	~	Life stage:		~
Family:	Erysiphaceae	Order:	Erysiphales	/
Substr.rel.:	Parasitic ( 🔽	Circumst.:		*
Colon, part:				
Notes:				
Exsiccata se Exsiccata id		licrof. Exs. nyces sordidu	s (L 🔽 Exs. I	Nr.: 470

### **Taxonomic Hierarchy - Family and Order**

In the last line you find the family and the order of the taxon. These entries are either set when linking to a taxonomic database or manually when no link to a taxonomic database exists.

Family: Erysiphaceae Order: Erysiphales	. /
---	-----

If no link to a taxonomic database exists you may enter the the family and the order after clicking on the øbutton. To transfer these entries to other specimen with the same genus use the maintenance functions as described under <u>Maintenance - family and order</u>.

### Parts of units

If a unit contains parts that have to be documented, you can do this by setting the relation to the substrate to "Part of".

Identifier:	A45/24		Description:	branch 🗾	1
Substr.rel.:	Part of	~	Circumst.:	×	/

In the tree the backgroud of a part will be grey as shown below for the unit-tree und the tree depicting the storage of a sample. The name of the part will correspond to the identifier set for this part and the icon will correspond to the description of the part provided you choose one of the preset options contained in the drop down list. You may of course enter any description for the unit. A unit that is part of another unit can not get an identification. Identifications are restricted to the main unit.



For details about <u>exsiccatal series</u> and <u>analysis</u> see the related topics. You can sort your identification units e.g. for display on a label with the <u>display order</u>. Each identification unit can have several <u>identifications</u>.

The data for the organisms are stored in the table <u>IdentificationUnit</u>.

### Relations to the substrate organism

Association = in association with (unspecific statement if no further information about the interaction between 2 organisms is available)

Endophytic in = endophytic fungi growing in plants without causing symptoms (possibly mutualistic or opportunistic paras.)

Growing on = substrate statement: fungus growing on 2nd organism, living stages directly observed (i.e. assoc. not due to diaspores alone)

Isolated from = substrate statement: fungus isolated from 2nd organism, no living stages observed (i.e. possibly due to surface contamination)

Lichenization = mutualistic symbiosis between a fungus and algae (= 2nd organism) Mutualism = mutualistic symbiosis, both partners profit from each other

Mycorrhiza of = mycorrhizal association of a fungus with a plant (= 2nd organism)

Parasitic (accid.) = parasitic on an 'accidential host' (in the sense of Nannfeldt): with strong infection pressure, another plant growing between infected plants may become infected.

Parasitic (facul.) = facultatively parasitic on host (= 2nd organism)

Parasitic (oblig.) = obligately parasitic on host (= 2nd organism)

Parasitic (quest.) = questionably parasitic on host (= 2nd organism), parasitic interaction is presumed, but doubtful/unverified

Parasitic on = the taxon is parasitizing its host (regardless of type, i.e.

holo-/meta-/hemi-biotrophic, or pertho-/necrotrophic)

Parent/Child = parent/child association (i.e. in the literal genetical sense, not in an abstract sense)

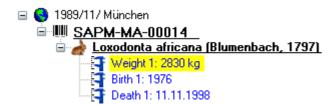
Pollinator of = organism 1 is the pollinator of a plant (organism 2)

Predator/Food = organism 1 is the predator of organism 2 (i. e. 2 is food of 1)

Sibling = both organisms are siblings (have the same parents)

# Analysis

The organisms in a specimen can be analysed by analysis types defined in the database. In the tree the analysis entries are symbolized with an ficon as shown below. Only the types of analysis that were assigned to the group of the organism can be selected. An analysis is allways refered to an organism and may be referred to a part of a specimen. An analysis that refers to a part of a specimen will be shown in the tree for the parts as shown in the examples below.



To show or hide the analysis items in the tree use the button in the left panel. This button has 3 states. In the default state the analysis entries will be shown as above. If you click a second time on the button it will change to the hierarchy mode and the entries will be shown as in the tree below. The last state will hide the entries.

🖮 🌳 A1: Salix fragilis L.		
🖮 🚰 clone affiliation		
🖨 🚰 height [cm]		
height (2002/09/): 92 cm		
height (2003/03/): 91 cm		
height (2003/05/): 102.5 cm		
height (2003/09/19 - 2003/09/22): 114 cm		
height (2003/06/): 114 cm		
🗈 📲 diameter (mm)		

To insert a new analysis select the organism which has been analysed in the upper tree. Than select the type of the analysis from the drop down list as shown below.

Ŧ	New TL	1
Ŧ	New Tail L	$ \mathbf{X} $
7	New Head and body L	
7	New Body L	
Ŧ	New Head L	
F	New Horn L	

To delete an analysis, select it in the tree and use the  $\bowtie$  button in the panel on the left. To edit the details of an analysis, select it in the tree to enter the fields as shown below. To

enter or inspect an URI given for a single analysis, click on the substantial button. If an analysis was performed at a part of the specimen, you can document this by choosing the respective part from the list. The analysis will then as well be shown in the tree for the parts of the specimen.

Weight 1: 283	10 kg			7
Nr.: 1		Result	2830 kg	1
Notes:		URI:		
Date: 19	9.01.2006	Part	Loxodonta africana 3 - bones -	*
Respons.: 💌	Obermeier, Henriette	9		<b>*</b>

If an analysis was performed at a part of the specimen, you can document this by choosing the respective part from the list. The analysis will then as well be shown in the tree for the parts of the specimen. You can as well directly choose the organism in the part tree and create the analysis for the organism in this part in the part tree.

### ■ I SAPM-MA-00014



If you need further information about an analysis click on the **I** button to open the form for the analysis administration. This will open a form where as an administrator you can edit the analysis types used in your collection. This form is also accessible via the menu entry **Administration - Analysis...** 

💱 Analysis		
View		
🖬 🖘 🗅 🛍 🗙 🗹	Analysis	
- Query results 1 - 57-	Mammals	<u>~</u> D
Age	TL	X
Analysis of host plants	Tail L Head and body L	
Birth Body L	- Head and body L	_
Breast Circumference	Head L	ID
bud color	HamL	
catkins	- Hom basal Circumference	
CEL clone officiation	CBL	~
Death		
deta13C	Display text: CBL	
deta15N	Description: Distance between a tangent at the most caudal points of the Condyli occipitales and a tangent at the m	ast
Diameter	Desuption. Distance between a rangelik at the mox casual points of the context occupitates and a tangelik at the mi	0.04
dianeter Dietoms	Measurement unit: mm	
Dietoris DNA analysis		
DNA isolation	Notes:	
EarL	Taxgt: mammal	
foliation phenology	Taky	
Foret L Frustule		$\mathbf{x}$
Gali		
gal length	UBI: http://pictures.snsb.info/SAPM/Analysis/htm/CBL.htm	
gal length		
gal width		^
galls per leaf Head and body L	Rodentia	
Head L		
height		
height lear 🛛 😽		
order by. Analysis	Company 100	
	and the second s	
T T T -		
Query conditions		
Analysis		
Display 💌 ~		
Description • ~		
Unit • ~	V V	
Notes - ~	Distance between a tengent at the most caudal points of the Conduli accimitates and a tengent at the	the
URI 👻 🐃	Distance between a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales and a tangent at the most caudal points of the Condyli occipitales at the most caudal points of the Condyli occipitales at the most caudal points of the caudal point	uie
	most rostral points of the Praemaxillaria.	*

If you want to see the ID's of the datasets, click on the **ID** button. Than the ID's will be shown as in the image below.

-	Mammals [24]
	- TL [25]
	Tail L [26]
	Head and body L [27]
	- Body L [28]
	- Head L [29]
	- Horn L [30]
	- Horn basal Circumference [31]
	<mark>CBL [32]</mark>
	- M1-M3 [33]
	Breast Circumference [34]

The types of an analysis are restricted by the taxonomic group of the organism or object to be analysed. Edit the list of taxonomic groups that can use a certain analysis using the  $\square$  and  $\times$  button. For details about handling the data see the <u>data</u> section. If you want to or inspect an URI given for an analysis type, click on the  $\square$  button. In the window below the URL related to the analysis can be shown.

# Identification

Each organism or unit may have been identified several times. The identifications are listed in the tree under the organism as shown in the image below. To create a new identification choose the organism from the tree and click on the  $\Box$  icon. The last identification will always be taken as the valid one and set at the top of the list. To insert an older identification at the base of the list click on the  $\Box$  icon.

I937/9/ Tschechoslowakei: Mährisch-Weißkirchen, Straßenrand Image: Machine M
Lycium sp. <b>Arthrocladiella mougeotii (Lév.) Vassilkov</b>
Arthrocladiella mougeotii (Lév.) Vassilkov Arthrocladiella mougeotii (Lév.) Vassilkov Arthrocladiella mougeotii

To hide / show the identifications in the tree click on the  $\blacksquare$  icon on the right panel next to the tree. To enter a confirmation of a identification, choose it in the tree and than click on the  $\blacksquare$ 

button. To delete an identification select it in the tree and click the  $\nearrow$  button. To enter details for an identification, choose it in the tree. You than can enter the details in the form opening on the right side of the tree as shown below.

Identification / Name changes				
Tax.name:	Arthrocladiella mougeotii (Lév.) Vassilkov 🛛 🚟 🗙 🂽			
Vern.term:		Qualifier:	*	
Date:	🔛 🎽 Suppl.:	Category:	*	
Type notes:		Type stat.:	~	
Respons.:	× (**	Date cat.:	*	
Reference:	*		<b>*</b>	
Notes:				

The taxonomic name of an organism can be selected from either the names already available in DiversityCollection or from the module DiversityTaxonNames. To choose from the local

names type the beginning of the name and click on the drop down button 🗖 to get a list of the available names. You can use <u>wildcards</u> according to SQL.

To select a name from an external database for taxonomic names, click on the <sup>1</sup>/<sub>2</sub> button. A <u>form</u> will open where you can search for a taxonomic name.

If the identification is uncertain use one of the available qualifiers:

?	Unspecified doubtful identification (aff. or cf., or applicable taxonomic rank not known)
aff. forma	'affinis' = similar to, but probably not the named forma
aff. gen.	'affinis' = similar to, but probably not the named genus
aff. sp.	'affinis' = similar to, but probably not the named species
aff. ssp.	'affinis' = similar to, but probably not the named subspecies
aff. var.	'affinis' = similar to, but probably not the named variety
agg.	aggregate
cf. forma	Doubtful identification of forma or forma specialis. Example: 'Ech. ferruginea cf. f. rubra'
cf. gen.	Doubtful genus identification. Examples: 'cf. Abies alba', 'cf. Abies', 'Abies', 'Abies?'
cf. sp.	Doubtful species identification (genus identification certain). Example: 'Abies cf. alba'
cf. ssp.	Doubtful identification of subspecies. Example: 'Abies alba cf. ssp. alba'

cf. var. Doubtful identification of variety. Example: 'Echinonema ferruginea var. campestris'

s. l. sensu latu

s. str. sensu strictu

sp. Only the genus is given, the information relates to a single, unspecified species

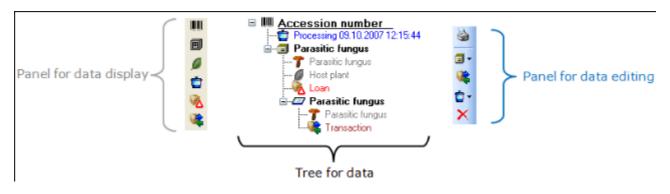
sp. nov. Only the genus is given, it is assumed that the unidentified species is new

spp. Only the genus is given, the information covers several unspecified species

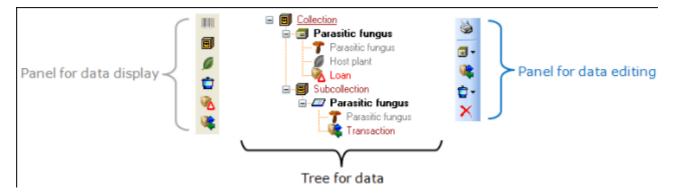
In the database the data for the idenfication are stored in table <u>Identification</u>.

# Storage and trees for the parts of the specimen

In the tree at the base of the form the parts of the specimen with their related data are shown. This tree depicts the parts either in accordance to their relation to each other in the specimen tree (click the IIII) icon in the panel on the left) ...



 $\dots$  or depending on the collections where the parts are stored (click the  $\blacksquare$  icon in the panel on the left).



With the buttons in the left panel you can hide or show certain nodes in the tree. So if for example you do not want to see the processings, just click on the tree. The button will change to a grey version the background will turn to yellow, to show you that there are hidden data of the processings.

The panel on the right of the tree is for editing the data, like for example the kulton will insert a new transaction. For further details see the special sections.

## Parts of the specimen

A specimen can contain several parts that may be stored in several collections. These parts may have diverse material categories, e.g. herbarium sheets, microscopic slides etc. The parts are shown in the part tree under the main tree. This tree depicts the parts either in accordance to their relation to each other in the specimen tree (click the Illicon in the panel on the left) or depending on the collections where the parts are stored (click the Illicon in the panel on the left) - see images below. To add a new part, use the drop down field in the panel on the right of the tree and choose the material category of the new part. You can set the <u>default collection</u> for new parts. If the default collection is not set, you will be asked to name the collection of the new part. The new part will then be a child of the old part. You can later edit these relations by drag & drop. If you want to create a copy of a part, use the Illicon in the panel on the panel right of the tree.

-	Ш <u>м-0013572</u>
	🖮 🗐 Arthrocladiella mougeotii
	💋 Lycium halimifolium
	🚊 🖅 Arthrocladiella mougeotii (Lév.) Vassilkov
	🋄 🔭 Arthrocladiella mougeotii (Lév.) Vassilkov
	Botanische Staatssammlung München (M)
	🖻 🗐 M-Fungi
	🖃 🗐 Arthrocladiella mougeotii
	- T Arthrocladiella mougeotii (Lév.) Vassilkov

	2 . ,
	Lycium halimifolium
-7	* Cystotheca lanestris (Harkn.) Sacc.
🚊 🖅 Aı	throcladiella mougeotii (Lév.) Vassilkov
	Arthrocladiella mougeotii (Lév.) Vassilkov

If the organims found in a sample are present, they are shown in the tree. To edit the presence, select the specimen part in the tree and edit the **Display order** as shown below.

Display order		
Units not in part:	Show in label:	Hide:
	< Athrocladiella mougeoti (Lév.) Vassilkov > Lycium halimifolium	< Cystotheca lanestris (Harkn.) Sacc.
	<b>▲ ▼</b>	

In the expample above, all organisms are present in the specimen, but the fungus *Cystotheca lanestris* was choosen to not appear on the label and transferred to the **Hide** list. This is symbolized by a grey icon **T** in the tree. The slide, symbolized by the **D** icon, was created from the sample, so in the specimen tree it is shown as a child of the specimen symbolized by the **D** icon. Concerning the organisms, only the fungus Arthrocladiella is found on the slide. So in the tree it is the only organsism shown as child of the slide. In the display order the two other organisms appear in the **Units not in part** list (see below).

Display order Units not in part:	Show in label:	Hide:
Lycium halimifolium Cystotheca lanestris (Harkn.) Sacc.	< Arthrocladiella mougeotii (Lév.) Vassilko	ov <
Cystolieca lanceths (Haikht, Joacc.	▲ ▼	

To move the organisms between the lists use the > and < buttons. In the list **Show in label** you can change the sequence of the organisms with the  $\blacktriangle$  and  $\checkmark$  buttons in the panel at the base of the list. The organism at the top will be the one that will be taken as the main organism, e.g. for printing a label. To edit the details of a part, select it in the tree to open the fields as shown below.

Specimen	part		
Acc.Nr.:		Part	
Collection:	M-Fungi 🛛 🗸 🗸	Date:	×
Preparat.:	~		
Stor. loc.:	🗸 Arthrocladiella m	nougeotii	
Mat. cat:	specimen 🛛 🗸	Stock:	
Notes:	*		

The identifier, e.g. the taxonomic name under which the specimen can be found in the collection is entered in the field **Storage location**. You can search for this entry in the <u>query</u>.

To enter the **storage location** you can use the drop down button **t**to select from the

identifications within the specimen. The drop down button for the Notes will provide you with a list of all entries in this field, filtered with your entry in the text field. You may use wildcards like "%" or "\_" (see <u>wildcards</u>).

In the collection tree, the specimen are to shown with their dependence upon each other, but where they are located with the collections. To get informations about a collection just select it in the tree. If you have the necessary rights, you can use the B button to open for the administration of the collections. This form is as well accessible under the menu entry **Administration - Collections**...

The material category of a specimen part is indicated by the icon in the hierarchy:

bones: bones or skeleton from vertebrates

Cultures: living cultures of organisms

drawing: original line or color drawing

herbarium sheets: capsules or sheets as stored in a botanical collection

Licones: icones, images etc. stored in a botanical collection

micr. slide: glass plate with sections of specimen for microscopic studies

specimen: specimen stored in a collection

Specimens can be included in a <u>transaction</u> and every stored part of a specimen can be treated with several <u>processings</u>.

Data are stored in the table <u>CollectionSpecimenPart</u>.

## Processing

Every specimen can be processed, e.g. for preparation or preservation. Any number of processings can be stored for a specimen or a part of the specimen. In the hierarchy for the parts the processings are indicated by the 🛱 icon and a blue text. If there are any processings this will be indicated by the icon in the tool bar. You can hide the processings in the hierarchy with a click on the icon. The images below show a processing in either the collection or the specimen tree for the parts.

	ia⊶i∎ Theresienstr. 37-39 Keller 33 ia⊶iማ Boselaphus tragocamelus 18
ø	Mazeration 09.11.2000 00:00:00
Ċ	
	SAPM-MA-02018
iii 8	🖃 🖤 Boselaphus tragocamelus 18

You can enter a new processing for either the whole specimen or a part of the specimen. To do this select the specimen or a part in the hierarchy and then choose a processing from the list as shown below.

			>	
				Type: Mazerau
	B III SAPM		<u>D</u> -	Date: 09.11.20
e	😑 🖤 Bose	💼 🛛 New Kochen	Add	a new processing dbo
ø		📋 New Entfleischen		Processi
Ó		📋 New Warmwasser	mazeration	
		📋 New Wässern		Notes:
		📋 New Entfettung		
		📋 New Anlage		
		💼 New Bleichen		Datei

To delete a processing select it and click on the  $\times$  button. To edit the data for a processing select it in the hierarchy. The form will show you the fields related to the processing as shown below.

In the form select the type of your processing from the list.

Processing	1	Ď
Type:	Mazeration Yotocoll:	
Date:	07.12.2005 🕑 Duration:	~
Respons.:	🗸 dbo 🦉	
Notes:	Processing date is entry date of dataset. Real date unknown.	

As an administrator you can edit the processing types under the menu entry **Administration** - **Processing...** 

Drocessing		
View		
🖬 🗠 🗅 🛍 🗙 🗹	Processing	
Query results 1 - 15	Mazeration	<u>~</u> D
Anlage Allage	Kochen <mark>Entfleischen</mark>	
Bleichen	Trocknon	≥ []
Einfrieren	Display text: Entfleischen	
Entfettung Entfleischen	Description:	
Enzyme	boscipilet.	
Käfer Kochen	Neter	
Mazeration	Notes:	
order by: Processing		
T TI-	Mat.cat.: bones	
Query conditions		×
Processing		
Name 🔻 ~	URI:	
Description - ~		
Notes - ~		
URI • ~		

If you want to see the ID's of the datasets, click on the **ID** button. Than the ID's will be shown as in the image below.



n this form you can define the processings used in your collection. To add a new processing

click the  $\square$  button, to delete a processing select it and click the  $\times$  button. The processings are related to material categories within the database. To add a new material

category that should be connected to the selected processing, click on the D button in the panel right of the material categories. A form will open, where have to select the material category that should be entered for the processing.

Select from the list	
Select a material category	
specimen	•
Cancel	ОК

The data of the processing are stored in the table **<u>CollectionSpecimenProcessing</u>** .

# Collection

The organisms in a specimen can be stored in several collections. To see the place where a specimen is stored use the lower tree and click on the  $\blacksquare$  icon to select the display according to the collections as shown below.



To edit the details of a collection, select it in the tree to display the datafields. At the base of the fields you find the default collection, used for the creation of new specimen parts. Use the <a>button to edit this entry.</a>

Default collection for new specimen parts	
M - M-Algae - Diatom collection of F.J.Weinzierl - Dried vouchers - Box 2	

If you need further information about a collection click on the **l**icons. To open the form for the collection administration choose **Administration - Collections...** from the menu (this menu entry is only available for administrators). This will open a form as shown below where as an administrator you can edit the collections used in your database.

Collection		
Image     Image       M-Algae     Image       M-Europi     Image       M-Lichens     Image       MSB     Image	Collection M-Algae M-Bryophytes M-Fungi M-Lichens M-VascularPlants	□ × ≋
order by: Collection   Collection  Collection  Name	Name: M-Fungi Contact: Triebel, Dagmar Description: Location:	
Location • ~ Contact • ~	Owner:         Botanische Staatssammlung München           Display order:         3	

The specimens stored in a selected collection are listed in the specimen list. You can hide / show this list using the  $\mathbb{Z}/\mathbb{H}$  button. To change to a specimen from this list click on the button.

For details about handling the data see the <u>data</u> section. Data of the collections are stored in the table <u>Collection</u>.

## Collector

The people or groups responsible for the collection of the specimen are stored in the table  $\underline{CollectionAgent}$ . There may be several collectors for one specimen. In the tree the collectors are symbolized by the  $\underline{A}$  icon as shown below.



To hide or show the collectors in the tree use the  $\triangle$  icon in the left panel. To insert a collector, choose either the specimen or an existing collector in the tree and then click on the  $\triangle$  icon in the right panel. To enter detail for a collector, select it in the tree. The form on the right of the tree will then display the fields for the details as shown below.

Collector-			
Zedda, L.			http:/
Col.Nr.:	5733 W	/ithh.reason:	~
Notes:	Zedda, Luciana		

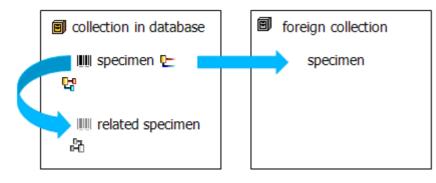
If you want to refer to the module DiversityAgents for the collectors click the <sup>CP</sup> button. The sequence of the collectors (e.g. for print on a label) is stored with the CollectorsSequence which you can change by clicking on the A and V buttons in the panel on the right of the tree.

To delete a collector, select him from the list and click the imes button.

You can search for the collectors number in the <u>query</u>.

# Relation

Each specimen may have relations to other specimens. This can be documented by adding relations to these specimens. To add a relation select the specimen in the tree (symbolized by the barcode IIII). Then you can either add a relation to a local specimen using the  $\frac{1}{2}$  button or a relation to a remote specimen using the  $\frac{1}{2}$  button. To show or hide the relations in the tree use the  $\frac{1}{2}$  and  $\frac{1}{2}$  buttons.

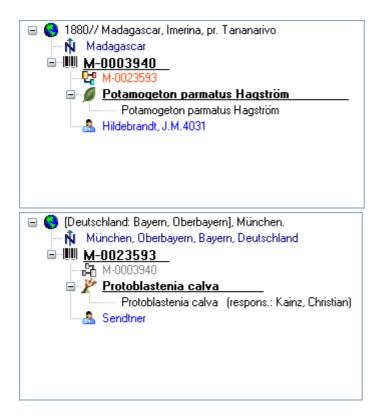


### Interal relation 😽 🖧

To add an internal relation to a local specimen use the  $\mathbf{G}$  button. A window will open where you can search for the related specimen.

DiversityCollection Server: 1	11.84.65.107 User: mweiss	
📴 🗹 🚃		open DiversityCollection 👸
Query conditions       Specimen       Acc.Nr.       Acc.Date       Image: Control of the second seco	Query results         1 - 100 of 996           M-0014000         M           M-0014002         M           M-0014003         M           M-0014005         M           M-0014005         M           M-0014006         M           M-0014008         M           M-0014009         M           M-0014010         M           M-0014011         M           M-0014012         M           M-0014013         M           M-0014015         M           M-0014016         M           M-0014017         M	
Storage	M-0014019	Material
Collection	M-0014020 M-0014021	specimen
Processing Process. • =	M-0014022 M-0014023 M-0014024	Storage location Enysiphe aquilegiae var. ranunculi
Project	order by: Specimen Acc.Nr.	
Project	▼ ⇒ ₹ ₽ −	
Cancel		ОК

If you found the specimen click OK to close the form and establish the relation. The left image below you can see an internal relation, while the image on the right shows an invers relation from another specimen to the current specimen. In the tree an invers relation will then be displayed with an Hicon as shown below.



With internal relations you can navigate to the related specimens using the 🛤 button.

### External relation 🗠

To add an external relation to a specimen that is not administrated in the database DiversityCollection use the button. The image below you can see an external relation in the tree.



To delete a relation select it from the list and click the imes button.

### **Editing the data**

To edit the data for the relation, click on the entry in the tree to open the corresponding form as shown below for a relation to an external specimen.

<ul> <li>Relation to other specir</li> <li>Specimen (e.g. URL):</li> </ul>	en 🕑
PERTH	(2)
Description:	
Department of Conserv	tion and Land Management. Australia. Western Australia.
Collection:	Relation type:
	×
Notes:	

The data are stored in the table <u>CollectionSpecimenRelation</u>.

## Exsiccatae

A <u>specimen</u> may be part of an exsiccatal series. These series are administrated in the Diversity Workbench module DiversityExsiccatae. To enter the exsiccatal series select the specimen or the organism resp. identification unit in the tree. With the specimen the exsiccatal series is shown at the base of the data form as shown below.

Exsiccatal series	
Rabenhorst, Fungi Eur. Exs.	1110/ ids 🗙 🧭

As there may be several organisms with separate exsiccatal numbers in one specimen the numbers are handled together with the identification units. Select the concerned organism to enter data in the form as shown below.

Exsiddata series:	Rabenhorst, Fungi Eur. Exs.		ht	15 🗙 🦉
Exsiccata ident.:		~	Exs. Nr.:	1522

You can either type the name of the exsiccatal series or choose one from the module

DiversityExsiccatae. If you click on the time Link a form will open showing the link to the entry as derived from the module.

URI of Rabenhorst, Fungi Eur. Exs.	×
http://id.snsb.info/Exsiccatae/632034778	
ОК	

The data about the exsiccatal series are stored in the table <u>CollectionSpecimen</u>, the data about the number and the taxon are stored in the table <u>IdentificationUnit</u>.

## Access to the data

To get access to the data, you have to take several hurdles. In DiversityCollection, you must be a member of one of the <u>user groups</u>. You have only access to those data, that are listed in the <u>projects</u> you have access to. For external users, data may be blocked by entries in the <u>data witholding reasons</u>.



## Availabiltiy of datasets

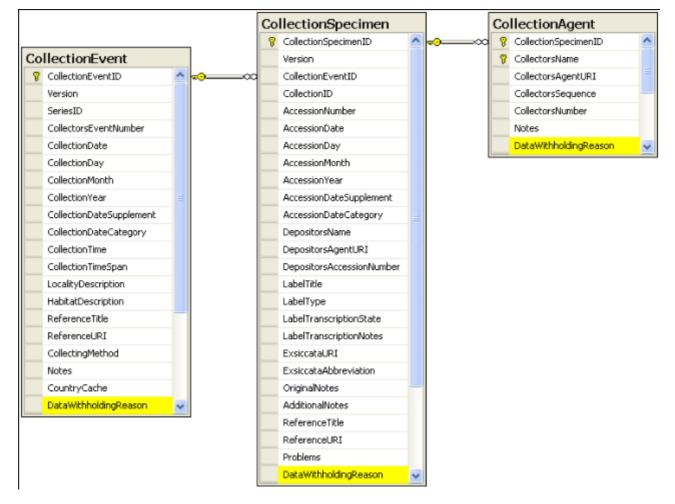
The data of certain parts of the database can be blocked for remote access. If you want to prevent access for the whole dataset, enter your reason in the field **Withholding reason** in the header (see below).

Acc.Nr. Erysiphe alphitoides (Griffon & Maubl.) U. Braun & S. Takam. M-0040396	ID 135429	Version 3/1	Withhold, reason	N	0
---	--------------	----------------	------------------	---	---

If you want to block only the access to the data of the collection event or the collector choose them in the tree and enter your reason for withholding the data in the corresponding fields. If these fields are empty, the data will be published.

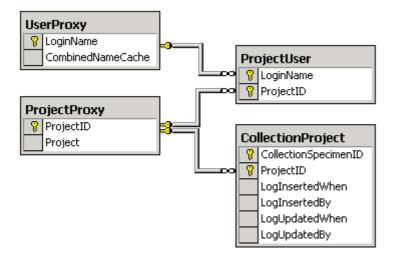


Within the database a user has only access to the data of those projects for which he has the permission. If a dataset belongs to a certain project, this is stored in the table CollectionProject. To prevent a publication of the data these can be blocked for the whole dataset (table <u>CollectionSpecimen</u>), for the <u>locality and collection</u> site informations (table <u>CollectionEvent</u>) and for the <u>collectors</u> (table <u>CollectionAgent</u>) - see overview below.



### **Permissions for projects**

The access for the user to the data within the database are stored in the tables shown below. The tables <u>UserProxy</u> and <u>ProjectProxy</u> are related to the Diversity Workbench modules DiversityUsers and DiversityProjects respectively.



# Projects

Every collection specimen can be assigned to any number of projects. To assign a specimen to a project click on the  $\Box$  button. To remove it from a project, select the project from the list and click the  $\times$  button.

Projects	
BSMeryscoll	
BSMschiefcoll	
ļ	
r 🗙 🧭	

If there are projects, where you have no access to, these will be listed in a separate list at the top as shown below.

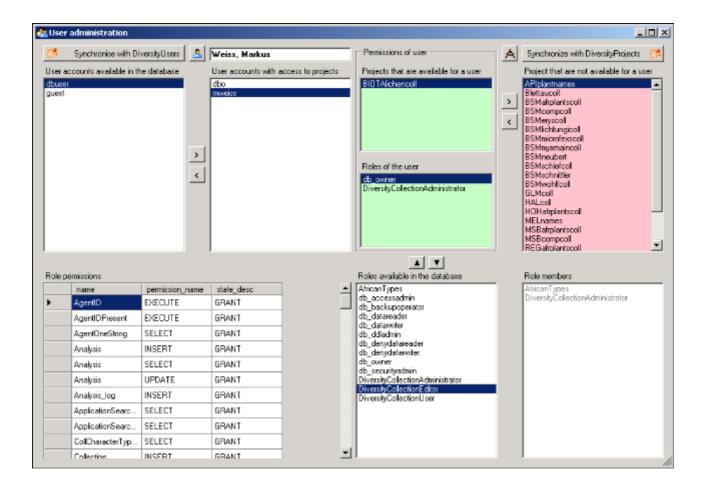


Data are stored in the table <u>CollectionProject</u>.

Details upon the projects within the DiversityWorkbench are stored in the database

DiversityProjects. To open a project to see further information upon a project click on the button. To edit details in the projects you need the application **DiversityProjects.exe** in your application directory and access to the database DiversityProjects. To synchronize the projects listed in DiversityProject you can use the synchronize functionality in the <u>user</u> administration form as shown below. If DiversityProjects is not available you can create a new

project with the button. If DiversityProjects is available, use the synchronize functionality



## User administration

The permissions of users in the database are set via roles and the access to the projects. To set the permissions choose **Administration** - **User** ... from the menu. A form will open where you can change the permissions of the user. The first list shows the user accounts that are available in the database but have no access to any of the projects. To synchronize this list with the Diversity Workbench module DiversityUsers click on the

Synchronise with DiversityUsers button. To create a new SQL-Server User, click on the button. To create a new Windows user with access to the database resp. allow an existing user the access to the database use the Microsoft SQL Server Management Studio (see the

installation section for further details). To permit access to a project click on the Dutton.

To remove a user from this list use the **Solution**.

The area **Permission of user** shows the projects a user has access to and the roles of the user within the database. To move users between the lists **Projects that are available for a** 

user and Projects that are not avialable for a user use the ڬ and 🗹 buttons. To create a

new project click on the button. If you use the Diversity Workbench module DiversityProjects, you can create a new project there and user the synchronize

button Synchronize with DiversityProjects (\*). To change the roles of a user use the and buttons. Underneath the project list for a user you find the list of the Roles of the user. This list can be changed by using the and buttons. Underneath the roles list you find the list with the roles available in the database. On the left side of this list the permissions of the selected role are listed and on the right side the members of this role.

🚑 User	administration						
64	Synchronise with Di	versityUsers 💄	Weiss, Markus		Permissions of user	A	Synchronize with DiversityProjects 🛛 🤔
User al	ccounts available in th	ie datebase	User accounts with a dbo mwells	access to projects	Projects that are available for a user BIOTAlichancoll Roles of the user db_oxnes DiversityCollectionAdministrator	>	Project that are not available for a user  APIplantnames Bitktaucoll BSMarplantscoll BSMerpscol BSMichfungicol BSMinsubert BSM
Role p	ermissions				Roles available in the database	1	Role members
	name	permission_name	state_desc	-	AfricanTypes		AfricanTypes
•	AgentiD	EXECUTE	GRANT		db_accessadmin db_backupoperator		DiversityCollectionAdministrator
	AgentiDPresent	EXECUTE	GRANT		db_datareader db_datawiker		
	AgentOneString	SELECT	GRANT		db_ddladmin		
	Analysis	INSERT	GRANT		db_denydatareader db_denydatawriter		
	Analysis	SELECT	GRANT		db_owner db_securityadmin		
	Analysis	UPDATE	GRANT	1	DiversityCollectionAdministrator		
	Analysis_log	INSERT	GRANT		DiversityCollectionEditor DiversityCollectionUser		
	ApplicationSearc	SELECT	GRANT				
	ApplicationSearc	SELECT	GRANT				
	CollCharacterTyp	SELECT	GRANT				
	Collection	INSERT	GRANT	-			1

The permissions of the roles are shown in the lower left part of the form.

The role **DiversityCollectionUser** can see the data within the permitted projects, but can not change anything.

The role **DiversityCollectionTypist** can edit a part of the user defined data.

The role **DiversityCollectionEditor** can change the user defined parts of the data.

The role **DiversityCollectionCurator** has the same rights as the group DiversityCollectionEditor and in addition can handle transactions, i.e. shipments of specimen between collections.

The role **DiversityCollectionAdministrator** can delete data, edit the contents of internal tables, change user permissions etc.

# Security

A user can be in 5 groups with diverse rights in the database where the higher groups have all rights of lower groups in addition to special rights for this group, e.g. DiversityCollectionUser can only read the data of certain tables while DiversityCollectionTypist has the rights of DiversityCollectionUser and additionally can edit the data in certain tables - see overview below.

- 🧟 DiversityCollectionAdministrator
- 🧟 DiversityCollectionCurator
- 🧟 DiversityCollectionEditor
- 🧟 DiversityCollectionTypist
- 🚴 DiversityCollectionUser

Summarzied overview of the permissions of the groups

Group	Permissions in addition to lower group
Administrator	Delete data, edit user permissions
Curator	Create and edit transactions (e.g. loans)
Editor	Create new entries and delete details (not whole datasets)
Typist	Edit data
User	See the data of the data tables

If you are an Administrator you can add a user to one of these groups

Any user may have access to several projects.

# Transactions

#### Prerequisites

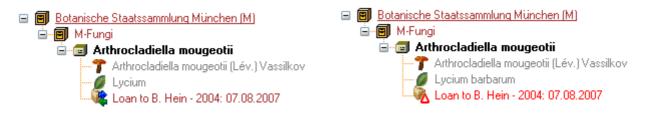
The transfer of specimen between collections is handled with transactions. There are two prerequisites to use transactions in DiversityCollection. You must be in the group DiversityCollectionCurator (see <u>user administration</u>).

- 🧟 DiversityCollectionAdministrator
- 👰 DiversityCollectionCurator
- 🧖 DiversityCollectionEditor
- 🧖 DiversityCollectionTypist
- 🧸 DiversityCollectionUser

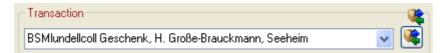
and the collections you have the right to handle transactions for must have been assigned to you as shown in the <u>curators</u> section.

#### **Visibility of transactions**

A specimen may be involved in diverse transactions between collections like loan, purchase, gift or exchange. The transactions are shown in the tree for the parts of a specimen and symbolized with an vicin or for specimens that are still on loan an vicin as shown below.



If you are a curator you can take a look at the details of a transaction. Select the specimen part in the tree and then click on the south that will be shown in the details next to the name of the transaction. This will open the form for the transactions as described below.



To edit the transactions choose **Administration - Transactions** from the menu. A form will open as shown below. In the tree a the top the relations between the transactions are shown. To create a transaction, dependent on another transaction, choose the superior transaction in the tree and click on the Dutton in the panel right from the tree. With the button you can create a copy of a transaction. To delete a specimen from the list click on the X button. The data for the transactions are stored in the tables Transaction and CollectionSpecimenTransaction.

#### Data entry 💝

On this page you can edit the data of a transaction. If a transaction is linked to an administrating collection (symbolized by the key  $\P$ ), it can be edited exclusively by <u>curators</u> of this collection. To appoint currators choose **Administration - Curators** from the menu.

K Administration of transaction	
Cuery results 1 - 40      Guery results 1 - 40      Gascherk, F. Wohlfath, München (     Gascherk, F. Wohlfath, München (     Cost b) B. Hein      Schnitter, M. M-0069732-0070281 (     Schnitter, M. M-0009732-0070281 (     Schnitter, M. M-000973-0070281 (     Schnitter, M. M-000973-007081 (     Schnitter, M. M-000973-007081 (     Schnitter, M.	Transaction  Loan to 8. Hein  2006 2007 X
order by: Transaction	Dato entry     Sending    Se
Name • ~ Type • = • Begin • • • End • • • Comment • ~	Collection:         Number:         Partner:           From:         M-Fung         456         M         68           Tox         8         554         Hein, Burghard, Dr.         564         Kong         68           Begin:         2310,2007         W         Units:         3         Admin:         M-Fung         97
Notes From Number Pather Collection	End: 23.01.2008 V Actend: V Invest: H. Meier
To Collection V Number • -	Bespore:

Depending on the type of the transaction additional tab pages will present for creating documents.

Transaction type	Tab pages						
<u>Sending</u>	Loan	Borrow	Exchange	Gift	Purchase		
<b>Confirmation</b>	Loan	Borrow	Exchange	Gift	Purchase	Request	
<u>Reminder</u>	Loan	Borrow	Exchange	Gift	Purchase		
<u>Partial return</u>	Loan	Borrow					
<u>Return</u>	Loan	Borrow					
<u>Printing</u>	Loan	Borrow	Exchange	Gift	Purchase	Request	
Documents	Loan	Borrow	Exchange	Gift	Purchase	Request	
<u>Balance</u>			Exchange				

#### **Common notes**

On the tab pages for generating documents you have to specify a xml-schema for your document - click on the button to choose from the predifined schemas or create your own schema. If you omit to specify a schema for your form you will see the XML output created by the database as shown below.

K Transaction	
Cuery results 1 - 34 Cuery results 1 - 34 2005 2005 ESMgrosseturool ESMgrosseturool ESMgrosseturool ESMgrosseturool ESMgrosseturool	Itareaction       Itareaction         Itareaction       Itareaction         2004       2006         2005       Itareaction         2006       Itareaction         2007       Itareaction         2008       Itareaction         2009       Itareact
order by:     Transaction       Image: conditions       Transaction       Name       Begin       End       End       Commerk       Notes       Finam       Number       Patner       Image:	Restrict to collection M-Fungi       Restrict to material specimen       Image: Collection M-Fungi xml version="1.0" encoding="utf=16" ? Image: Collection M-Fungi       Image: Collection M-Fungi xml version="1.0" encoding="utf=16" ? Image: Collection M-Fungi       Image: Collection M-Fungi <crtansaction>        Image: Collection M-Fungi       Image: Collection M-Fungi         <crtansaction>         Image: Collection M-Fungi       Image: Collection M-Fungi         <crtansactiontype>/collection D&gt;              <crtansactiontitle> <!--</th--></crtansactiontitle></crtansactiontype></crtansaction></crtansaction>

To choose a schema click on the button and select a schema from the list. DiversityCollection contains several ready to use schemas in the folder **Transaction -Schemas**.

😂 C: \Daten \DiversityWorkbench 2.0 \Releas	e\Diversi	tyCollection\Transaction\Sche	mas		
Datei Bearbeiten Ansicht Eavoriten Extras	2				- <b></b>
😋 Zurück 🝷 🕥 - 🏂 🔎 Suchen 🞼	Ordner				
Adresse 🔁 C:\Daten\DiversityWorkbench 2.0\Release	e\DiversityC	Collection\Transaction\Schemas		💌 🔁 Wea	hseln zu
Ordner	×	Name 🔺	Größe	Тур	^
🖃 🦳 Release	^	🚰 Balance.xslt	23 KB	XSL Transform	
20061120	-	Confirmation.xslt	10 KB	XSL Transform	
AfricanTypes		Confirmation_DE.xslt	9 KB	XSL Transform	
Diversity Agents		Z Cover.xslt	23 KB	XSL Transform	
DiversityCollection		🚰 Inventary.xslt	7 KB	XSL Transform	
Image: Second		🚰 Loan.xslt	1 KB	XSL Transform	
E CabelPrinting	_	Proverview.xslt	23 KB	XSL Transform	
LabelSchemataFuerProje	skte	🚰 PartiaReturn.xslt	14 KB	XSL Transform	
Construction     Construction     Construction     Construction		Reminder.xslt	14 KB	XSL Transform	
	~	🚰 Return.xslt	13 KB	XSL Transform	~
<	2	<			> .:

Feel free to change these schemas to your own needs. Choose the schema you need and then click on the 🗟 button to create a document. To print the document, use the 🖨 button. To store the current document in the documents for later reference click on the 🖬 button.

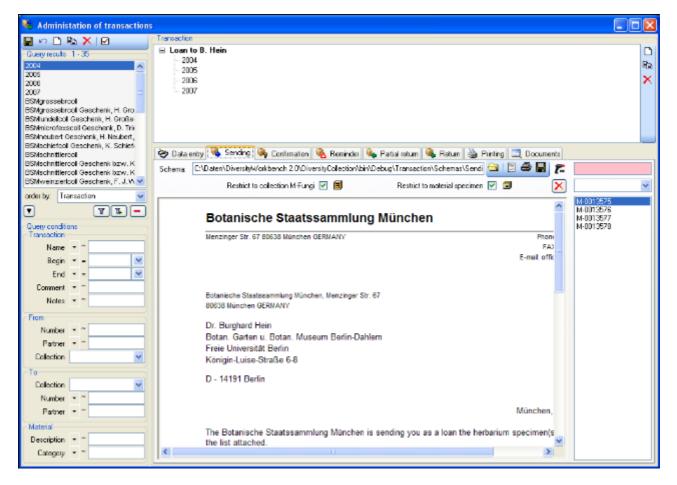
## Transactions - Sending 👒

In the sending tab page of the transaction form you can create the covering note for a sent sample. To choose a schema click on the button and select a schema from the list. DiversityCollection contains several ready to use schemas in the folder **Transaction -Schemas**.

To add a specimen to the list, you can either use the combobox or a barcode scanner. In case you scanner is reading only parts of the barcode try to adjust the timer intervall - click on the shown to open a form as shown below.

Timer intervall	
Please give a value for the timer interval milliseconds	l of the scanner in
300_	
Cancel	ОК

To restrict the selection of the specimens and parts of the specimens, you can check the **Restrict to collection** ... and **Restrict to material** ... options. To remove a specimen from the list, use the  $\times$  button. Click on the  $\blacksquare$  button to create the document as shown below.



## **Transactions - Confirmation**

On this page you can create an inquiry letter for a package sent, e.g. if a parcel was sent to a loan taker and no confirmation that the parcel reached its destination was returned so far.

With the button, choose the schema you need. Click on the button to create a document. To print the document, use the button. To store the current document in the documents for later reference click on the button.

Botanische Staatssammlung München	м	^	Specimen M-0013570 - speci M-0013571 - speci M-0013572 - speci
Menzinger Str. 67 80638 München GERMANY	Phone: 089 17861 265 FAX: 089 17861 193 E-mail: office@bam.mwn.de	=	M-0013573 - speci M-0013574 - speci M-0013575 - speci M-0013576 - speci
Botanische Staatssammlung München, Menzinger Str. 67 80638 München GERMANY		_	
Dr. Burghard Hein Botan. Garten u. Botan. Museum Berlin-Dahlem Freie Universität Berlin Königin-Luise-Straße 6-8			
D - 14191 Berlin			
	München, 13. Nov. 2007		
The Botanische Staatssammlung München sent you as a loan the hert list attached.	arium specimen(s) specified in the	~	

## Transactions - Reminder 🔌

If a loan is due to return resp. a loan taker did not meet the deadline, you can create a prompt note here.

With the 🔄 button, choose the schema you need. Click on the 🗏 button to create a document. To print the document, use the 🖨 button. To store the current document in the documents for later reference click on the 🖬 button.

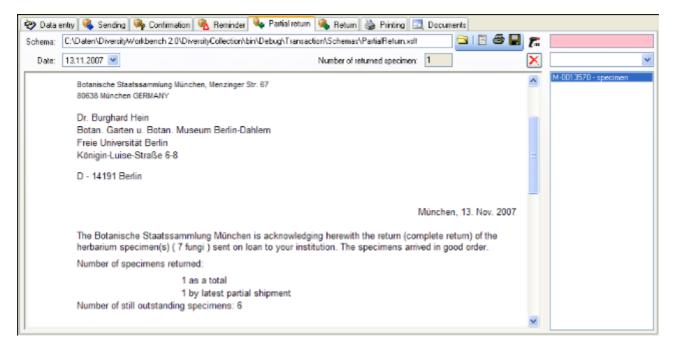
The at the upper right the missing specimen and at the lower right the returned specimen are listed.

🤣 Data entry 🦓 Sending 👒 Continuation 🦓 Reminder 🍬 Partial return 👒 Return 🍓 Printing 🗔 Documents		
Schema: C:/Daten/Diversity/Workbench 2.0/Release/DiversityCollection/Transaction/Schemas/Reminder.sslt		🔁   🖻 🍜 📕
Botanische Staatssammlung München	vi ^	Specimen on loan M-0013571 - specimen M-0013572 - specimen M-0013573 - specimen
Menzinger Str. 67 80638 München GERMANY Phone: 089 17861 2 FAX: 089 17861 2 E-mail: office@bsm.mvm	93	M-0013574 - specimen M-0013575 - specimen M-0013576 - specimen
Botanische Staatssammlung München, Menzinger Str. 67 80638 München GERMANY		
Dr. Burghard Hein Botan. Garten u. Botan. Museum Berlin-Dahlem Freie Universität Berlin Königin-Luise-Straße 6-8		Returned specimen M-0013570 - specimen
D - 14191 Berlin		
München, 14. Nov. 20	07	
The Botanische Staatssammlung München is acknowledging herewith the return (complete return) of the herbarium specimen(s) ( 7 fungi ) sent on loan to your institution. The specimens arrived in good order.		
Number of specimens returned:		
1 as a total	~	

## Transactions - Partial Return 🔖

If parts of a loan were returned, create a letter of acknowledgment here.

With the  $\square$ button, choose the schema you need. Click on the  $\blacksquare$ button to create a document. To print the document, use the Bbutton. To store the current document in the documents for later reference click on the  $\blacksquare$ button.



You have two option to enter returned specimen.

You may either use a barcode scanner  $\overline{}$  move the mouse cursor into the field for the barcode detection, then scan the barcode. The specimen will be automatically inserted into the list. In case your scanner is reading only parts of the barcode try to ajust the timer intervall - click on the  $\overline{}$  button to open a form as shown below. Here you can set the interval to a value that is compatible to your scanner.

Timer intervall	
Please give a value for the timer interv milliseconds	vall of the scanner in
300_	
Cancel	ОК

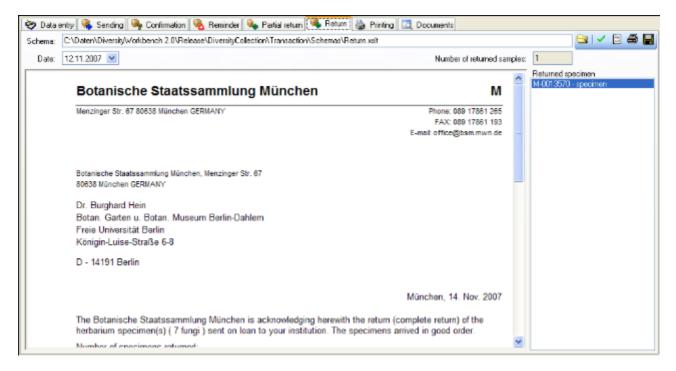
If you lack a scanner or you do not use barcodes, use the drop down box to select the specimen from the list.

To remove a specimen from the list use the  $\times$  button.

## Transactions - Return 👒

If a loan is returned, create a letter of acknowledgment here. With the 🖾 button, choose the

schema you need. If all specimen were returned, click the  $\checkmark$  button. This take all remaining specimen into the list of the returned specimens. With the date field you can define a different date as the start if e.g. you starting to register the returned specimen some days before. Click on the 🗟 button to create a document. To print the document, use the 🖨 button. To store the current document in the documents for later reference click on the 🖬 button.



# Transactions - Printing / Inventory 🎍

Besides the special pages for creating letters along with a loan this page provides the possibility to print cover letters, inventories and the like. You can restrict the selected specimen to the current collection, include the subcollections or all related collections - just activate the corresponding checkboxes.

To add a specimen to the list, you can either use the combobox or a barcode scanner. To use the barcode scanner, move your mouse cursor into the pink field right from the scanner. In case your scanner is reading only parts of the barcode try to adjust the timer intervall - click on the timer interval open a form where you can set the timer interval to a different value. To remove specimen form the list, select it and then click on the button.

With the  $\bigcirc$  button, choose the schema you need. Click on the  $\blacksquare$  button to create a preview of the document. To print the document, use the B button. To store the current document in the documents for later reference click on the  $\blacksquare$  button.

ờ Data entry 💩 Printing 🔯 Documents	
Schema file: C.\Daten\DiversityWorkbench 2.0\DiversityCollection\bin\Debug\Transaction	NSchemasMinventory.xst 🔄 🗟 📕 🚒
Include subcollections     Include at related colle	ctions Number of speciment 452 🗙 💌
	Specimen
Botanische Staatssammlung München	M-0140302 · specimen
	M-0140303 - specimen M-0140304 - specimen
zugegangen am: 16. Jan. 2007	M-0140305 - specimen
452 Kry/Fungi: The Fungal Collection of Seth Lundell	M-0140305 - specimen M-0140307 - specimen
452 Kry/Fungi. The Fungar Collection of Seth Lunder	M-0140308 - specimen
Geschenk	M-0140309 - specimen
	M-0140310 - specimen M-0140311 - specimen
InvNr.: 6609	M-0140312 - specimen
1110-111. 0009	M-0140313 - specimen
	M-0140314 - specimen M-0140315 - specimen
Zugang: Kry/Fungi: 452 Belege - The Funga	
Zugang. Niyir ungi. 402 belege - me runga	M-0140017 - specifien
	M-0140318 - specimen M-0140319 - specimen
Geber: Helga Grosse-Brauckmann, Seeheir	
	M-0140321 - specimen
Geschenk	M-0140322 - specimen
	M-0140323 - specimen M-0140324 - specimen
	M-0140325 - specimen
Fuligo cinerea (Schwein.) Morgan	M-0140301 M-0140326 - specimen
	M-0140027 - specifier
Albatrellus cristatus (Schaeff.) Kotl. & Pouzar	M.0140229 . specimen
Amylocystis lapponicus (Romell) Bondartsev & Singer ex Singer	M-0140303 - M-0140304 VM-0140330 - specimen V
A	M 0440305 M 0440305

### Transactions - Documents

This page stores all the documents created or received along with a transaction.

💝 Data entry 🍓 Printing	Documents	
13.11.2007 16.21		^
	Botanische Staatssammlung München	-
	zugegangen am: 16. Jan. 2007	
	452 Kry/Fungi: The Fungal Collection of Seth Lundell	
	Geschenk	
	InvNr.: 6609	
	Zugang: Kry/Fungi: 452 Belege - The Fungal Collection of Seth Lundell	*
	Add image from document	

To add a document, create a screeshot of this document, then create a new entry (click on the button) and insert the screenshot with the Add image from document button. In the lower part you can enter any text related to the document.

## Transactions - Balance 1/2

The balance for the exchange between two collections.

With the button, choose the schema you need. Click on the button to create a document. To print the document, use the button. To store the current document in the documents for later reference click on the button. To include either the subcollections of any related collections to the collections of the current transaction select the corresponding checkboxes.

😵 Data entry 🛧 Balance 🍓 Pr	inting 🔯 Doc	uments						
Schema file: C:\Daten\DiversityWork	bench 2.0\Diver	sityCollection\bin\D	ebug\Transact	ion\Sche	mas\Balance.xs	k		3 🖨 🔚
Include subcollections of M-Fungi			🗹 Include	all collec	tions related to N	4-Fungi		
Include subcollections of B-Lichens			🗹 Include	all collec	tions related to E	3-Lichens		
exchange partner: Dr. Burghard Hein Botan. Garten u. Bo Freie Universität Be Königin-Luise-Straß	tan. Museum rlin	Berlin-Dahlem						~
D - 14191 Berlin						München, 19. Nov.	2007	
exchange balance	per categor	у						
category		receive	d		sent	balance		
Kry/Fungi		0			666	666		
Kry/Flechten		200			0	-200		
Kry/Algae total balance		50			111	61 527		
exchange details								
	itegory	date	specimen	inv-no	description			
sent Kr	y/Fungi	22.05.2004	666					~

## Maintenance

DiversityCollection can be linked several other modules within the Diversity Workbench. If you link a datasource to another module, the URI of the dataset in the other module together with several cached values will be stored in DiversityCollection. Along with changes in the other modules these cached values may differ from the original values. To get the actual values you can set these with the maintenance function within DiversityCollection.

toChoose Administration -> from the menu. A form as shown below will open. To transfer the higher taxonomic entries choose the tab Family and order. The upper part will synchronize the entries with taxonomic databases like DiversityTaxonNames\_Fungi. Select a taxonomic database, a project and a taxonomic group, then choose if you want to synchronize the Family or th order. If you want to take a look at the single datasets you have to check the "Include accession number" checkbox. Than start the query with a click on the

Check for differences button.

Synchronize databases         Synchronize databases         Celection <> Taxoning databases         Collection <> Taxoning databases         Projecti         ESMegrood         Include accession numbers         Synchronize with available data         Projecti         ESMegrood         Include accession numbers	PiversityCollection, Database: DiversityCollection, Database: Database: Database: Database: D	tyCollection_Test v. 2.3.5.0 Server: 141.84.65.107 Port: 5432 User: BOTSAMML08\mweiss	
Collection <> TexonNames       Fomly and ordor       Calection <> Exciccate       Collection <> References         Synchronice with database       Image: Collection <> Calection <> Gazetter       Collection <> References         DiversityTexonNames_Fung       Image: Collection <> Calection <> Gazetter       Collection <>> References         BioMeryscoll       Image: Collection <> Calection <> Gazetter       Collection <>> References         Check for differences       Image: Collection <> Collection <> Calection <> Calection <>> References         Check for differences       Image: Collection <> Calection <> Calection <>> Calectio	Synchronize databases		
Synchronize with database         Taxonomy database.         DiversityTaxonNamet_Fungi         Project:         BSMeryscoll         Taxonomic group:         Iungud         Include accession numbers         Check for differences         Stert update         Stert update	Synchronzie the cached data in dependent dat	abases with the original source	
Taxonomy ddabasei         Diversity TaxonNames_Fungi         Project:         BSMeryscoll         Taxonomic goup:         Ivraud         Pranty         Order         Include accession numbers         Start update         Start update         Start update         BSMeyscoll		Collection <> Explocatae Collection <> Gazetteer Collection <> References	
Project: BSMesyscoll Taxonomic group: [urigud Family Order Include accession numbers Check for differences Start update Synchronize with available data Project: BSMesyscoll	Synchronize with database Taxonomy database:		
BSMeryscoll Tasonomic group: Iungud Famiy Famiy Check for differences Start opdate Synchronize with available data Ptojact: BSMeryscoll	DiversityTaxonNames_Fungi		
Taxonomic group: Iunguat  Family  Grantly  Check for differences  Start update  Synchronize with available data Projest: BSMetyscoll			
Iunguid       Image: Check for differences         Check for differences       Start update         Start update       Start update         Project:       BSMeryscoll			
Family     Order     Include accession numbers      Check for differences      Start update      Synchronize with available data      Project:     BSMegyscoll			
Check for differences  Synchronize with available data Project: BSMergscoll			
Synchronize with available data       Project:       BSMeryscoll	Include accession numbers		
Synchronize with available data       Project:       BSMeryscoll			
Synchronize with available data       Project:       BSMeryscoll			
Synchronize with available data Ptoject: BSMeryscoll	Check for differences		
Synchronize with available data Ptoject: BSMeryscoll			
Project: BSMegecoll	Start update		
Project: BSMegecoll	l		
BSMeryscoll			
Include accession numbers	Ip sivilely score		
	Include accession numbers		
Check for differences	Check for differences		
Start update	Start update		

The form will list all differences found as shown below. To update the database click on the Start update

button.

nchronize with database xonomy database:		LastIdentificationCache	Family	Order	TaxonomicGroup
ersityTaxonNames_Fungi	►	Arthrocladiella mougeotii (Lév.) Vassilkov	Etysiphaceae		fungus
		Blumeria graminis (DC.) Speer	Erysiphaceae		lungus
iject:		Brasilionyces trina (Harkn.) R. Y. Zheng	Erysiphaceae		fungus
teryscoll 💌		Cystotheca lanestris (Harkn.) Sacc.	Erysiphaceae		fungus
onomic group:		Cystotheca wighti Berk, & M. A. Curtis	Etysiphaceae		fungus
# <b>•</b>		Ensiphe abbreviata (Peck) U. Braun & S. Takam.	Erysiphaceae		fungus
amily C Order		Erysiphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Erysiphaceae		fungus
iclude accession numbers		Etysiphe adunca (Walk.) Fr.	Erysiphaceae		fungue
		Etysiphe adunca (Walk.) Fr. var. adunca	Etysiphaceae		fungus
		Ensiphe adunca var. regularis (R. Y. Zheng & G	Erysiphaceae		fungus
heck for differences		Erysiphe aggregata (Peck) Farl.	Erysiphaceae		fungus
iferences found		Etysiphe alphitoides (Griffon & Maubl.) U. Braun &	Erysiphaceae		fungue
		Etysiphe aquilegiae DC.	Etysiphaceae		lungus
Starl update		Enysiphe aquilegiae var. aquilegiae	Erysiphaceae		fungus
		Enviphe aquilegiae var. ranunculi (Grev.) R. Y. Z	Erysiphaceae		fungus

In the lower part you can synchronize your entries within the database. Choose a project and click on the <u>Check for differences</u> button to start the query. To transfer the higher taxa to the found dataset click on the <u>Start update</u> button.

Synchronize with available data		LastIdentificationCache	Family	Order	TaxonomicGroup
Project:	•	Etysiphe abbreviata (Peck) U. Braun & S. Takam.	Etysiphaceae	Erysiphales	fungus
BSMeryscoll		Enysiphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Etysiphaceae	Erysiphales	lungus
		Erysiphe adunca (Walk.) Fr.	Erysiphaceae	Erysiphales	fungus
Include accession numbers		Etysiphe adunca (Walk.) Fr. var. adunca	Erysiphaceae	Erysiphales	fungus
		Eusiphe adunca var. regularis (R. Y. Zheng & G	Etysiphaceae	Erysiphales	lungus
		Enysiphe aggregata (Peck) Farl.	Enysiphaceae	Erysiphales	lungus
Check for differences 97 differences found		Erysiphe alphitoides (Gritton & Maubl.) U. Braun &	Erysiphaceae	Erysiphales	fungus
		Etysiphe aquilegiae DC.	Etysiphaceae	Erysiphales	fungus
		Etysiphe aquilegiae var. aquilegiae	Erysiphaceae	Erysiphales	lungus
Start update		Erysiphe aquilegiae var. ranunculi (Grev.) R. Y. Z	Erysiphaceae	Erysiphales	fungus
		Etysiphe artemisiae Grev.	Erysiphaceae	Erysiphales	fungus

If you want to have a more detailed look on you data you have to check the "Include

Close form and check dataset in database will

accession number" checkbox before starting the Query. A button appear that will take you back to a single dataset in the database.

Synchronize with available data		LastIdentificationCache	Family	Order	TaxonomicGroup	AccessionN
Project:		Enysiphe abbreviata (Peck) U. Braun & S. Takam.	Erysiphaceae	Erysiphales	fungus	M-0019406
BSMeryscoll		Enysiphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Erysiphaceae	Erysiphales	tungus	M-0013772
		Enviphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Erysiphaceae	Erysiphales	fungus	M-0013771
Include accession numbers	۲	Etysiphe adunca (Walk.) Fr.	Eiysiphaceae	Erysiphales	tungus	M-0019304
Close form and check		Etysiphe adunca (Walk.) Fr.	Erysiphaceae	Erysiphales	lungus	M-0019385
dataset in database		Erysiphe adunca (Walk.) Fr.	Erysiphaceae	Erysiphales	tungus	M-0019384
Check for differences		Etysiphe adunca (Walk.) Fr.	Erysiphaceae	Erysiphales	fungus	M-0019303
2208 differences found		Etysiphe adunca (Wallt.) Fr.	Eiysiphaceae	Erysiphales	tungus	M-0019328
2200 diferences round		Etysiphe adunca (Walk.) Fr. var. adunca	Erysiphaceae	Erysiphales	lungus	M-0015297
Start update		Erysiphe adunca (Walk.) Fr. var. adunca	Erysiphaceae	Erysiphales	fungus	M-0123959
	4	e o a avane a	e 11	le sur		N 00 10 107

## Maintenance - Exsiccatae

To synchronize the abbreviations titles of the titles of the exsiccatal series that are linked to the module DiversityExsiccatae choose **Administration -> Maintenance** from the menu. A form as shown below will open. On the tab page **Collection <-> Exsiccatae** select the project for which the titles should be synchronized. The title is stored in the field <u>ExsiccataAbbreviation</u> in the table <u>CollectionSpecimen</u>. Select the project that should be

button.

synchronized. Than start the query with a click on the Check for differences

ynchronize databases						
unchionzie the cached data in depende	ni data	bases	with the original source			
Collection <-> TaxonNames Family an	t order	Cole	ction <-> Exsiccatae Collection <-> Gazetteer Coll	ection <-> References		
Project:			ExsAbbreviation in DiversityExsideatae	ExsidentaAbbreviation in DiversityCollection	AccessionNumber	C
BSMeryscoll	-		Anonymous, Soc. Roch 1892	Anorymous, Soc. Roch.	M-0018768	1:
Include accession numbers Close form and check			Anonymous, Soc. Roch 1892	Anorymous, Soc. Roch.	M-0016427	9.
			Bondartsev, Fungi Exs. URSS	Bondartsev, Fungi Exe. URSS [1 - 100]	M-0019390	9
			Briosi & Cavara, Fung, Paras, Piante Colt, Utili Ess,	Briosi & Cavara, Fung, Paras, Piante Cok, Utili Ess.	M-0019207	4:
			Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	M-0017292	4:
dataset in database			Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	Briosi & Cavara, Fung. Paras. Piante Cok. Utili Ess.	M-0016330	4
			Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	M-0016946	4
Check for differences			Briosi & Cavara, Fung, Paras, Piante Colt, Utili Ess,	Briosi & Cavara, Fung, Paras, Piante Colt, Utili Ess.	M-0013679	3:
529 differences found			Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	Briosi & Cavara, Fung, Paras, Piante Colt, Utili Ess.	M-0013860	5
			Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	M-0015150	5
Start update			Briesi & Cavara, Fung, Paras, Piante Colt, Utili Ess,	Briosi & Cavara, Fung, Paras, Piante Cok, Utili Ess.	M-0016544	21
			Briosi & Cavara, Fung, Paras, Piante Colt, Utili Ess,	Briosi & Cavara, Fung, Paras, Piante Cok, Utili Ess,	M-0014204	3:

The form will list all differences found. To update the database click on the

Start update button. If you want to have a more detailed look on you data you have to check the "Include accession number" checkbox before starting the Query. A button

Close form and check dataset in database

will appear that will take you back to a single dataset in the database.

## **Maintenance - Family and Order**

To synchronize the entries for the family and order of taxa derived from the module DiversityTaxonNames choose **Administration -> Maintenance** from the menu. A form as shown below will open. To synchronize the higher taxonomic entries for entries linked to the module DiversityTaxonNames choose the tab **Family and order**. These are stored in the fields <u>FamilyCache</u> and <u>OrderCache</u> in the table <u>IdentificationUnit</u>.

In the upper part will synchronize the entries with taxonomic databases like DiversityTaxonNames\_Fungi. Select a taxonomic database, a project and a taxonomic group, then choose if you want to synchronize the Family or the order. If you want to take a look at the single datasets you have to check the "Include accession number" checkbox. Than start

the guery with a click on the Check for differences button.

DiversityCollection, Database: DiversityCollect	on_Test v. 2.3.5.0 Server: 141.84.65.107	Port: 5432 User: BOTSA	MML08\mweiss
Synchronzie the cached data in dependent databases wit	the address of the		
Collection (-> TaxonNames Family and order Collection	-	tion c.s. References	
Synchronize with database	I CO EXACERCIÓN CO CAZENTER   CONSC	non conteletetetet	1
Taxonomy database: DiversityTaxonNames_Fungi			
Project: B5Meryscoll			
Taxonomic group:			
lungus 💌			
Family C Order			
Include accession numbers			
Check for differences			
Start update			
Synchronize with available data			
Project:			
BSMeryscoll			
Include accession numbers			
Include accession numbers			
Check for differences			
Start update.			
- control to provide the			

The form will list all differences found as shown below. To update the database click on the Start update button.

nchronize with database xonomy database:		LastIdentificationCache	Family	Order	TaxonomicGroup
ersityTaxonNames_Fungi	►	Arthrocladiella mougeotii (Lév.) Vassilkov	Etysiphaceae		fungus
		Blumeria graminis (DC.) Speer	Erysiphaceae		lungus
iject:		Brasilionyces trina (Harkn.) R. Y. Zheng	Erysiphaceae		fungus
teryscoll 💌		Cystotheca lanestris (Harkn.) Sacc.	Erysiphaceae		fungus
onomic group:		Cystotheca wighti Berk, & M. A. Curtis	Etysiphaceae		fungus
# <b>•</b>		Ensiphe abbreviata (Peck) U. Braun & S. Takam.	Erysiphaceae		fungus
amily C Order		Erysiphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Erysiphaceae		fungus
iclude accession numbers		Etysiphe adunca (Walk.) Fr.	Erysiphaceae		fungue
		Etysiphe adunca (Walk.) Fr. var. adunca	Etysiphaceae		fungus
		Ensiphe adunca var. regularis (R. Y. Zheng & G	Erysiphaceae		fungus
heck for differences		Erysiphe aggregata (Peck) Farl.	Erysiphaceae		fungus
iferences found		Etysiphe alphitoides (Griffon & Maubl.) U. Braun &	Erysiphaceae		fungue
		Etysiphe aquilegiae DC.	Etysiphaceae		lungus
Starl update		Enysiphe aquilegiae var. aquilegiae	Erysiphaceae		fungus
		Enviphe aquilegiae var. ranunculi (Grev.) R. Y. Z	Erysiphaceae		fungus

In the lower part you can synchronize your entries within the database. Choose a project and click on the <u>Check for differences</u> button to start the query. To transfer the higher taxa to the found dataset click on the <u>Start update</u> button.

Synchronize with available data		LastIdentificationCache	Family	Order	TaxonomicGroup
Project:	•	Etysiphe abbreviata (Peck) U. Braun & S. Takam.	Eiysiphaceae	Erysiphales	fungus
BSMeryscoll		Ensiphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Etysiphaceae	Erysiphales	lungus
		Etysiphe adunca (Walk.) Fr.	Erysiphaceae	Erysiphales	fungus
Include accession numbers		Etysiphe adunca (Walk.) Fr. yar. adunca	Etysiphaceae	Erysiphales	fungus
		Etysiphe adunca var. regularis (R. Y. Zheng & G	Etysiphaceae	Erysiphales	fungus
		Etysiphe aggregata (Peck) Farl.	Etysiphaceae	Erysiphales	fungus
Check for differences		Etysiphe alphitoides (Griffon & Maubl.) U. Braun &	Etysiphaceae	Erysiphales	fungus
97 differences found		Etysiphe aquilegiae DC.	Etysiphaceae	Erysiphales	fungus
or allelences lound		Etysiphe aquilegiae var. aquilegiae	Etysiphaceae	Erysiphales	lungus
Start update		Etysiphe aquilegiae var. ranunculi [Grev.] R. Y. Z	Erysiphaceae	Erysiphales	fungus
		Etysiphe artemisiae Grev.	Etysiphaceae	Erysiphales	fungus

If you want to have a more detailed look on you data you have to check the "Include

Close form and check dataset in database will

accession number" checkbox before starting the Query. A button appear that will take you back to a single dataset in the database.

Synchronize with available data		LastIdentificationCache	Family	Order	TaxonomicGroup	AccessionN
Project:		Enysiphe abbreviata (Peck) U. Braun & S. Takam.	Erysiphaceae	Erysiphales	fungus	M-0019406
BSMeryscoll		Enysiphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Erysiphaceae	Erysiphales	tungus	M-0013772
		Enviphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Erysiphaceae	Erysiphales	fungus	M-0013771
Include accession numbers	۲	Etysiphe adunca (Walk.) Fr.	Eiysiphaceae	Erysiphales	tungus	M-0019304
Close form and check		Etysiphe adunca (Walk.) Fr.	Erysiphaceae	Erysiphales	lungus	M-0019385
dataset in database		Erysiphe adunca (Walk.) Fr.	Erysiphaceae	Erysiphales	tungus	M-0019384
Check for differences		Etysiphe adunca (Walk.) Fr.	Erysiphaceae	Erysiphales	fungus	M-0019303
2208 differences found		Etysiphe adunca (Wallt.) Fr.	Eiysiphaceae	Erysiphales	tungus	M-0019328
2200 diferences round		Etysiphe adunca (Walk.) Fr. var. adunca	Erysiphaceae	Erysiphales	lungus	M-0015297
Start update		Erysiphe adunca (Walk.) Fr. var. adunca	Erysiphaceae	Erysiphales	fungus	M-0123959
	4	e o a avane a	e 11	le sur		N 00 10 107

## **Maintenance - Gazetteer**

To synchronize the entries derived from the module DiversityGazetteer choose **Administration -> Maintenance** from the menu. A form as shown below will open. On the tab page **Collection <-> Gazetteer** select the project for which the entries should be synchronized. There are 3 targets for the synchonization: Place name in the field <u>Location1</u> in table <u>CollectionEventLocalisation</u>, Country stored in the field <u>CountryCache</u> in the table <u>CollectionEvent</u> and the Coordinates stored in the fields <u>AverageLatitudeCache</u> and <u>AverageLongitudeCache</u> in the table <u>CollectionEventLocalisation</u>. Select one of there tagets

Check for differences

for the synchronization. Than start the query with a click on the button.

nchronize databases						
inchronzie the cached data in dependent	database	s with the original source				
collection <-> TaxonNames Family and o	rder Co	lection <-> Exsiccatae Collection <-> Gaze	tteer Collection <-> References			
Project:		Place name in DiversityGazetteer	Place name in DiversityCollection	AccessionNumber	Latitude	l
ProtoblasteniaColl  Choose the part the should be checked	F	Abruzzi, Italy	Abruzzi, Italia	M-0028486		
Place name		Alassio, Savona, Liguria, Italy	Alassio, Savona, Liguria, Italia	M-0028167		
Include accession numbers		Alassio, Savona, Liguria, Italy	Alassio, Savona, Liguria, Italia	M-0028168		
<ul> <li>Include accession numbers</li> </ul>		Alfeld an der Leine, Hannover, Germany	Alfeld an der Leine, Hannover, Nieder	M-0028409		
		Algauer Alpen, Schwaben, Germany	Allgauer Alpen, Schwaben, Bayern, D	M-0028367		
		Algauer Alpen, Schwaben, Germany	Aligauer Alpen, Schwaben, Bayern, D	M-0028640		
Check for differences 216 differences found		Algauer Alpen, Schwaben, Germany	Allgauer Alpen, Schwaben, Bayern, D	M-0028560		
		Algauer Alpen, Schwaben, Germany	Allgauer Alpen, Schwaben, Bayern, D	M-0028635		
		Algauer Alpen, Schwaben, Germany	Allgauer Alpen, Schwaben, Bayern, D	M-0028609		
Start update		Alinavar Alinen Schwahen Germaniu	Alloquer Albert, Schwahen, Rairern, D	MJ0128225		

The form will list all differences found. To update the database click on the

Start update

button. If you want to have a more detailed look on you data you have to check the "Include accession number" checkbox before starting the Query. A button

Close form and check dataset in database

will appear that will take you back to a single dataset in the database.

### **Maintenance - References**

To synchronize the titles of the references that are linked to the module DiversityReferences choose **Administration -> Maintenance** from the menu. A form as shown below will open. On the tab page **Collection <-> References** select the project for which the reference titles should be synchronized. There are 3 tables which may contain links to DiversityReferences: <u>CollectionEvent</u>, <u>CollectionSpecimen</u> and <u>Identification</u>. Choose one of these tables for the

synchronization. Then start the query with a click on the

Check for differences button.

Contractive Collection, Database: L	iversit	Collection_Test v. 2.5.1.7 Serv	er: 141.84.65.107 Port: 54	32 User: BOTS	1MML221 📃	
Synchronize databases						
Synchronzie the cached data in dependent	tatabase	s with the original source				
Collection <-> TaxonNames Family and or	der Col	ection <-> Exsiccatae Collection <-> Gazette	er Collection <> References			
Project: ProtoblasteniaColl		RefDescription_Cache in ReferenceTitle	ReferenceTitle in Identification	CollectionSpecimer	AccessionNumber	Refer
PT01004330911dC.011	•	Aldrich 1966. A study of the ultrastructural	Aldrich 1966. A study of the ultrastru	121363	M-0023593	http://
Table						
Identification 🗸						
Include accession numbers						
Check for differences 1 differences found Start update	3					2

The form will list all differences found. To update the database click on the

Start update button. If you want to have a more detailed look on one of the datasets in the list data you have to check the "Include accession number" checkbox before starting

Close form and check dataset in database

the Query. A button will appear that will take you back to a single dataset in the database.

### **Maintenance - Taxonomic names**

To synchronize the entries for the taxonomic names derived from the module DiversityTaxonNames choose **Administration -> Maintenance** from the menu. A form as shown below will open. To synchronize the taxonomic names for entries linked to the module DiversityTaxonNames choose the tab **Collection <-> TaxonNames**. There are two ways to synchronize taxonomic names. You can either **Synchronize taxonomic names based on the link via an URI** for entries where the link to a taxonomic database is allready established or you can **Synchronize taxonomic names missing a connection**, where no link is established and you can query for identical names in one of the databases.

#### Synchronize taxonomic names based on the link via an URI

The taxonomic names are stored in the field <u>TaxonomicName</u> in the table <u>Identification</u>. Select a taxonomic database and a project that should be synchronized. Than start the query with a

click on the Check for differences button.

chionize databases Remove un	elated events	Remove unrelated event series			
nchronzie the cached data in deper	ومعطوفه فعقاو	an while they existent encourse			
		-			
-		ection (-> Exsiccatae Collection (-> Gazettee	E	mber duplicates	
Synchronize taxonomic names base	d on the link vi	a an URI Synchronize taxonomic names missin	g a connection		
Taxonomy database:		TaxonNameCache in DiversiteTaxonNames	TaxonomicName in DiversityCollection	AccessionNumber	CollectionSpecimenID
DiversityTaxonNames_Fungi	¥	Ervsiphe aguilegiae DC, var, aguilegiae	Ervsiphe aquilegiae var. aquilegiae	M-0013899	292
Project		Ervsiphe aquilegiae DC, var. aquilegiae	Envsiphe aquilegiae var. aquilegiae	M-0013898	476
BSMeryscol	¥ -			M-0013939	4400
		Etysiphe aquilegiae DC, var. aquilegiae	Enysiphe aquilegiae var. aquilegiae		
		Enysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013920	326
Include accession numbers		Etysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013918	2616
		Enviphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013900	18
Close form and check, dataset in database		Erysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013922	15378
		Erysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013911	15535
Check for differences		Erysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013890	15041
1391 differences found		Enviphe aquilegiae DC, var. aquilegiae	Etysiphe aquilegiae var. aquilegiae	M-0013914	11819
1351 GEORGE IOUNG		Erysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013919	12078
Start update		Etysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013916	14625
		Erysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013940	14633
		Ervsiphe aquilegiae DC, yar, aquilegiae	Ervsiphe aquilegiae yar, aquilegiae	M-0019228	15235

The form will list all differences found. To update the database click on the

Start update button. If you want to have a more detailed look on your data you have to check the "Include accession number" checkbox before starting the Query. A button

Close form and check dataset in database

will appear that will take you back to a single dataset in the database.

#### Synchronize taxonomic names missing a connection

Select a taxonomic database, a project and a taxonomic group to search for identical names. Than start the query with a click on the **Check for identical names** button.

DiversityCollection v. 2.5.3.6 Se	arver: I	BSM1 Port: 5432 User: BOTSAMML	22\mweiss		
Synchronize databases Remove unrelated eve	nts Re	move unrelated event series			
Synchronzie the cached data in dependent data	bases wi	th the original source			
Collection <-> TaxonNames Family and order	Collect	ion <-> Exsiccatae Collection <-> Gazetteer Co	allection <> References   AccessionNumber du	plicates	
Synchronize taxonomic names based on the lin	ik via an	URI Synchronize taxonomic names missing a c	onnection		
Taxonomy database:		TaxonNameCache in DiversityTaxonNames	TaxonomicName in DiversityCollection	AccessionNumber	CollectionSpecimenID
DiversityTaxonNames_Fungi 🛛 💌	•	Enysiphe lanuginosa Fuckel	Erysiphe lanuginosa Fuckel	M-0015743	4551
Project		Etysiphe scholzii U. Braun & Bolay	Erysiphe scholzi U. Braun & Bolay	M-0019413	117715
BSMetytcol V		Microsphaera alni vat. yamadai E. S. Salmon	Microsphaera alni var. yamadai E. S. Salmon	M-0016665	13529
Taxonomic group:		Oidium cydoniae Pass.	Oldium cydoniae Pass.	M-0017370	6669
fungus 🗸		Oidium violae Pass.	Oldium violae Pass.	M-0015355	11140
		Oidium violae Pass.	Oldium violae Pass.	M-0015355	11140
		Sphaerotheca lanestris Harkn	Sphaerotheca lanestris Harkn.	M-0013586	4552
Include accession numbers		Uncinula septata var. curvispora Hara	Uncinula septata var. curvispora Hara	M-0018646	6324
Close form and check dataset in database Check for identical names 8 matches found Start update					

The form will list all matches found. To insert the links to the database click on the

Start update button. If you want to have a more detailed look on your data you have to check the "Include accession number" checkbox before starting the Query. A button

Close form and check dataset in database

will appear that will take you back to a single dataset in the database.

## **Maintenance - Unrelated data**

#### **Collection events**

Provided you have the proper rights, you can remove unlinked datasets in the tables CollectionEvent and CollectionEventSeries. To delete events that are not linked to any data in the database, use the tab page **[Remove unrelated events]**. These unrelated dataset may e.g. stem from specimen that were transferred to another collection event. Click the **[List unrelated events]** button to list all events that are not related to a specimen. The found collection events will be listed in the upper part of the form. The lower parts show the localisations and the event properties related to these collection events. These must be deleted to delete the related events. Otherwise only the events with no relations to localisations or properties will be deleted.

🔗 DiversityCo	llectio	n v. 2.5.2.3	Server: BSM1 P	ort: 5432 Use	r: BOTSAMML22V	mweiss					×
Synchronize data	bases [	Remove unrelated ev	rents   Remove unrel	ated event series							
List		CollectionEventID	Version	SeriesID	CallectorsEventNut	CollectionDate	CollectionD ay	CollectionMonth	CollectionYear	Coller	•
unrelated events	۶	45850	1								1
2340		45910	1								
callection		46388	1								
events with no relation to		48453	1								
specimen		48813	1								
Delete unrelated		48905	1								
events	<	10000	1							>	
92 localisations		CollectionEventID	LocalisationSystem	Location1	Location2	LocationAccuracy	LocationNotes	DeterminationDate	DistanceToLocatio	Direc 🖌	1
with not	F	45950	7	Hildesheim, Kreis	http://id.eneb.inf			17.11.2003 07:51			
relation to		46388	7	Hildesheim, Kreis	http://id.eneb.inf			17.11.2003 07:51			
Delete umelated		48813	7	Hildesheim, Kreis	http://id.eneb.inf			17.11.2003 07:51			
localisations	<	1	1							>	
0 event properties with		CollectionEventID	PropertyID	DisplayText	PropertyURI	PropertyHierarchyC	PropertyValue	ResponsibleName	ResponsibleAgentL	Notes	٦
not relation to											
specimen											
Delete unrelated											
event	<			11						>	

#### **Collection event series**

To delete collection event series with no relation to collection events or other event series, choose the tab page **[Remove unrelated event series]**. Click the **[List unrelated event series]** to list these series and the [Delete unrelated event series] button to delete them.

Synchronize dat	abases	Remove unrelated a	vents Remove un	related event series						
List		SeriesID	SeriesParentID	Description	SeriesCode	Notes	DateCache	LogCreatedwhen	LogCieatedBy	LogUp 🗹
unrelated event series	•	-1536		New EventSeries				04.01.2008 13:36	BSM1\beck	04.01.2
even seles		-1531		Germany, Bayern		Germany, Bayern	09.08.1946	03.01.2008 13:47	doo	03.01.2
22 event series with no relation to		-1525		Germany, Bayern		Germany, Bayern	17.11.1941	03.01.2008 13:47	doo	03.01.2
		-1524		Germany, Bayern		Germany, Bayern	10.04.1320	03.01.2008 13:47	doo	03.01.2
callection		-1520		Germany, Bayern		Germany, Bayern	23.05.1919	03.01.2006 13:47	doo	03.01.2
events or other series		-1519		Germany, Bayern		Germany, Bayern	04.08.1946	03.01.2006 13:47	doo	03.01.2
		-1513		New EventSeries				21.11.2007 17:20	BSM1Vriebel	21.11.2
Delete		-1511		New EventSeries				21.11.2007 11:00	BSM1'triebel	21.11.2
unrelated event series		-1510		New EventSeries				09.11.2007 14:11	BSM1'triebel	09.11.2

# **Import and export**

For the import and export you have several options:

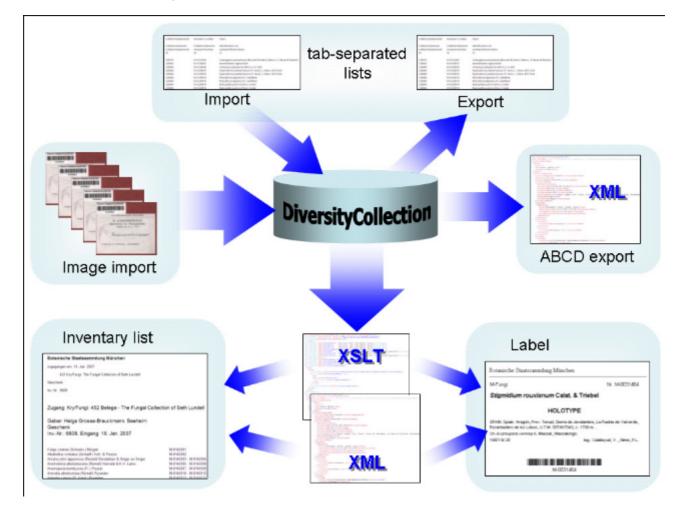
<u>Import of images</u>: Images that are named according to the accession number can be imported together with default informations to the whole batch.

Import and export of tab separated list: To import data from foreign soures and to export data e.g. for reimport after extern editing.

Export of XML data according to ABCD.

Generation of labels.

Generation of inventary list.



### Label

If there is only one part in your specimen click on the printer symbol in the specimen the printing mode. If your specimen contains more then one part, choose the part of the specimen for which the label should be generated and click on the button in the right

ŵ 😔

ŵ \Theta

panel. The image area will switch to the label view shown in the data area the details related to the label will be accessible. The sequence is shown in the image below.

Acc.Nr. M-0013572	Arthrocladiella mouge	otii (Lév.) Vassilkov	ID 3251	Version 171	Withhold, reason	
				5	Print the	labels
Schema file: Title:		<b>3</b> Specify the sch	nema	-		
	Chose the part	Label Title: Trans.: first curator review	4	Gene	erate the	labels
E)	572 cladiella mougeotii hrocladiella mougeotii (Lév.) Vassikov sium halimitolium	Cinits not in part	Show in Arthrocia	labet		ons

If you want to print label for all the specimen in the specimen list you can restrict these to the collection and the material category of the current specimen part. These options are active by default as shown in the image below.

Label-		4
Title:		~
Trans.:	first curator review	~
Туре:	mixed	~
Notes:	collector not readable	
E E	🛛 Restrict to col. M-Fungi 🔽 Restrict to mat. specime	n

Informations about an existing label are entered in this label section. The data are stored in the table <u>CollectionSpecimen</u>.

label types: handwriting = all data in handwriting mixed = data typed with handwriting comments typed = all data typed

The organisms of a specimen are printed on a label according to the display order.

To print a label for a specimen you have to select a schema file. There are default schema files available in the folder LabelPrinting/Schemas in your application directory. Click on the

button to open the directory. You will find several prepared schema files among which you can choose resp. change to your own needs or create new ones. The schema file LabelTemplates.xslt provides templates for the other schema files. You may give a title for the print in the field Title. From the Collection and MaterialCategory available for the specimen choose one from the list (Coll./Mat.). To generate the label for the current specimen click on

the 🧧 button. To generate labels for all specimen in your query click on the 🃟 button. If

you need duplicates of your labels change the number in the duplicates box 3 to the desired value. You can print 1 - 99 duplicates of a label. If there are more than 20 specimen in the list, you get a warning if you really want to create all these labels, as this could be somewhat time consuming. The labels are generated as XML files with XSLT-Schema files and depicted in

a browser. To print the label click on the 🚔 button. If you use a different browser than that included in DiversityCollection make sure, that the browser can interpret XSLT/XML (e.g. MS-Internet Explorer).

M-Fungi		Nr. M-001366	3 🔺
Blumer	<i>ia graminis</i> (DC.) Speer		
LATVIA. Le On <i>Triticui</i> 1936/ 7/ 19		 leg.: Smarods, det.: db	
	<b>                                   </b>		Ŧ
Schema file:	Label.xslt	3 🗇 3	8 🔒
Title:			
Coll. / Mat.:	M-Fungi / specimen		•

If you want to save the generated files for later printing click on the button to do this. Note that the program will by default create a file Label.xml in the LabelPrinting directory that will be overwritten everytime you generate a new label. So you have to save the file under a different name or in a different directory to prevent the program to erase these data.

If you use Code 39 for your labels and want to print the barecodes on the labels you need the font code<sup>39,ttf</sup>, which is included in the DiversityCollection packet. Place this font in the folder where your fonts are stored (e.g.: C:\WINNT\Fonts). If the font is not available, the Barcode will appear as the accession number between two '\*' signs.

If you omit to give a Schema file, you will see the generated XML-file as shown in the image below. The XML file is the base for all label types you want to generate. To create your own labels just design your own XSLT-schema file. See e.g. <u>http://www.w3.org/TR/xslt</u> for further informations about schema files.

	<collectionday>20</collectionday> <collectionmonth>10</collectionmonth> <collectionyear>1841</collectionyear> <collectiondatecategory>collection date</collectiondatecategory> <localitydescription>Africa, Ethiopia, In montibus Djeladjeranne</localitydescription> <notes>M-0011595</notes>	•
	)	·
Schema file:		H
Title:		
Coll. / Mat.:	M-VascularPlants / herbarium sheets	•

# Export

For an analysis of the data within the database, you can export the contents of the datasets listed in the specimen list into a tab separated list. Choose **Data - Export - Export list...** from the menu. A form as shown below will open. To change the preset path of the export file use the **Data** button.

Export list		
C:\Daten\DiversityW	/orkbench 2.0\DiversityCollection\bin\Debug\DiversityCollectionExport_20071211_104237.txt	
Settings	Add columns for reimport 🗹 Include the SQL-Query Show first 20 🗢 datasets Order by:	Start export
CollectionSpecimen I AccessionNumber / M-0038773 M-0038775 M-0038775 M-0038776 M-0038776 M-0038778 M-0038780 M-0038780 M-0038781 M-0038781 M-0038781 M-0038783 M-0038783 M-0038784 M-0038785	Average altitude       Country       Taxon       Collector         CollectionEventLocalisation       CollectionEvent       IdentificationUnit       CollectionAgent         AverageAltitudeCache       CountryCache       LastidentificationCache       CollectorsName         1200       Namibia       Candelariel       Zedda, L         1200       Namibia       Candelarie       Zedda, L         1200       Namibia       Candelarie       Zedda, L         1200       Namibia       Candelaria       L         1200       Nam	
OUTER JOIN Collect	T0.AccessionNumber, T2.AverageAltitudeCache, T3.CountryCache, T4.LastIdentificationCache, T5.CollectorsName FROM CollectionSpecimen T0 tionEventLocalisation T2.ON T0.CollectionEventID = T2.CollectionEventID AND T2.LocalisationSystemID IN (4, 5) LEFT OUTER J0IN CollectionE D = T3.CollectionEventID LEFT OUTER J0IN IdentificationUnit T4.ON T0.CollectionSpecimenID = T4.CollectionSpecimenID LEFT OUTER J0IN	

To start the export click on the **[Start export]** button. A file will be created in your application directory, containing the exported data. A preview of the data is shown in the lower part of the form. If you check the **include columns for reimport** option, the header will contain an additional line for table names you can use for reimporting the data. If you check the **include the SQL-Query** option, the Text of the command for selecting the datasets will be attached at the end of your report. The form will show the first lines as set in the Show first ... datasets (range: 1 - 99) as a preview. During the first export, the list for the fields for ordering the results **[Order by:]** will be filled. So if you need your results ordered just restart the export after selecting the field after the first export.

To choose the fields you want to see in the export click on the settings button. A form will open as shown below, where you can choose the fields you want to export.

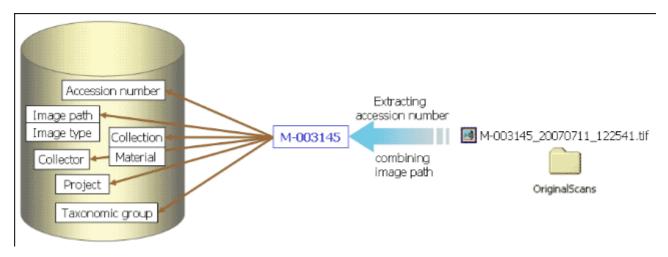
✓ Choose the fields for the exportX	I
🖃 🗖 Specimen 🔺	1
- Accession number	1
CollectionSpecimenID	I
- Accession date	I
- Depositor	I
Reference —	1
🗖 Original notes	
— 🗖 Туре	
Transcription state	
Exsiccata series	
Exsiccata number	
	d
Table, Collecting Consistent	1
Table: CollectionSpecimen	l
Accession number of the specimen within the	
collection, e.g. "M-29834752"	
<b>v</b>	1
Cancel OK	

Please be aware, that you will get "cross joins" between the data in your database as in the example shown below. If for example you start an export containing taxa and collectors and you have 3 taxa and 2 collectors in a dataset this will result in 6 lines in the export: every taxon combined with every collector  $(3 \times 2 = 6)$ . To evaluate the data you have to group the results accordingly. The first line in the file corresponds to the description as shown in the form above for the selection of the export fields. The second line shows the tables and the third line the column within the database. The following lines contain the data.

Accession number CollectionSpecimen	Taxon IdentificationUnit
AccessionNumber	LastIdentificationCache
M-0013579	Arthrocladiella mougeotii (Lev.) Vassilkov
M-0013579	Arthrocladiella mougeotii (Lev.) Vassilkov
M-0013579	Blumeria graminis (DC.) Speer
M-0013579	Blumeria graminis (DC.) Speer
M-0013579	Lycium barbarum
M-0013579	Lycium barbarum

## Import specimen scans

With this import routine, you can import new datasets along with new images into the database. To achieve this the image files should be named corresponding to the accession numbers of the datasets that should be imported and an optional trailing identifier. The image below shows an overview of the whole import process.



To import images like scanned label from specimen choose **Data - Import - Specimen scans...** from the menu. A form for the import of images will open.

	abase Folder of original images H.\Schiele	adecker\	
port options and sect Overwrite existing images	nty checks ✓ Place images in subfolder of length: 6 ♀ ✓ check the of the image		stat: M· V check length 9
DK   Acc. Nr.	Source file	Path in database	Error Ap;
M-0038137	M-0030137_20070730_170350.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/M-0038137_20.	
M-0017745	M-0017745_20070604_130620.jpg	http://pictures.ands.info/85Machiefcol/web/M-0017/M-0017745_20.	
M-0038119	M-0038119_20070604_130314(pg	http://pictures.snsb.info/8SMschiefcol/Aveb/M-0038/M-0038119_20.	
M-0039120	H-0038120_20070604_125832.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/H-0038120_20.	
M-0030121	M-0030121_20070604_131042.jpg	http://pictures.onsb.info/BSMschiefcoll/web/M-0038/M-0038121_20.	
M-0038122	M-0038122_20070604_131400.jpg	http://pictures.ands.info/85Machiefcal/web/M-0038/M-0038122_20.	
M-0038123	M-0038123_20070604_125306 (pg	http://pictures.ansb.into/BSMschiefcal/web/M-0038/M-0038123_20.	
M-0038124	W-0039124_20070730_172436.jpg	http://pictures.snsb.info/BSMschiefcal/web/M-0038/W-0038124_20.	
M-0030125	M-0030125_20070730_172632.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/M-0038125_20.	
M-0038126	M-0038126_20070730_172014.jpg	http://pictures.anab.info/B5Machiefcal/web/M-0038/M-0038126_20.	
M-0038127	M-0038127_20070730_172158.jpg	http://pictures.ansb.into/85Machiefcall/web/M-0038/M-0038127_20.	
M-0038128	W-0039128_20070730_171704.jpg	http://pictures.snsb.info/BSMschiefcal/web/M-0038/H-0038128_20.	
M-0030129	M-0039129_20070730_171948.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/M-0038129_20.	
M-0038130	M-0033130_20070730_171420.jpg	http://pictures.snsb.info/B5Mschiefcoll/web/M-0038/M-0038130_20.	
atebase someters for the port in the database	Locality or places	Collection date:	Suppl:
Test Import	Collector: 💌	Accession date:	Suppl:
(1)	Collection: M-Fungi 🛛 Mata	<sub>stat</sub> specimen 💌 Project: BSMschiefcol 👻	Image type: label
Start Import Append images if	Identification: 💌	💌 Identity: 💌	Taxon group: fungus

The fields marked with red are obligate.

#### **Image source**

To select the images you want to import in the database click on the 🖾 button. A dialog will open, where you can select the images that you want to import into your Database.

Öffnen		×
<u>S</u> uchen in	r: 🔄 OriginalScans 💽 🗢 🛍 📸 🖛	
Verlauf Verlauf Desktop Arbeitsplatz Netzwerkumg	<ul> <li>M_0031400.tif</li> <li>M-00313658.tif</li> <li>M-003145.tif</li> <li>M-0031450_k.tif</li> <li>M-0031451_113220.tif</li> <li>M-0031457_2.tif</li> <li>M-00314571.tif</li> <li>M-0031458tif</li> <li>M31451.tif</li> </ul>	
	Dateiname: "M-0031457_2.tif" "M-00313658.tif" "M-003145▼ Öffnen	]
	Dateityp: Abbrechen	Ī

This will enter the selection of the images in the list in the form.

#### Import options and security checks

If you want to replace datasets for images already in the database, check the **Overwrite** existing images checkbox. If the images are located in a subfolder, that is named according to the first characters of the AccessionNumber, check the **Place images in subfolder of** length checkbox and specify the length of the name of the folder. If you want to check the URI's of the images check the corresponding checkbox. The datasets will than only be imported when the images are available on the web. If the filename next to the accession number contains a trailing identifier, this must be separated by a unique character. Check the corresponding box and enter the separating character. If you want to check if the accession numbers are correct you can check the start and the length of the accession number by checking the appropriate checkboxes.

#### Image list

The list shows the images selected for the import. If the file name passed the specified checks, the OK field for the image will be checked. Otherwise an explanation for not passing the checks will be shown in the Error section. The list shows the accession number extracted from the file name, the file name of the original image file and if selected the file names for the web and preview images. If a dataset for an image already exists in the database, the checkbox **Append** at the right end of the table will be checked.

#### Database

You can set several obligate and optional values that will be written in the database for all imported data. The fields marked with **red** are obligate. These are the collection in which the specimen are located, the material of the specimen, the project, the image type of the scans and the taxonomic group of the main organism in the specimen. If you want to refer to a web source for the label instead of a local file you must give the base URL as well. Optional field are a place according to the DiversityGazetteer and the date of the collection, the collector,

the accession date, an identification, an exsiccatal series and the type of the label. For explanation of the buttons see  $\underline{module\ related\ entries}$  .

To test the import and if the images are present in the database click the

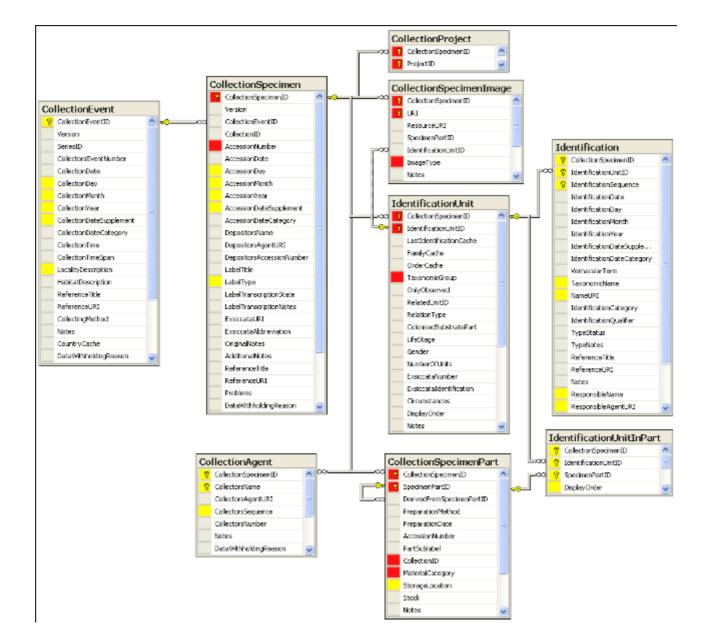
button. If everything is fine click the <u>Start Import</u> button to start the import. **Logfile**: To log the list of imported images and any errors during the import, check the Create log file checkbox. This will create a log file with your name and the date and time of the import in the directory where the image files are archived.

The program will check, if an accession number is already present in the database. It will then only import data, when the option Append images if accession number is present is checked. Otherwise these data will not be imported.

If the images will be provided by a webserver, check the appropriate checkbox and specify

the folder or click the button of search for the website.

In the overview below the obligate fields are marked with red, the optional fields with yellow.



# Import tab-separated lists

With this import routine, you can import data in tab-separated lists into the database. Choose **Data -> Import -> Import list...** from the menu to open the form for the import. In the form click on the button to select the file with the data you want to import. Use the proper **[encoding]** to ensure that all special characters will be transferred correctly. If you change the encoding after opening the file, click on the button to reload the file with the new encoding.

The content of the file will be shown in the upper part of the **[Column mapping]** tab page. Use the **[Data start in line]** to set the area for the import. Preceeding lines will be ignored and depicted with a gray background as shown below. Every column in your file must be either ignored of mapped to a column in the database. The lower part of the mapping section shows your mapping, while the upper part contains the first lines of your file. You can either use a prepared column mapping or create a new one. To import a previous column mapping, click on the  $\Box$  button and choose one of the XML-files.

#### **Column Mapping**

For a column that should not be imported, choose the **black** color from the Group as shown for the second column in the image below. These columns will be ignored for the analysis and the import. For all other columns choose the **[Table]** and the **[Column]** your data correspond to. If you want to import two different datasets in the same table, you have to change the **[Alias for table]** to a unique value for this dataset.

If some columns should be transfered into one field, you have to choose a group for these column as shown below for columns 3 to 5, 6 to 9,  $\dots$ . To do this, just choose a color from the Group combobox other than white or black. To save the current mapping, click on the **b**utton.

ncoding: UTF8	M Filen	ame: C:\Daten\Dive	ssityWorkbench 2.0V	Diversity Collection/\bir	NDebugVmportVHER	BAR41.txt			🗹 Use mappir
resetting parameters	for the import								
Collection event and (	gathering information:	Specimen and rel	ated informations 0	rganisms and related i	nformations Column	mapping			
COLNO	GRUPPE	GENUS	SPECIES	AUTHORS	LAND	BUNDESLAND	REGION	STADT	STANDC
0.00	м	Arcyria	of, insignis, yellow		Costa Rica	Prov. Limon	Caribean Lowlan	Limon	strongly c
0.00	м	Arcyria	cinerea	var. cinerea (Bult	Costa Rica	Prov. Limon	Carribean Lowlen	Linon	strongly c
5037.00	×				Costa Rica	Prov. Limon	Carribean Lowlan	Linon	strongly c
5038,00	х				Costa Rica	Prov. Limon	Carribean Lowlan	Limon	strongly c
5039,00	х				Costa Rica	Prov. Limon	Carribean Lowlan	Limon	strongly c 🗠
<								_	>
Data start in line: 2	2 🗢 Save Tab	ie:	🚩 Ala	is for table:		Column:		Sroup:	✓ <u>○</u>
CollectionSpecim		Identification	Identification	Identification	DollectionEvent	CollectionEvent	CollectionEvent	CollectionEvent	CollectionE
CollectionSpecim		Identification	Identification	Identification	CollectionEvent	CollectionEvent	CollectionEvent	CollectionEvent	CollectionE
epositarsAcces		TaxonomicName	TaxonomicName	TaxonomicName	LocalityDescription	LocalityDescription	Localit/Description	LocalityDescription	HabitatDe
(	0 1	lectionEventID:							
Analyse data	Collection     C	caisationSystemID; nAgent /lectorsName: C. Ro /lectonSpecimenID; ationUnit /lectionSpecimenID; entiticationUnitD;	- x Aroyria of insignia, s	yelow					6

To analyse the data in the file click on the **[Analyse]** button. During the analysis you may be asked to give additional information, like the taxonomic groups of the imported organisms. In the upper part of the form you can preset diverse informations that should be imported together with your data from the file. The available options depend on the structure of your data.

The image below shows the tab page where you can define the relations between two organisms in your data if there is e.g. a parasite and a host. The data tables that are related to an identification are listed with their aliases in the lists for the identification tables. Use the ▶ and ◀ buttons to move them between the lists. Use the ▼ buttons to change the sequence within a list. With the **[Host]** option O Host ⊙ you define the host and the **[Main]** option defines which organism will be choosen as the first to be printed e.g. on a label.

Collection event and gathering informations Sp	ecimen and related informations Organisms and	related informations	
☑ Datasets contain 2 organisms. Tables:	IdentificationUnit_1	⊘ IdentificationUnit_2	
Такоп, дюцх	Identification tables	Identification tables	Taxon, group:
×	T5 T7		×
	. 0	Host 💿 💌	1
V Host-parasite or corresponding relation betwe	een organisms resp. units:	~	
🔽 Taxon name is storage location. Main orga	rism 💿	Main 🔘	

By default for every dataset one collection event will be created.



If the events should be taken together on the bases of the entries in the file, you can choose the second option as shown below. The import will create a new event if there is a change in any of the data related to the collection event, like the description of the locality, the altitude, the coordinates etc.



If all the dataset belong to one event series, e.g. an expedition, you can choose the option as shown below and enter the code and description of the event series in the corresponding fields.

All collection events belong to an event series, e.g. an expedition		
Code	Description	Notes
Elbe06	Elbsandsteingebirge, 25.9 4.10.2006	

If you want to use an existing event series, click on the Subutton and select a series from the form. The code and description of the selected series will be shown as in the image below.

All collection events belong to an event series, e.g. an expedition			
Code	Description	Notes	_
Elbe07	Elbsandsteingebirge, 25.9 4.10.2007		

After a successfull analysis, the form will show you the result as shown in the image below. During the analysis, the program will add missing tables and columns necessary for the import. The first dataset will be shown in the form. If you want to check more datasets, set the number of the last position you want to check and click on the **[Analyse]** button. The data are presented according to the tables in the database where they will be inserted. Underlined columns belong the the primary keys of the respecitve tables and are <u>red</u> if missing. These missing values will be generated during the import. If a dataset contains no values and will therefore not be imported into the database, the columns will be shown in blue. To import these entries in any case, choose the **[import empty values]** option. To browse through the datasets in the preview use the **[4] 2 b** buttons.



To import your data, click on the **[Start import]** button. If you want to import just a part of the data, e.g. for a test, choose the **[Import first ... lines]** option.

# **Reimport tab-separated lists**

With this import routine, you can reimport data in tab-separated lists that had been exported from the database into the database. Choose **Data -> Import -> Reimport list...** from the menu to open the form for the reimport. To reimport data, these must have been exported using the option **[add columns for reimport]** to ensure correct header lines in your file. As there is no possibility to change data on the bases of lists, you may export the respective data to a tab separated list, change your values and than reimport it.

In the form click on the button to select the file with the data you want to import. Use the proper **[encoding]** to ensure that all special characters will be transferred correctly. If you change the encoding after opening the file, click on the button to reload the file with the new encoding. The content of the file will be visible as shown below. For a reimport, the data will allways start in line 7, indicated by a gray background of the header lines.

🛿 Import list						
Encoding: Unicode  Filename: C:\Daten\DiversityWorkbench 2.0\DiversityCollection\bin\Debug\Export\DiversityCollection Presetting parameters for the import DiversityCollectionExport_20080215_161230.txt						
CollectionSpecim	Average latitude	CollectionEventID	LocalisationSyste	Average longitude	Location 1	Location 2
CollectionSpecim	CollectionEventL	CollectionEventL	CollectionEventL	CollectionEventL	CollectionEventL	CollectionEventL
CollectionSpecim T0	AverageLatitude T2	CollectionEventID T2	LocalisationSyste T2	AverageLongitud T2	Location1 T2	Location2 T2
168446	48,1381	204669	9	46,832	46,832	48,1381
168448 169568	48,1381 48,1381	201482 204668	9	46,832 46,832	46,832 46,832	48,1381 48,1381
169637	48,1381	205416	9	46,832	46,832	48,1381
163637       46,1361       203416       3       46,032       46,032       46,032       46,031         167313       48,1381       205415       9       46,832       46,832       48,1381         Analyse data       Image: CollectionSpecimen[D: 168448       Image: CollectionSpecimen[D: 168448       Image: CollectionEventLocalisation [T2]       Image: CollectionEventLocalisation [T2]       Image: CollectionEventD: 201482       Image: CollectionEventD: 201482       Image: CollectionEventD: 9						
Start import	Import data: 💿 I	mport all data lines (	Import first	🗘 lines 🗌 Impo	rt empty data	

To analyse the data in the file click on the **[Analyse]** button. After a successfull analysis, the form will show you the result as shown in the image below. The first dataset will be shown in the form. If you want to check more datasets, set the number of the last position you want to check and click on the **[Analyse]** button. The data are presented according to the tables in the database where they will be inserted. Underlined columns belong to the primary key of the respecitive tables and are <u>red</u> if missing. These missing values will be generated during the import. If a dataset contains no values and will therefore not be imported into the database respectively updated, the colums will be shown in blue. To import these entries in any case, choose the **[import empty values]** option. To browse through the datasets in the preview use the **[4] [2] [b**] buttons.

To import your data, click on the **[Start import]** button. If you want to import just a part of the data, e.g. for a test, choose the **[Import first ... lines]** option.

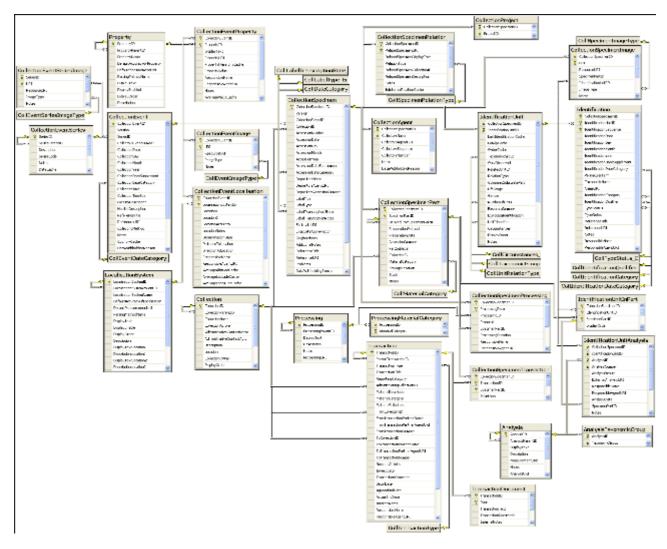
# Database

The database for DiversityCollection is based on Microsoft SQL-Server 2005.

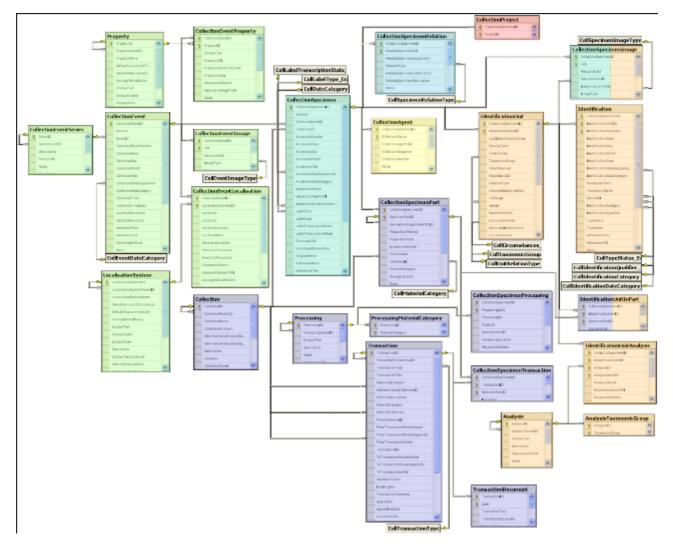
#### Organisation of the data

The main tables of the database are CollectionEvent corresponding to the event of the collection and CollectionSpecimen holding the collected specimen. Connected to these tables you find tables for holding additional information.

The structure of the whole database is shown in the image below.



In the graphic below the tables of the database are marked according to their logical groups. The central is the table **CollectionSpecimen** holding the data of the specimen like e.g. the accession number. In the left part you find the tables containing data related to the **collection** event, and in the right part tables related to the **organisms and their identifications**. Further logical groups are relation, **collectors**, **projects** and **storage**.



For details about the tables see the table groups about <u>analysis</u>, <u>event</u>, <u>exchange</u>, <u>geography</u>, <u>identification</u>, <u>specimen</u>, <u>storage</u>, .

Further details: application tables, access .

# **Database - access**

The database for DiversityCollection is based on Microsoft SQL-Server 2005.

If you are connected to a database this is indicated by the icon of the connection button  $\square$ 

in left upper corner. If you are not connected this will be indicated by the icon  $\bowtie$ . To access any database, you must specify the server where the database is located. For the configuration of this connection choose **Connection**, **Database...** from the menu or click on

the 🖳 button.

#### **Database name, IP-address and Port**

A dialog will open, where you can specify the name or IP-adress and port number of the server and the authentication mode. You can either choose Windows authentication (see left image below) or SQL-Server authentication (see middle image below).

📴 Connection to database 📃 🔲 🗙	📴 Connection to database 📃 🗆 🗙
Please select a server from the list or type the name or the IP-address of the server Port 141.84.65.107	Please select a server from the list or type the name or the IP-address of the server       Port         141.84.65.107 <ul> <li>5432</li> </ul>
Cogin Windows authentication	C Windows authentication
C SQL-Server authentication	SQL-Server authentication
User Password	User Editor Password *****
Restrict to database     DiversityCollection     C Show all available     databases	Restrict to database C Show all available DiversityCollection
Connect to server 💂	Connect to server 💼
Choose database:	Choose database:
DiversityCollection_Test	×
Cancel	Cancel

📴 Connection to database 📃 🔲 🗙			
Please select a server from the list or type the name or the IP-address of the server Port			
141.84.65.107 🗾 5432			
© Windows authentication			
C SQL-Server authentication			
User			
Password			
Restrict to database C Show all available     DiversityCollection			
Reset 🔀			
Choose database:			
DiversityCollection			
Cancel OK			

The standard port number for SQL-Server is 1433 and will be set as a default. If the database server is configured using a port different from that port, you must give the port number in

the field Port. Click on the connect to server button to connect to the server. If the connection informations are valid, you can choose a database from the server from the combobox at the base of the form (see right image above). To restart the connecting process

click on the Reset Button.

#### Index

- <u>Analysis</u>
- <u>AnalysisTaxonomicGroup</u>
- <u>Collection</u>
- <u>CollectionAgent</u>
- <u>CollectionCurator</u>
- <u>CollectionEvent</u>
- <u>CollectionEventImage</u>
- <u>CollectionEventLocalisation</u>
- <u>CollectionEventProperty</u>
- <u>CollectionEventSeries</u>
- <u>CollectionEventSeriesImage</u>
- <u>CollectionProject</u>
- <u>CollectionSpecimen</u>
- <u>CollectionSpecimenImage</u>
- <u>CollectionSpecimenPart</u>
- <u>CollectionSpecimenProcessing</u>
- <u>CollectionSpecimenRelation</u>
- <u>CollectionSpecimenTransaction</u>
- Identification
- IdentificationUnit
- IdentificationUnitAnalysis
- IdentificationUnitInPart
- LocalisationSystem
- <u>Processing</u>
- <u>ProcessingMaterialCategory</u>

- <u>Property</u>
- Transaction
- <u>TransactionDocument</u>

#### Table <u>Analysis</u>

Analysis types used within the database

Column	Data type	Description
<u>AnalysisID</u>	int	ID of the analysis (Primary key)
AnalysisParentID	int	Analysis ID of the parent analysis if it belongs to a certain type documented in this table
DisplayText	nvarchar (50)	Name of the analysis as e.g. shown in user interface
Description	nvarchar (MAX)	Description of the analysis
MeasurementUnit	nvarchar (50)	The measurement unit used for the analysis, e.g. mm, µmol, kg
Notes	nvarchar (MAX)	Notes concerning this analysis
AnalysisURI	varchar (255)	URI referring to an external documentation of the analysis
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

#### Table <u>AnalysisTaxonomicGroup</u>

The types of analysis that are available for a taxonomic group

Column	Data type	Description
<u>AnalysisID</u>	int	Analysis ID, foreign key of table Analysis.
<u>TaxonomicGroup</u>	nvarchar (50)	Taxonomic group the organism identified by this unit belongs to. Groups listed in table

		CollTaxonomicGroup_Enum (= foreign key)
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset <i>Default value: user_name()</i>

# Table <u>Collection</u>

The collections where the specimen are stored

Column	Data type	Description
<u>CollectionID</u>	int	Unique reference ID for the collection (= Primary key)
CollectionParentID	int	For a subcollection within another collection: CollectionID of the collection to which the subcollection belongs. Empty for an independent collection
CollectionName	nvarchar (255)	Name of the collection (e.g. 'Herbarium Kew') or subcollection (e.g. 'cone collection', 'alcohol preservations'). This text should be kept relatively short, use Description for additional information
CollectionAcronym	nvarchar (10)	A unique code for the Collection, e.g. the herbarium code from Index Herbariorum
AdministrativeContactName	nvarchar (255)	The name of the person or organisation responsible for this collection
AdministrativeContactAgentUR I	varchar (255)	The URI of the person or organisation responsible for the Collection e.g. as provided by the module DiversityAgents
Description	nvarchar (MAX)	A short description of the collection
Location	nvarchar (255)	Optionally location of the collection, e.g. the number within a file system or a description of the room(s) housing the (sub)collection
CollectionOwner	nvarchar (255)	The owner of the collection as e.g. printed on a label, should be given if CollectionParentID is null
DisplayOrder	smallint	The order in which the entries are displayed. The order may

		be changed at any time, but all values must be unique.
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

## Table CollectionAgent

The collector(s) of collection specimens

Column	Data type	Description
<u>CollectionSpecimenID</u>	int	Refers to ID of CollectionEvent (= Foreign key and part of primary key)
<b>CollectorsName</b>	nvarchar (255)	Name of the Collector
CollectorsAgentURI	varchar (255)	The URI of the Agent, e.g. as stored within the module DiversityAgents
CollectorsSequence	datetime	The order of collectors in a team. Automatically set by the database system <i>Default value: getdate()</i>
CollectorsNumber	nvarchar (50)	Number assigned to a specimen or a batch of specimens by the collector during the collection event (= 'field number')
Notes	nvarchar (MAX)	Notes about the collector, e.g. if the name is uncertain
DataWithholdingReason	nvarchar (255)	If the dataset is withhold, the reason for withholding the data, otherwise null
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

## Table CollectionCurator

Curators within DiversityCollection, responsible of specimen transactions

Column	Data type	Description
<u>LoginName</u>	nvarchar (50)	A login name which the user uses for access the DivesityWorkbench, Microsoft domains, etc
<u>AdministratingCollectionID</u>	int	ID for the collection for which the curator has the right to administrate the transaction. Corresponds to AdministratingCollectionID in table Transaction.

### Table CollectionEvent

The collection event where the specimen was collected

Column	Data type	Description
<u>CollectionEventID</u>	int	Unique ID for the collection event (= Primary key)
Version	int	The version of the dataset. Automatically set by the system. <i>Default value: (1)</i>
SeriesID	int	The ID of the related expedition. Relates to the PK of the table CollectionExpedition (Foreign key).
CollectorsEventNumber	nvarchar (50)	Number assigned to a collection event by the collector (= 'field number')
CollectionDate	datetime	The date of the event calulated from the entries in CollectionDay, -Month and -Year.
CollectionDay	tinyint	The day of the date of the event or when the collection event started
CollectionMonth	tinyint	The month of the date of the event or when the collection event started
CollectionYear	smallint	The year of the date of the event or when the collection event started
CollectionDateSupplement	nvarchar (100)	Verbal or additional collection date information, e.g. 'end of summer 1985', 'first quarter',

		'1888-1892'. The end date if the collection event comprises a period. The time of the event if necessary.
CollectionDateCategory	nvarchar (50)	Category of the date of the identification e.g. "system", "estimated" (= foreign key, see in table CollEventDateCategory_Enum)
CollectionTime	varchar (50)	The time of the event or when the collection event started
CollectionTimeSpan	varchar (50)	The time span in seconds of the collection event
LocalityDescription	nvarchar (MAX)	Locality description of the locality, exactly as written on the original label (i.e. without corrections during data entry)
HabitatDescription	nvarchar (MAX)	Geo-ecological description of the locality, exactly as written on the original label (i.e. without corrections during data entry)
ReferenceTitle	nvarchar (255)	The title of the publication where the collection event was published. Note this is only a cached value where ReferenceURI is present
ReferenceURI	varchar (255)	URI (e.g. LSID) of the source publication where the collection event is published, may e.g. refer to the module DiversityReferences
CollectingMethod	nvarchar (MAX)	Description of the method used for collecting the samples, e.g. traps, moist chambers, drag net
Notes	nvarchar (MAX)	Notes about the collection event
CountryCache	nvarchar (50)	The country where the collection event took place. Cached value derived from an entry in CollectionGeography
DataWithholdingReason	nvarchar (255)	If the dataset is withhold, the reason for withholding the data, otherwise null
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>

LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

#### Table <u>CollectionEventImage</u>

The images showing the site of the collection event

Column	Data type	Description
<u>CollectionEventID</u>	int	Unique ID for the collection event (= Primary key)
URI	varchar (255)	The complete URI address of the image. This is only a cached value if ResourceID is available referring to the module DiversityResources
ResourceURI	varchar (255)	The URI of the resource (e.g. see module DiversityResources)
ImageType	nvarchar (50)	Type of the image, e.g. map
Notes	nvarchar (MAX)	Notes to this image concerning the collection event
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

#### Table CollectionEventLocalisation

The geographic localisation of a collection event

Column	Data type	Description
<u>CollectionEventID</u>	int	Refers to the ID of CollectionEvent (= Foreign key and part of primary key)
LocalisationSystemID	int	Refers to the ID of LocalisationSystem (= Foreign key and part of primary key)
Location1	nvarchar (255)	Either a named location selected from a thesaurus (e. g. 'Germany, Bavaria, Kleindingharting') or altitude

		range or other values (e. g. 100-200 m)
Location2	nvarchar (255)	Corresponding value to Location1 e.g. ID or URI of gazetteer or thesaurus
LocationAccuracy	nvarchar (50)	The accuracy of the determination of this locality
LocationNotes	nvarchar (MAX)	Notes on the location
DeterminationDate	smalldatetime	Date of the determination of the geographical localisation
DistanceToLocation	varchar (50)	Distance from the specified place to the real location of the collection event (m)
DirectionToLocation	varchar (50)	Direction from the specified place to the real location of the collection event (Degrees rel. to north)
ResponsibleName	nvarchar (255)	The name of the agent (person or organization) responsible for this entry. Default value: [dbo].[CurrentUserName]()
ResponsibleAgentURI	varchar (255)	URI of the person or organisation responsible for the data (see e.g. module DiversityAgents)
AverageAltitudeCache	real	Calculated altitude as parsed from the location fields
AverageLatitudeCache	real	Calculated latitude as parsed from the location fields
AverageLongitudeCache	real	Calculated longitude as parsed from the location fields
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

#### Table CollectionEventProperty

A property of a collection site, e.g. exposition, slope, vegetation. May refer to Diversity Workbench module DiversityScientificTerms

Column	Data type	Description
CollectionEventID	int	Refers to the ID of

		CollectionEvent (= Foreign key and part of primary key)
PropertyID	int	The ID of the descriptor of the collection event, foreign key, see table Descriptor
DisplayText	nvarchar (255)	The text for the property as shown e.g. in a user interface
PropertyURI	varchar (255)	URI referring to an external datasource e.g. DiversityTerminology
PropertyHierarchyCache	nvarchar (MAX)	A cached text of the complete name of the descriptor including superior categories if present
PropertyValue	nvarchar (255)	The value of a captured feature e.g. temperature, pH, vegetation etc. If there is a range this is the lower or first value
ResponsibleName	nvarchar (255)	The name of the agent (person or organization) responsible for this entry. Default value: [dbo].[CurrentUserName]()
ResponsibleAgentURI	varchar (255)	URI of the person or organisation responsible for the data (see e.g. module DiversityAgents)
Notes	nvarchar (MAX)	Notes about the property of the colletion site.
AverageValueCache	float	For numeric values - a cached average value according to the
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

# Table CollectionEventSeries

The series whithin which collection events take place

Column	Data type	Description
<u>SeriesID</u>		Primary key. The ID for this expedition (= Primary key)

SeriesParentID	int	The ID of the superior expedition
Description	nvarchar (MAX)	The description of the expedition as it will be printed on e.g. the label
SeriesCode	nvarchar (50)	The user defined code for an expedition
Notes	nvarchar (MAX)	Notes about this expedition
DateCache	datetime	The first date of the depending events, used for sorting the expeditions [controlled by the database]
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

## Table CollectionEventSeriesImage

The images showing the sites of a collection event series, e.g. an expedition or sampling plot

Column	Data type	Description
<u>SeriesID</u>	int	Unique ID for the collection event series (= Foreign key and part of primary key)
URI	varchar (255)	The complete URI address of the image. This is only a cached value if ResourceID is available referring to the module DiversityResources
ResourceURI	varchar (255)	The URI of the resource (e.g. see module DiversityResources)
ImageType	nvarchar (50)	Type of the image, e.g. map
Notes	nvarchar (MAX)	Notes to this image concerning the collection event
LogCreatedWhen	datetime	The time when this dataset was created <i>Default value: getdate()</i>
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this

		dataset was updated Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

#### Table CollectionProject

The projects within which the collection specimen were placed

Column	Data type	Description
<b>CollectionSpecimenID</b>	int	Refers to the ID of CollectionSpecimen (= Foreign key and part of primary key)
<u>ProjectID</u>	int	ID of the project to which the specimen belongs (Projects are defined in DiversityProjects)
LogCreatedWhen	datetime	The time when this dataset was created <i>Default value: getdate()</i>
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

## Table CollectionSpecimen

The data directly attributed to the collection specimen

Column	Data type	Description
<u>CollectionSpecimenID</u>	int	Unique reference ID for the collection specimen record (primary key)
Version	int	The version of the dataset <i>Default value: (1)</i>
CollectionEventID	int	Refers to the ID of CollectionEvent (= Foreign key and part of primary key)
CollectionID	int	ID of the Collection as stored in table Collection (= foreign key, see table Collection)
AccessionNumber	nvarchar (50)	Accession number of the specimen within the collection, e.g. "M-29834752"
AccessionDate	datetime	The date of the accession

		calculated from the entries in AccessionDay, -Month and -Year
AccessionDay	tinyint	The day of the date when the specimen was acquired in the collection
AccessionMonth	tinyint	The month of the date when the specimen was acquired in the collection
AccessionYear	smallint	The year of the date when the specimen was acquired in the collection
AccessionDateSupplement	nvarchar (255)	Verbal or additional accession date information, e.g. 'end of summer 1985', 'first quarter', '1888-1892'
AccessionDateCategory	nvarchar (50)	Category of the date of the identification e.g. "system", "estimated" (= foreign key, see in table xColl_DateCategory_Enum)
DepositorsName	nvarchar (255)	The name of the depositor(s) (person or organization responsible for deposition). Where entire collections are deposited, this should also contain the collection name (e.g. 'Herbarium P. Döbbler')
DepositorsAgentURI	varchar (255)	The URI of the depositor(s) (person or organization responsible for deposition)
DepositorsAccessionNumber	nvarchar (50)	Accession number of the specimen within the previous or original collection, e.g. 'D-23948'
LabelTitle	nvarchar (255)	The title of the label e.g. for printing labels.
LabelType	nvarchar (50)	Printed, typewritten, typewritten with handwriting added, entirely in handwriting, etc.
LabelTranscriptionState	nvarchar (50)	The state of the transcription of a label into the database: 'Not started', 'incomplete', 'complete'
LabelTranscriptionNotes	nvarchar (255)	User defined notes concerning the transcription of the label into the database
ExsiccataURI	varchar (255)	If specimen is an exsiccata: The URI of the Exsiccata series, e.g. as stored within the DiversityExsiccata module
ExsiccataAbbreviation	nvarchar (255)	If specimen is an exsiccata: Standard abbreviation of the

		exsiccata (not necessarily a unique identifier; editors or publication places may change over time)
OriginalNotes	nvarchar (MAX)	Notes found on the label of the specimen, by the original collector or from a later revision
AdditionalNotes	nvarchar (MAX)	Additional notes made by the editor of the specimen record, e.g. 'doubtful identification/locality'
ReferenceTitle	nvarchar (255)	The title of the publication where the specimen was published. Note this is only a cached value where ReferenceURI is present
ReferenceURI	varchar (255)	URI (e.g. LSID) of reference where specimen is published, e.g. referring to the module DiversityReferences
Problems	nvarchar (255)	Description of a problem that occurred during data editing. Typically these entries should be deleted after help has been obtained. Do not enter scientific problems here; use AdditionalNotes for such permanent problems!
DataWithholdingReason	nvarchar (255)	If the dataset is withhold, the reason for withholding the data, otherwise null
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

#### Table CollectionSpecimenImage

The images of a collection specimen or of an identification unit within this specimen

Column	Data type	Description
<b>CollectionSpecimenID</b>	int	Refers to the ID of CollectionSpecimen (= Foreign key and part of primary key)

URI	varchar (255)	The complete URI address of the image. This is only a cached value if ResourceID is available referring to the module DiversityResources
ResourceURI	varchar (255)	The URI of the image, e.g. as stored in the module DiversityResources.
SpecimenPartID	int	Optional: If the dataset is not related to a part of a specimen, the ID of a related part (= foreign key)
IdentificationUnitID	int	If image refers to only on out of several identification units for a specimen, refers to the ID of an IdentificationUnit for a CollectionSpecimen (= foreign key)
ImageType	nvarchar (50)	Type of the image, e.g. label
Notes	nvarchar (MAX)	Notes about the specimen image
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

# Table CollectionSpecimenPart

Parts of a collection specimen. Includes a possible hierarchy of the parts

Column	Data type	Description
<b>CollectionSpecimenID</b>	int	Refers to the ID of CollectionSpecimen (= Foreign key and part of primary key)
<u>SpecimenPartID</u>	int	ID for a part of a specimen (part of primary key) Default value: (1)
DerivedFromSpecimenPartID	int	SpecimenPartID of the specimen from which the current specimen is derived from
PreparationMethod	nvarchar (MAX)	The method used for the preparation of the part of the specimen, e.g. the inoculation method for cultures

PreparationDate	datetime	The date and time when the part was preparated e.g when it was separated from the source object
AccessionNumber	nvarchar (50)	Accession number of the part of the specimen within the collection if it is different from the accession number of the specimen as stored in the table CollectionSpecimen, e.g. "M-29834752"
PartSublabel	nvarchar (50)	The label for a part of a specimen, e.g. if duplicats of a specimen have a separate number
CollectionID	int	ID of the Collection as stored in table Collection (= foreign key, see table Collection)
MaterialCategory	nvarchar (50)	Material category of specimen. Examples: 'herbarium sheets', 'drawings', 'microscopic slides' etc. (= foreign key, see table CollMaterialCategory_Enum) Default value: N'specimen'
StorageLocation	nvarchar (255)	A code identifying the place where the specimen is stored within the collection. Frequently the accepted scientific name is used as storage location code.
Stock	tinyint	Number of stock units if the specimen is stored in separated units e.g. several boxes or vessels
Notes	nvarchar (MAX)	Notes concerning the storage of the sample
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

### Table CollectionSpecimenProcessing

The processing that was applied to a collection specimen

Column	Data type	Description
<u>CollectionSpecimenID</u>	int	Refers to ID of CollectionSpecimen (= Foreign key and part of primary key)
ProcessingDate	datetime	Date and time of the start of the processing Default value: getdate()
ProcessingID	int	ID of the processing. Refers to ProcessingID in table Processing (foreign key) Default value: (1)
Protocoll	nvarchar (100)	The label of the processing protocoll
SpecimenPartID	int	Optional: If the dataset is related to a part of a specimen, the ID of a related part (= foreign key, see table CollectionSpecimenPart)
ProcessingDuration	varchar (50)	The duration of the processing in seconds
ResponsibleName	nvarchar (255)	Name of the person or institution responsible for the determination Default value: [dbo].[CurrentUserName]()
ResponsibleAgentURI	varchar (255)	URI of the person or institution responsible for the determination (= foreign key) as stored in the module DiversityAgents.
Notes	nvarchar (MAX)	Notes about the processing
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

# Table CollectionSpecimenRelation

The relations of a collection specimen to other collection specimen

Column	Data type	Description
CollectionSpecimenID	int	Unique reference ID for the collection specimen record (primary key)
<b>RelatedSpecimenURI</b>	varchar (255)	URI of the related specimen

RelatedSpecimenDisplayText	varchar (255)	The name of a related specimen as shown e.g. in a user interface
RelationType	nvarchar (50)	Type of the relation between the specimen (= foreign key, see table CollRelationType_Enum)
RelatedSpecimenCollectionID	int	ID of the Collection as stored in table Collection (= foreign key, see table Collection)
RelatedSpecimenDescription	nvarchar (MAX)	Description of the related specimen
Notes	nvarchar (MAX)	Notes on the relation to the specimen
IsInternalRelationCache	bit	If the relation represents a connection between specimen in this database <i>Default value: (1)</i>
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

# Table CollectionSpecimenTransaction

The transactions in which a specimen was involved

Column	Data type	Description
<u>CollectionSpecimenID</u>	int	Refers to ID of CollectionSpecimen (= Foreign key and part of primary key)
<u>TransactionID</u>	int	Unique ID for the transaction (= Foreign key and part of primary key)
<u>SpecimenPartID</u>	int	Optional: If the dataset is related to a part of a specimen, the ID of a related part (= foreign key, see table CollectionSpecimenPart)
IsOnLoan	bit	True if a specimen is on loan
LogInsertedBy	nvarchar (50)	Name of user who first entered (typed or imported) the data. Default value: user_name()
LogInsertedWhen	smalldatetime	Date and time when the data

		were first entered (typed or imported) into this database. <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Name of user who last updated the data. <i>Default value: user_name()</i>
LogUpdatedWhen	smalldatetime	Date and time when the data were last updated. <i>Default value: getdate()</i>

# Table Identification

The identifications of the organisms within a specimen

Column	Data type	Description
CollectionSpecimenID	int	Refers to the ID of CollectionSpecimen (= Foreign key and part of primary key)
IdentificationUnitID	int	Refers to the ID of IdentficationUnit (= foreign key and part of primary key)
<b>IdentificationSequence</b>	smallint	The sequence of the identifications. The last identification (having the highest sequence) is regarded as valid <i>Default value: (1)</i>
IdentificationDate	datetime	The date of the identification calculated from the entries in IdentificationDay, -Month and -Year
IdentificationDay	tinyint	The day of the identification event
IdentificationMonth	tinyint	The month of the identification event
IdentificationYear	smallint	The year of the identification event. The year may be empty if only the day or month are known.
IdentificationDateSupplement	nvarchar (255)	Verbal or additional identification date information, e.g. 'end of summer 1985', 'first quarter', '1888-1892'
IdentificationDateCategory	nvarchar (50)	Category of the date of the identification e.g. "system", "estimated" (= foreign key, see in table CollDateCategory_Enum)
VernacularTerm	nvarchar (255)	Name or term other than a taxonomic (= scientific) name, e.g. 'pine', 'limestone', 'conifer', 'hardwood'
TaxonomicName	nvarchar (255)	Valid name of the species

		(including the taxonomic author where available. Example: 'Rosa canina L.'
NameURI	varchar (255)	The URI of the taxonomic name, e.g. as provided by the module DiversityTaxonNames.
IdentificationCategory	nvarchar (50)	Category of the identification e.g. 'determination', 'confirmation', 'absence' (= foreign key, see table CollIdentificationCategory_Enu m)
IdentificationQualifier	nvarchar (50)	Qualification of the identification e.g. "cf."," aff.", "sp. nov." (= foreign key, see table CollIdentificationQualifier_Enu m)
TypeStatus	nvarchar (50)	If identification unit is type of a taxonomic name: holotype, syntype, etc. (= foreign key, see table CollTypeStatus_Enum)
TypeNotes	nvarchar (MAX)	Notes concerning the typification of this specimen
ReferenceTitle	nvarchar (255)	Publications or authoritative opinions of scientist used during the identification process. Example: enter 'Schmeil-Fitschen 1995' if this field flora was used.
ReferenceURI	varchar (255)	The URI of the reference e.g. as provided by the module DiversityReferences
Notes	nvarchar (MAX)	User defined notes, e.g. the reason for a re-determination / change of the name, etc.
ResponsibleName	nvarchar (255)	Name of the person or institution responsible for the determination Default value: [dbo].[CurrentUserName]()
ResponsibleAgentURI	varchar (255)	URI of the person or institution responsible for the determination (= foreign key) as stored in the module DiversityAgents.
LogCreatedWhen	datetime	Date and time when the dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Login of the user who created the dataset Default value: user_name()
LogUpdatedWhen	datetime	Date and time when the dataset was changed

		Default value: getdate()
LogUpdatedBy	nvarchar (50)	Login of the user who changed the dataset Default value: user_name()

## Table IdentificationUnit

Organism that is present in or on a collection specimen

Column	Data type	Description
<u>CollectionSpecimenID</u>	int	Refers to the ID of CollectionSpecimen (= Foreign key and part of primary key)
IdentificationUnitID	int	ID of the identification unit (= part of Primary key). Usually one of possibly several organisms present on the collection specimen. Example: parasite with hyperparasite on plant leaf = 3 units,
LastIdentificationCache	nvarchar (255)	The last identification as entered in table Identification
FamilyCache	nvarchar (255)	A cached value of the family of the taxon of the last identification. Can be set by the editor if NameURI in table Identification is NULL, otherwise set by the system.
OrderCache	nvarchar (255)	A cached value of the order of the taxon of the last identification. Can be set by the editor if NameURI in table Identification is NULL, otherwise set by the system.
TaxonomicGroup	nvarchar (50)	Taxonomic group the organism identified by this unit belongs to. Groups listed in table CollTaxonomicGroup_Enum (= foreign key)
OnlyObserved	bit	True if the organism was only observed rather than collected. It is therefore not present on the preserved specimen. Example: Tree under which the collected mycorrhizal fungus grew. <i>Default value: (0)</i>
RelatedUnitID	int	The IdentificationUnitID of the organism or substrate, on which this organism is growing (= foreign key)
RelationType	nvarchar (50)	The relation of an unit to its substrate, e.g. parasitism, symbiosis etc. as stored in

		CollRelationType_Enum (= foreign key)
ColonisedSubstratePart	nvarchar (255)	If a substrate association exists: part of the substrate that is affected in the interaction (e.g. 'leaves' if a fungus is growing on the leaves of an infected plant)
LifeStage	nvarchar (255)	Examples: 'II, III' for spore generations of rusts or 'seed', 'seedling' etc. for higher plants
Gender	nvarchar (50)	The gender of the identification unit, e.g. 'male'
NumberOfUnits	smallint	The number of units of this identification unit, e.g. 400 beetle in a bottle
ExsiccataNumber	nvarchar (50)	If specimen is an exsiccata: Number of current specimen within the exsiccata series
ExsiccataIdentification	smallint	Refers to the IdentificationSequence in Identification (= foreign key). The name under which the collection specimen resp. this unit is published within an exsiccate.
UnitIdentifier	nvarchar (50)	An identifier for the identification of the unit e.g. a number painted on a tree within an experimental plot
UnitDescription	nvarchar (50)	Description of the unit, esp. if not the an organism but parts or remnants of it were present or observed, e.g. a nest of an insect or a song of a bird
Circumstances	nvarchar (50)	Circumstances of the occurence of the organism
DisplayOrder	smallint	The sequence in which the units within this specimen will appear on e.g. a label where the first unit may be printed in the header and others in the text below. 0 means the unit should not appear on a label. <i>Default value: (1)</i>
Notes	nvarchar (MAX)	Further information on the identification unit or interaction, e. g. infection symptoms like 'producing galls'
LogCreatedWhen	datetime	The time when this dataset was created <i>Default value: getdate()</i>
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()

LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

# Table IdentificationUnitAnalysis

The analysis values taken from an identification unit

Column	Data type	Description
<u>CollectionSpecimenID</u>	int	Refers to the ID of CollectionSpecimen (= Foreign key and part of primary key)
IdentificationUnitID	int	Refers to the ID of IdentficationUnit (= foreign key and part of primary key)
<u>AnalysisID</u>	int	Analysis ID, foreign key of table Analysis.
AnalysisNumber	nvarchar (50)	Number of the analysis
AnalysisResult	nvarchar (MAX)	The result of the analysis
ExternalAnalysisURI	varchar (255)	An URI for an analysis as defined in an external datasoure
ResponsibleName	nvarchar (255)	Name of the person or institution responsible for the determination Default value: [dbo].[CurrentUserName]()
ResponsibleAgentURI	varchar (255)	URI of the person or institution responsible for the determination (= foreign key) as stored in the module DiversityAgents.
AnalysisDate	datetime	The date of the analysis
SpecimenPartID	int	ID of the part of a specimen (optional, Foreign key) if the analysis was done with a part of the specimen (see table CollectionSpecimenPart).
Notes	nvarchar (MAX)	Notes concerning this analysis
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset

	Default value: user name()

### Table IdentificationUnitInPart

The list of the organisms that are found in a part of the specimen

Column	Data type	Description
<u>CollectionSpecimenID</u>	int	Refers to the ID of CollectionSpecimen (= Foreign key and part of primary key)
<u>IdentificationUnitID</u>	int	ID of the identification unit (= part of Primary key). Usually one of possibly several organisms present on the collection specimen. Example: parasite with hyperparasite on plant leaf = 3 units,
<u>SpecimenPartID</u>	int	ID of the part of a specimen (optional, Foreign key) if the identification unit is located on a part of the specimen (see table CollectionSpecimenPart).
DisplayOrder	smallint	The sequence in which the units within this part will appear on e.g. a label where the first unit may be printed in the header and others in the text below. 0 means the unit should not appear on a label. <i>Default value: (1)</i>
Description	nvarchar (500)	A description of the unit, esp. if not a whole unit but e.g. parts of it are stored in the collection, e.g. a nest of a bird
LogInsertedBy	nvarchar (50)	Name of user who first entered (typed or imported) the data. Default value: user_name()
LogInsertedWhen	smalldatetime	Date and time when the data were first entered (typed or imported) into this database. Default value: getdate()
LogUpdatedBy	nvarchar (50)	Name of user who last updated the data. Default value: user_name()
LogUpdatedWhen	smalldatetime	Date and time when the data were last updated. Default value: getdate()

### Table LocalisationSystem

The geographic localisation systems, e.g. coordinates

Column	Data type	Description
LocalisationSystemID	int	Unique ID for the localisation system (= Primary key)
LocalisationSystemParentID	int	LocalisationSystemID of the superior LocalisationSystem
LocalisationSystemName	nvarchar (100)	Name of the system used for the determination of the place of the collection, e. g. Gauss-Krüger, MTB, GIS
DefaultAccuracyOfLocalisation	nvarchar (50)	The default for the accuracy of values that can be reached with this method
DefaultMeasurementUnit	nvarchar (50)	The default measurement unit for the localisation system, e.g. m, geograpic coordinates
ParsingMethodName	nvarchar (50)	Internal value, specifying a programming method used for parsing text in fields Location1/Location2 in table CollectionLocalisation
DisplayText	nvarchar (50)	Short abbreviated description of the localisation system as displayed in the user interface
DisplayEnable	bit	Specifies if this item is enabled to be used within the database. LocalisationSystems can be disabled to avoid seeing them, but to keep the definition for the future.
DisplayOrder	smallint	The order in which the entries are displayed. The order may be changed at any time, but all values must be unique.
Description	nvarchar (255)	Description of the localisation method
DisplayTextLocation1	nvarchar (50)	Short abbreviated description of the attribute Location1 in the table CollectionGeography as displayed in the user interface
DescriptionLocation1	nvarchar (255)	Description of the attribute Location1 in the table CollectionGeography as displayed in the user interface
DisplayTextLocation2	nvarchar (50)	Short abbreviated description of the attribute Location2 in the table CollectionGeography as displayed in the user interface

DescriptionLocation2	nvarchar (255)	Description of the attribute Location2 in the table CollectionGeography as displayed in the user interface
----------------------	----------------	---

#### Table Processing

The processings of the specimen

Column	Data type	Description
ProcessingID	int	ID of the processing (Primary key)
ProcessingParentID	int	The ID of the superior type of the processing
DisplayText	nvarchar (50)	The display text of the processing as shown e.g. in a user interface
Description	nvarchar (MAX)	Description of the processing
Notes	nvarchar (MAX)	Notes about the processing
ProcessingURI	varchar (255)	An URI for a processing as defined in an external datasource
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

## Table ProcessingMaterialCategory

The processings that are possible for a certain material category

Column	Data type	Description
<u>ProcessingID</u>	int	ID of the processing. Refers to ProcessingID in table Processing (foreign key) Default value: (1)
<u>MaterialCategory</u>	nvarchar (50)	Material category of specimen. Examples: 'herbarium sheets', 'drawings', 'microscopic slides' etc. Default value: N'specimen'
LogUpdatedWhen	datetime	The last time when this dataset was updated

		Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset <i>Default value: user_name()</i>

### Table <u>Property</u>

The list of the properties that can be specified for the collection site

Column	Data type	Description
<u>PropertyID</u>	int	Unique ID for the localisation system (= Primary key)
PropertyParentID	int	LocalisationSystemID of the superior LocalisationSystem
PropertyName	nvarchar (100)	Name of the system used for the determination of the place of the collection, e. g. Gauss-Krüger, MTB, GIS
DefaultAccuracyOfProperty	nvarchar (50)	The default for the accuracy of values that can be reached with this method
DefaultMeasurementUnit	nvarchar (50)	-
ParsingMethodName	nvarchar (50)	Internal value, specifying a programming method used for parsing text in fields Location1/Location2 in table CollectionLocalisation
DisplayText	nvarchar (50)	Short abbreviated description of the localisation system as displayed in the user interface
DisplayEnabled	bit	Specifies if this item is enabled to be used within the database. LocalisationSystems can be disabled to avoid seeing them, but to keep the definition for the future.
DisplayOrder	smallint	The order in which the entries are displayed. The order may be changed at any time, but all values must be unique.
Description	nvarchar (255)	Description of the localisation method

### Table <u>Transaction</u>

Transactions like loan, borrow, gift, exchange etc. of specimen if they are e.g. permanently or temporary transfered from one collection to another

Column Data type Description
------------------------------

TransactionID	int	Unique ID for the transaction (= Primary key)	
ParentTransactionID	int	The ID of a preceeding transaction of a superior transaction if transactions are organized in a hierarchy	
TransactionType	nvarchar (50)	Type of the transaction e.g. gift in or out, exchange in or out, purchase in or out Default value: N'exchange'	
TransactionTitle	nvarchar (200)	The title of the transaction as e.g. shown in an user interface	
ReportingCategory	nvarchar (50)	A group defined for the transaction, e. g. a taxonomic group as used for exchange balancing	
AdministratingCollectionID	int	ID of the collection thas is responsible for the administration of the transaction.	
MaterialDescription	nvarchar (MAX)	ID of the project to which the transaction belongs (Projects are defined in DiversityProjects) Default value: "	
MaterialCategory	nvarchar (50)	Material category of specimen. Examples: 'herbarium sheets', 'drawings', 'microscopic slides' etc. <i>Default value: N'specimen'</i>	
MaterialCollectors	nvarchar (MAX)	The collectors of the material	
FromCollectionID	int	The ID of the collection from which the specimen were transfered, e.g. the donating collection of a gift	
FromTransactionPartnerName	nvarchar (255)	Name of the person or institution from which the specimen were transfered, e.g. the donator of a gift	
FromTransactionPartnerAgent URI	varchar (255)	The URI of the transaction partner (see e.g. module DiversityAgents)	
FromTransactionNumber	nvarchar (50)	Number or code by which a transaction may be recorded by the administration of the source of the specimen, e.g. the donating collection of a gift	
ToCollectionID	int	The ID of the collection to which the specimen were transfered, e.g. the receiver of a gift	
ToTransactionPartnerName	nvarchar (255)	Name of the person or	

		institution to which the specimen were transfered, e.g. the receiver of a gift		
ToTransactionPartnerAgentUR I	varchar (255)	The URI of the transaction partner (see e.g. module DiversityAgents)		
ToTransactionNumber	nvarchar (50)	Number or code by which a transaction may be recorded by the administration of the destination of the specimen, e.g. the receiving collection of a gift		
NumberOfUnits	smallint	The number of units that were (initially) included in the transaction		
Investigator	nvarchar (50)	The investigator for whose study a transacted material was sent		
TransactionComment	nvarchar (MAX)	Comments about the exchanged material addresse to the transaction partner		
BeginDate	datetime	Date when the transaction started		
AgreedEndDate	datetime	End of the transaction period, e.g. if the time for borrowing the specimen is restricted		
ActualEndDate	datetime	Actual end of the transaction when e.g. the borrowed specimen were returned to the owner		
InternalNotes	nvarchar (MAX)	Internal notes about this transaction, not to be published e.g. on a web page		
ResponsibleName	nvarchar (255)	The person responsible for this transaction		
ResponsibleAgentURI	varchar (255)	The URI of the person, team or organisation responsible for the data (see e.g. module DiversityAgents)		
LogCreatedWhen	datetime	The time when this dataset was created <i>Default value: getdate()</i>		
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()		
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()		
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()		

### Table TransactionDocument

The history of transactions resp. the documents connected to the transactions

Column	Data type	Description
<u>TransactionID</u>	int	Unique ID for the Transaction, refers to table Transaction (= Part of primary key and foreign key)
Date	datetime	The date of the event of a transaction
TransactionText	nvarchar (MAX)	The text of a transaction document
TransactionDocument	image (2147483647)	A scanned document connected to this transaction event
InternalNotes	nvarchar (MAX)	Internal notes about this transaction event
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

# History

To inspect the history of a dataset click on the button. A form will open, showing all former states of the data in the tables with the current dataset at the top. The database DiversityCollection handles 2 different histories - one for the collection specimen and one for the collection event. The version shown in the header of the main form refers to these histories. The first number refers to the version of the specimen. If an event was defined a second number is shown, referring to the version of the collection event, e.g. 2 / 1 means version 2 of the specimen and version 1 of the collection event.

Colle	ction specimer	n CollectionEven	CollectionGer	oranhu Colle	ctionAgent Col	lectionStorag	e Identification	Identification Ini	
Joine	contrapocinier	TT CONCERDINE VEH	(T collectionact	grapity :	C0	localitationag	c   identification	Idenkiie dionomi	9
	Version	Collector	Collectors UR	Sequence	Collectors nu	Notes	Availability	Kind of chang	Date of chan
►	2	W. Schimper	(NULL)	04.02.2005	187	(NULL)	Available	current versio	04.09.2006
		W. Schimper	(NULL)	04.02.2005	1792	(NULL)	Available	UPDATE	04.09.2006

The version will be set automatically. If a dataset is changed the version will be increased if the last changes were done by a different user or the last change is more than 24 hours ago (for further details see topic Logging ).

# Backup

If you need to backup your database, you have to use the functionality provided by SQL-Server. To do this, you need administration rights in the database you want to create a backup. Open the Enterprise Manager for SQL-Server, choose the database and detach it from the server as shown in the image below.

+		Diversity	Callection	
+	ř	Diversity	Nouo Dataphank	
+	ĭ	Diversit		Name
+	Ũ	Diversity	Skript für Datenbank als 🔸	Datenbankdiagramme
+	Ū	Diversity	Tasks 🕨 🕨	
+		Diversity	1000	

After detaching the database, you can store a copy of the  $\dots$ \_Data.MDF File to keep it as a backup.

After storing the backup you have to attach the database.

Neue Datenbank
Anfügen
Datenbank wiederherstellen
Dateien und Dateigruppen wiederherstellen
Aktualisieren

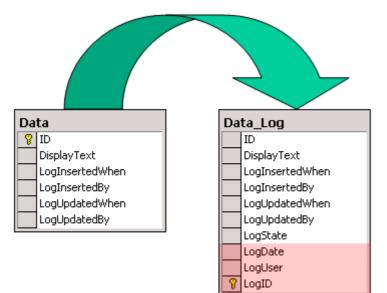
A dialog will appear where you have to select the original database file in your directory.

# Logging

Changes within the database will be documented for each dataset together with the time and the responsible user in the columns shown in the image below.

Spaltennene	Detentyp-Kureform	Beschreibung	*
LoginsertedBy	rivarchar(50)	Nane of user who first entered (typed or inported) the data. This is the operator (or typist) name, which may be different from the person responsible.	
LogInsertedWhen	smalidatetine	Date and time when record was first entered (typed or imported) into this system.	
 LogUpdatedBy	m-archar(50)	Name of user who last updated the data. This is the operator (or typist) name, which may be different from the person responsible.	
LogUpdatedWhen	smalidatetine	Data and time when record was last updated.	-

All main tables have a corresponding logging table. If you change or delete a dataset the orignial dataset will be stored in this logging table together with informations about who has done the changes and when it happend.



🚡 SQL Server Enterprise Manager - [Konsolenstamm\Microsoft SQL Servers\SQ 💶 🗙					
Konsole Eenster ?					
Vorgang Ansicht Extras   ⇐ → 🔁 🔃 🖅 🔀 😰					
] *   N   🖟 🕕 🗊 🔽 🕞					
Struktur	Tabellen 143 Elemente				
DiversityCollection	Name CollectionProject CollectionProject_Log CollectionSpecimen CollectionSpecimen_Log CollectionSpecimenImage CollectionSpecimenImage_Log				

## **Version of datasets**

The Version of a dataset consists of two parts, e.g. 3 / 1 as shown in the header of the specimen in the main form. The first part of the number refers to the version of the dataset as stored in table CollectionSpecimen. The second part refers to the version as stored in the table CollectionEvent. Both versions will be set to a higher number if the data in the tables themselves or in dependent tables are changed, e.g. the insertion of a new identification in the table Identification will increase the specimen part of the version from 3 to 4 resulting in a version 4 / 1 for the whole dataset. The changes in the version will only occur if the last changes in the data were more than **24 hours** ago or a **different user** is changing the data. This ensures, that a user can change several parts in a dataset within 24 hours and the version will only be increased by 1.

Acc.Nr.	ID	Version	Withhold. reason
M-0040396 Erysiphe alphitoides (Griffon & Maubl.) U. Braun & S. Takam.	135429	3/1	

The data are stored in the tables <u>CollectionSpecimen</u> and <u>CollectionEvent</u>.

## **Database - Application tables**

Informations concerning the application are stored in the application tables. The table ApplicationSearchSelectionStrings hold the SQL-strings of the predefined queries for the users. The table ApplicationEntityDescription holds the description of the database entities, if these are different from the description in the database, especially if other languages then English are to be supported.

#### Index

- <u>ApplicationEntityDescription</u>
- <u>ApplicationSearchSelectionStrings</u>
- ProjectProxy
- <u>ProjectUser</u>
- UserProxy

#### Table ApplicationEntityDescription

The description of the columns in different languages

Column	Data type	Description
<b>TableName</b>	Name varchar (50) The name of the table within the database	
<u>ColumnName</u>	<b>umnName</b> varchar (50) The name of the column of the table within the database	
DisplayText	nvarchar (50)	The text for the column as shown e.g. in a user interface
Description	nvarchar (MAX)	The description of the content of the column
LanguageCode	nvarchar (50)	ISO 639: 2-letter codes for the language of DisplayText and Description
LogCreatedWhen	eatedWhen datetime The time when this dataset was created Default value: getdate()	
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

### Table ApplicationSearchSelectionStrings

Selection strings for customized queries for users

Column	Data type	Description	
<u>UserName</u>	varchar (50)	The name of the user who created this SQL string Default value: user_name()	
<u>SQLStringIdentifier</u>	varchar (50)	The identifier for the selection string as shown in user interface	

ItemTable	varchar (50)	The main table from which the datasets should be selected Default value: 'TaxonName'	
SQLString	varchar (MAX)	SQL string for selecting datasets from the database	
Description	nvarchar (MAX)	Description of the resultset and the purpose of the query	
LogCreatedWhen	datetime	The time when this dataset was created Default value: getdate()	
LogCreatedBy	nvarchar (50)	Who created this dataset Default value: user_name()	
LogUpdatedWhen	datetime	The last time when this dataset was updated Default value: getdate()	
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()	

### Table ProjectProxy

The projects as stored in the module DiversityProjects

Column	Data type	Description	
<u>ProjectID</u>	int	ID of the project to which the specimen belongs (Projects are defined in DiversityProjects)	
Project	nvarchar (50)	The name or title of the project as shown in a user interface (Projects are defined in DiversityProjects)	

### Table ProjectUser

The projects that a user can access

Column	Data type	Description	
<u>LoginName</u>		A login name which the user uses for access the DivesityWorkbench, Microsoft domains, etc	
ProjectID	int	ID of the project to which the specimen belongs (Projects are defined in DiversityProjects)	

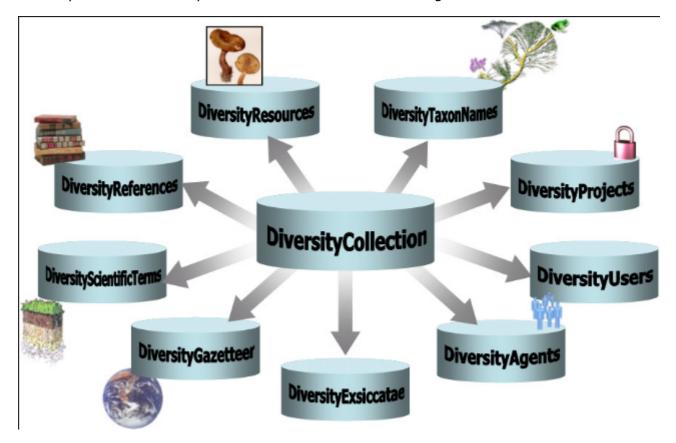
### Table <u>UserProxy</u>

The user as stored in the module DiversityUsers

Column Data type Description		Description	
		A login name which the user uses for access the DivesityWorkbench, Microsoft domains, etc	
		The short name of the user, e.g. P. Smith <i>Default value: NULL</i>	
UserURI	varchar (255)	URI of a user in a remote module, e.g. refering to UserInfo.UserID in database DiversityUsers	

# **Diversity Workbench**

The Diversity Workbench is composed of components for building and managing biodiversity information, each of which focuses on a particular domain. Each component can provide services to the other components. DiversityCollection can link data to the modules DiversityProjects, DiversityResources, DiversityExsiccatae, DiversityGazetteer, DiversityScientificTerms, DiversityTaxonNames, DiversityAgents, DiversityUsers and DiversityReferences as illustrated in the image below.



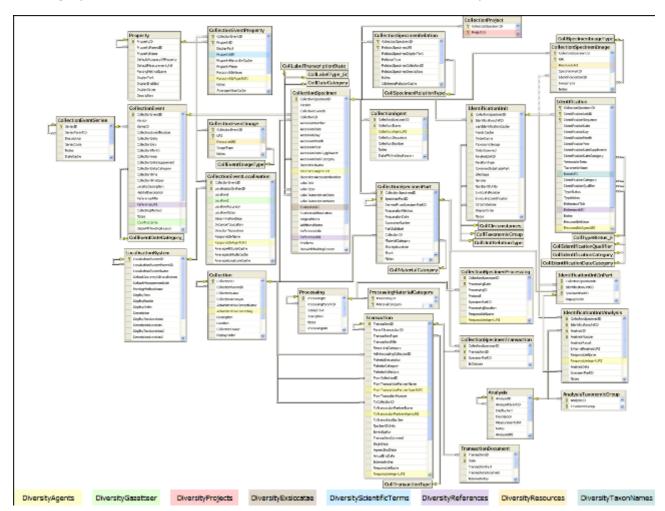
The modules communicate with each other to provide their services for the other modules.

## Modules

The <u>Diversity Workbench</u> is a set of components for building and managing biodiversity information, each of which focuses on a particular domain. Dive rsity Administration of the agents, i.e. people and institutions which should be documented with e.g. their addresses Age nts Dive rsity Coll Administration of the scientific collections and specimens within these collections ecti on Dive rsity Des Administration of descriptive data cript ions Dive rsity Exsi Administration of exsiccatal series ccat ae Dive rsity A data collection to enable the linking of geographical records with the Getty Thesaurus of Geographical Names (TGN), the Gern Gaze geographical names. tteer Dive rsity Scie Data collections of scientific terms from foreign sources like vegetation, stratigraphy, soil science etc. ntifi cTer ms Dive rsity Administration of projects within the Diversity Workbench Proj ects Dive rsity Refe Administration of references renc es Dive rsity Res Administration of resources like images, etc. ourc es Dive rsity Tax Administration of taxonomic names, their synonyms and hierarchical position onN ame S Dive rsity Administration of the users and their permissions within the Diversity Workbench User S

Each module provides services for the other modules. To use the service of a module, you need access to the database of the module and optionally the module application placed in

your application directory.



In the graphic below the connections to other modules within DiversityCollection are indicated.

In the form a connection to a module of <u>Diversity Workbench</u> is a set of components for building and managing biodiversity information, each of which focuses on a particular domain.

## Module related entry

The Diversity Workbench is a set of components for building and managing biodiversity information, each of which focuses on a particular domain. Each module provides services for the other <u>modules</u>. To use the service of a module, you need access to the database of the module and optionally the module application placed in your application directory. Entries related to an external module have a standard interface in the main form. There are 2 states of this interface:

#### 1 - the value is only set in the local database with no connection to the remote module

: 🔽 Melastoma argyrophyllum Schrank & Mart. ex DC.	<u>്</u>

In this state, you can either type the value or select it from the values that are already available in the database. To get a list of the available values type the beginning of the value

(you may use wildcards) and click on the 🖾 button. If you want to set a relation to the remote module, click on the 🥙 button. A form will open where you may select an entry from the foreign database.

豨 DiversityTaxonNames 🛛 (DiversityT	axonNames_Plants) Server: 127.0.0.1	
i 📴 🗹 🚃		open DiversityTaxonNames 💏
Query conditions	Query results 1 - 100 of 1361 Melastoma arborescens Aubl. Melastoma arborescens Sieber ex Prest	ID 417384
Rank Authors	Melastoma arboreum Schitdl. Melastoma arboreum Schitdl. Melastoma arboreum Vell.	Taxonomic name Melastoma argyrophyllum Schrank & Mart. ex DC. Basionvm
Bas.auth. • ~ Comb.auth. • ~	Melastoma arboreum Vell. Melastoma argenteum Desr. Melastoma argenteum Desr. Melastoma argenteum Poir, ex Steud.	Rank sp.
Revision Level	Melastoma argenteum Sw. Melastoma argenteum Sw. Melastoma argenteum Sw.	Publication Prodr. (DC.) 3: 181 1828
Project MelList	Melastoma argyratum Presi. Melastoma argyrophyllum Schrank & Mar Melastoma argyrophyllum Schrank & Mar	Validity Valid name Hierarchy
	Melastoma argyrophyllum Schrank & Mar Melastoma aristatum Mart. ex DC. Melastoma arioulata Desr. Melastoma articulatum Desr.	Melastoma Burm. ex L. Melastomataceae Myrtales Magnoliopsida Magnoliophyta
	Melastoma articulatum Naudin Melastoma arvense Vell. Melastoma aspera L.	Synonym Synonymy type
	order by: Taxonomic Name	Accepted name Melastoma argyrophyllum Schrank & Mart. ex DC.
Cancel		OK

#### 2 - the value is related to the remote module

Tax.name: Melastoma argyrophyllum Schrank & Mart. ex DC.

If the value has a relation to the remote module, the interface will appear as shown above. To

release the connection to the remote module click the  $\times$  button. If you need further information about the value, click the  $\overset{\textcircled{}}{\overset{\textcircled{}}{\overset{}}}$  button. This will open a form, showing an overview of the related value.

🎏 DiversityTaxonNames	(DiversityTaxonNames_Plants)	Server: 127.0.0.1	
		open DiversityTaxo	nNames 🥳
ID			
	417384		
Taxonomic name M	1elastoma argyrophyllum Schrank & Mart	. ex DC.	
Basionym			
Rank			
	sp.		
Publication	Prodr. (DC.) 3: 181 1828		
Validity	Valid name		
Hierarchy	Melastoma Burm. ex L. Melastomataceae Myrtales Magnoliopsida Magnoliophyta		
Synonym			
Synonymy type			
Accepted name	1elastoma argyrophyllum Schrank & Mart	. ex DC.	

If the client application of the module is available you can inspect the details of the entry. To start the client application of the remote module, just click on the start.

#### 3 - relation to a webservice

Some modules provide the possibility to link your data to an external webservice. For example DiversityTaxonNames gives you access to the taxonomic names of IndexFungorum.

To establish a connection to an external webservice, click on the <sup>CA</sup> button. As with the link to modules within the Diversity Workbench a form will open where you can choose from either Diversity Workbench modules or external Webservices. See <u>Webservice</u> for further details

#### 4 - relation to a local service

Some modules provide the possibility to link your data to a local installed service. For example DiversityTaxonNames gives you access to the taxonomic names of the Catalogue of life. See <u>Catalogue of Life</u> for further details

### Webservice - foreign sources

Some modules within the Diversity Workbench provide the possibility to link your data to an external webservice. For example DiversityTaxonNames gives you access to the taxonomic names of IndexFungorum. To establish a connection to an external webservice, click on the

button. A form will open where you can choose from either Diversity Workbench modules or external Webservices.

🎏 IndexFungorum	
Database: IndexFungorum	
http://www.indexfungorum.org/IXFWebService/Fungus.asmx Query results 10 Amanita muscaria (L.) Lam. Amanita muscaria a. eu-umbrina R. Schulz Amanita muscaria b. hercynica R. Schulz	LITERATURE_LINK 818 RECORD_NUMBER 161267
Amanita muscaria c. sudedica R. Schulz Amanita muscaria f. aureola (Kalchbr.) J.E. Lange	BASIONYM_RECORD_NUMBER 375287
Amanita muscaria f. formosa (Pers.) Gonn. & Rabenh. Amanita muscaria f. gussowii (Veselý) Neville & Poumarat Amanita muscaria f. muscaria (L.) Lam.	Change to basionym Agaricus muscarius L.
Amanita muscaria f.sp. americana EJ. Gilbert Amanita muscaria subsp. americana (J.E. Lange) Singer	NAME_OF_FUNGUS_FUNDIC_RECORD_NUMBER 17045
Agaricus muscarius L.	CURRENT_NAME Amanita muscaria var. muscaria
order by: DisplayText	CURRENT_NAME_RECORD_NUMBER 417119
▼ max. results: 10 ▼ 14 -	Change to current name Amanita muscaria var. muscaria (L.) Lam.
Query conditions Name Amanita musc	CURRENT_NAME_FUNDIC_RECORD_NUMBER
Cancel	OK

If you choose a webservice the form will change as shown in the above image. Enter the query condition for your search and the maximal number of records you want to get in the

max. results field max. results: 50 (choose a low number if you have a slow connection to the internet). Then click on the search button to start the query. In the right part of the form additional information is shown as provided by the webservice. For certain entries buttons will appear, as e.g. shown above for the basionym and the current name of a scientific name. Click on these buttons if you want to change to one of these related datasets from the webservice. To take the link from the webservice into your database choose one of the entries and click OK. The entry will change as shown below.

Tax.name:	Xanthoria parietina f. excrescens	http:/	×	1	0ª
			_	_	

If you double-click on the link area a window will open, providing you with the retrieval information of the webservice.



To get the whole information related to this entry as provided by the webservice, click on the

button. A window will open as shown below where the informations of the webservice are listed.

🎏 DiversityTaxonNames	(DiversityTaxonNames_Plants)	Server: BSM1	User: mw 💶 🗙
NAME_OF_FUNGUS	Xanthoria parietina f. excrescen	\$	<u>*</u>
AUTHORS	Hillmann		
PUBLISHED_LIST_REFER	Lamb's Index nom. lich.: 805		
SPECIFIC_EPITHET	parietina		
INFRASPECIFIC_RANK	f.		
INFRASPECIFIC_EPITHET	excrescens		
YEAR_OF_PUBLICATION	1935		•

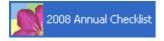
If you want to remove the link to the webservice, click on the  $\times$  button. This will only remove the relation to the webservice, not the cached name.

# Catalogue of life

Some modules within the Diversity Workbench provide the possibility to link your data to a foreign source. For example DiversityTaxonNames gives you access to the taxonomic

names of the Catalogue of life. To establish a connection to this source, click on the button. As with the link to modules within the Diversity Workbench a form will open where you can choose from either Diversity Workbench modules, external Webservices or foreign sources. If you need the service of the catalogue of life, you have to install this according to the installation instructions provided at

<u>http://www.catalogueoflife.org/annual-checklist/2008/info\_about\_col.php</u>. If you have the catalogue of life installed on your local machine, you have access to this service provided the service is started. Start the service e.g. by choosing **Programs** -> **Catalogue of Life** ->
 **2008 Annual Checklist** from your Windows Start menu (the exact path depends on your local installation).



An icon will apear in your Windows Task panel, showing that the MicroWeb server is running. Than choose the Catalogue of life from the list as shown below. If you forget to start this service, the programm will try to start it. To stop this service, right-click on this symbol and choose Exit.



If the service is started you can search the names provided by the Catalogue of life as shown below.

🏶 Catalogue of life		
Database: CatalogueOfLife		
Trutta marina Moreau, 1881	5348263	
Trutta marina Duhamel, 1771 Trutta montenigrina Karaman, 1933	Genus	
Trutta obtusirostris krkensis Karaman, 1927	Trutta	
Trutta obtusirostris salonitana Karaman, 1927 Trutta relicta Malmgren, 1863	Species Initia	
Trutta salar (Linnaeus, 1758)		
Trutta salmanata Strøm, 1784 Trutta salmonata Rutty, 1772	Authors (Linnaeus, 1758)	
Trutta taleri Karaman, 1933	· · · · · · · · · · · · · · · · · · ·	
Trutta trutta (Linnaeus, 1758) Trutta ungeri Yásárhelyi, 1840	Website http://www.fishbase.org/Summary/SpeciesSummary.php?ID=238	
Trutta variabilis Lunel, 1874 🗸 🗸	Status	
	synonym	
T Genus: Trutta	Accepted name	
Species:	Salmo trutta trutta Linnaeus, 1758	
	Database	
Database: FishBase	FishBase	
Distribution:	Hierarchy	
Status:	Animalia-Chordata-Actinopterygi-Salmoniformes-Salmonidae	
Common name:		
Cancel	OK	

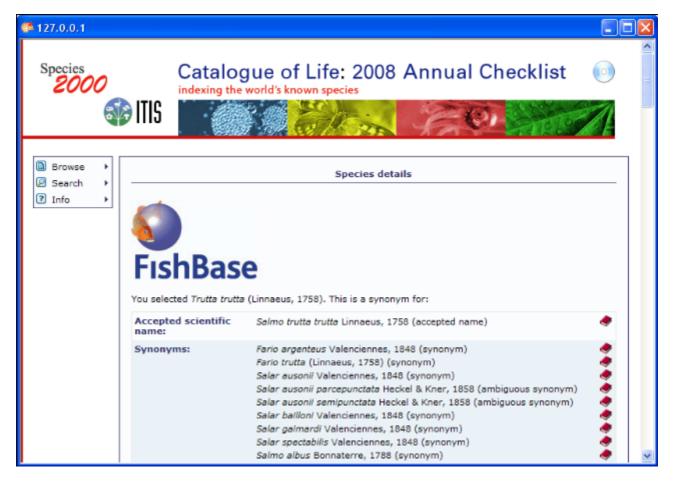
You can choose one of the databases provided by the Catalogue of Life and enter the query conditions for your search. Then click on the search button **T**to start the query. In the right part of the form additional information is shown as provided by the service. To take the link from the service into your database choose one of the entries and click OK. The entry will change as shown below.

	Tax.name:	Trutta trutta (Linnaeus, 1758)	http:///////////////////////////////////
--	-----------	--------------------------------	--

If you double-click on the link area a window will open, providing you with the retrieval information of the service.

URI of Trutta trutta (Linnaeus , 1758) 🛛 🛛 🔀
http://127.0.0.1/show_species_details.php?record_id=5348263
ОК

To get the whole information related to this entry as provided by the service, click on the <sup>4</sup> button. A window will open as shown below where the informations of the service are listed.



If you want to remove the link to the service, click on the  $\times$  button. This will only remove the relation to the service, not the cached name.

### Resources

Images for specimen and the collection event can either be stored in DiversityCollection with their file path or in more detail in the module DiversityResources. For directly changing to

DiversityResources click on the 🥙 button.

For direct access to the resources in this module, you need the application **DiversityResources.exe** in your application directory, the database DiversityResources and a valid account in the database DiversityUsers.

## Reference

Details about References are stored in the module DiversityReferences. You can choose one of the entries in this module from the picklist. To directly change to DiversityReferences click on  $\Im$ .

For access to the references from other modules, you need the application **DiversityReferences.exe** in your application directory. To use the application DiversityReferences.exe you need access to the database DiversityReferences.