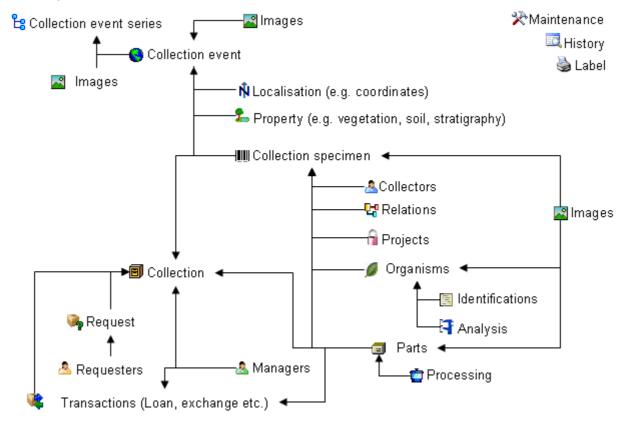


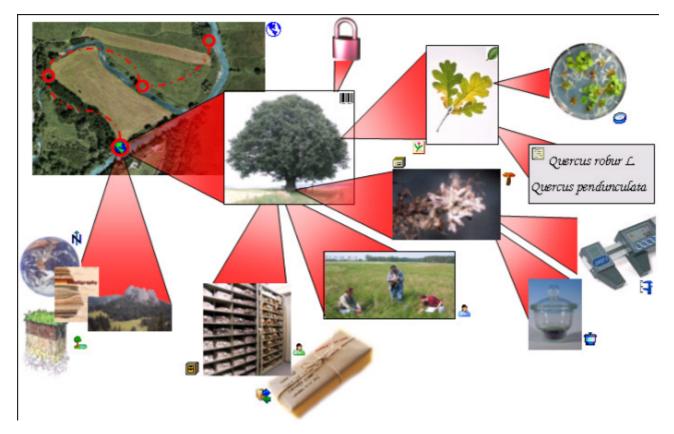
DiversityCollection (Version 2) is part of the database framework <u>Diversity Workbench</u>. Within this framework the application DiversityCollection is confined to the management of specimens in scientific collections. In this context it is designed to documente any action concerning the collection, 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 I and characterized L. The collectors Collected twigs of the plant and fungi T from the roots. They store the samples as herbarium sheets and specimens F preserved by other methods in a collection II. The manager collection. The samples were collected as part of a project C. Certain parts were cultivated A analysed C. The organisms on specimen were identified several times. Images were taken for the event series, the collection event, the collection specimen as well as organisms

and part of this specimen.



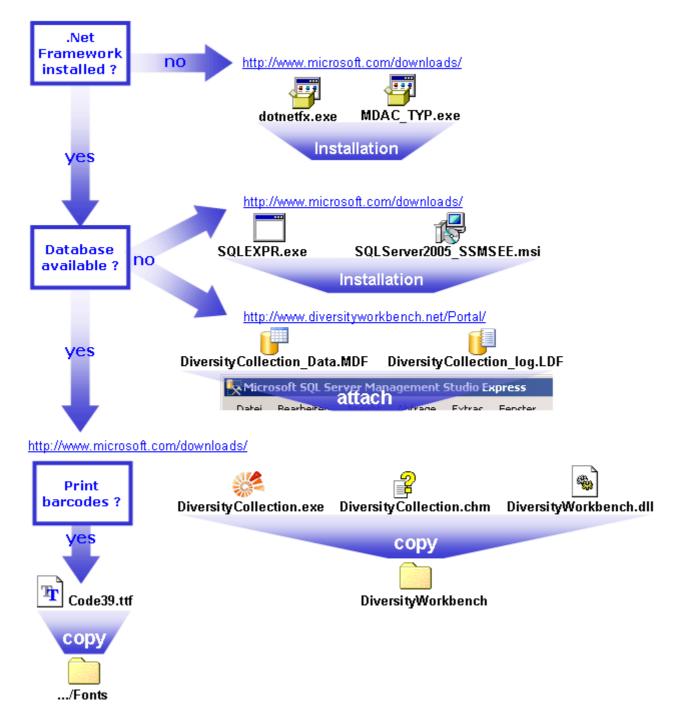
DiversityCollection 2 is based on <u>Microsoft</u> SQL-Server 2005 and the .Net Framework, Version 2.0.

For licence and copyright see the <u>licence</u> section.

Installation

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

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



Client

The client is based on the .Net framework version 2.0 from Microsoft. If not already present, you have to install the framework first. Download and install the Microsoft .NET Framework (e.g. dotnetfx35.exe 4 - start the program and follow the installation instructions (see

<u>http://www.microsoft.com/downloads/</u> for the latest versions). Version 2.0 is compatible with older operating systems like Windows 2000. For later operating systems use the latest version available.

Download the files for DiversityCollection from http://www.diversityworkbench.net/Portal/ provided as a zip archive. Copy all files (DiversityCollection.exe http://www.diversityworkbench.net/Portal/ provided as a zip archive. Copy all files (DiversityCollection.exe http://www.diversityworkbench.net/Portal/ provided as a zip archive. Copy all files (DiversityCollection.exe http://www.diversityCollection.exe , DiversityWorkbench.dll http://www.diversityWorkbench.net/Portal/ , DiversityWorkbench.dll http://www.diversityCollection.exe , DiversityCollection.exe http://www.diversityCollection.exe , DiversityWorkbench.dll http://www.diversityCollection.exe , DiversityCollection.exe http://www.diversityCollection.exe , D

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

Database

For the installation of a local database see the section <u>Installation of the database</u>.

Menu

Overview of the menu in DiversityCollection

Connection

F	Database	Choose one of the databases available on the server. Only those databases will be listed to which the user has access permission
ŵ	Module connections	Edit the connections to the other modules within the Diversity Workbench.
set	Transfer previous tings	Transfer the settings of a previous version
	Quit	Quit the application and stop all processes started by the application
2	ery Show query Predefined queries Scan mode Grid mode	Show or hide the query list Under this menu entry all predefined queries will be listed Change to the scan mode to open the dataset of a specimen by scanning the barcode Change to the grid mode to edit the dataset in a list
Dat		
•	Import Specimen scans Import list Export Export list XML	Import scans of specimen labels Import tab-separated lists Export a tabulator separated file with the data of the specimen Export data as a XML-file according to ABCD
-	ministration	
7	Analysis Collections	Administration of the analysis methods used for the specimens Administration used for the collections
	Customize display	Customizing the display of the window, e.g. the material categories and taxoniomc groups that should be visible when creating a new entries
X	Maintenance	Maintenance of database entries especially if connected to other modules
ė	Processing	Administration of the processing procedures applied in the collection
T	Queries	Creating and editing predefined queries
ų,	Transaction management Transactions	Management transactions, managers, loans etc. 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
	🆣 Loan requests	Administration of loan requests for the collections a user is an collection manager. This menu entry will appear when there are loan requests for the managed collections of the current
	<table-of-contents> My requests</table-of-contents>	Administration of the loan requests of a user. This menu entry will appear when a user placed requests for specimen
	Å Requesters	User having the right to place requests for specimen of a collection

 Managers User Versions 	Administration of the users that manage collections and are e.g. responsible for the administration of the transactions Administration of the users and their permissions in the database Administration of the versions of client and database
Help 😰 Manual 🖄 Feedback 殝 Info	Opens the online manual Opens a window for sending feedback Show the version of the program and corresponding information

Manual

The online manual DiversityCollection.chm 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. To open the manual from the menu, choose **Help ->** Manual.

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. As an administrator, you can set the versions of the database and the client. Choose **Administration** - **Versions** from the menu. A form as shown below will open, giving you an overview of the version settings.

🥵 Setting	nt and database		
Current version		New version	
Client:	02.05.05.08	02.05.05.08	Set client version
Database:	02.05.03	02.05.03	Set DB version
Versions as	stored in client		
Client:	02.05.05.08		
Database:	02.05.03]	

Update of database and client

DiversityCollection is still in development. Therefore regular updates for the database and the client will be provided. When you start the program and connect to a database, the program will check if it is compatible with the database or if the database needs an update. In any of these cases an **Supdate** entry in the menu will appear. If a new version of the client is available this menu will contain an **Supdate client** ... entry. Click on it to open the webpage where you can download the cient as shown below.



Home | Changes | Index | Edit | Find:

Go

Diversity Workbench – Software Components for Building and Accessing Biodiversity Information

The Diversity Workbench is work in progress, aiming at developing a set of information models and application components that collaborate through agreed software interfaces. That is, each component of the Workbench applications uses services from other applications, but at the same time does not need to know about the internal design and implementation of them (encapsulation principle). The goal is increased reuse and collaboration across project and national borders.

For each component of the Diversity Workbench we aim at providing a comprehensive documentation of the application and the information model online. The framework for these components is currently still under development as we continue to learn about the necessary components and the best approach to the modularization of biodiversity information. A draft version providing important insight into the framework concept , is, however, available.

In an intitial phase during the GLOPP project, a set of prototypes was developed in Microsoft Access. The prototype applications are still available. With the exception of DeltaAccess/DiversityDescriptions they are by now largely obsolete. DeltaAccess predates the Workbench concepts and is actively used and under active development.

Diversity Workbench online help and user guides

These are collected on a separate Wiki web,

Diversity Workbench information models

- DiversityCollection
- DiversityDescriptions
- DiversityExsiccatae
- DiversityGazetteer
- DiversityResources
- DiversityReferences
- DiversityTaxonomy
- DiversityTaxonNames

Diversity Workbench applications

If you are the owner of the database (Database role = dbo) and the database needs to be updated, the menu will contain a **pupdate database** ... entry. Select this entry to open a window as shown below to run the provided update scripts, delivered with the client software.

These scripts needs to run consecutively, so e.g. to update from version 2.5.1 to 2.5.4 you either have to run the script DiversityCollectionUpdate_020501_To_020504 or the scripts DiversityCollectionUpdate_020501_To_020502, DiversityCollectionUpdate_020502_To_020503 and DiversityCollectionUpdate_020503_To_020504. The program will guide you through these steps and check for the scripts. All you have to do is click the **Start update** button.

🥵 Update database					
Update the database DiversityCollection to version 02.05.03					
	Start update 🏂	_			
SQL script:	C:\Daten\DiversityWorkbench 2.0\DiversityCollection\bin\Debug\Updates\DiversityCollectionUpdate_020500_To_020503.sql				
DECLARE @VERSION VARCHAR(8); SET @VERSION = (SELECT DB0.VERSION() AS VARCHAR); IF @VERSION = '02.05.00' BEGIN BEGIN TRANSACTION @VERSION;					
Removing redundant objects					
IF EXISTS (SELECT * FROM sys.objects WHERE object_id = OBJECT_ID(N'[dbo] [ExpeditionTopID]') AND type in (N'FN', N1F', N'FF', N'FS', N'FT']) DROP FUNCTION [dbo] [ExpeditionTopID]					
IF_EXISTS (SELECT * FROM sys.objects WHERE_object_id = OBJECT_ID(N'[dbo][wbCurrentUserID]) AND type in (NFN', N'IF', N'FS', NFT']) DROP FUNCTION [dbo][wbCurrentUserID]					
IF_EXISTS (SELECT * FROM sys.objects WHERE object_id = OBJECT_ID(N'(dbo),[NextAccessionNumber]')AND type in (N'FN', N1F', N'FS', N'FT')) DROP FUNCTION [dbo],[NextAccessionNumber]					

License

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

DiversityWorkbench					
	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 the implied warranty of MERCHANTABILITY or FIT FOR A PARTICULAR PURPOSE. For more details http://www.qnu.org/licenses/qpl.html					

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 program or encounter an error you can give a feedback to the administrator. Click on 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 window as shown below.

🖄 Feedback	
Feedback sent by: TestEditor. Module: DiversityCollection 2.5.4.7. Database: Description	DiversityCollection To insert a screen shot click ALT-PRINT and then use the
enter your suggestions for improvements etc. here	Insert image button to enter the image
	DiversityCollection, Database: DiversityCollection_Te
	Connection Query Data Administration Help Image: Connection Image: Connection Image: Connection Help Acc.No. Query results 1 - 100 of 4622 Image: Connection Acc.No. Image: Connection Image:
If you want to receive a message when the described problem is solved, please enter your email address in the field below E-mail to: somebody@somewhere.net	D: 191658 D: 191659 D: 191660
	Cancel Send feedback

Click on the linsert image button to insert the screen shot and give a comment about your problem. Then click on the Send feedback button to send your feedback to the administrator. If you want to receive a message, when the problem you described is solved, please enter you e-mail address in the field under the descrption.

In case you do not have access to the central database for the feedbacks, the program will open your mail client to send an e-mail. In case of bugs in the program it would help if you attach the file **DiversityCollectionError.log** located in your application directory (see image below).

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 occured and the parameters involved in the file **DiversityCollectionError.log** located in your application directory.

ImportMappings
 LabelPrinting
 Transaction
 Updates
 code39.ttf
 DiversityCollection.chm
 DiversityCollection.exe
 DiversityCollectionError.log
 DiversityWorkbench.dll

Tutorial - first steps

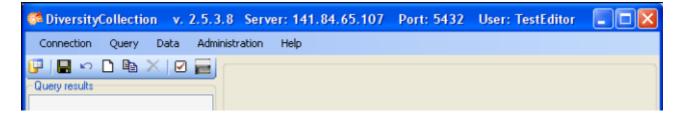
This tutorial will guide you through the first basic steps to enter a single dataset in DiversityCollection. After the <u>installation</u>, make sure, you have <u>access</u> to the database. To start the programm, double click on the ^{CA}DiversityCollection.exe in the directory where you copied the files of DiversityCollection. The main window will open.

Solution v. 2.5.3.8 DiversityCollection v. 2.5.3.8	not connected		
Connection Query Data Help			
🗙 🖩 🗠 🗅 🖻 🗙 🖉 🚘			
Query results			
	LIN/	IAGES	
	117	IAGLO	
order by: Specimen Acc.No.			
T 7 5 🗹 -			
Query conditions Project			
Project A	SPECIMEN		
Specimen			
Acc.Nr. • ~		DATA	
Depositor 👻 ~			
Depos.Acc • ~	STORAGE		
Orig. notes 💌 🖉			

If you open this window for the first time, you have to connect to the database. Click on the button or choose **Connection -> Database...** from the menu. A window will open where you can enter your account information and choose the database (see image below, for further informations see <u>database access</u>).

📴 Connection to database 📃 🗖 🔀					
Please select a server from the list or type the name or the IP-address of the server Port					
127.0.0.1	✓ 1433				
O Windows authentication	_				
 SQL-Server authentication 					
User Editor					
Password					
Restrict to DiversityCollection v. 2	2.5				
Restrict to DiversityCollection					
🔘 Show all available databases					
Connect to server 💼					
Choose database:					
DiversityCollection_Test					
Cancel OK					

After connecting to the server and choosing a database click on the **OK** button to return to the main form. As indicated by the symbol in the right upper corner, you are now connected to the database. In addition the header of the window shows your current login informations (see below).



This tutorial is continued in the sections listed below.

- section Collection event
- section <u>Collection specimen</u>
- section <u>Collection specimen relations</u>
- section Organisms and identifications
- section <u>Specimen parts and storage</u>

Tutorial - collection event

To enter a new dataset, click on the button in the upper left panel (see point 1 in image below). In case there are accession numbers in the database, the software will ask whether you want to take the next free number (see accession for further information). If you click on the OK button, the program will try to find the next free accession number starting with your current accession number.

Accession number
Do you want the database to search for the next free accession number after M-0003940
la <u>N</u> ein

Finally you will find a new entry in the <u>specimenlist</u> on the left and the trees for the <u>specimen</u> (see point **2** in image below) and the <u>storage</u> as shown below.

DiversityCollection, Database	se: DiversityCollection_Test	
Connection Query Data Adr	ninistration Help	
🕞 🔲 🗠 🗖 🖻 🗙 🗹 📄	Acc.Nr.	ID Version Withhold reason
Query results		2 – select dataset
order by: S 1 - create	new dataset	
T. —		
Query conditions Specimen	IIIIID: 182872]	
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: DiversityCollection_Test 🛛 v. 2.5.3.9 Server: BSM1 🛛 Port: 5432 User: BOTSAMML 🗐 🗖 🔀					
Connection Query Data Admi	nistrati	on Help			
📴 🔚 🗠 🗅 🖻 🗙 🗹 🧮 - Query results 1 - 1		Acc.No.		I	ID (Specimen / Event) Version Withhold reason 182872 1
D: 182872	- [6	Collection specimen
		3 – create		0	Number: Find next No. Depositor:
		collection event		0-	Acc.date:
order by: Specimen Acc.No.				요 단안	Collection: V - Withhold. reason: V Ref.: V
Query conditions				6-	Projects Notes Originat
Project Project		······································			Additionat Problems:
Specimen Acc.Nr. ~ ID = 182872					Exsiccatal series
10 1 1 102012					J

In the panel in the middle of the form, 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 (see point **3** in image above). This will add an entry for the collection event in the upper tree as shown below. Select this entry in the tree (see point **4** in image below), to open the fields for the collection event. To see the projected contents of any data field, simply place your mouse in the field. A explanation will appear like for the field **Description of the locality**:

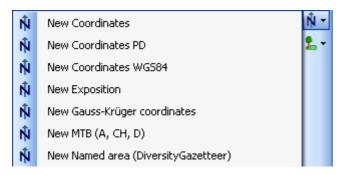
Locality description of the locality, exactly as written on the original label (i.e. without corrections during data entry)

See the <u>event</u> part for further details.

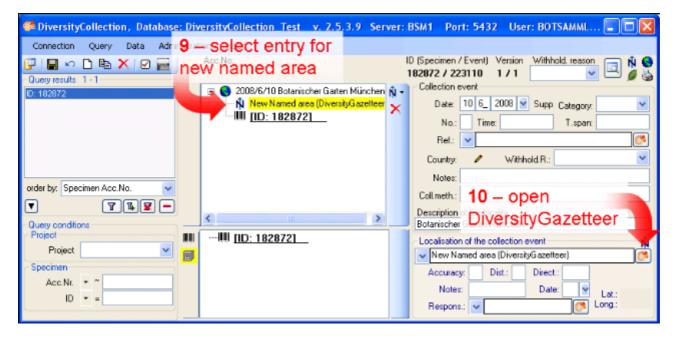
Then enter the date (see point **5** in image below) of the collection event. If you click on the drop down button as shown in the image below, a calendar will open where you can select the date. Then enter the description of the locality (see point **6** in image below). To store the data entered so far, click on the **b**button (see point **7** in image below).

🍜 DiversityCollection, Database: DiversityCollection Test v. 2.5.3.9 Server: BSM1 Port: 5432 User: BOTSAMML 🖃 🔲 🔀						
Connection Query Data Admir	Connection Query Data Administration 4 select the 5 – enter the date of					
📴 🔚 🗠 🗅 🖻 🗙 🗹 📄	Accollection event	the collection event 📰 💷 🧯 🔮				
0:18.2 7 – save	□ ● [ID: 223110] □ □ □ [ID: 182872]	Collection event Date: 10 6_ 2008 V Curr Exegory: V				
entries	8 – enter	N → No.: Time: < Juni 2008 >				
	details about the	Country: / Witi 26 27 28 29 30 31 1 2 3 4 5 6 7 8				
order by: Specimen Acc.No.	locality	Notes: 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29				
Quesy conditions Project	III (15) 1020201	30 1 2 3 4 5 6 Heute: 10.06.2008				
Project V	6 – enter the					
	description of the locality	Description of the locality Description of the habitat Botanischer Garten München				

To enter coordinates, named places etc. click on the \mathbb{N} button (see point 8 in image above) and select an option from the list.



To enter a name of the place using the DiversityGazetteer, choose **New Named area** (**DiversityGazetteer**) from the list. In the overview tree in the middle of the window an entry will be inserted as shown below. Select it to open the detail fields for this entry (see point 9 in image below).



To open the connection to the DiversityGazetteer, click on the ⁵⁶button (see point **10** in image above). A window as shown below will open. Enter a search string for e.g. the city you want to find (see point **11** in image below) and start the query with a click on the **T**button (see point **12** in image below).



In the middle of the form, the results of the query will be listed. Select on of these. To guide you to the correct entry, details to this place are listed in the area right from the list and the base will show a map corresponding to the coordinates connected to this entry. After selecting the correct entry (see point **13** in image above) click on the OK button to return to the main window (see point **14** in image above). As shown below the data retrieved from the gazetteer will be written in several areas. Next to the name of the place the DiversityGazetteer provides the coordinates and the country as shown below.

State Content Collection , Database	e <mark>: Di</mark> v	versityCollection Test v. 2.5.3.9	Se	erver: BSM1 – Port: 5432 – User: BOTSAMML 🗐 🗖 🔀
Connection Query Data Adm	nisp	lace in overview afte	r	
📴 🔜 🖘 🗅 🖻 🗙 🗹 📻 - Query results: 1 - 1	S	aving the entries		ID (Specimen / Event) Version Withhold, reason
ID: 182972	Ŵ	 2008/6/10 Botanischer Gatten Mü München MII [ID: 182872] 	×	Collection event Date: 10 6_ 2008 Suppl: Category: No.: Time: T.span: Ref.: V
		Country set by	1	Country: Germany / Withhold.R.:
order by: Specimen Acc.No.		DiversityGazetteer		Notes:
Query conditions		K		Description of the locality Botanischer Garten München
Project Vice Vice Vice Vice Vice Vice Vice Vice		entry with relation		Localisation of the collection event
Specimen Acc.Nr. • ~		to external module		Accuracy: Dist.: Direct.:
ID -		Coordinates se	t k	by DiversityGazetteer

The area where you entered the name now changed to a locked state and will prevent you from changing the entry (see image below). Next to the field with the place you find the link to the external module. Double-click it for more details.

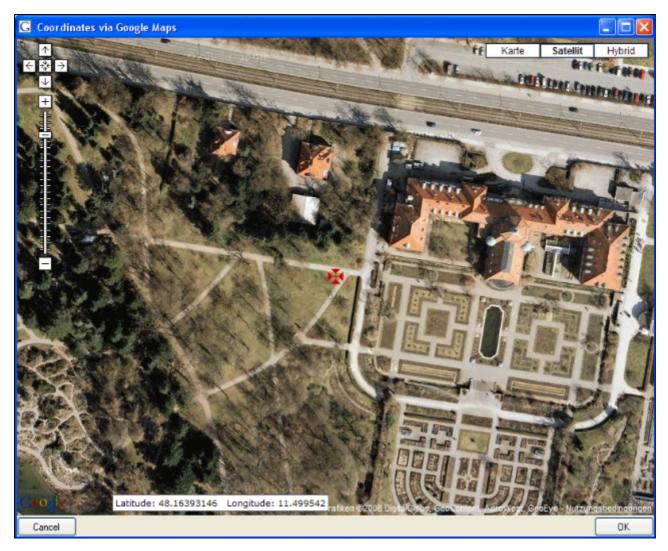
München http://

If you want to remove the connection to the external module click on the \times button. This will keep all entries (country, place, coordinates) but remove the connection to DiversityGazetteer.

Now lets add the exact coordinates for the locality with the assistance of Google Maps. Click on the Nbutton (see point 8 above) and choose **New Coordinates WGS84** (Google Maps uses WGS84). This will add a new entry in the overview. Select it (see point **15** in the image below) to open the details for this entry. Here click on the H button (see point **16** in image below).

DiversityCollection, Database:	DiversityCollection Test v. 2.5.3.9 Ser	ver: BSM1 🛛 Port: 5432 🛛 User: BOTSAMML 📰 🔲 🔀
Connection Query Data Admin	istration 15 – select the	
📴 🔜 🗠 🗅 🖻 🗙 🗹 🚃 - Query results 1 - 1	* coordinates	ID (Specimen / Event) Version Withhold, reason
ID: 182872	N = O 2008/6/10 Botanischer Garten Mü N → N München N Coord. WGS84 Long. WI 11	Collection event Date: 10 6_ 2008 Suppl: Category: No.: Time:
		Ref.: V Country: Germany / Withhold.R.: V
order by: Specimen Acc.No.		Collmeth: Description of the locality Botanischer Garten München
Query conditions	IIIIIIII <u>[ID: 182872]</u> ■	-Localisation of the collection event
Project 💌	16 – open que	ry for coordinates
Acc.Nr. • ~ ID • =		Accuracy: Dist.: Direct.: Vister: Date: Vister: Lat.: Notes: Date: Vister: Lat.: Respons.: Vister: Lat.: Long.:

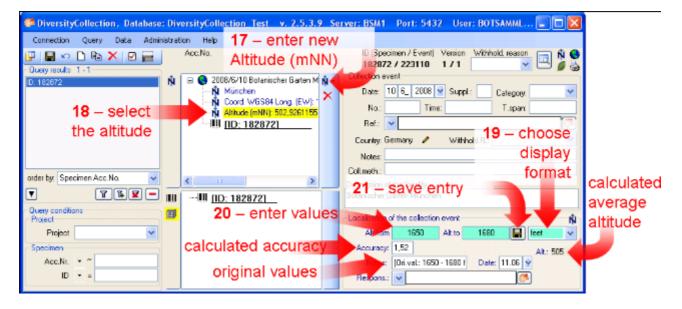
A window as shown below will open where you can set the coordintes simply by dragging the map with your mouse. The coordinates correspond to the center of the map, symbolized with the \mathbf{H} . Click on the OK button to store the coordinates.



In the main window as shown below the coordinates will be stored at two positions - see image below. In the upper area, you can set the values an choose a different format for display as shown here the more familiar form with degrees, minutes and seconds. You change the values and click on the button, to change the original entry. In parallel the numeric values are stored in fields that can not be edited by the user (see below).

🚰 DiversityCollection,Database	: DiversityCollection_Test v. 2	2.5.3.9 Server: BSM1 Port: 5432 User: BOTSAMML 📰 🗔 🔀
Connection Query Data Admin	histration Help	
📴 🖬 🗠 🗅 🖻 🗙 🗹 🧮	Acc.No.	ID (Specimen / Event) Version Withhold, reason 🖂 🕅 🥥
Query results 1 - 1	2008/6/10 Botanischer G München K Coord, WGS84 Long, IID: 1828721	arten M N Collection event Date: 10 6_ 2008 V Suppl: Category:
order by: Specimen Acc.No.	K III	Coll meth.: choose the Description of the locality Botanischer Garten Müncher display format
Query conditions Project Project	Coordinates degrees	AS Localisation of the collection event N Long, (EW) 11 29 58 Lat. (NS) 48 9 49 🔛 deg_min_ ~
Specimen Acc.Nr. • ~ ID • =	minutes seconds	Accuracy: 3 Dist: Direct: numeric coordinates Lat: 48,1637 Long: 11,4994

As a last information about the locality, we enter the altitude. Click on the Nbutton (see point 8 above) and choose New Altitude (mNN) (see point 17 in the image below). Then select the new entry in the overview to open the datafields (see point 18 in the image below). Lets suppose, you have only feet values available - so change the display format to feet (see point 19 in the image below). Enter your values (see point 20 in the image below) and click on the button (see point 21 in the image below) to save your entries. Now your values are converted to meter, the internal format of DiversityCollection. The program calculates an average value for the altitude and an accuracy in meter corresponding to the accuracy of your original values (see below). The original values of your entry are saved in the Notes field.



Next we turn to the collection specimen and set the accession number in the first section listed below.

- section <u>Collection specimen</u>
- section Organisms and identifications
- section <u>Specimen parts and storage</u>

Tutorial - collection specimen

To set the accession number for the collection specimen, select it in the overview (see point **1** in image below) enter the accession number (see point **2** in image below).

DiversityCollection, Database: Div	versityCollection_Test v. 2.5.3.9 Se	Server: BSM1 🛛 Port: 5432 🛛 User: BOTSAMML 📰 🗖	
	Select the Accessor Ollection specimen 2008/6/10 Botanischer Garten M München Coord WGS84 Long. (EW): Altitude (mNN): 502,9261155 IIID: 1828721 IID: 1828721 4 - enter a project	Number: M-0014917 Find next No. Depositor: Dep No: Acc.date: 3 – search for	

To search for the next free accession number, click on the corresponding button as shown above (see point **3** in image above). A window as shown below will open. Start the search for a free accession number. If the query ended successful, click **OK** to take the new accession number in your dataset.

Accession number	
Searching for the next free accession nur	nber after a given start
Start search for the next accession number after:	M-0014900
Start	
Next free accession number:	M-0014917
Cancel	ОК

Project

To restrict the access to your dataset, add it to a project (click on the Dbutton - see point 4 in image above). A dialog will open where you can select a project from the projects defined in DiversityCollection (see image below). The project will then be added to the list of the projects for this specimen.

🔺 Select a project	
Testcoll	~
Cancel	ОК

Collectors

Now we will add the collectors of the specimen. In the overview, select the specimen (see point **1** above) then click on the Abutton to insert a new collector (see point **5** in image below). Select the collector in the overview (see point **6** in image below). Now we use the module DiversityAgents to search for a certain person. Click on the Sutton to open the interface to the module (see point **7** in image below).

DiversityCollection, Database: DiversityCollection_Te	Test v. 2,5,3,9 Server: BSMT Port: 5432 User: BOTSAMML
Connection Query Data Administration Help	
Image: Construction Image: Construction Acc.No. - Query results 1 - 1 M-0014917	new collector (Specimen / Event) Version Withhold reason
6 - select	VGS84 Long (EW): 1 Dep.No:
order by: Specimen Acc.No.	Collector 1 Acc.date: Suppl: Cat: v Collection: v Ref.: v
Image: Conditions Image: Conditions Project Image: Conditions Project Image: Conditions Specimen Acc.Nr. Acc.Nr. Image: Conditions ID Image: Conditions	

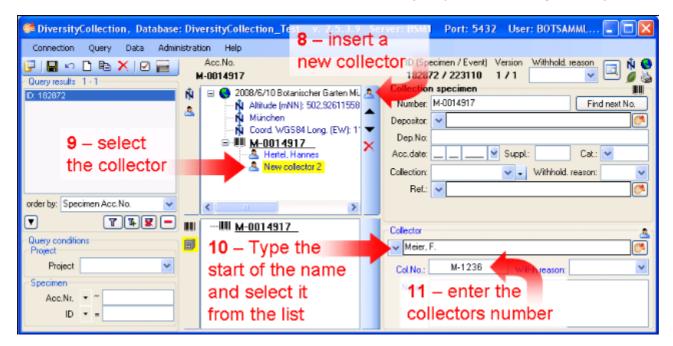
In the interface for DiversityAgents, enter search criteria (see point 1 in image below) and click on the **T**button to start the query (see point 2 in image below).

1 enterns Serv	er: BSM1 Use <mark>: 3 S</mark> el	lect entry	
search	Query results 1 - 9	AgentName Herte	I, Hannes
Agen Hert Abbr. • ~ Type • = •	Hertel, Hannes Hertel, Kerstin Hertel, R.J.G. Hertel, Stefan Herter, Wilhelm(Guillermo) Gusta	Abbreviation	les Hertel
Country • ~	Hertlein, Leo George Hertrich, William Hertsch, Hermann Hertwig, Richard	P	4 – accept selection
2 – start query	order by: Agent Name	Description From_Date	1939 OK

Select the correct entry from the query result (see point **3** in image above) and click on the OK button (see point **4** in image above) to store the name in DiversityCollection.

The next collector will have no connection to the module DiversityAgents. To insert this collector, again click on the ^l/₂ button (see point ⁸ in image below), select it (see point ⁹ in image below), type the start of the name in the field (in this example "Mei" would be a good

choice) for the name and click on the drop down button (see point **10** in image below) to select a name from the list of collectors already stored in the database. Finally if the collector has a field number, enter this field number of this collector (see point **11** in image below).



This tutorial is continued in the sections listed below:

- section <u>Collection specimen relations</u>
- section <u>Organisms and identifications</u>
- section Specimen parts and storage

Tutorial - relations between specimen

There are two types of relations possible:

- $1. \quad \text{relation to a specimen within DiversityCollection} \\$
- 2. relation to a specimen not administrated in the local database.

1. Internal relations

To enter a relation to a specimen in DiversityCollection select the specimen in the tree (see point 1 in image below) and click on the $\frac{1}{2}$ button (see point 2 in image below).



A window will open where you can search for the related specimen. In the window enter your restrictions (see point **1** in image below), start the query (see point **2** in image below), select the related specimen from the result list (see point **3** in image below) and click OK (see point **4** in image below) to insert the relation.

DiversityCollection (DiversityCollection)	ityCollection_Test) Server: BSN	11 User: mweiss
📴 🗹 🧮		open DiversityCollection 💏
Query conditions Project Project Blettaucoll Specimen Acc.Nr. Acc.Nr. Depositor ~ Depos.Acc Orig. notes Event Locality Event localisation Place	Query results 1 - 17 B 60 0001620 B 60 0001620 B 60 0001621 B 60 0001622 B 60 0001622 B 60 0001630 B 60 0001631 B 60 0001634 B 60 0001635 B 60 0001635 B 60 0001635 B 60 0001637 B 60 0001641 B 60 0001648 B 60 0001649 B 60 0001650 B 60 0001651	ID 96584 Accession number B 60 0001620a Depositor Exsiccata Locality Thüringer Wald: "Hohe Tanne" und "Buchenwand" bei Collection date 1909-9-3 Collectors Lettau, G.
Identification Last Ident. • ~ Tax.group • = • Family • ~	order by: Specimen Acc.No.	Alectoria sarmentosa (Ach.) Ach., Picea Material Storage location Alectoria sarmentosa Ach.

In the window select the entry for the relation (see point **1** in image below) to display the

DiversityCollection, Database	: Diversi	tyCollection	_Test v. 2	.5.4.0 \$	Server: BSM1	Port: 5	432 User:	BOTSAMM	22\mweiss	
	nistration Acc	Help						a) Marrian	Withhold reason	-
Query results 1 - 100 of 3625		001620	Thùringer Wald	t "Hohe Ta	s a (Ach.) Ac	934	35 / 132757 Collection	2/1 specimen	×	
B 60 00003419 B 60 0000341× B 60 0000342 B 60 0000342 B 60 0000343	Ø	- N Greenw - N Stützer	bach, Ilm-Kreis,	s Long (EW	(): 10.8625 Lat. ()	vs): 50.1 <mark>℃</mark> ×	Depositor: Dep.No:	8 60 000162i		nd next No.
B 60 0000344 B 60 0000509 B 60 0000510	ය. 당	8- 💋 Pic	0001620 Picea sp.			<i>#</i> 9			Supp Cat. Withhold reason	
B 60 0000511 B 60 0000512 B 60 0000591 B 60 0000755			🔄 Alectoria s	armentosa (Ach.] Ach. Ach.] Ach. [resp Ach. [respons.: §		Ref.:	*		<u> </u>
order by: Specimen Acc.No.		- 윤 년 - 단명 <mark>8 (</mark>	tau, G. 10 0001620a 🖣	(- 1			- Relation to Specimen (e B 60 00016)		men	당 문
Query conditions Project	<		- 11			>	Description			
Project Blettaucol		🎢 Ale	oria sarmento: cloria sarmento		h.	2-	Relation typ Duplicate (0 Notes:		nother specimen	*
Acc.Nr. • ~	2	L- 💋 Pic	ea							

fields for the details. Then enter the type of the relation (see point 2 in image below).

2. External relations

To enter a relation to a specimen in a foreign collection, insert a relation (see point 1 in image below) and select it in the overview (see point 2 in image below). Enter the name of the specimen (see point 3 in image below) and the type of the relation (see point 5 in image below). .

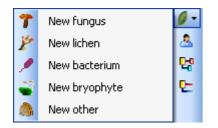
DiversityCollection, Database: DiversityCollection	insert a rela	ation 35M 1 Port: 5432 User: BOTSAMML 🗐 🗖 🔀
	an external ecimen	ID (Specimen / Event) Version Withhold reason
C: 162672	D Botanischer Garten Mi. 😡 e (mNN): 502.92611558 ren WGS84 Long. (EW): 1 🗙	Collection specimen III Number M-0014917 Find next No. Precoskor Image: Collection specimen Image: Collection specimen
order by: Specimen Acc.No. V V Ouery conditions Project Project Specimen Acc.Ni. ID	ct the	Relation to other specimen C Specimen (e.g. UBL); REG-002031 Description: Collection: Collection: Relation type: REG-VascularPlants Same origin Nobe: 5 – specify the relation type

If there is a dataset for the collection available you can select it from the list (see point **4** in image above). Otherwise you first have to add this collection to the list. If you have the permissions to edit the collections choose Administration -> Collections from the menu to add a collection. See the section <u>collection</u> for details.

For further informations about the relations turn to the section relation.

Tutorial - organisms and identifications

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



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: D	iversityCollection_Test v. 2	2.5.1.7 Server: 141.84.65	107 Port: 5432	User: B0 🔳 🗖 🔀
Connection Query Data Administr	ration Help			
📴 🔛 🖘 🗅 🖻 🗙 🗹 🕁	Acc.Nr.	bird	ID Version Wi	ithhold. reason
D: 182872	🕺 🕺 Coordinates EW: N	Tax. group: bird	VI. of units	Only obs. 🗌
order by: Specimen Acc.Nr. 🗸		Gender:	 Life stage: 	*
• • •	:	Family: Substruel:	Circumst.:	· ·
- Query conditions		Colon, part		
Acc.Nr. • *	<	Notes:		
Locality - ~		Exsiccata series: 💌		(
Project V		Exsiccata ident:		Exe. Nr.:

To enter an <u>identification</u>, click on the Buttom. This will insert 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: Div	versityCollection_Test v. 2.5.1	.7 Server: 141.84.65.107	Port: 5432 User	r: BOTSA 🔳 🗖 🔀	
Connection Query Data Administration	Connection Query Data Administration Help				
📴 🖶 🗠 🗅 🛍 🗙 🗹 🚍 👘	Acc.Nr.	bird	ID Version With 182872 1/1	hhold. reason 📃 🕺 🤤	
Query results	û 🕞 🕒 (ID: 212439) 🛛 🕅	bird	162872 171	No. 100 (100 (100 (100 (100 (100 (100 (100	
D: 182872	Coordinates EW: New (Tax. group: bird	Vr. of units:	Only obs.	
	Γ 🖻 🛄 <u>[ID: 182872]</u> Γ		 Life stage: 	~	
order by: Specimen Acc.Nr.	⊟- A bird [det. by w	Identification / Name change	\$	3	
V 74-		Tax.name: 🔽 bird		<u>(*)</u>	
Query conditions Specimen		Veinitem		Qualifier:	
Acc.Nr. • ~		Date:	Suppl:	Category: determinatio 💌	
Event	< >	Type notes:	1	Type stat.: 💌	
Locaity • ~	IIIII [ID: 182872]	Respons.: 💌	<u></u>	Date cat.:	
Project		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	5.1.7	Server: 141.84.65.107	7 Port: 5432	User: BOTSA	
Connection Query Data Adminis							
🕼 🔜 🗠 🗅 🖻 🗙 🗹 🛁		Acc.Nr.		bird	ID Version 182872 1/1	Withhold, reason	
D: 162672	Ň	😑 [ID: 212439]		Specimen part			
	0	🕅 Coordinates EW: New		Acc.Nr.:		Part	
				Collection: SAPM		Date:	×
order by: Specimen Acc.Nr. 🗸		i⊒- A bird		Preparat.: 😺			
• • •				Stor. loc.: 💌 bird			
Query conditions Specimen		<		Mat. cat: specimen		Stock:	
Acc.Nr. • ~		□ IIII [ID: 182872]	6	Notes: 🔽			
Event	I	🖻 - 🗊 bird		Display order			
Locality 💌 ~	ų	💉 bird	•	Units not in part	Show in label:	Hide	
Project			W		bird	<	
Project 🗸			×	2		>	
	_				* 		

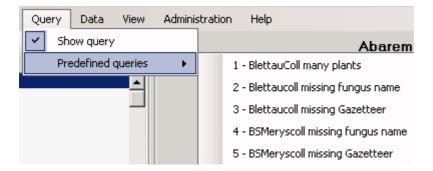
Queries - overview

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

With the <u>user defined</u> queries, you can define any query condition - this is the default query mode.

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

The <u>predefined queries</u> are defined by the system administrator and are accessible via the menu **Query** - **Predefined queries**. To return to the userdefined click on the **Show query conditions** = button.

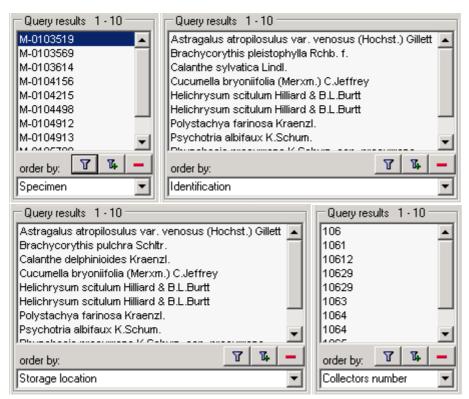


With the scan mode you can use a barcode scanner to search for a specimen. To work with the scan mode, select the **Scan mode** in the **Query** menu. To return to another query mode, deselect the Scan mode.



Result list

The result list displays the specimens found in a <u>query</u>.



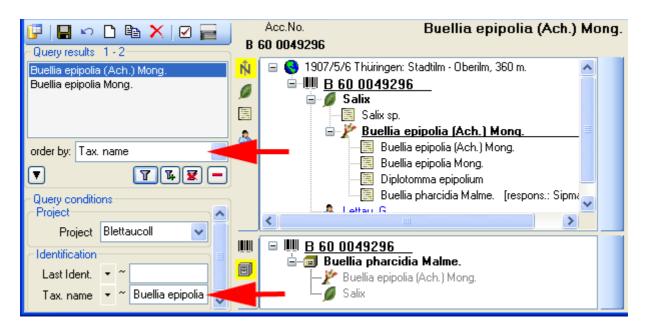
The specimens can for example be shown with their accession number, their identifications or their storage location etc. as shown in the images above. To get further informations about the chosen field, just place the mouse in the field. A text box will appear with the description of the field (see below).

Valid name of the species (including the taxonomic author where available. Example: 'Rosa canina L	order by: Tax. name	✓ [△]	Buellia epipolia (Ach.) Mong.	
		Valid name of the specie	s (including the taxonomic author where available. Example:	'Rosa canina L.'

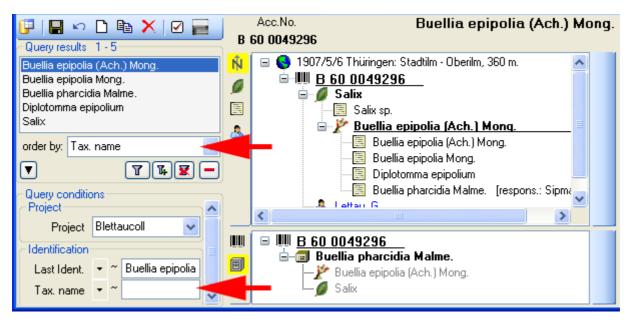
You can restrict the maximal number of specimens together with the query options (click on

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 ensure, that restrictions set in the query conditions will be applied to the specimen list make sure that you choose matching restictions and order columns as shown below. In the upper example corresponding fields where used for restricting the query and the display (**Tax. name**). Here the Query results will be restricted to this field.



In the second example a different field for the restiction was chosen (**Last ident.** <> **Tax. name**). The query result in consequence will list all entries found in the field **Tax. name** from the datasets where on entry matches the restriction (see below).



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

Here some examples you can select for display in the result list:

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

Last identification: The last identification for every unit in a specimen is shown in the list. As

there can be several units in one specimen several entries for one specimen may appear in the list.

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

<u>Collecting number</u>: The collecting number given by the 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 specimens in a collection. The options for a fast search are displayed in the main window beneath the list of the items. You can change this arrangement

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

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

To search for specimens enter the restrictions in the fields for the search conditions and click on the Dutton. The specimens found in the database will be shown in the specimen list. To add specimens with differing search conditions click on the Dutton. To clear all entries in the query fields use the Dutton. If the list of items is longer than your maximal number of returned items you can browse the next items with the Dutton. To move back to the previous block of items click on the Dutton. If you want to remove entries from the selected list, choose them and click on the Dutton. 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.
<i>≠</i>	search for an entry not like	Pinus s[iy]lvestris % (you can use wildcards)

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

•	search for an entry where a value is present	
-	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
đ	anorch for an antry whore a value is missing	
Ø	search for an entry where a value is missing	
•	search for an entry where a value is present	
Date	2 1	
=	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
đ	sourch for missing ontry	M Euro
Ø	search for missing entry	M-Fungi
•	search for present entry	M-Fungi
Δ	search including childs in a hierarchy	M-Fungi
		_

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

To change the displayed fields for searching specimens click on the 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.: Is not activated, move the mouse to the field to activate it. Then scan the barcode and the program will start the search for the specimen in the database.

Grid mode

To edit the data in a data grid, choose the **Grid mode** from the Query menu. The query part will be hidden and table will appear where every dataset from the query result list is

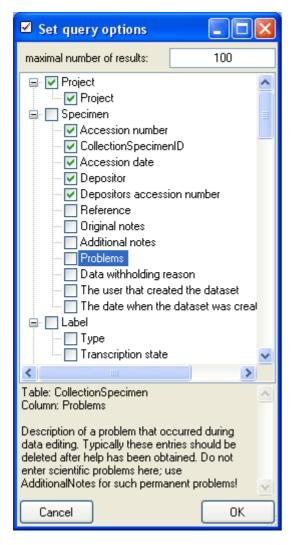
restricted to one line. Please keep in mind, that in this view, you can only see a limited part of the data. So for example you will only the the last identifications for an organism. The selection of the visible fields can be adapted in the tree above the list.

To replace a part of a text in a column, select the column, enter the text that should be replaced and the replacement in the corresponding fields (see below). To start the replacement click the button.

Query options

The maximal number of items shown in a query result can be set in the window 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 search fields click on the 🗹 button. This opens a form where you can select and deselect the fields shown for searching specimens. You might also change the maximum number of items that will be shown in the result list.



After having edited the query options click OK to store you selection. 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.

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

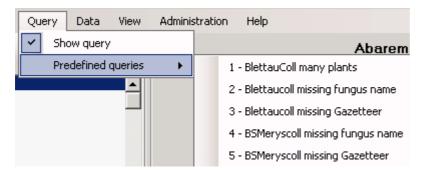
_ a single character, e.g. Pinus s_lvestris will find Pinus sylvestris and Pinus silvestris etc.

[] 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

Besides setting querries for specimens via the query options you can define separate predefined user-specific queries. 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 title of the query, 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).

1	Query conditions	-
	Specimen that are not included in any project	
1	WHERE CollectionSpecimenID NOT N (SELECT CollectionSpecimenID FROM CollectionProject)	

To return to the <u>user defined query</u> click on the **Show query conditions** Button.

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

	the search strings for UserName	the user SQLStringIdentifie	ItemTable	SQLString			Description			
					N - R C ID IN COTI D					
tiebel Neubert missing		CollectionSpecim		tionSpecimenID IN (SELE)						
	sebek	Neue Belege	CollectionSpecim		tionSpecimenID IN (SELE)					
	BSM1\triebel	No project	CollectionSpecim		tionSpecimenID NOT IN (are not attributed to	any project	
	dbo	No project	CollectionSpecim	WHERE Coles	tionSpecimenID NOT IN (SELECT Collection:	Speci Datasets that	are not attributed to	ary project	
	sebek.	No project	CollectionSpecim	WHERE Coles	tionSpecimenID NOT IN (ELECT Collection:	Speci			
	dbo	Schieferdecker d.	CollectingSpecim	WHERE Coles	tionspecimenID IN (SELEC	T CollectionSpeci	menl			
	sebek.	Schieferdecker d.	CollectingSpecim	WHERE Collect	tionspecimen/D IN (SELE)	T CollectionSpeci	menl			
	triebel	Schieferdecker d.	CollectinoSpecim	WHERE Collect	tionspecimenID IN (SELE)	T CollectionSpeci	menl			
	dbo	Schieferdecker m.	CollectionSpecim	WHERE Collec	tionSpecimenID IN (SELE)	T CollectionSpeci	menID			
	trichal	Sobiafordadu or m	ColloctionSpecies	NUMERS PAIN	tionSpecimenID IN (SE) Et	T CollectionSpace	montD			
Test	Datasets ti SELECT C FROM	halt are not attributed	lto any project							
	Collection5 SELECT *									
	Query Collections		CollectionSpecime	r Version	CollectionEventID	CollectionID	AccessionNumber	AccessionDate	AccessionDay	Access
Test		•	787	2	42634		M-0044143			
Test			2257	1	44104		M-0013600			
Test										

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 chosen by the user. So queries in DiversityCollection should start with the reference to the primary key of the main table (CollectionSpecimenID in table CollectionSpecimen and depending tables). The lower field contains the description for the query as shown in the user interface. To test a query use the **[Test count]** and **[Test Query]** buttons.

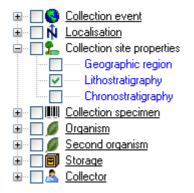
Grid mode

To edit the data in a data grid, choose the **Grid mode** from the **Query** menu. A window will open where every dataset from the query result list is restricted to one line. Please keep in mind, that in this view, you can only see a limited part of the data. So for example you will only see the last identification of an organism. This is demonstrated in the image below, where two organsims, indicated with the red arrows will not appear in the grid.

	Accession number	Locally description	Taxonomic group		Taxonomic name	Taxonomic group of second organism		Taxonomic name of second organism
	B 60 0002689 Baden: Bümningen nahe Lörrach lich			¥	Arthonia impolita (Hoffm) Borrer	plant	¥	Quercus
	8 60 0002590	Baden: Röttler Wald bei Rümmingen	lichen	÷	Arthonia impolita (Hoffm) Borrer	plant	v	Quercus
	B 50 0002740 Schwarzwald: Gersbacher Waldung: R., 1			¥	Arthonia marmorata	plant	v	Abies excelsa
	8 60 0002741	Schwarzwald Baden: 1] Gersbacher	lichen	¥	Arthonia leucopellaea (Ach.) Almg	plant	¥	Abies excelsa
 1912/9/15 Schwarzweid: Buder: 1) Gersbacher Weidungen: "Dickicht" nahe Fetzenbrigweid. 900-1000 m. B 60 0002741 Abies excelsa Schismatomma abietinum (Ach.) A. Massal. Schismatomma abietinum (Ach.) A. Massal. [respons: Sigman A.] Schismatomma abietinum Thelotrems lepadinum (Ach.) Ach. Thelotrems lepadinum (Ach.) Ach. Athonia leucopellaca (Ach.) Almg. Athonia leucopelaca (Ach.) Almg. 								

Customize visibility of fields

The selection of the visible fields can be adapted in the tree above the list. Change the selection of the colums and click on the **[Set columns]** button.

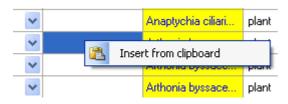


Find and replace

To edit the values in a column with e.g. the replace function, select a field in that column. If only a part of the fields should be edited, select these fields. Otherwise all fields in the column will be edited. Then choose the function you want to apply (remove, insert, append or replace). To replace a part of a text in a column, enter the text that should be replaced and the replacement in the corresponding fields. To start the **replacement** click the **P**button. To insert a string to the **beginning** of all entries in a column, click the **S** button. To **append** a string to all entries in a column, click the **P**button. To **remove** all entries from a column click the **X** button.

Transfer from spreadsheet

You can transfer data from a spreadsheet, e.g. Excel or Calc. Copy one column of these data in the spreadsheet and then in DiversityCollection, click in the upmost cell where these data should be inserted and use the context menu (click the right mouse button) to insert the data.



Editing

Some columns can not be edited directly but are linked to external modules or services. These columns appear as buttons. Just click on the button the call the service. If a value is linked to an entry in an external module, the background will change to yellow and you can not change the text. Some values are linked to a list of values. Use the drop down list to change the value in one of these columns.

If you click in the empty line at the base of the data grid, you will be asked if you want to create a new dataset. The programm will ask you for a new accession number and the project of the new dataset. Another way to create a new dataset is the copy button \square . Just click in the line you want to create a copy of and then click on the copy button \square . A copy of the dataset will be inserted at the base of the datagird.

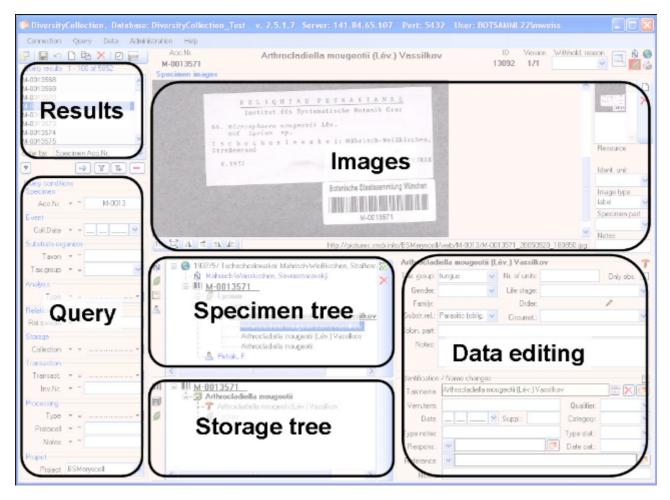
Saving the data

To save all changes click on the button. To undo the all changes since the last time the datasets were saved, click on the button. To save the changes in the current dataset, use the button. To undo the changes in the current dataset, click the button. If you click the **[OK]** button, you will be asked if you want to save the changes before the window will be closed. If you click the **[Cancel]** button or close the window your changes will not be saved. To save the data shown in the grid in a tab delimited file, click on the button.

To change to a selected dataset in the main form, click the Hubutton.

Editing the data

The main window of the DiversityCollection client contains two main areas. At the left you find the query and the results of this query. In the right part the data of the 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.



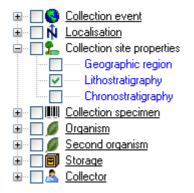
Grid mode

To edit the data in a data grid, choose the **Grid mode** from the **Query** menu. A window will open where every dataset from the query result list is restricted to one line. Please keep in mind, that in this view, you can only see a limited part of the data. So for example you will only see the last identification of an organism. This is demonstrated in the image below, where two organsims, indicated with the red arrows will not appear in the grid.

	Accession number	Locally description	Taxonomic group		Taxonomic name	Taxonomic group of second organism		Taxonomic name of second organism
	B 60 0002689 Baden: Bümningen nahe Lörrach lich			¥	Arthonia impolita (Hoffm) Borrer	plant	¥	Quercus
	8 60 0002590	Baden: Röttler Wald bei Rümmingen	lichen	÷	Arthonia impolita (Hoffm) Borrer	plant	v	Quercus
	B 50 0002740 Schwarzwald: Gersbacher Waldung: R., 1			¥	Arthonia marmorata	plant	v	Abies excelsa
	8 60 0002741	Schwarzwald Baden: 1] Gersbacher	lichen	¥	Arthonia leucopellaea (Ach.) Almg	plant	¥	Abies excelsa
 1912/9/15 Schwarzweid: Buder: 1) Gersbacher Weidungen: "Dickicht" nahe Fetzenbrigweid. 900-1000 m. B 60 0002741 Abies excelsa Schismatomma abietinum (Ach.) A. Massal. Schismatomma abietinum (Ach.) A. Massal. [respons: Sigman A.] Schismatomma abietinum Thelotrems lepadinum (Ach.) Ach. Thelotrems lepadinum (Ach.) Ach. Athonia leucopellaca (Ach.) Almg. Athonia leucopelaca (Ach.) Almg. 								

Customize visibility of fields

The selection of the visible fields can be adapted in the tree above the list. Change the selection of the colums and click on the **[Set columns]** button.

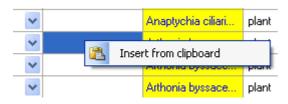


Find and replace

To edit the values in a column with e.g. the replace function, select a field in that column. If only a part of the fields should be edited, select these fields. Otherwise all fields in the column will be edited. Then choose the function you want to apply (remove, insert, append or replace). To replace a part of a text in a column, enter the text that should be replaced and the replacement in the corresponding fields. To start the **replacement** click the **P**button. To insert a string to the **beginning** of all entries in a column, click the **S** button. To **append** a string to all entries in a column, click the **P**button. To **remove** all entries from a column click the **X** button.

Transfer from spreadsheet

You can transfer data from a spreadsheet, e.g. Excel or Calc. Copy one column of these data in the spreadsheet and then in DiversityCollection, click in the upmost cell where these data should be inserted and use the context menu (click the right mouse button) to insert the data.



Editing

Some columns can not be edited directly but are linked to external modules or services. These columns appear as buttons. Just click on the button the call the service. If a value is linked to an entry in an external module, the background will change to yellow and you can not change the text. Some values are linked to a list of values. Use the drop down list to change the value in one of these columns.

If you click in the empty line at the base of the data grid, you will be asked if you want to create a new dataset. The programm will ask you for a new accession number and the project of the new dataset. Another way to create a new dataset is the copy button \square . Just click in the line you want to create a copy of and then click on the copy button \square . A copy of the dataset will be inserted at the base of the datagird.

Saving the data

To save all changes click on the button. To undo the all changes since the last time the datasets were saved, click on the button. To save the changes in the current dataset, use the button. To undo the changes in the current dataset, click the button. If you click the **[OK]** button, you will be asked if you want to save the changes before the window will be closed. If you click the **[Cancel]** button or close the window your changes will not be saved. To save the data shown in the grid in a tab delimited file, click on the button.

To change to a selected dataset in the main form, click the Hubtton.

Collection event

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

-	🌔 1976/11/20 Hilbersdorf b. Görlitz S, Mengelsdorfer Forst, Forst-Mischbestand
	📲 😓 Geographic regions - Königshainer Berg- und Hügelland
	🖻 🎹 GLM-F000011
	🚊 🖉 Populus tremula
	Trametes multicolor (Schaeff.) Jülich

To edit the data of the collection event, choose it in the tree view 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			6		
Date:	20 11 1976 🍟	Suppl.:		Category:		
Nr.:		Time:		T.span:		
Ref.:	*			(*)		
Country:	Germany		Withhold.R.:	*		
Notes:	00011					
Coll.meth.:						
Description of the locality Description of the habitat						
Hilbersdorf I Mengelsdor Forst-Mischl	fer Forst,		Substrat: Popu Stamm.	lus tremula, liegender		

The text shown in the tree view is composed of the date of the collection event and the description of the locality. For each collection event you can enter several <u>geographical</u> <u>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 another 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 e.g. to document expeditions, 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 ③. 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 of collecting etc. are stored in the collection event. To show or hide the collection event series you have two options. In the panel of the right of the tree the ③ button will show the superior event series of the current collection event as shown below.

E	🗉 🔇 1986/2/4: Australia New South Wales Barrington Tops National Park. 4.2.1986
	🚊 🌖 1986/2/4: Australia New South Wales Barrington Tops National Park, Gloucester Tops, Negrohead Beech Forest Walking Trail, Altid.: ca. 1200 m: Koord.: 32'05' S, 151'35' E.
	😑 🌒 1986/2/4 Australia New South Wales Barrington Tops National Park, Gloucester Tops, Negrohead Beech Forest Walking Trail. Altid: ca. 1200 m; Koord: 32°05' S., 151°35'
	- IIII <u>GR04228</u>
•	

The Button will show the whole hierarchy of the event series as shown 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	
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 S 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 on the Sicon.

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

If you want to delete a collection event series or an collection event, remove all depending collection event series, events and specimens and click on the \times button. A specimen can not be deleted here. If you want to remove a collection event from a collection event series, click

on the Subutton to open the window for selecting a collection event series. Then select nothing but simply click OK to remove the link to the collection event series.

The images for a collection event series are shown below the data of the collection event series as shown below. To add images to a collection event series, click on the \square button, to remove an image use the \leftthreetimes button.

Event series				
Code:	Elbe07	Date:		
Description:	Elbsandsteingebirge, 25.9 4.10	.2007		
Notes:				
Images of	the collection event series			
				□ × ≪
	Contraction of the second	2	Image type	
10 10			map	*
Ster 2	Carlo Carlo Carlo	<u>_</u>	Notes	
SALE	MIGHT REAL PROPERTY	×		
			Withhold.reas.	
11 🗖 🖊	http://www	w.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 ¹¹ button. To adapt the size of the image to the available space in the form click on the ¹² button. To change the orientation of the image use the appropriate buttons (¹⁴ flip horizontal, ¹⁴ flip vertical, ¹⁴ rotate right, ¹⁶ rotate left). To view the image in a separate form, click on the ¹¹ 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

The specimens stored in a collection are gathered during a <u>collection event</u>. To insert an image related to a collection event click on the \Box button. If you want to delete an image, click on the \times button.

If for any reason, an image should not be published i.e. shown on a website, enter the reason in the field **Withholding reason**. Only images where this field is empty will be shown e.g. on websites.



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 ¹¹ button. To adapt the size of the image to the available space in the form click on the ¹² button. To change the orientation of the image use the appropriate buttons (¹⁴ flip horizontal, ¹⁴ flip vertical, ¹⁴ rotate right, ¹⁶ rotate left). To view the image in a separate form, click on the ¹¹ 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

As additional information to the description of the locality you can use several localisation systems, e.g. georefencing. These entries are marked with an \hat{N} icon in the tree as shown below.



To add a new entry choose the localisation system from the drop down list as shown below. Only items that are not already set for a collection event will be shown. The items that are visible in the dropdown list can be <u>customized</u>.

Ń	New Coordinates	Ŵ
Ŵ	New Coordinates PD	₽
Ŵ	New Coordinates WGS84	
Ŵ	New Exposition	
Ŵ	New Gauss-Krüger coordinates	
Ŵ	New MTB (A, CH, D)	
Ŵ	New Named area (DiversityGazetteer)	

If a localisation should be removed, select it from the list and click on the imes button.

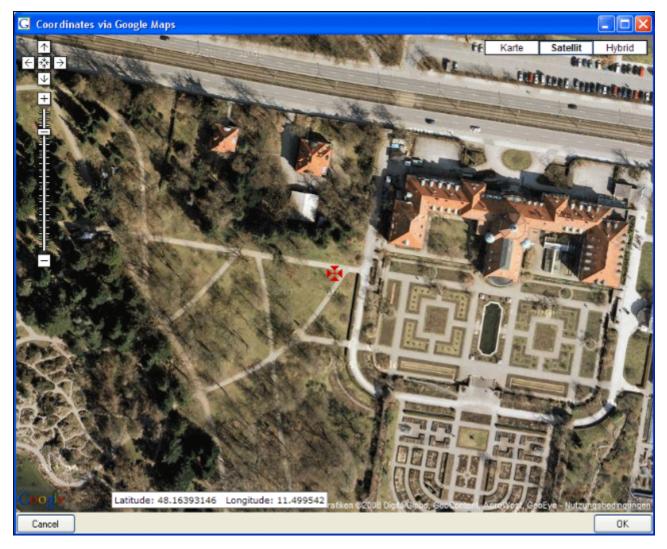
Named areas - DiversityGazetter

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 o	f the collection ev	/ent			Ŵ
Agrigento, Sici	lia				http://
Accuracy:	Dis	t:	Direct.:		Alt.: 0
Notes:	province		Date:	10.04.2001 🍸	Lat. Jr.4J
Respons.:	*			(*	Long.: 13,5

Coordinates (WGS84)

If you use geo-coordinates as georeferencing system (coordinates WGS84), a button 4 will appear, that will provide you with the possibility to set or correct the coordinates via Google Maps. Just click on the 4 button, and a window will open where you will see 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. C

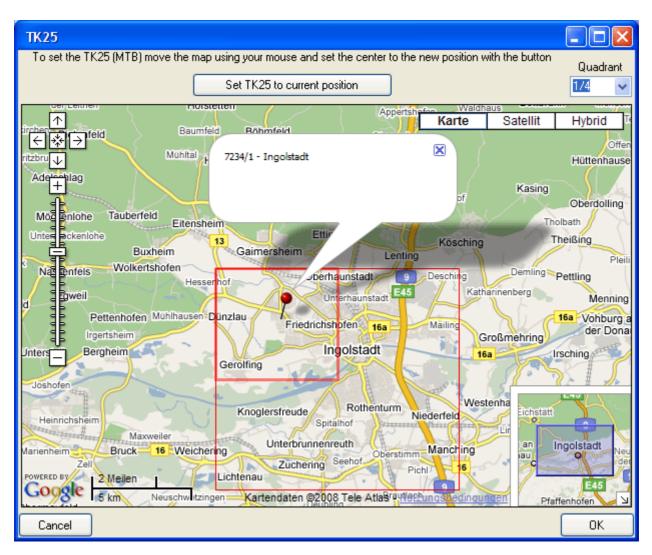


If you start with existing geographic coordinates (WGS 84) in your data, the system will use these as starting point. You can zoom the map, drag it to another position and change from map to satellite mode. The actual position is symbolized by the H symbol in the middle of the map. The current coordinates are shown in the field at the buttom of the map. To take these coordinates in your data, just click OK.

Please keep in mind, that Google Maps coordinates are based on **WGS84**.

TK25 (MTB)

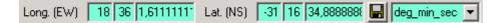
If you choose MTB resp. TK25, the button Hwill open a window where you can set the TK25 together with the quadrant. See image below. Choose the quadrant, depending on your preferred resolution. The thick line shows the current quadrant, the thin line the whole TK25. The needle in the center is placed at you current position. If you click on it, a messagebox will show you the TK25 informations as shown below.



If you click **[OK]**, the values for the values for the TK25 together with the coordinates of the center of the selected quadrant will be taken into the database.

Conversion of values

The values for any localisation system are stored in two text fields. You can enter your values 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 may exist, within the Diversity Workbench measurement data are stored in units according to the <u>Système international d'unités (SI)</u>. For those who still need to use these units DiversityCollection provides a possibility 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 then edit the values and click on the button to take the changed values in your data. The system will 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. When you save the data, DiversityCollection will store geographic coordinates and the average altitude where available in separate fields.

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.

Exp. from NNE v to NE v P orientation v Available units: Orientiation (N, NE,) and degree rel. to North.	Alt.from	500	Alt.to	550	Available units: meter and feet.
					Available units: Orientiation (N, NE,
Slope from 10 to 15 🕞 percent 🗸 Available units: degree and		10			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 always 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>.

Maps of the collection event

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 of the show the maps. Click on the solution to see the location of your event or if the event 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 specimens found in your query, use the Subutton. This functionality is limited in the number of specimens 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	Brot En	Belgique o Köln Germany Dresden Wahranh
Event Country • ~ Germany Identification Taxon • ~ Erysiphe aquilegiae var. ranunculi	e Haven Paris pen yang pen yang pen yang pen yang pen yan	Rems Viesbadeno Frankfurt Česka Republika Luxembourg Mannheim Nürnberg Metz Karleruneo Pfelborn Inpoletadt Bino Strasbourgo Stuttent Münghen Linz Wien
Substrate organism Taxon • C Delphinium	Le Marriers Poweetres Doubles	00 Melegion 00 Melegion 00 km Lissbestendarder 62008 AND, Geocentre Consultor PWK. Te

Habitats and properties of the collection site

For the description of the habitat select the collection event **S**or an existing collection site property **L**. The description is entered in the field **Description of the habitat** (see below).

Description of the habitat	
Substrat: Alnus, liegend.	

To enter a new property of the collection site, select the collection event **O**or an existing collection site property **L** and then choose the type of the property you want to enter from the dropdown menu as shown below. Only items that are not already set for a collection event will appear in the list. You can <u>customize</u> the selection of visible items.

2	New entry of European Nature Information System (EUNIS)	• 🛃
۶.	New entry of Geographic regions	X

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 reg	gions	2					
Oberlausitz	Oberlausitzer Heide- und Teichgebiet 🗮 🔀 💕							
Hierarchy:	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 $\overset{\circ}{\sim}$ 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>.

Specimens

Specimens are the entities stored in a collection. For handling the data use the appropriate buttons (new specimen), copy), delete). 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 window shows some important parameters for the specimen selected. On the left side the **accession number** is shown. In the center you find the last <u>identification</u> of the main <u>identification unit</u> according to the <u>display order</u>. The next field shows the internal **ID**'s (field CollectionSpecimenID in table CollectionSpecimen and CollectionEventID in table CollectionEvent) and the **Version**s for the specimen and the collection event. 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.No. Erysiphe aquilegiae var. ranunculi (Grev.) U. Braun M-0040397	ID (Specimen / Event) 135548 / 211558	Version 3/1	Withhold reason		
--	--	----------------	-----------------	--	--

If the specimen is a type, the header will show the type state and the identification connected with the type (see below).

Acc.No.	Potamogeton parmatus Hagström	ID (Specimen / Event)	Version	_Withhold. reason_ 🥅 Ň 🚭
M-0003940	isotype	29432 / 72391	1/2	Image: A state of the state

To inspect the history of a specimen click on the \square button. For further details see the <u>history</u> section.



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

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

Data

The controls for the handling of datasets in the database are located in the left upper part of the window 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: Divers									
Connection	Query	Data	Administration						
📴 🔛	D 🗈	×							

To **save** the changes in a dataset click on the **H**button. If you select another dataset from the result list, the current changes will be saved automatically.

To **undo** the changes in a dataset click on the \bigcirc 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 \square button below the search result listbox. This will create a new record of a specimen and show it in the result list.

To **copy** the data of a specimen record, choose it from the list and click on the button \square . If the specimen you want to copy is linked to a collection event, a window will open and provide you with several possibilities for the copy as shown below.



The field for the new accession number contains a string like Copy of \dots . If you change this the accession number to a value that is already present in the database you will be warned as shown below.

🖻 Copy dataset	
New Acc.Nr.: M-0014446	Find next free accession number for: M-0014006

Use the **[Find next free accession number for:]** button to search for the next free number for the accession number shown in the second field. If the program finds a free number, it will be used as shown below.

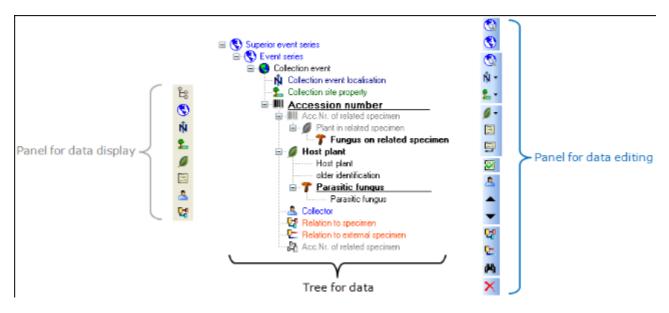
🖴 Copy dataset	
New Acc.Nr.: M-0014481	Find next free accession number M-0014444
The specimen was collected during the SAME event	I960/11/5 China: Sichuan: Guanxian Image: M-0013610 Image: M-0014481
Copy the data of the collection event in a NEW dataset	 I960/11/5 China: Sichuan: Guanxian IIII M-0013610 I960/11/5 China: Sichuan: Guanxian IIII M-0014481
Copy only the specimen WITHOUT the collection event	■ Solution Sichuan: Guanxian MM M-0013610 MM M-0014481

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 record with the new event. The last option will only copy the specimen data and establish no connection to any collection event. If you decide not to copy anything, just close the window.

To **delete** a dataset click on the button \times .

Tree for the specimen

The upper tree in the window 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 A and the background will turn to yellow to show that there are hidden data of the collectors. The first two buttons (),) are visible if the collection event is part of a collection event series. They switch between two display modes for the event series. If you click on the button only the superior event series will be shown. To show the whole hierarchy of the event series, click on the button.



The panel on the right side of the tree is for editing the data, like for example the Abutton 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 buttons. If a unit should not appear on the label, transfer it to the hide list using the button. The button returns it to the list that will be shown on a label. The first unit can not be transferred to the hide list.

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

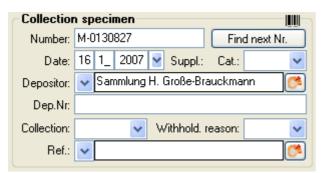
In addition to the display order you can specify whether an organsim is present in a selected part of a specimen.

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

Display or	rder	 	
Show	in label:	 Hide:	
	iora conizaea (Ach.	Lahmia Körb.	
	a disciformis (Fr.) Mu Iora pallida (Schreb		
Larix	1010 paillaa (0011100		
		<u> </u>	

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 another collection, this may be documented with the name of the depositor and the number in the original collection (Dep.Nr).

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

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

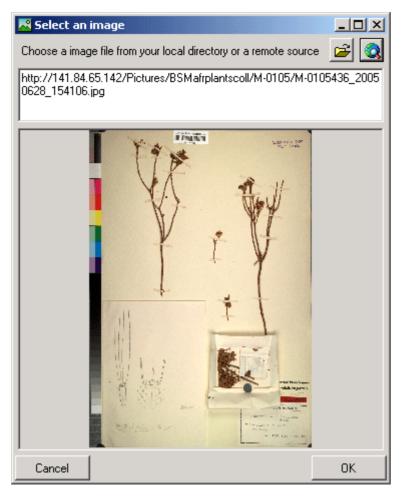
The system will try to find the next free number on the basis of the accession numbers available in the database. Click OK to use the number for the specimen.

Data concerning the accession and deposition are stored in the table <u>CollectionSpecimen</u>.

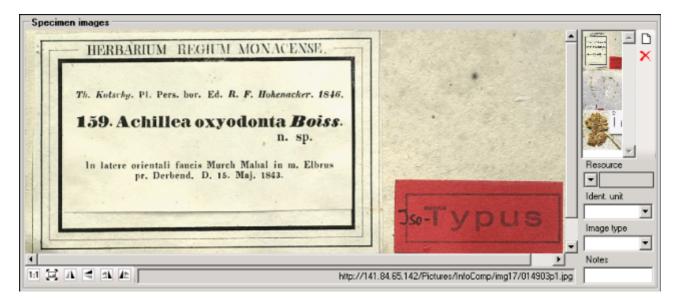
Specimen images

To see the specimen images activate the sicon in the image selector sime. 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 Workbench. To enter a new image, click on the 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 button to search for a web address. The selected image will be shown in the preview.

ŵ 😔



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

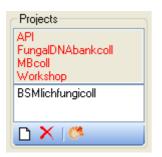
Data are stored in the table <u>CollectionSpecimenImage</u>.

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 on the \times button.



If there are projects, to which 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 CollectionProject.

Details upon the projects within the Diversity Workbench are stored in the database DiversityProjects. To open a project to see further information upon a project click on the sutton. 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 DiversityProjects you can use the synchronize functionality in the <u>user</u> administration window 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 Synchronize with DiversityProjects (1996).

🕭 Use	r administration						
64	Synchronise with Div	ersityUsers 🚨	User with reading a	access	Permissions of user	- 6	Synchronize with DiversityProjects 👫
User a databa	ccounts available in th se		User accounts with ac	cess to projects	Projects that are available for a use		Project that are not available for a user
dhuan DivCo Expres	Dbo		dbo guest		DiversityWorkbench Roles of the user DiversityCollection/User	> <	Specimen from southern Australia
Role permissions Boles available in the database Bole members							Role members
	name	permission_name	state_desc	<u>^</u>	db_owner	~	DiversityCollectionEditor
•	Analysis	SELECT	GRANT	-	db_securityadmin DiversityCollectionAdministrator		DiversityCollectionTypist ExpressUser
	AnalysisChildNodes	SELECT	GRANT		DiversityCollectionCurator DiversityCollectionEditor		
	AnalysisHierarchy	SELECT	GRANT		DiversityCollectionManager		
	AnalysisTaxonom	SELECT	GRANT		DiversityCollectionRequester DiversityCollectionTypist	-	
	ApplicationEntity	SELECT	GRANT	~	DiversityCollectionUser	~	
	ApplicationEntity	SELECT	GRANT	<u>₩</u>	DiversityCollectionUser	~	

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> and 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 use the drop down menu as shown below to select the taxonomic group to which the new organism belongs to.



To specify the taxonmic groups that are shown in the drop down menu select Administration - <u>Customize display ...</u> from the menu.

The organisms of 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 \times button.



To enter details about one of the organisms like the e.g. the gender or the life stage, select it in the tree. Then the fields for the details of this organism are shown in the right area of the window as shown below.

-Golovinomyces sordidus (L. Junell) V. P. Gelyuta 🌱 🍸							
Tax. group:	fungus 🔽	Nr. of units:		Only obs. 📃			
Gender:	~	Life stage:		*			
Family:	Erysiphaceae	Order:	Erysiphales	1			
Substr.rel.:	Parasitic (🔽	Circumst.:		*			
Colon. part:							
Notes:							
Exsiccata series: Triebel, Microf. Exs.							

Taxonomic hierarchy - family and order

The entries for the family and the order of the taxon 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 family and the order after clicking on the *I* button. To transfer these entries to other specimens with the same genus use the maintenance functions as described under <u>Maintenance - family and order</u>.

1

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 🗸 🗸	
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.



--- 🙀 Pontania vesicator Bremi

- 🏂 A45/24

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 IdentificationUnit.

Analysis

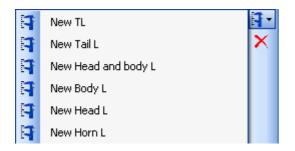
The organisms in a specimen can be analysed by analysis types defined in the database. In the tree the analysis entries are symbolized with an ficon as shown below. Only the types of analysis that were assigned to the group of the organism can be selected. An analysis always referes to an organism and may refer 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.



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



To delete an analysis, select it in the tree and use the \times 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 Q button.

⊖Weight 1: 3	2830 kg			1
Nr.:	1	Result	2830 kg	1
Notes:		URI:		
Date:	19.01.2006	Part	Loxodonta africana 3 - bones -	~
Respons.:	V Obermeier, Henriette	9		(*

If an analysis refers to a part of the specimen, you can document this by choosing the

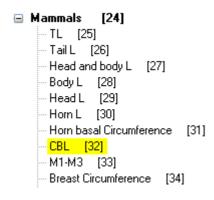
respective part from the list (see field **Part** above). The analysis will then be shown in the tree for the parts of the specimen as well. Alternatively you may directly choose the organism in the part tree and create the analysis for this part of the organism in the part tree.



If you need further information about an analysis click on the button to open the window for the analysis administration. If you have the proper rights you can edit the analysis types used in your collection as shown below. This window is also accessible via the menu entry **Administration - Analysis...**

💱 Analysis		
New		
🖬 🕫 🗅 🛍 🗙 🗹	Analysis	
Age Analysis of host plants Firth Body L Broast Circumference bud color cettions Cet Clone atfiliation Death deta13C deta13C deta13N Diameter Diatoms DNA analysis DNA isolation Ear L	Mammals TL Tail, Head and body L Body L Head L Head L Horn L Hour Seal Circumference CBL Display text: CBL Description: Distance between a tangent at the most caudal points of the Condyli occipitales and a tangent at the most Measurement unit: mm Nates:	
foliation phenology Foret L Frustule	Takgi: mammal	×
Gall gallength gallength gallyidth	URI: http://pictures.snsb.info/SAPM/Analysis/htm/CBL.htm	
gels per leaf Head and body L Head L height height leaf order by Analysis V V & C Query conditions Analysis Display • ~ Unit • ~ Unit • ~	Rodentia Distance between a tangent at the most caudal points of the Condyli occipitales and a tangent at the	
	most rostral points of the Praemaxillaria.	~

For the import and export of data it is sometimes necessary to know the ID's of the analyis types. To see the ID's, click on the **ID** button. Than the ID's will be shown as in the image below.



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 Dand X 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 Sutton. 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.

🖃 😒 1907/5/6 Thüringen: Stadtilm - Oberilm, 360 m.
<u> </u>
🖨 💋 Salix
🔤 Salix sp.
🖮 🎢 <u>Buellia epipolia (Ach.) Mong.</u>
🔤 Buellia epipolia Mong.
🦳 🧮 Diplotomma epipolium
🔤 Buellia pharcidia Malme. [respons.: Sipman, H.]
🚣 Lettau, G.

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 then click on the \bowtie button. To delete an identification select it in the tree and click the \times button. To enter details for an identification, choose it in the tree. You then 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.) \	http://			
Vern.term:		Qualifier:	*		
Date:	🔛 🎽 Suppl.:	Category:	*		
Type notes:		Type stat.:	~		
Respons.:	× (*	Date cat.:	*		
Reference:	*		*		
Notes:					

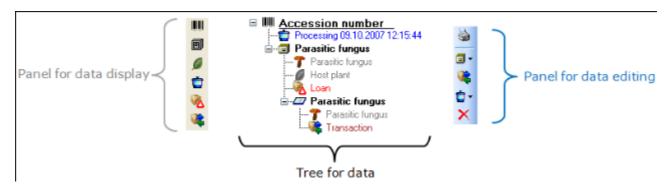
The taxonomic name of an organism can be selected from either the names already available in DiversityCollection or from the module DiversityTaxonNames. To choose from the local

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

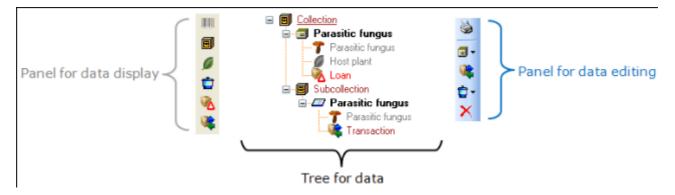
To select a name from an external database for taxonomic names, click on the ⁶⁴button. A <u>window</u> will open where you can search for a taxonomic name. In the database the data for the identification are stored in table <u>Identification</u>.

Storage and trees for the parts of the specimen

In the tree at the base of the window 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 on the \mathbf{IIII}) is the panel on the left) ...



 \dots or depending on the collections where the parts are stored (click on 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 \P button will insert a new transaction. For further details see the sections <u>Transaction</u> and <u>Processing</u>.

Parts of the specimen

A specimen can contain several parts which may be stored in several collections. These parts may represent different 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 on the Imicon in the panel on the left) - see first image below - or in relation to the collections where the parts are stored (click on the Imicon in the panel on the left) - see first image below - or in relation to the collections where the parts are stored (click on the Imicon in the panel on the left) - see second image below where the two parts of the specimen are located in two collections. 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. The material categories that appear in this list can be <u>customized</u>. You can set the <u>default</u> collection 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 Imicon in the panel right of the tree.

□ IIII M-0013572
🖮 🗐 Arthrocladiella mougeotii
🍞 Arthrocladiella mougeotii (Lév.) Vassilkov
💋 Lycium halimifolium
🛓 🖅 Arthrocladiella mougeotii (Lév.) Vassilkov
🦥 🔭 Arthrocladiella mougeotii (Lév.) Vassilkov
🖃 📲 Botanische Staatssammlung München (M)
🚊 🗐 M-Fungi
🖮 🗊 Arthrocladiella mougeotii
— 🖉 Lycium halimifolium
🚽 🍞 Cystotheca lanestris (Harkn.) Sacc.
Botanischer Garten und Botanisches Museum Berlin-Dahlem (B)
🛓 🖅 Arthrocladiella mougeotii (Lév.) Vassilkov
-

If an organim is present in a part of the specimen, it will be 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:
	< Arthrocladiella mougeotii (Lév.) Vassill Lycium halimifolium	kov < Cystotheca lanestris (Harkn.) Sacc.
	▲ ▼	

In the expample above, all organisms are present in the specimen, but the fungus *Cystotheca lanestris* was chosen 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 organ ism 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	<	Arthrocladiella mougeotii (Lév.) Vassilkov	<	
Cystotheca lanestris (Harkn.) Sacc.	_			
		▲ ▼		

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 **I** to select from the

identifications within the specimen. The drop down button I 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.

Here some expamples:

whones: bones or skeleton from vertebrates

Cultures: living cultures of organisms

Adrawing: original line or color drawing

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

Relicones: 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. Processings can be applied to a specimen or a part of a 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 or show 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.

8	ia∎ Theresienstr. 37-39 Keller 33 ia
ø	Mazeration 09.11.2000 00:00:00
٢	
	SAPM-MA-02018
iii	🖃 💖 Boselaphus tragocamelus 18
	🖃 💖 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.

			> Processing	
		New Mazeration	iype.	
đ	🖃 🖤 Bose	🔁 New Kochen	Add a new processing	
Ø		🔁 New Entfleischen		
0	1	New Warmwassermazeration		
	1	🔁 New Wässern	Notes:	
	1	👌 New Entfettung		
	1	🔁 New Anlage		
	1	New Bleichen		

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 window will show you the fields related to the processing as shown below.

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

Processing	1	7
Type:	Mazeration Protocoll:	
Date:	07.12.2005 🕑 Duration:	~
Respons.:	✓ dbo	*
Notes:	Processing date is entry date of dataset. Real date unknown.	

If you have the proper rights you can edit the processing types under the menu entry **Administration - Processing...**

Direction Processing		
View		
🖬 🗠 🗅 🛍 🗙 🗹	Processing	
Query results 1 - 15	Mazeration	<u>~</u> D
Anlage	Kochen Entfleischen	- ×
Benzin Bleichen	Trocknon	× 3
Einfrieren	Display text: Entfleischen	
Entfettung		
Entfleischen	Description:	
Käfer		
Kochen Mazeration	Notes:	
order by: Processing	Mat.cat.; bones	D
T		×
 Query conditions 		<u> </u>
Processing		
Name • ~	URI:	2
Description 🝷 ~		
Notes 🔹 ~		
URI • ~		

In this window you can define the processings used in your collection. To add a new processing click on the button, to delete a processing select it and click on the 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 button in the panel right of the material categories. A window will open and you have to select the material category that should be connected with the processing (see below).

Select from the list	
Select a material category	
specimen	•
	1
Cancel	OK

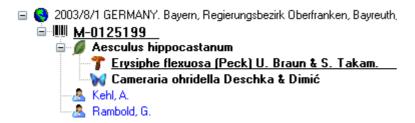
For the import and export of data it is sometimes necessary to know the ID's of the analyis types. To see the ID's of the datasets, click on the **ID** button. Than the ID's will be shown as in the image below.

Mazeration	[5]
Kochen [6	6]
- Entfleischen	[8]
Trocknen	[9]

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

Collector

The people or groups responsible for the gathering of the specimen are stored in the table <u>CollectionAgent</u>. There may be several collectors for one specimen. In the tree the collectors are symbolized by the \triangle icon as shown below.



To hide or show the collectors in the tree use the Aicon in the left panel (it will change to a grey version Awith a yellow background when the authors are hidden). To insert a collector, choose either the specimen or an existing collector in the tree and then click on the Aicon in the right panel. To enter details for a collector, select it in the tree. In the right part of the window the fields for the details will then displayed (see below).

Collector-			
Zedda, L.			http://
Col.Nr.:	5733	Withh.reason:	*
Notes:	Zedda, Luciana		

If a collector should refer to a dataset in the module DiversityAgents (where more details like addresses may be stored) click on the 5° button. The sequence of the collectors (e.g. for print on a label) as shown in the tree can changed by with the \triangle and \checkmark buttons in the panel on the right of the tree.

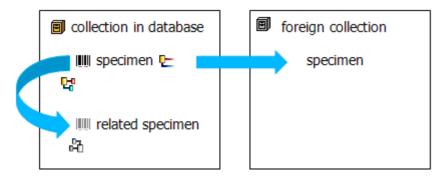
To remove a collector, select the entry in the tree and click on the \times button.

You can search for the gathering numbers of the collectors in the <u>query</u>.

The data of the collectors are stored in the table <u>CollectionAgent</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.

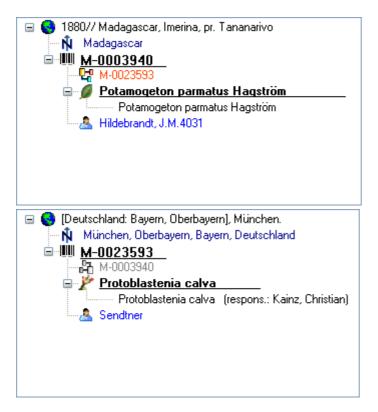


Internal relation 4 3 4

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

🗱 DiversityCollection Server: 1	41.84.65.107 User: mweiss	
📴 🗹 🚃		open DiversityCollection 👸
	Query results 1 - 100 of 996 M-0014000 M-0014001 M-0014002 M-0014003 M-0014004 M-0014005 M-0014006 M-0014007 M-0014008 M-0014010 M-0014011 M-0014012 M-0014013 M-0014015 M-0014016 M-0014017 M-0014018 M-0014019 M-0014020 M-0014021 M-0014021 M-0014021	
Project	order by: Specimen Acc.Nr.	
Project		
Cancel		OK

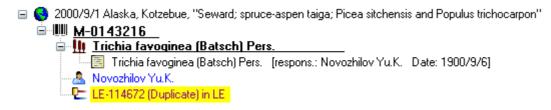
Select the related specimen from the query result list and click OK to close the window and establish the relation. In the left image below you can see an internal relation \mathfrak{P} , while the image on the right shows a reverse relation \mathfrak{P} from another specimen.



In the case of internal relations you can navigate to the related specimens using the \mathbf{H} button.

External relation 🗠

To add an external relation to a specimen that is not administrated in the database DiversityCollection use the $rac{1}{2}$ button. In the image below you can see a relation to a specimen in a external collection.



To delete a relation select it in the tree and click on the imes button.

Editing the data

To edit the data for a relation, click on the entry in the tree. In the right part of the window the details of the dataset will be shown (see below).

External relation to Duplicate LE-114672 in LE Number of duplicate or URL:	먇
LE-114672	
Description:	
Relation type: Collection:	
Duplicate = Duplicate of anot 👽 LE	 ✓
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.	# 🗙 🍼

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	12 🗙 🎽
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 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>.



Availability of datasets

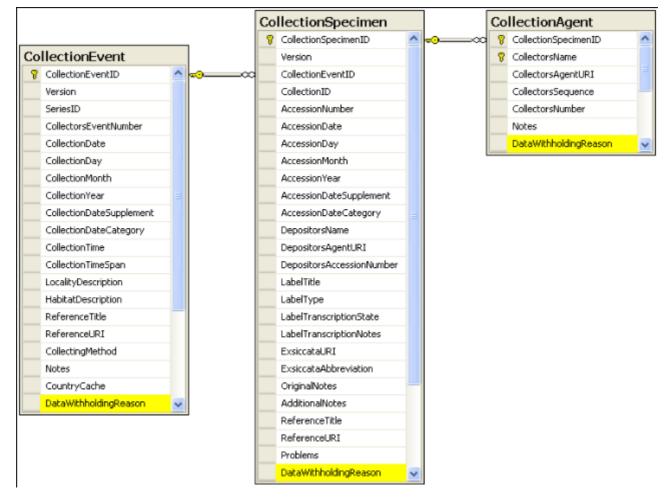
The data of certain parts of the database can be blocked for remote access. If you want to prevent access for the whole dataset, enter your reason in the field **Withholding reason** in the header (see below).

Acc.No.	Erysiphe aquilegiae var. ranunculi (Grev.) U. Braun	ID (Specimen / Event)	Version	Withhold reason	ŵ 🕓
M-0040397	Erysiphe aquilegiae var. ranunculi (Grev.) U. Braun	135548 / 211558	3/1	~	ø 🎍

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. The data will only be published if these fields are empty.

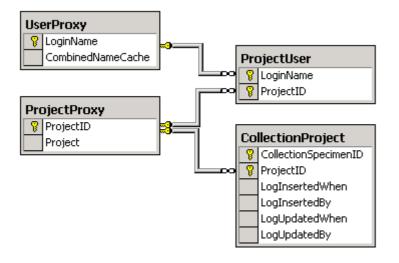


Within the database a user has only access to the data of those projects for which he has the permission. If a dataset belongs to a certain project, this is stored in the table CollectionProject. To prevent a publication of the data these can be blocked for the whole dataset (table <u>CollectionSpecimen</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 - and for all image tables: <u>CollectionSpecimenImage</u>, <u>CollectionEventImage</u>, <u>CollectionEventSeriesImage</u>.



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. See <u>user administration</u> for further details.

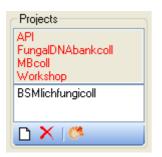


Projects

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 on the \times button.



If there are projects, to which 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 CollectionProject.

Details upon the projects within the Diversity Workbench are stored in the database DiversityProjects. To open a project to see further information upon a project click on the sutton. 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 DiversityProjects you can use the synchronize functionality in the <u>user</u> administration window 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 Synchronize with DiversityProjects (3).

🏝 Use	r administration						
64	Synchronise with Div	ersityUsers 🤱	User with reading a	access 🔛	Permissions of user	- 6	Synchronize with DiversityProjects 🤔
Usera databa	ccounts available in th se		User accounts with ac	cess to projects	Projects that are available for a use	1	Project that are not available for a user
dbuse DivCo Expres	Dbo		dbo guest		Diversity-Volkbench Roles of the user DiversityCollectionUser	>	Specimen from acuthern Australia
Role p	ermissions				Roles available in the database		Role members
	name	permission_name	state_desc	<u>^</u>	db_owner	^	Diversity CollectionEditor
•	Analysis	SELECT	GRANT	-	db_securityadmin DiversityCollectionAdministrator		DiversityCollectionTypist ExpressUser
	AnalysisChildNodes	SELECT	GRANT		DiversityCollectionCurator DiversityCollectionEditor		
	AnalysisHierarchy	SELECT	GRANT		DiversityCollectionManager		
	AnalysisTaxonom	SELECT	GRANT		DiversityCollectionRequester DiversityCollectionTypist	-	
	ApplicationEntity	SELECT	GRANT	~	DiversityCollectionUser	v	
	1			<u>.</u>			

User administration

The permissions of users in the database are set via user groups resp. roles in the database and the access to the projects. To set the permissions choose **Administration** - **User** ... from the menu. A window as shown below will open. Here, among other administration tasks, you can change the permissions of the users. 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 DiveristyUsers** button. To create a new SQL-Server user, click on the **A** 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 <u>installation</u> section for further details). To permit access to a project click on the > button. To remove a user from this list use the < button.

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 > and < buttons. To create a new project click on the **D** button. If you use the Diversity Workbench module DiversityProjects, you can create a new project there and user the **Synchronise with DiversityProjects S** button. To change the roles of a user use the **A** and **v** 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 users with this role (Role members).

🐣 User administration							
(% User	Synchronise with Div accounts available in th		User with reading a	sccess	Permissions of user	a	Synchronize with DiversityProjects 👫
			User accounts with acc dbo guest	cess to projects	Projects that are available for a user Diversity-Workberich Roles of the user Diversity-Collection/User	> <	Project that are not available for a user Specimen from southern Australia
Role	permissions				Roles available in the database		Role members
	name	permission_name	state_desc	^	db_owner		DiversityCollectionEditor
•	Analysis	SELECT	GRANT		db_securityadmin DiversityCollectionAdministrator		DiversityCollectionTypist ExpressUser
	AnalysisChildNodes	SELECT	GRANT		DiversityCollectionCurator DiversityCollectionEditor		
	AnalysisHierarchy	SELECT	GRANT		DiversityCollectionManager		
	AnalysisTaxonom	SELECT	GRANT		DiversityCollectionRequester DiversityCollectionTypist		
	ApplicationEntity	SELECT	GRANT	<u>×</u>	DiversityCollectionUser		

The permissions of the roles resp. user groups 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** has the same rights as the role DiversityCollectionUser and can edit a part of the user defined data.

The role **DiversityCollectionRequester** has the same rights as the role DiversityCollectionUser and in addition can place requests for specimens.

The role **DiversityCollectionManager** has the same rights as the role DiversityCollectionUser and in addition can handle transactions, i.e. shipments of specimen between collections and edit the collections for the collections he has the permission. The role **DiversityCollectionEditor** can change the user defined parts of the data.

The role **DiversityCollectionCurator** has the combined rights of the roles DiversityCollectionEditor and DiversityCollectionManager.

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

- DiversityCollectionCurator
 DiversityCollectionEditor
 DiversityCollectionManager
 DiversityCollectionRequester
- 👰 DiversityCollectionTypist
- 👧 DiversityCollectionUser

Summarzied overview of the permissions of the groups

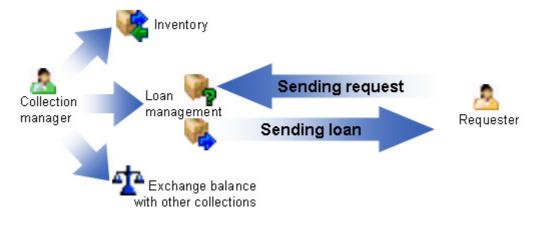
Role	Permissions in addition to lower role resp. user group
Administrator	Delete data, edit user permissions
Curator	Combines the roles editor and collection manager
Editor	Create new entries and delete details (not whole datasets)
Manager	Administration of collections, handling loans etc.
Requester	Has the right to place requests for specimen
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.

Collection management

<u>Collections</u> are managed by **<u>Collection managers</u>**, who organize the **t**ransfer of specimen between collections and track the <u>exchange balances</u> **t**. Any transfer **s** of specimen is organized via <u>transactions</u>. To be able to place are request **S** for specimen from a collection, you must be in the group of **<u>Collecters</u>** for this requested collection and a collection manager for the requesting collection. An overview is given in the image below.



Collection

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

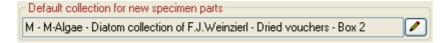


In the tree shown above select the collection is to display the datafields as shown below.

Collection	
Name:	М
Acronym:	M
Contact:	Botanische Staatssammlung München 🚟 🗙 ്
Descript.:	Botanische Staatssammlung München
Location:	
Owner:	Botanische Staatssammlung München

To be able to edit the detais of a collection, you must be a collection manager of this collection. The restrictions for the access for editing the collections are defined in the <u>collection manager</u> part.

At the base of the fields you find the default collection, used for the creation of new specimen parts. Specimen parts that are not created as a part of another part will be placed in this collection. Use the *P* button to edit this entry.



If you need further information about a collection click on the button or choose **Administration - Collections...** from the menu to open the window for the collection administration (this menu entry is only available for collection managers). This will open a window as shown below where you can edit the collections used in your database for which you are a collection manager.

Collection		
Cuery results 1 - 87 M M-Algae M-Bryophytes M-Fungi M-Lichens MSB	Collection M-Algae M-Bryophytes M-Fungi M-Lichens M-VascularPlants	
order by: Collection Collection Query conditions Collection Name	Name: M-Fungi Contact: Triebel, Dagmar Description:	
Contact • ~	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{E} button. To change to a specimen from this list click on the H 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>.

Collection manager

Collection managers are users with the right to edit the transactions. To edit the collection managers you must be in the administator group. Choose - **Administration** - **Collection managers** A from the menu to open the editing window for the collection managers as shown below.

Administation of collection managers					
Collection managers	Collections administrated by a collection manager	Collections			
Beck, Andreas (München) Bräuchler, Christian (München) Esser, Hans-Joachim (München) Melcher, Martina (Bayreuth) Obermaier, Henriette (München) Schuhwerk, Franz (München) Sebek, Ingrid (München) Weiss, Markus	M-Algae M-Bryophytes	 HOH im osteol. Vergleichsmaterial Karolinenplatz 2a Kaulbachstraße 37 Knochenklavier LD LE Leihgabe,in Konstanz, E.Stefa M 	an 💌		

Use the < and > buttons to edit the list of the collections for which the selected collection manager can create and edit transactions.

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

Collection requester

Collection requesters are users with the right to place requests for loans in other collections. To edit the collection requesters you must be a <u>collection manager</u> for the requested collection. Choose - **Administration** - **Collection requesters** from the menu to open the editing window for the collection requesters as shown below. The list on the left contains all users that are in the group Collection requesters. See <u>user administration</u> for further details. Select a user in this list to edit the accessible collections for this requester.

🐣 Administration of loan requester			
Collection requesters	Collections open for requests	Collections	
Novozhilov, Yura (St. Petersburg) Rambold, Gerhard (Bayreuth) Schnittler, Martin (Greifswald)	M ✓ Include subcollections □ M □ M-Algae	Herb. Rambold	
	WeinzierlColl Dried vouchers	v	

Use the < and > buttons to edit the list of the collections for which the selected requester can place a request. If the option Include subcollections is choosen, the requester can send requests for all subcollections of a collection. Otherwise the requests can only be sent for the collections in the list. The subcollections are shown in the hierarchy underneath the list.

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

Transactions - Request SAR

To enter a request for a loan you must be in the user group resp. role DiversityCollectionRequester (see <u>user administration</u> for further details). This is done by the collection managers for their collections. To enable a user to place requests, choose **Administration - Aun requesters** ... from the menu. A window as shown below will open.

Administration of loan requester			
Collection requesters	Collections open for requests	Collections	
Novozhilov, Yura (St. Petersburg) Rambold, Gerhard (Bayreuth) Schnittler, Martin (Greifswald)	M	 Herb. Rambold M-Fungi M-VascularPlants SAPM 	
	Include subcollections		
	 M M-Algae WeinzierlColl Dried vouchers 		

As a collection manager you can give requesters access to the collections you manage. Click on the < or > buttons to add or remove collections from the list for which a user can place a request. If the option **Include subcollections** is choosen, a user can request for specimens stored in subcollections of the administrating collection. To give you an overview of the subcollections, the hierarchy of the collection is shown in the tree below the list.

If you are a collection manager and there are requests for your collections, the administration menu will contain a **Loan requests** ... entry. Choose it to open a window listing the requests for specimen in your collections.

If you have entered request for specimen in a foreign collection, the administration menu will contain a **My requests...** entry. To inspect your request choose this entry from the menu to open a window as shown below. The window will show your requests and loans from foreign collections.

Nequest			
Collection From: M-Fungi To:	Loan number of requester 554 Hein, Burghard		Ioan Specimen on Ioan M-0024405 - specimen M-0024404 - specimen M-0013568 - specimen M-0025188 - specimen
		Y	Specimen returned M-0014206 - specimen M-0014237 - specimen M-0014004 - specimen

To enter a new request, click on the \Box button. Use the \blacksquare button to search for specimen in the collection and the \times button to remove unwanted specimen from your list.

Transactions

Prerequisites

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

- 🤼 DiversityCollectionAdministrator
- 🧖 DiversityCollectionCurator
- 👰 DiversityCollectionEditor
- 🙇 DiversityCollectionManager
- 🙇 DiversityCollectionRequester
- 🧖 DiversityCollectionTypist
- 👰 DiversityCollectionUser

and the collections you have the right to handle transactions for must have been assigned to you as shown in the <u>managers</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 \Re icon. For specimens that are still on loan an \Re icon as shown while a returned loan is symbolized with an \Re icon (see image below).



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

Transaction	<u>.</u>
BSMlundellcoll Geschenk, H. Große-Brauckmann, Seeheir	n 🔽 💘

To edit the transactions choose **Administration - Transactions** from the menu. A window will open as shown below. In the tree at 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 button 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. Every transaction is linked to an administrating collection (symbolized by the key ?), and can be edited exclusively by

<u>collection managers</u> of this collection. To appoint managers choose **Administration -Managers** from the menu.

🍇 Administration of transact	tions	
🖬 🗠 🗅 🗞 🗙 🗹	Loan to B. Hein	ID: 30 🕑
Query results 1 - 91	Transaction	
Loan SNC	Loan to B. Hein	
Loan to B. Hein	2003	
Loan to Barcelona	2004	Be
Loan to D. Nagel	- 2005	×
Myxomycaten aus Costa Rica (2006	• •
Myxomycaten aus dem Elbsand	2000	
Myxomyceten aus Russland, Ki		
Purchase from Barcelona 📃		
Request to Barcelona Request to Barcelona	😻 Data ontry 🍓 Sending 🁒 Continuation 🦓 Reminder 🔖 Partial return 👒 I	Return 🍓 Printing, specimen list 📴 Documents
Schnittler, M. M-0069782-00702	Type: Ioan 🛛 🗸 Admin. coll.: M	I-Fungi 🗸 💡
Schnittler, M. M-0070282-00707	Title: Loan to B. Hein	
order by: Transaction	TROC.	echten und Moose aus der Türkei
	Material: specifien Material-description: P	echten und Moose aus der Furker
T THE -	Material	
- Query conditions - Transaction	collect.:	
	Loan collection: Loan Nr: Lo	oan pariner:
Name 💌 ~	From: M-Fungi	
Type 👻 – 🛛 🐱	To: B 554 H	ein, Burghard, Dr. 🗮 🗙 🤭
Begin 🕶 = 🛛 💌		
End • = 💌		ry/Flechten 🔽
Comment · ~	End: 23.01.2008 🔮 Act.end: 🔮 Investigator: H	. Meier
Notes -	Comment:	
From		~
Number 🝷 🐃	Int notes:	
Partner + ~		
Collection	Respons.: 🔽	
⊻		

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

Transaction type	Tab p	ages				
<u>Sending</u>	Loan	Borrow	Exchange	Gift	Purchase	
<u>Confirmation</u>	Loan	Borrow	Exchange	Gift	Purchase	Request
<u>Reminder</u>	Loan	Borrow	Exchange	Gift	Purchase	
Partial return	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

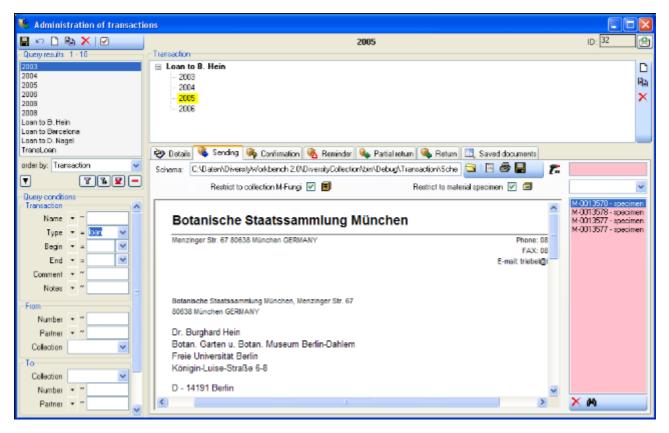
On the tab pages for generating documents you have to specify a xml-schema for your document - click on the button to choose one of the predifined schemas or create your own schema. If you do not specify a schema (i.e. the field for the path of the schema is empty - see below) for your form you will see the XML output created by the database as shown below.

💐 Transaction		×
Query results 1 - 34 Query results 1 - 34 2005 2005 BSMgrocesetricol BSMgrocesetricol BSMgrocesetricol	Tareaction Interaction Locan to B. Hein 2006 2016 2015 2015 2015 2015 2016 2017 2018 2019 2010 2011 2012 2015 2015 2016 2017 2018 2019 2010 2011 2012 2013 2014 2015 2015 2015 2016 2017 2018 2019 2010 2011 2012 2013 2014 2015 2015 2015 2016 2017 2018 2019 2010 2011 2012 2013 2014 2	
Content of Checker (In Content (In Content)) order by: Transaction	Restrict to collection M-Fungi Restrict to material spectment Image: Collection M-Fungi xml version="1.0" encoding="utf-16" ? M.0013576 - <transaction> M.0013576 <date>5. Nov. 2007 M.0013576 M.0013576 <date>5. Nov. 2007 M.0013576 M.0013577 <parenttransactionid>30 ParentTransactionID> <transactiontiple>loan TransactionTipe> <transactiontiple>loan TransactionTitle> <reportingcategory>Kry/Flechten </reportingcategory> <administratingcollectionid>3 <materialdescription>Mat. Description <mumberofunits> NumberOfUnits></mumberofunits></materialdescription></administratingcollectionid></transactiontiple></transactiontiple></parenttransactionid></date></date></transaction>	•

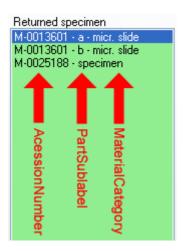
To choose a schema click on the button and select a schema from the list. DiversityCollection contains several ready to use schemas in the folder **Transaction -Schemas**.

🔄 C:\Daten\DiversityWorkbench 2.0\Release\	Diversi	ityCollection\Transaction\Sche	emas		
Datei Bearbeiten Ansicht Eavoriten Extras ?					- 🥂
🕒 Zurück 🔹 🕥 🕤 🏂 🔎 Suchen 🞼	Ordner	••••			
Adresse 🔁 C:\Daten\DiversityWorkbench 2.0\Release\D	Diversity	Collection\Transaction\Schemas		🖌 🄁 Wea	chseln 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	
DiversityAgents		🚰 Cover.xslt	23 KB	XSL Transform	
DiversityCollection		🚰 Inventary.xslt	7 KB	XSL Transform	
e 🗀 alt		🛃 Loan.xslt	1 KB	XSL Transform	
E CabelPrinting	_	Proverview.xslt	23 KB	XSL Transform	_
LabelSchemataFuerProjekt		PartiaReturn.xslt	14 KB	XSL Transform	
Cases and a set of the set o	-	Reminder.xslt	14 KB	XSL Transform	
Constant Schemas	~	a Return.xslt	13 KB	XSL Transform	~
<					> .:

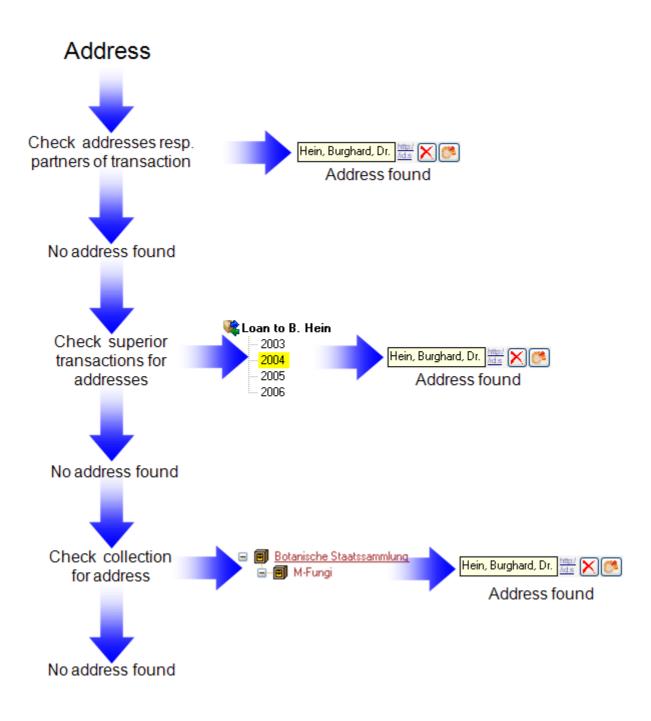
Feel free to change these schemas to your own needs (editors are available e.g. from http://www.altova.com/). Choose the schema you need and then click on the button to create a document. To print the document, use the button. To store the current document in the documents for later reference click on the button. An example for a document is shown below.



The specimens will be listed with their accession number, a optional label of the part and the material category to ensure discrimination in case a specimen contains more then one part (see image below).



If a transaction entry has no address, resp. a transaction partner linked to an entry in the module DiversityAgents, where addresses are stored, the program will try to find an address in one of the superior transactions from the transaction partners found there. If no address exists in these transactions, the program will try to get an address from the collections. Therefore a transaction partner linked to DiversityAgents is only necessary if either there are no addresses for the collections or you want to use a different address. The search path as described is summarized in the image below.



Transactions - Sending 👒

In the sending tab page of the transaction window 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 window as shown below.

Timer intervall	
Please give a value for the timer interva milliseconds	II 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 under the specimen list. If you want to see the details of a specimen, choose it in the list and click on the #button. Click on the \blacksquare button to create the document as shown below.

💐 Administration of transactio	DIS	
🖬 🗠 🗅 🗞 🗙 🗹	2005	ID: 32
Query results 1 - 10	Transaction	
2003	E Loan to B. Hein	D
2004 2005	2003 2004	Ra I
2006	- 2004	×
2008	- 2006	
Loan to B. Hein		
Loan to Barcelona		
Loan to D. Nagel TransLoan	💝 Detaile 🤏 Sending 🧠 Confirmation 👒 Reminder 👒 Partial return 🔍 Return 🛄 Saved documents	
order by: Transaction 💌	Schema: C:\Daten\DiversityWorkbench 2.0\DiversityCollection\Din\Debug\Transaction\Sche 🔄 🖪 🖉 📲	
T TLE-	Restrict to collection M-Fungi 🔽 🗐 Restrict to material specimen 🗹 🗔	~
- Query conditions		M-0013578 - specimen
Transaction		M-0013578 - specimen
Name • "	Botanische Staatssammlung München	M-0013577 - specimen M-0013577 - specimen
Type 🝷 = 📴 💙	Menzinger Str. 67 80638 München GERMANY Phone: 08	N-0010077 - specifien
Begin 🔹 🔜 💌	FAX: 08	
End 🕶 = 🔛	E-mail: triebel@/	
Comment • ~		
Notes • ~		
Fiom	Botanische Staatssammlung München, Menzinger Str. 67	
Number • ~	80838 München GERMANY	
Pailnei • ~	Dr. Burghard Hein	
Collection	Botan, Garten u. Botan, Museum Berlin-Dahlem	
	Freie Universität Berlin	
Collection	Königin-Luise-Straße 6-8	
Number • ~	D - 14191 Berlin	
		XM
Paitnei • ~		

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.

ờ Data entry 👒 Sending 🁒 Continuation 🍓 Reminder 🝬 Partial return 👒 Return 🍓 Princing 🗔 Documents					
Schema: C:\Daten\DiversityWorkbench 2.0\DiversityCollection\bin\Debug\Transaction\Schemas\Confirmation.xst		🔁 I 🖻 🍜 🔚			
Botanische Staatssammlung München	м	Specimen M-0012570 - specimen M-0013571 - specimen M-0013572 - specimen			
Menzinger Str. 67 80638 München GERMANY Phone: 089 1786 FAX: 089 1786 E-mail: office@bem.m	1 193	M-0013573 - specimen M-0013574 - specimen M-0013575 - specimen M-0013576 - specimen			
Botanische Staatseammlung 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 herbarium specimen(s) specified in the list attached.					

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			
Schemax C:\Daten\DiversityWorkbench 2.0\Release\DiversityCollection\Transaction\Schemas\Reminder.xsit 😂 📘			
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 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.

😵 Details 👒 Sending 🧠 Confirmation 🗞 Reminder 🍬 Partial return 👒 Return 🗔 Saved o	documents
Date: 31.07.2007 💌 Schema: C:\Daten\DiversityWorkbench 2.0\DiversityColl 🔄 🗟 🚭 🔚 🎢	
Botanische Staatssammlung München	M-0013568 - specimen M-0024404 - specimen M-0024405 - specimen
Menzinger Str. 67 80638 München GERMANY	M-0025188 - specimen
	★ A
Botanische Staatssammlung München, Menzinger Str. 67 80638 München GERMANY	M-0014206 - specimen M-0014237 - specimen M-0014004 - specimen
Dr. Burghard Hein	
Rotan Carton II Botan Mucoum Borlin Dahlom	

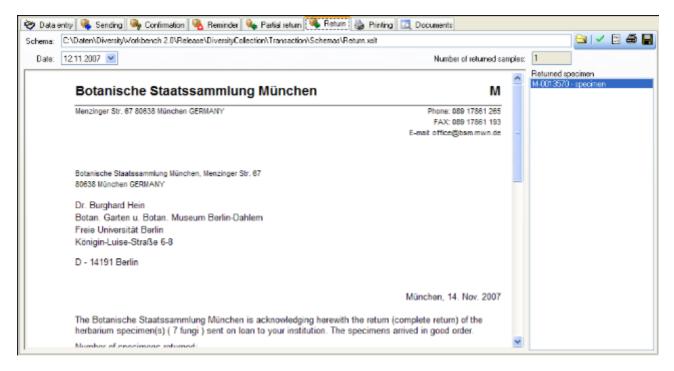
You have two option to enter returned specimen. Use the A and \checkmark buttons respectively to move items between the lists or use a barcode scanner \square move the mouse cursor into the field for the barcode detection, then scan the barcode. The specimen will be automatically inserted into the list for the returned specimen. In case your scanner is reading only parts of the barcode try to ajust the timer intervall - click on the \square button to open a window as shown below. Here you can set the interval to a value that is compatible to your scanner. If you want to see the details of a specimen, choose it in the list and click on the \square button.

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

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 on 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 curbot to open a window where you can set the timer intervall to a different value. To remove specimen from 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.

💝 Data entry 🍓 Printing 🔝 Documents				
Schema file: C:\Daten\DiversityWorkbench 2.0\DiversityCollection\bin\Debug\Transaction\Schemas\Inventory.xdt	N 🗄 🖨 📕 🏻	7		
Include subcollections Include al related collections Number of specimen 4	52	×		~
			Specimen M-0140301 - specimen	
Botanische Staatssammlung München			M-0140302 - specimen	
			M-0140303 - specimen M-0140304 - specimen	
zugegangen am: 16. Jan. 2007		1	M-0140305 - specimen	
452 Kry/Fungi: The Fungal Collection of Seth Lundell			M-0140305 - specimen M-0140307 - specimen	
402 Nayi digi. The Fungar Conection of Cear Canden			M-0140308 - specimen	
Geschenk			M-0140309 - specimen M-0140310 - specimen	
			M-0140311 - specimen	
InvNr.: 6609			M-0140312 · specimen	
			M-0140313 - specimen M-0140314 - specimen	
			M-0140315 - specimen	
Zugang: Kry/Fungi: 452 Belege - The Fungal Collection of Seth I	undell		M-0140316 - specimen	
			M-0140317 - specimen M-0140318 - specimen	
			M-0140319 · specimen	
Geber: Helga Grosse-Brauckmann, Seeheim			M-0140320 · specimen	
Geschenk			M-0140321 - specimen M-0140322 - specimen	
Geschenk			M-0140323 - specimen	
			M-0140324 - specimen	
			M-0140325 · specimen M-0140326 · specimen	
Fuligo cinerea (Schwein.) Morgan M-0140301			M-0140328 · specimen M-0140327 · specimen	
Albatrellus cristatus (Schaeff.) Kotl. & Pouzar M-0140302			M-0140328 - specimen	
Amylocystis lapponicus (Romell) Bondartsev & Singer ex Singer M-0140303 -	M-0140304		M-0140329 - specimen M-0140330 - specimen	
Алаланананан инин маланын өнүнүнүлүү мөнүнүнү	14.0440200		M 0140321 an ocimon	

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, scan the document and 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 with several other modules of the Diversity Workbench. If you link a data source 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 use the maintenance function within DiversityCollection.

Choose **Administration -> XMaintenance ...** from the menu. A window 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 the order. If you want to take a look at the single datasets you have to select the "Include accession number" checkbox. Than start the query with a click on

DiversityCollection, Database: Divers	ityCollection_Test v. Z.3	3.5.0 Server: 141.84.6	5.107 Port: 5432	liser: BOTSAMML08\mweiss	
Synchronize databases					
Synchronzie the cached data in dependent data	tabases with the original sourc	e			
Collection <-> TaxonNames Family and order	Collection <-> Exsiccatae	$Collection \leftrightarrow Gazetteer$	$Collection \leftrightarrow Reference$	es	
Synchronize with database Taxonomy database:					
DiversityTaxonNames_Fungi					
Project:					
BSMeryscoll					
Taxonomic group:					
lungus 💌					
C Droter					
Include accession numbers					
Check for differences					
Start update					
			_		
Synchronize with available data Project:					
BSMetyscoll					
·					
Include accession numbers					
Check for differences					
Start update					

the Check for differences button.

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

_____button.

Start update

nchronize with database conomy database:		LastIdentificationCache	Family	Order	TaxonomicGroup
ersityTaxonNames_Fungi	۲.	Arthrocladiella mougeotii (Lév.) Vassilkov	Etysiphaceae		tungus
		Blumeria graminis (DC.) Speer	Erysiphaceae		lungus
ct:		Brasilionyces trina (Harkn.) B. Y. Zheng	Erysiphaceae		fungus
eryscoll 💌		Cystotheca lanestris (Harkn.) Sacc.	Erysiphaceae		fungus
amie group:		Cystotheca wighti Berk, & M. A. Curtis	Etysiphaceae		lungus
·		Enysiphe abbreviata (Peck) U. Braun & S. Takam.	Erysiphaceae		fungus
ily C Order		Esysiphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Erysiphaceae		tungus
ude accession numbers		Etysiphe adunca (Walk.) Fr.	Erysiphaceae		fungus
		Etysiphe adunca (Walk.) Fr. var. adunca	Etysiphaceae		lungus
		Enysiphe adunca var. regularis (R. Y. Zheng & G	Erysiphaceae		fungus
eck for differences		Erysiphe aggregata (Peck) Farl.	Erysiphaceae		fungus
ferences found		Etysiphe alphitoides (Grifton & Maubl.) U. Braun &	Etysiphaceae		fungus
		Etysiphe aquilegiae DC.	Etysiphaceae		lungus
Start update		Enysiphe aquilegiae var. aquilegiae	Erysiphaceae		fungus
		Erysiphe 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 import the higher taxa to the dataset click on the <u>Start update</u> button.

Synchronize with available data		LastIdentificationCache	Family	TaxonomicGroup	
Project:	Þ	Cladosporium spec.	Mycosphaerellacea	fungus	
BSMeryscol	~	Cladosporium spec.	Mycosphaerellac	fungus	
		Cystotheca lanestris (Harkn.) Sacc.	Erysiphaceae	fungus	
		Erysiphe adunca (Walls.) Fr. var. adunca	Erysiphaceae	fungus	
Taxonomic group:		Erysiphe adunca (Walt.) Fr. var. adunca	Hominidae	fungus	
fungus	~	Envsiphe adunca var. regularis (R. Y. Zheng & G. Q. C	Erysiphaceae	fungus	
Family Order		Erysiphe adunca var. regularis (R. Y. Zheng & G. Q. C	Hominidae	fungus	
Include accession numbers		Enysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	
Check for differences		Erysiphe betae (Vanha) Weltzien	Hominidae	fungus	
81 differences found		Erysiphe cichoracearum DC. var. cichoracearum	Erysiphaceae	fungus	
		Enysiphe cichoracearum DC. var. cichoracearum	Hominidae	fungus	
Start update		Erysiphe cichoracearum var. fischeri (S. Blumer) U. Bra	Erysiphaceae	fungus	

If you want to have a more detailed look on your 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	TaxonomicGroup	AccessionNumber	CollectionSpecimer
Project	۶.	Cladosporium spec.	Mycosphaerellacea	fungus	M-0019344	97109
BSMeyscol 👻		Cladosporium spec.	Mycosphaerellac	fungus	M-0019344	97109
		Cystotheca lanestris (Harkn.) Sacc.	Erysiphaceae	fungus	M-0013572	3251
Taxonomic group:		Erysiphe adunca (Walt.) Fr. var. adunca	Erysiphaceae	fungus	M-0040497	135712
Tungus 🛛 🖸 Grder		Erysiphe adunce (Walk) Fr. var. adunce	Hominidae	fungus	M-0040497	135712
Family Order Include accession numbers		Erysiphe adunca var. regularis (R. Y. Zheng & G. Q. C	Erysiphaceae	lungus	M-0040495	135383
Include accession numbers		Enysiphe adunce ver. regularis (R. Y. Zheng & G. Q. C.,	Hominidae	fungus	M-0040495	135383
Elose form and check dataset in database		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014084	11377
uaraser in uarases		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014085	4156
Check for differences		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014086	9307
1765 differences found		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014087	2905
Start update		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014088	10552

Maintenance - Exsiccatae

To synchronize the abbreviations of the titles of the exsiccatal series that are linked to the module DiversityExsiccatae choose **Administration -> Maintenance...** from the menu. A window 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

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

ynchronize databases					
ynchionzie the cached data in depende	nt databas	es with the original source			
Collection <-> TaxonNames Family and	order D	allection <-> Exsiccatae Collection <-> Gazetteer Collection	action <-> References		
Project:		ExsAbbreviation in DiversityExsiccatae	ExsideataAbbreviation in DiversityCollection	AccessionNumber	C
BSMeryscoll	• •	Anonymous, Soc. Roch 1892	Anonymous, Soc. Roch.	M-0018768	1:
Include accession numbers Close form and check		Anonymous, Soc. Roch 1892	Anonymous, Soc. Roch.	M-0016427	9,
		Bondartsev, Fungi Exs. URSS	Bondartsev, Fungi Exa. URSS [1 - 100]	M-0019390	9
		Briosi & Cavara, Fung, Paras, Plante Colt, Utili Ess.	Briosi & Cavara, Fung, Paras, Piante Cok, Utili Ess.	M-0019207	4:
Close form and check		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 Colt, Utili Ess.	M-0016330	4
		Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	Briosi & Cavara, Fung. Paras. Piante Colt. Utili Esa.	M-0016946	4:
Check for differences		Briosi & Cavara, Fung, Paras, Plante Colt, Utili Ess.	Briosi & Cavara, Fung, Paras, Piante Colt, Utili Ess.	M-0013679	3:
529 differences found		Briosi & Cavara, Fung. Paras. Plante Colt. Utili Ess.	Briosi & Cavara, Fung, Paras, Piante Colt, Utili Ess.	M-0018768 M-0016427 M-0019390 i Ess. M-0019207 i Ess. M-0017292 i Ess. M-0016330 i Ess. M-0016946 i Ess. M-0013679 i Ess. M-0013860 i Ess. M-0015150 i Ess. M-0016544	5
		Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	Briosi & Cavara, Fung. Paras. Piante Colt. Utili Ess.	M-0015150	5
Start update		Briosi & Cavara, Fung, Paras, Plante Colt, Utili Ess.	Briosi & Cavara, Fung, Paras, Piante Cok, Utili Ess.	M-0016544	21
		Briosi & Cavara, Funo, Paras, Piante Colt, Utili Ess,	Briosi & Cavara, Funo, Paras, Piante Colt, 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 at 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.

button.

Maintenance - Accession number duplicates

The database will not prevent you from entering an accession number several times e.g. via an import. To check for duplicate accession numbers choose **Administration -> Maintenance** from the menu. A window as shown below will open. On the tab page **AccessionNumber duplicates**. You can restrict the query to a project. To start the query with a click on the **Check for duplictes** button.

DiversityCollection v. 2.5	.3.6 Server: BSM1 Port: 5432 Use	er: BOTSAMML22\mweiss	
Synchronize databases Remove unr	elated events Remove unrelated event series		
Synchronzie the cached data in deper	ndent databases with the original source		
Collection <-> TaxonNames Family	and order Collection <-> Exsiccatae Collection	↔ Gazetteer Collection ↔ Reference	AccessionNumber duplicates
Project:	AccessionNumber	CollectionSpecimenID	Project
✓	M-0038380	107846	BIOTAlichencoll
Check for duplicates	M-0038380	181051	BIOTAlichencoll
20 duplicates found	M-0039591	141877	BIOTAlichencoll
Close form and check	M-0039591	108196	BIOTAlichencoll
dataset in database	M-0039593	108177	BIOTAlichencoll
	M-0039593	108209	BIOTAlichencoll
	M-0039603	108180	BIOTAlichencoll
	M-0039603	108178	BIOTAlichencol
	M-0044886	182966	BSMlichfungicol
	M-0044886	182967	BSMlichfungicol
	M-0105430	119290	BSMcompcoll
	M-0105430	16183	BSMafrplantscoll
	M-0111200	118298	BSMcompcoll
	M-0111200	23607	BSMafrplantscoll
	M-0125395	141884	BIOTAlichencoll
	M 0126296	141001	PIOTAlishonsall

The form will list all duplicates found as shown above. To switch to a dataset in the database,

select it in the table and click on the

Close form and check dataset in database button.

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 window 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 you can synchronize your data with the entries in taxonomic databases like DiversityTaxonNames_Fungi. Select a taxonomic database, a project and a taxonomic group, then choose whether you want to synchronize the family or the order. If you want to inspect single datasets you have to check the **Include accession number** checkbox. Then click on

Synchronize databases	sityCollection_Test v. 2.3.5.0 Server: 141.84.65.107 Port: 5432 User: BOTSAMML08\mweiss	
Synchronzie the cached data in dependent da	stabases with the original source	
Collection <-> TaxonNames Family and ord	Collection <> Explocatee Collection <> Gazetteer Collection <> References	
Synchronize with database Taxonomy database: DiversityTaxonNames_Fungi Project: BSMetyscoll Taxonomic group: Tungust Family Family C Order Include accession numbers		
Check for differences Start update		
Synchronize with available data Project: BSMergacol		
Include accession numbers		
Check for differences		

the <u>Check for differences</u> button to start the query.

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

Synchronize with database Taxonomy database:		LastIdentificationCache	Family	Order	TaxonomicGroup
iversityTaxonNames_Fungi	+	Arthrocladiella mougeotii (Lév.) Vassilkov	Etysiphaceae		fungus
		Blumeria graminis (DC.) Speer	Erysiphaceae		lungus
Project:		Brasilionyces trina (Harkn.) R. Y. Zheng	Erysiphaceae		fungus
BSMeryscoll		Cystotheca lanestris (Harkn.) Sacc.	Erysiphaceae		fungus
Taxonomic group:		Cystotheca wighti Berk, & M. A. Curtis	Etysiphaceae		tungus
lungus 💌		Ensiphe abbreviata (Peck) U. Braun & S. Takam.	Erysiphaceae		lungus
Family C Order		Erysiphe acalyphae (F. L. Tai) R. Y. Zheng & G. Q	Erysiphaceae		fungus
Include accession numbers		Etysiphe adunca (Walk.) Fr.	Etysiphaceae		fungus
		Etysiphe adunca (Walk.) Fr. var. adunca	Etysiphaceae		lungus
		Ensiphe adunca var. regularis (R. Y. Zheng & G	Erysiphaceae		fungus
Check for differences		Erysiphe aggregata (Peck) Farl.	Erysiphaceae		tungus
233 differences found		Etysiphe alphitoides (Griffon & Maubl.) U. Braun &	Etysiphaceae		fungus
		Etysiphe aquilegiae DC.	Enysiphaceae		lungus
Start update		Enysiphe aquilegiae var. aquilegiae	Erysiphaceae		fungus
		Erysiphe aquilegiae var. ranunculi (Grev.) R. Y. Z	Erysiphaceae		fungus

In the lower part you can synchronize your entries within the database. Choose a project, the taxonomic group and if you want to check the family or the order and click on the

<u>Check for differences</u> button to start the query. To import the higher taxa to the dataset click on the <u>Start update</u> button.

Synchronize with available data		LastIdentificationCache	Family	TaxonomicGroup	
Project:	•	Cladosporium spec.	Mycosphaerellacea	fungus	
BSMetyscol	~	Cladosporium spec.	Mycosphaerellac	fungus	
		Cystotheca lanestris (Harkn.) Sacc.	Erysiphaceae	fungus	
		Erysiphe adunca (Walls.) Fr. var. adunca	Etysiphaceae	fungus	
Taxonomic group:		Erysiphe adunca (Walt.) Fr. var. adunca	Hominidae	fungus	
fungus	~	Erysiphe adunca var. regularis (R. Y. Zheng & G. Q. C	Erysiphaceae	fungus	
Family Order		Erysiphe adunca var. regularis (R. Y. Zheng & G. Q. C	Hominidae	fungus	
Include accession numbers		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	
Check for differences		Erysiphe betae (Vanha) Weltzien	Hominidae	fungus	
81 differences found		Erysiphe cichoracearum DC. var. cichoracearum	Erysiphaceae	fungus	
		Erysiphe cichoracearum DC. var. cichoracearum	Hominidae	fungus	
Start update		Erysiphe cichoracearum var. fischeri (S. Blumer) U. Bra	Erysiphaceae	fungus	

If you want to have a more detailed look on your 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	TaxonomicGroup	AccessionNumber	CollectionSpecimer
Project	۶.	Cladosporium spec	Mycosphaerellacea	fungus	M-0019344	97109
BSMetyscol 👻		Cladosporium spec.	Mycosphaerellac	fungus	M-0019344	97109
		Cystofheca lanestris (Harkn.) Sacc.	Erysiphaceae	fungus	M-0013572	3251
Taxonomic group:		Erysiphe adunca (Walt.) Fr. var. adunca	Erysiphaceae	fungus	M-0040497	135712
Tungus 💌 Tamilu O Order		Erysiphe adunce (Walt.) Fr. var. adunce	Hominidae	fungus	M-0040497	135712
Family Order Include accession numbers		Erysiphe adunca var. regularis (R. Y. Zheng & G. Q. C.,	Erysiphaceae	lungus	M-0040495	135383
 Include accession numbers 		Enysiphe adunce ver. regularis (R. Y. Zheng & G. Q. C.,	Hominidae	fungus	M-0040495	135383
Close form and check dataset in database		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014084	11377
ualaterini databate		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014085	4156
Check for differences		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014086	9307
1765 differences found		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014087	2985
Start update		Erysiphe betae (Vanha) Weltzien	Erysiphaceae	fungus	M-0014088	10552

Maintenance - Gazetteer

To synchronize the entries derived from the module DiversityGazetteer choose **Administration -> Maintenance** from the menu. A window 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 synchronization: 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 targets

for the synchronization. To start the query, click on the

Check for differences button.

nchronize databases						
inchionzie the cached data in dependent d	atabase	s with the original source				
ollection <-> TaxonNames Family and or	ler Co	lection <-> Exsiccatae Collection <-> Gaze	fleer Collection <-> References			
Project: ProtoblasteniaColl		Place name in DiversityGazetteer	Place name in DiversityCollection	AccessionNumber	Latitude	l
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		
Include accession numbers		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		
		Algauer Alpen, Schwaben, Germany	Allgauer Alpen, Schwaben, Bayern, D	M-0028560		
Check for differences		Algauer Alpen, Schwaben, Germany	Allgauer Alpen, Schwaben, Bayern, D	M-0028635		
216 differences found		Algauer Alpen, Schwaben, Germany	Allgauer Alpen, Schwaben, Bayern, D	M-0028609		
Start update		Alinauer Alinen, Schwaben, Germanu	Alloquer Alben, Schwahen, Rairers, D	MJ0128225		

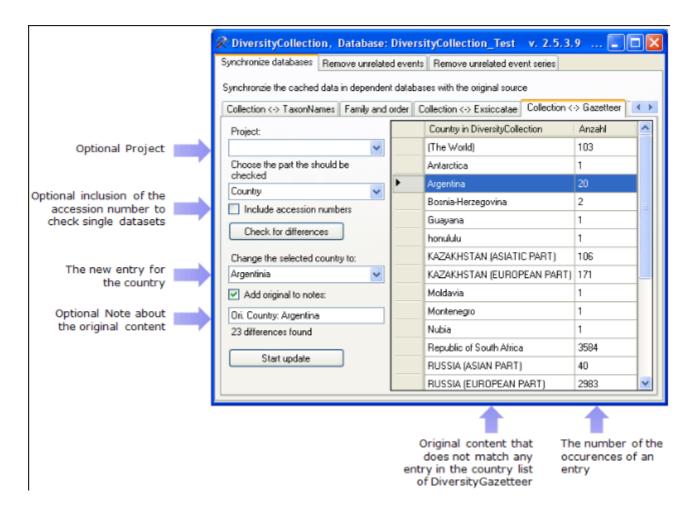
The form will list all differences found. To update the database click on the

Start update button. If you want to have a more detailed look on 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.

To check for countries that do not match entries in DiversityGazetteer choose Country from the list as shown below.



The image above summarizes the options for an update of the country. You can restrict your query to one of the projects you have access to. If you want to check single datasets, check the **include accession numbers** option before you start the query. To keep the old entry in the Notes field check the **Add original to notes** option.

Maintenance - References

To synchronize the titles of the references that are linked to the module DiversityReferences choose **Administration -> Maintenance** from the menu. A window 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.

🛠 DiversityCollection, Database: D	iversit;	Collection_Test v. 2.5.1.7 Serv	er: 141.84.65.107 Port: 54	32 User: BOTS	MML221 🔳				
Synchronize databases									
Synchronzie the cached data in dependent d	atabases	with the original source							
Collection (-> TaxonNames Family and order Collection (-> Exsiocatae Collection (-> Gazetteer Collection (-> References									
Project: ProtoblasteniaColl		RefDescription_Cache in ReferenceTitle	ReferenceTitle in Identification	CollectionSpecimer	AccessionNumber	Refer			
ProtoblasteniaColl	۶.	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									
	<		11			>			

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 window 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 unrela	ted events	Remove unrelated event series			
nchronzie the cached data in depende					
		ection ⇔ Exsiccatae Collection ⇔ Gazettee	Collection (-> References AccessionNus	mber dunlicates	
		an URI Synchronize taxonomic names missin			
Taxonomy database:		TaxonNameCache in	TaxonomicName in DiversityCollection	AccessionNumber	CollectionSpecimenID
DiversityTaxonNames_Fungi	¥	DiversityTaxonNames	-		
Project		Erysiphe aquilegiae DC, var. aquilegiae	Etysiphe aquilegiae var. aquilegiae	M-0013899	292
BSMeryscol	-	Enysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013896	476
boniajaco		Erysiphe aquilegiae DC, var. aquilegiae	Etysiphe aquilegiae var. aquilegiae	M-0013939	4400
		Enviphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013920	326
Include accession numbers		Etysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae yar, aquilegiae	M-0013918	2616
Include accession managers		Egyiphe aquilegiae DC, var. aquilegiae	Enysiphe aquilegiae yar, aquilegiae	M-0013900	18
Close form and check dataset in database		Erysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013922	15378
ualaser in dalabase		Egysphe aquilegiae DC, var. aquilegiae	Enysiphe aquilegiae yar, aquilegiae	M-0013911	19535
Check for differences		Etysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013890	15041
1391 differences found		Enviphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae yar, aquilegiae	M-0013914	11819
raar dinerendes radho		Erysiphe aquilegiae DC, var. aquilegiae	Erysiphe aquilegiae var. aquilegiae	M-0013919	12078
Start update		Enviphe aquilegiae DC, var. aquilegiae	Etysiphe 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

If you synchronize your data with a webservice as shown in the image below, you can specify the taxonomic group as well.

nchronize databases Remo	ve ume	lated ev	ents 🔇 Remove unrelated event series		2
unchronzie the cached data in dep	endent	databas	es with the original source		
Collection <-> TaxonNames Famil	y and o	rder C	allection <-> Exsiccatae 🜘 Collection <-> Gazetteer 🗓	Collection <-> References	uplicate
Synchronize taxonomic names bas	ed on t	he link v	ia an URI Synchronize taxonomic names missing a conn	ection	
Taxonomy database:	[TaxonomicName in DiversityCollection	Name in IndexFungorum	Ne 🔨
IndexFungorum	*		Albugo candida (Pers.) Kuntze	Albugo candida (Pers.) Roussel	hiti
Project:			Ascocorticium anomalum (Ellis & Harkn.) Earle	Ascocorticium anomalum (Ellis & Harkn.) J. Schröt.	http
BIOTAlichencol	*		Camarophyllus russocoriaceus (Berk. & T.K. Mill.) J.E	Camarophyllus russocoriaceus (Berk, & Jos.K. Mill.) J	
TaxonomicGroup			Cortinarius anomalus (Fr.) Fr.	Cortinarius anomalus (Pers.) Fr.	
fungus	*		Hygrocybe russocoriacea (Berk, & T.K. Mil.) P.D. Orto	Hygrocybe russocoriacea (Berk. & Jos.K. Mil.) P.D. Or	http =
	-		Lepiota seminuda (Lasch) Gillet	Lepiota seminuda (Lasch) P. Kummer	http
Include accession numbers			Mycena crocala (Schrad.) P. Karst	Mycena crocata (Schrad.) P. Kumm.	
			Panellus serotinus (Schrad.) Kühner	Panellus serotinus (Pers.) Kühner	http
			Pholiota aurivella (Batsch) Fr.	Pholiota aurivella (Batsch) P. Kumm.	http
Check for differences			Pycnoporus cinnabarinus (Jacq.) Fr.	Pycnoporus cinnabarinus (Jacq.) P. Karst.	http
14 differences to IndexFungorum			Sphaeropsis visci	Sphaeropsis visci (Alb. & Schwein.) Sacc.	http
Start update			Tenhionihe strate (L.) Donk	Tenhromhe atrata (Fr.1 Donk	lan 💙

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.

Sunchmarize taxanomic names based o			ion \leftrightarrow Exsideatae Collection \leftrightarrow Gazetteer C URI Synchronize taxonomic names missing a c	allection <-> References AccessionNumber du	plicates	
Taxonomy database:			TaxonNameCache in DiversityTaxonNames	TaxonomicName in DiversityCollection	AccessionNumber	CollectionSpeciment
DiversityTaxonNames_Fungi	¥	۶.	Egyiphe lanuginota Fuckel	Erysiphe lanuginosa Fuckel	M-0015743	4651
Project			Erysiphe scholziiU. Braun & Bolay	Erysiphe scholzii U. Braun & Bolay	M-0019413	117715
BSMetytcol	¥		Microsphaera alni var. yamadai E. S. Salmon	Microsphaera alni var. yamadai E. S. Salmon	M-0016665	13529
Taxonomic group:	_		Oidium cydoniae Pass.	Oldum cydoniae Pass.	M-0017370	6669
fungus	¥		Oidium violae Pass.	Oidium violae Pars.	M-0015355	11140
ing (got)			Oidium violae Pass.	Oidium 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	6924
Close form and check dataset in database Check for identical names 8 matches lound 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 datasets may e.g. be derived from specimens that were transferred to another collection event. Click on 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 first before you can delete the events related to these datasets. 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: BOTSAMML22	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	۲.	45850	1							
2340		45910	1							
collection events with		45388	1							
no relation to		48453	1							
specimen		48813	1							
Delete unrelated		48905	1							~
events	<	10010	1							2
92 localisations		CollectionEventID	LocalisationSystem	Location1	Location2	LocationAccuracy	LocationNotes	DeterminationDate	DistanceToLocatio	Direc 🔼
with not relation to	۲	45950	7	Hildesheim, Kreis	http://id.eneb.inf			17.11.2003 07:51		_
		46388	7	Hildesheim, Kreis	http://id.eneb.inf			17.11.2003 07:51		
Delete unrelated		48813	7	Hildesheim, Kreis	http://id.ensb.inf			17.11.2003 02:51		~
localisations	<									>
0 event properties with		CollectionEventID	PropertyID	DisplayText	PropertyURI	PropertyHierarchyC	PropertyValue	ResponsibleName	ResponsibleAgen/L	Notes
not relation to specimen										
Delete										
unrelated event										
EVEN	<			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		-1525		Germany, Bayern		Germany, Bayern	17.11.1941	03.01.2008 13:47	doo	03.01.2
series with no relation to		-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

There are several import and export mechanisms:

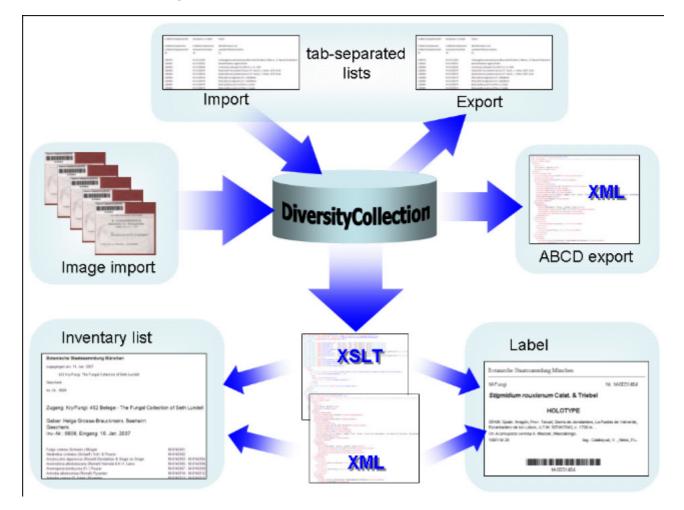
Import of specimen scans: Import image data where the accession number is a part of the file name can be imported together with default informations to the whole batch.

Import, **export** and **reimport** of tab-separated lists: Import data from foreign sources, export data and reimport after external editing.

Export of XML data according to the ABCD schema 2.06.

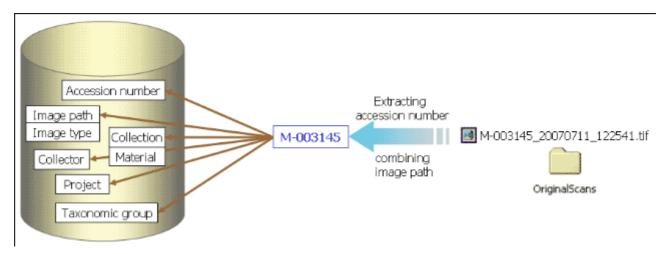
Generation of labels.

Generation of *inventary lists*.



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 (e.g. M-003145 in the example below) and an optional trailing identifier (e.g. _20070711_122541 in the example below). The image below shows an overview of the whole import process.



To import images like scanned labels from specimens choose **Data - Import - Specimen scans...** from the menu. A window for the import of images will be opened (see below).

nport options and secu				
Overwrite existing images	ity checks Place images in subfolder of length:	's Separator for eccession number. Checks for the accession Nr.: Checks for the checks for the chec	start: M- V check length:	9
OK Acc. Nr.	Source file	Path in database	Error	Ap;
M-0038137	M-0039137_20070730_170350.jpg	http://pictures.snsb.info/BSMschiefcol/web/M-0038/M-0039137_20.		
M-0017745	M-0017745_20070604_130620.jpg	http://pictures.anab.info/85Machiefcoll/web/M-0017/M-0017745_20.		
M-0038119	M-0038119_20070604_130314 jpg	Mtp://pictures.snsb.into/85MschiefcollAveb/M-0038/M-0038119_20.		
M-0039120	H-0039120_20070604_125832.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/M-0038120_20.		
M-0030121	M-0039121_20070604_131042.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/M-0038121_20.		
M-0038122	M-0038122_20070604_131400.jpg	http://pictures.anab.info/85Machiefcall/web/M-0038/M-0038122_20.		
M-0038123	M-0038123_20070604_125306 jpg	http://pictures.snsb.info/8SMschiefcollAveb/M-0038/M-0038123_20.		
M-0039124	H-0038124_20070730_172436.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/M-0038124_20.		
M-0039125	M-0030125_20070730_172632.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/M-0039125_20.		
M-0038126	M-0038126_20070730_172014.jpg	http://pictures.ands.info/85Machiefcal/web/M-0038/M-0038125_20.		
M-0038127	M-0038127_20070730_172158 jpg	http://pictures.snsb.info/85Mschiefcol/web/M-0038/M-0038127_20.		
M-0038128	H-0038128_20070730_171704.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/W-0038128_20.		
M-0030129	M-0039129_20070730_171048.jpg	http://pictures.snsb.info/BSMschiefcoll/web/M-0038/M-0038129_20.		
M-0038130	M-0038130_20070730_171420.jpg	Http://pictures.anab.info/85Machiefcoll/web/M-0038/M-0038130_20.		
etabase				
sameters for the port in the database	Locally or place:	Collection date:	Suppl:	
Test Import	Collector: 🗸	🔥 Accession date: 🔄 🔤	🔮 Suppl:	
	Collection: M-Fungi 🛛 Materiak	specimen Y Project BSMschiefcel Y	Image type: label	~
Start Import	Identification:	🖪 Identity: 💌 🥵	Taxon group: fungus	~
Append images if				

The fields marked with red are mandatory.

Image source

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

Öffnen		<u>?×</u>
<u>S</u> uchen in	n: 🔄 OriginalScans 💽 🗢 🗈 📸 🎫	
Verlauf Verlauf Desktop Arbeitsplatz Netzwerkumg	 M_0031400.tf M-00313658.tif M-003145.tif M-0031450_k.tif M-0031451_113220.tif M-0031457_2.tif M-00314571.tif M-0031458tif M31451.tif 	
	Dateiname: "M-0031457_2.tif" "M-00313658.tif" "M-003145	en
	Dateityp: Abbred	hen

Select the files and close the window to 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 accession number, 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 URIs of the images check the corresponding checkbox. The datasets will then only be imported if 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 whether 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 image files selected for the import. To test if all files satisfy the specified checks, click on the **Test import** button. If the file name passed all checks, the OK field for the image will be checked after the test. Otherwise an explanation for not passing the checks will be shown in the **Error** column.

The second column of the list shows the accession number extracted from the file name, the second column the file name of the original image file and the path written in the database. These paths may differ from the original if you select the option for setting a different **BaseURL**. If a dataset for an image already exists in the database and you selected the **Append images** option, the checkbox **Append** at the right end of the table will be checked.

Database

You can set several mandatory and optional values that will be written in the database for all

imported data. The fields marked with **red** are mandatory. These are the collection in which the specimens are located, the material categories of the specimens, the project, the content type of the scans (e.g. label) and the taxonomic group of the main organism in the specimens. If you want to refer to a web source for the labels instead of a local file you must give the base URL as well. Optional fields are a place according to the DiversityGazetteer and the date of the gathering event, the collector, the accession date, an identification, an exsiccatal series and the type of the label. For explanation of the buttons see <u>module related entries</u>.

To test the import and whether the images are present in the database click on the

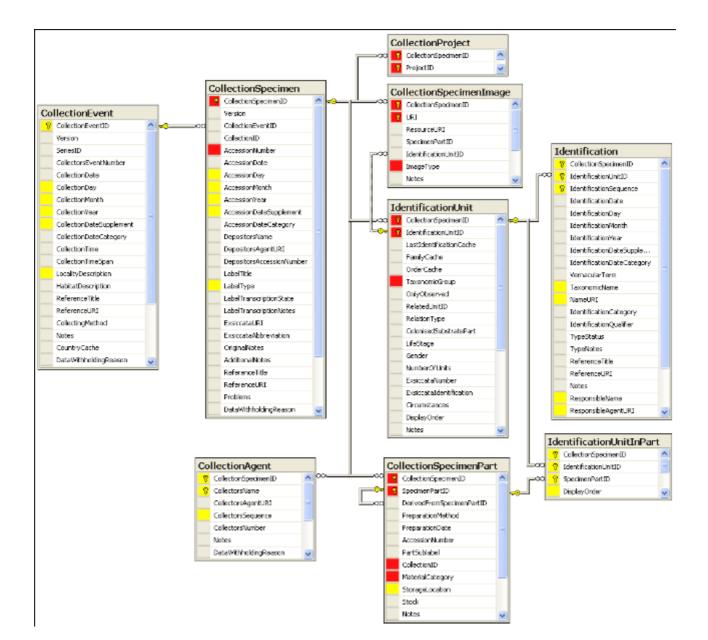
Test Import button. If everything is fine click on the Start Import button to start the import.

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, the date and time of the import in the directory where the image files are located.

The program will check, whether an accession number is already present in the database. It will only import the data, if 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 on the Q button of search for the website.

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



Import tab-separated lists

With this import routine, you can import data as tab-separated lists into the database. Choose **Data -> Import -> Import list...** from the menu to open the window for the import. In the window 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 transferred 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.

coding: UTF8	V Filen	ame: C:\Daten\Dive	sityWorkbench 2.0V	DiversityCollection/\bir	NDebugVmportVHER	BAR 41.txt			🛃 Use mappi
recetting parameters	for the import								
collection event and	gathering information:	Specimen and rel	ated informations [0)	iganisms and related i	nformations Column	mapping			
COLNO	GRUPPE	GENUS	SPECIES	AUTHORS	LAND	BUNDESLAND	REGION	STADT	STANDO
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	Caribean Lowlan	Linon	strongly c
5037.00	×				Costa Rica	Prov. Limon	Caribean Lowlan	Limon	strongly c
5038,00	x				Costa Rica	Prov. Limon	Caribean Lowlan	Limon	strongly c
5039,00	х				Costa Rica	Prov. Limon	Caribean Lowlan	Limon	strongly c
<						-		_	>
Data start in line: 2	2 🗢 Save Tab	íe:	Mia Alia	is for table:	1	🖌 Dolumn:		Sroup:	<u>~</u> 🖻 🗉
CollectionSpecim		Identification	Identification	Identification	CollectionEvent	CollectionEvent	CollectionEvent	CollectionEvent	Collection
CollectionSpecim		Identification	Identification	Identification	CollectionEvent	CollectionEvent	CollectionEvent	CollectionEvent	Collection
epositorsAcces		TaxonomicName	TaxonomicName	TaxonomicName	LocalityDescription	LocalityDescription	LocallyDescription	LocaltyDescription	HabitatDe
		ectionEventID:							
	Collectio	icalisationSystem(D); inAgent illectorsName: C. Roj illectionSpecimen(D); ationUnit	- 						
Analyse data 4 1 2 24 Jp to 10 2 Total 119	Collectio Collection Co	icalisationSystem(D); rrAgent vilectorsName: C. Ro vilectorsSpecimen(D); ationUnit vilectorsSpecimen(D); istidentificationCache aplayOrder: 1 sentomicSinopa myso ification]	ies : Arcyria of insignia, y mycete Arcyria of, insignia, yał						

To analyse the data in the file click on the **[Analyse]** button. During the analysis the program may ask you to give additional information, like the taxonomic groups of the imported organisms. In the upper part of the window you can add 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. This might be necessary if e.g. your data contain informations of parasites and hosts. The data tables that are related to an identification are listed with their aliases in the lists for the identification tables. Use the \blacktriangleright and \blacktriangleleft buttons to move them between the lists. Use the \checkmark buttons to change the sequence within a list. With the **[Host]** option \bigcirc Host \bigcirc you define the host and the **[Main]** option defines which organism will be chosen as the first to be printed e.g. on a label.

Collection event and gathering informations	Specimen and related informations	Organisms and related informations	
Datasets contain 2 organisms. Tables:	IdentificationUnit_1	☐ IdentificationUnit_2	
Taxon, gloup,	Identification tables	Identification tables	Taxon, group:
	V 15 17		×
	17	•	
		O Host 💿 💌	
Host-parasite or corresponding relation b	etween organisms resp. units:	~	
V Taxon name is storage location. Main	organism	💿 Main 🔘	

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



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



If all the dataset are belonging to one event series, e.g. to one 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 your data where successfully analysed, the window 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 arranged according to the tables in the database in which they will be imported. The underlined fields belong the the primary keys of the respective tables and are red 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 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] [1]**



To import the 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.

Export as tab-separated lists

You can export the content of the datasets listed in the specimen list into a tab-separated list. Choose **Data - Export - Export list...** from the menu. A window as shown below will open. To change the preset path of the export file use the Dutton.

C: \Daten\Diversity	Vorkbench 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
CollectionSpecime	Average altitude Country Taxon Collector CollectionEventLocalisation CollectionEvent IdentificationUnit CollectorAgent AverageAltitudeCache CountryCache LastIdentificationUnit CollectorsName 1200 Nambia Candelaniella Zedda, L 1200 Nambia Candelaniella Zedda, L 1200 Nambia Candelania Zedda, L 1200 Nambia CandelacaZedda, L 1200 1200 Nambia CaloplacaZedda, L 1200 1200 Nambia CaloplacaZedda, L 1200 1200 <t< td=""><td>=</td></t<>	=
M-0038784 M-0038785 M-0038786 SQL-Query	 Namibia Colema Zedda, L. Namibia Hysterium/Zedda, L. Namibia fungus Zedda, L. Namibia fungus Zedda, L. TO AccessionNumber, T2 AverageAlthudeCache, T3 CountryCache, T4 LastIdentificationCache, T5 CollectorsName FROM CollectionSpecimen T0 L 	

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 which 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 sorting the results **[Order by:]** will be filled. So if you need sorted results 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 window will open as shown below, where you can choose the fields you want to export.

Choose the fields for the export	
🖃 🗖 Specimen	
- 🗸 Accession number	
CollectionSpecimenID	
Accession date	
🗖 🗖 Depositor	
Reference	
🛛 🗖 Original notes	
Transcription state	
Exsiccata series	
Exsiccata number	
Average altitude	_
Table: CollectionSpecimen	
Column: AccessionNumber	
Accession number of the specimen within	the
collection, e.g. "M-29834752"	
	_
Cancel	ок

Please keep in mind, that only the datasets listed in the **specimen list** of the main form will be exported. If for example you set the maximal number for the specimen list to 100, only these datasets will be exported, even if the number of datasets related to your query will be more than 100.

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. If you want to avoid these cross joins and need only one line for each dataset, please use the export funktion of the grid mode.

Taxon IdentificationUnit
LastIdentificationCache
Arthrocladiella mougeotii (Lev.) Vassilkov
Arthrocladiella mougeotii (Lev.) Vassilkov
Blumeria graminis (DC.) Speer
Blumeria graminis (DC.) Speer
Lycium barbarum
Lycium barbarum

Reimport tab-separated lists

With this import routine, you can reimport data in tab-separated lists that had been exported from the database. Choose **Data -> Import -> Reimport list...** from the menu to open the window 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 the client provides no possibility to change data on the basis of lists, you may export the respective data to a tab-separated list, change your values and reimport the data.

In the window 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 always start in line 7, indicated by a gray background of the header lines.

🔰 Import list						
Encoding: Unicode		ame: C:\Daten\Dive	ersityWorkbench 2.0\	DiversityCollection\bit	h\Debug\Export\Dive	ersityCollection 🔄 [
Presetting parameters		20				
DiversityCollectionEx					1	
CollectionSpecim	Average latitude	CollectionEventID	LocalisationSyste	Average longitude	Location 1	Location 2
CollectionSpecim	CollectionEventL	CollectionEventL	CollectionEventL	CollectionEventL	CollectionEventL	CollectionEventL
CollectionSpecim	AverageLatitude	CollectionEventID	LocalisationSyste	AverageLongitud	Location1	Location2
то	T2	T2	T2	T2	T2	T2
168446	48,1381	204669	9	46,832	46,832	48,1381
168448	48,1381	201482	9	46,832	46,832	48,1381
169568	48,1381	204668	9	46,832	46,832	48,1381
169637	48,1381	205416	9	46,832	46,832	48,1381
167313	48,1381	205415	9	46,832	46,832	48,1381
Analyse data Image: state in the state						
Start import	Import data: 💿 I	mport all data lines	Import first	🗘 línes 🔲 Impo	rt empty data	

To analyse the data in the file click on the **[Analyse]** button. After a successful analysis, the window 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 respective 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.

Export ABCD

In the current version only the main data from DiversityCollection will be exported to ABCD.

To export the data of the specimen selected in the specimen list following the <u>ABCD schema</u> <u>2.06</u> choose **Data -> Export -> XML (ABCD Schema)...** from the menu. A window as shown below will open where you can set some additional parameters defined in ABCD resp. <u>BioCASE</u>.

XML Export		
	Create an export file according to the schema ABCD 2.06	2
Technical contacts:	webmaster@somewhere.net	
Content contacts:		
Other providers:		
Metadata		
Icon URI:	http://www.botanischestaatssammlung.de/grafik/bslogo.jpg	- 6
Scope:	Fungi	M
Version	2.7	Dienstag , 26. 💌
Dataset GUID:	d69fe197-10e7-401a-89ae-c39b5f7a5a61	create GUID
Collection	M-Fungi	× -
Export file:	C:\Daten\DiversityWorkbench 2.0\DiversityCollection\bin\Debug\XmlExportABCD_26_08_2008.XML	
		Start export

To start the export click on the **Start export** button. The data will be exported into a file in your application directory. Click on the Dutton to inspect the exported data (see below).

🔮 Browser	
🗢 🔿 🔕 file:///C:/Daten/DiversityWorkbench 2.0/DiversityCollection/bin/Debug/XmlExportABCD_26.08.2008.XML	
	^
xml version="1.0" encoding="utf-16" ?	
- <datasets></datasets>	-
- <dataset></dataset>	_
<pre><datasetguid>d69fe197-10e7-401a-89ae-c39b5f7a5a61</datasetguid></pre>	
<technicalcontact>webmaster@somewhere.net</technicalcontact>	
– <metadata></metadata>	
lconURI>http://www.botanischestaatssammlung.de/grafik/bslogo.jpg	
<scope>Fungi</scope>	
 <originalsource></originalsource> 	
<sourceinstitutioncode>Botanische Staatssammlung</sourceinstitutioncode>	
München	
<sourceinstitutionid>Botanische Staatssammlung München</sourceinstitutionid>	
- <units></units>	
- <unit></unit>	
<unitguid>URN:catalog:M:M-Fungi:2507</unitguid>	
<sourceinstitutionid>Botanische Staatssammlung</sourceinstitutionid>	
München SourceInstitutionID	
<unitid>2507</unitid>	
<unitidnumeric>2507</unitidnumeric>	~
Cancel	ОК

Label

If there is only one part in your specimen click on the printer symbol in the specimen to switch to 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

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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 F	Print the	labels
Schema file: Title:		3 Specify the se	chema			
	²² Pomania: Los Provensi Gradina Solanice Chose the part	Di A Label Title: Trans.: first curator rev	view 4	Gener	rate the	labels
T	3572 rocladiella mougeotii Arthrocladiella mougeotii (Lév.) Vassilkov Lycium halimirolium	Dinits not in part:	Show in Arthrocise		Hide:	ns
<		× ×	* *			

Additional information about a label are entered in the label section (see image below). The data are stored in the table <u>CollectionSpecimen</u>.

Label				
Title:				~
Trans.:	incomplete	~	Type: typed	~
Notes:				

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 them 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 selected 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 specimens 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 one label. If there are more than 20 specimens in the list, you get a warning whether 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, transformed to HTML-files and depicted in a browser. To print the label click on the \clubsuit button.



If you want to print labels for duplicates that are stored in a different collection, the duplicate should be a child of the original specimen as shown in the example below.

<u></u>	Botanische Staatssammlung München (M)
	🗐 M-Fungi
	🖮 🗊 Arthrocladiella mougeotii
	— 🍞 Arthrocladiella mougeotii (Lév.) Vassilkov
	🛄 🖉 Lycium barbarum
ė-0	Botanischer Garten und Botanisches Museum Berlin-Dahlem (B)
	🗊 Arthrocladiella mougeotii (Lév.) Vassilkov
	🍞 Arthrocladiella mougeotii (Lév.) Vassilkov
	🦾 💋 Lycium barbarum
	4 0012574
	M <u>-0013574</u> Mai Arthrocladiella mougeotii
	<u> </u>
	Lycium barbarum
	🖃 🖅 Arthrocladiella mougeotii (Lév.) Vassilkov
	🍞 Arthrocladiella mougeotii (Lév.) Vassilkov
	🛄 🖉 Lycium barbarum

IDepending on the schema you use, the label will be marked as duplicat and contain a reference to the original specimen (see below).

ex Botanische Staatssammlung München

Duplicate of M-0013574

Arthrocladiella mougeotii (Lév.) Vassilkov

In Lycii barbari foliis, in pago Böllberg prope Halle

15.10.1870

leg. A. Bary

If you want to save the generated files for later printing click on the \blacksquare button to do this.

Note that the program will by default create a file **Label.xml** and in case a schema file is specified a file **Label.htm** 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 Code39,ttf, 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 want to print labels for all the specimens in the specimen list you can restrict these to the collection and the material category of the current specimen part (see image above).

If you do not select a schema file, i.e. the textbox **Schema file:** is empty, 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.

-	<collection></collection>	ī
	<collectionname>M-Fungi</collectionname>	
	<collectionowner>Botanische Staatssammlung</collectionowner>	9
	München	
	<collectionowneraddress></collectionowneraddress>	
-	<collectionspecimen></collectionspecimen>	
	<accessionnumber>M-0013663</accessionnumber>	
	<exsiccataabbreviation>Smarods, Fungi Lat.</exsiccataabbreviation>	
	Exs.	
	<materialcategory>specimen</materialcategory>	
	StorageLocation>Blumeria graminis	
<		
Schema file:	😑 📼 🗗 🗋 🎍 🔚	
Title:	Regard stock for duplicates	
	Restrict to collection: M-Fungi 📃 Restrict to material: specimen 📃 🧰	J

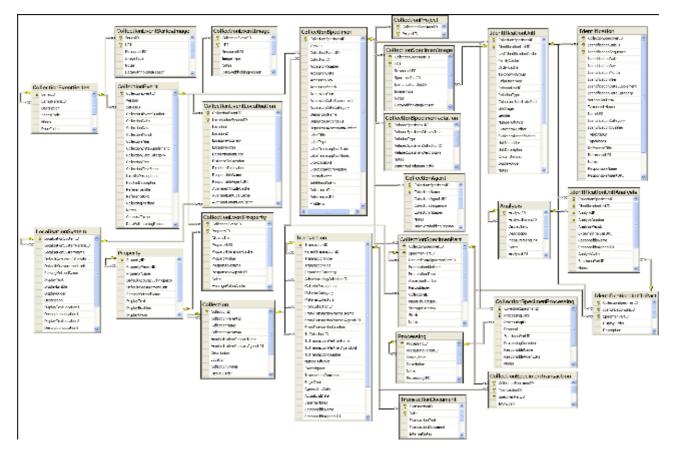
Database

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

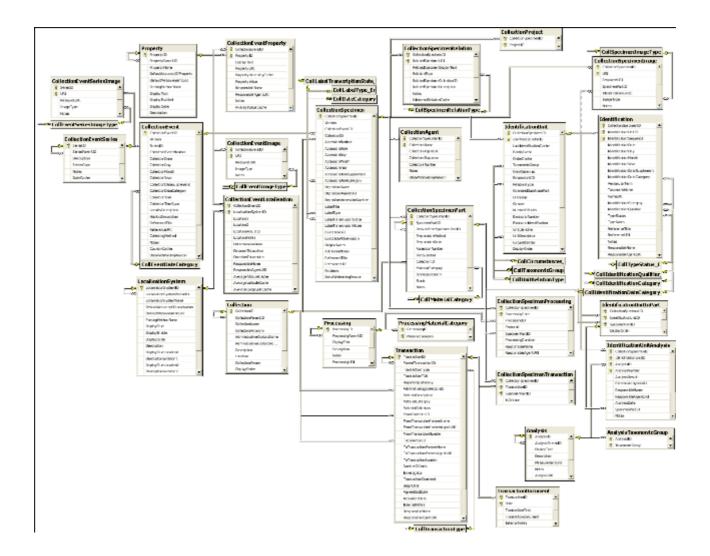
Organisation of the data

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

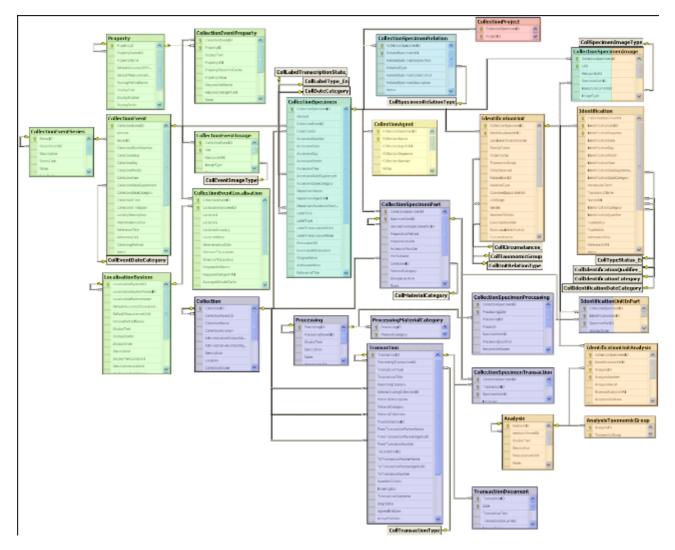
The image below shows the main tables of the database.



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**.



Further details: tables , application tables, access.

Database - access

The database engine for DiversityCollection is Microsoft SQL-Server 2005.

If you are connected to a database this is indicated by the icon of the connection button \bigcirc in left upper corner. If you are not connected this will be indicated by the icon \bigotimes . 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 \bigcirc button.

If you want to use a database on your local computer (SQL Server Express), start the program ^{CS}DiversityCollection.exe and in the main window click on the ^{SS}button or choose **Connection -> Database ...** from the menu. A window as shown below will open. Here choose the option **Local database** and select the database file in your directory.

📴 Cor	nection to database	
	Choose if the database is remote or local (SQLExpress)	
🔘 Remo	te database 💿 Local database	
Select th	e local database file for the database DiversityCollection	
File: C:\I	Daten\DatenbankenExpress\DiversityCollection\DiversityCollection_Data	a.MDF 🔂
Cance		ОК

If you want to use a database on a central server or remote computer choose the option **Remote database** and set the connection parameters as described below.

Database name, IP-address and Port

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

📴 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	Please select a server from the list or type the name or the IP-address of the server Port
127.0.0.1 💙 1433	127.0.0.1 🗸 1433
Login	Login
 Windows authentication 	 Windows authentication
SQL-Server authentication	 SQL-Server authentication
User TestCurator	User Editor
Password	Password ******
Restrict to DiversityCollection v. 2.5	Restrict to DiversityCollection v. 2.5
Restrict to DiversityCollection	Restrict to DiversityCollection
Show all available databases	Show all available databases
Connect to server 💼	Connect to server 💼
Choose database:	Choose database:
DiversityCollection_Test	DiversityCollection_Test
Cancel	Cancel OK
📴 Connection to database 🛛 🗖 🔀	
Please select a server from the list or type the name or the IP-address of the server Port	
BSM1 5432	
C Login	
Windows authentication	
SQL-Server authentication	
User Editor	
Password	
Restrict to DiversityCollection v. 2.5	
Restrict to DiversityCollection	
 Show all available databases 	
 Show all available databases Reset 	
Reset	
Reset 🔀	

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 Connect to server

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

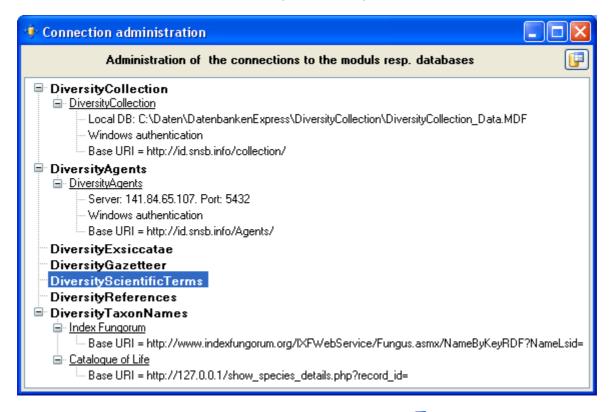
process click on the

Reset

Button.

Module connections

The program will automatically try to get connection to all the modules within the Diversity Workbench. To edit these connections choose Connection - MModule connections ... from the menu. A form as shown below will open, where you can edit these connections.



To edit a connection, select it in the tree and click on the \square button.

Index

- <u>Analysis</u>
- <u>AnalysisTaxonomicGroup</u>
- <u>Collection</u>
- <u>CollectionAgent</u>
- <u>CollectionEvent</u>
- <u>CollectionEventImage</u>
- <u>CollectionEventLocalisation</u>
- <u>CollectionEventProperty</u>
- <u>CollectionEventSeries</u>
- <u>CollectionEventSeriesImage</u>
- <u>CollectionExternalDatasource</u>
- <u>CollectionManager</u>
- <u>CollectionProject</u>
- <u>CollectionRequester</u>
- <u>CollectionSpecimen</u>
- <u>CollectionSpecimenImage</u>
- <u>CollectionSpecimenPart</u>
- <u>CollectionSpecimenProcessing</u>
- <u>CollectionSpecimenRelation</u>
- <u>CollectionSpecimenTransaction</u>
- <u>ExternalRequestCredentials</u>
- Identification
- IdentificationUnit
- IdentificationUnitAnalysis
- IdentificationUnitInPart

- LocalisationSystem
- <u>Processing</u>
- <u>ProcessingMaterialCategory</u>
- <u>Property</u>
- <u>Transaction</u>
- <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 Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

Table AnalysisTaxonomicGroup

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 Default value: user_name()

Table Collection

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 (500)	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 <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 <i>Default value: user_name()</i>

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)
CollectorsName	nvarchar (255)	Name of the Collector
CollectorsAgentURI	varchar (255)	The URI of the Agent, e.g. as stored within the module DiversityAgents
<u>CollectorsSequence</u>	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 CollectionEvent

The collection event where the specimen was collected

Column	Data type	Description
CollectionEventID	int	Unique ID for the collection event (= Primary key)
Version	int	The version of the dataset. Automatically set by the system. Default value: (1)
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 e.g. 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 Default value: getdate()
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

Table CollectionEventImage

The images showing the site of the collection event

Column	Data type	Description
<u>CollectionEventID</u>	1 11 11	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
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 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 Default value: getdate()
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
<u>CollectionEventID</u>	int	Refers to the ID of CollectionEvent (= Foreign key and part of primary key)
<u>PropertyID</u>	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. <i>Default value:</i> [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>	int	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
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 CollectionExternalDatasource

CollectionExternalDatasource document the sources of the names.

Column	Data type	Description
ExternalDatasourceID	int	An ID to identify an external data collection of collection specimen (primary key, the ID has no meaning outside of the DiversityWorkbench system)
ExternalDatasourceName	nvarchar (255)	The name of the data collection that has been integrated or can be linked to for further analysis
ExternalDatasourceVersion	nvarchar (255)	The version of this data collection (either official version number, or dates when the collection was integrated)
Rights	nvarchar (500)	A description of copyright agreements or permission to use data from the external database
ExternalDatasourceAuthors	nvarchar (200)	The persons or institutions responsible for the external database
ExternalDatasourceURI	nvarchar (300)	The URI of the database provider resp. the external database
ExternalDatasourceInstitution	nvarchar (300)	The institution responsible for the external database
InternalNotes	nvarchar (1500)	Additional notes concerning this data collection
ExternalAttribute_NameID	nvarchar (255)	The table and field name in the external data collection to which CollectionExternalID refers
PreferredSequence	tinyint	For selection in e.g. picklists: of several equal names only the name from the source with the lowest preferred sequence will be provided.
Disabled	bit	If this source should be disabled for selection of names e.g. in picklists

Table <u>CollectionManager</u>

Collection managers within DiversityCollection, responsible of specimen transactions

Column Data type Description	Column	Data type	Description
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<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 Manager has the right to administrate the transaction. Corresponds to AdministratingCollectionID in table Transaction.

Table CollectionProject

The projects within which the collection specimen were placed

Column	Data type	Description
CollectionSpecimenID	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 <i>Default value: user_name()</i>

Table CollectionRequester

Requesters within DiversityCollection, responsible of specimen transactions

Column	Data type	Description
<u>LoginName</u>	nvarchar (50)	A login name which the user uses for access to the DivesityWorkbench, Microsoft domains, etc
AdministratingCollectionID	int	ID for the collection for which the Requester has the right to request specimen. Corresponds to AdministratingCollectionID in table Transaction.
IncludeSubcollections	bit	If the subcollections of the

administrating accessible for	
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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 <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()
InternalNotes	nvarchar (MAX)	Internal notes that should not be published e.g. on websites
ExternalDatasourceID	int	An ID to identify an external data collection of collection specimen (primary key, the ID has no meaning outside of the DiversityWorkbench system)
ExternalIdentifier	nvarchar (100)	The identifier of the external specimen as defined in the external datasource

Table CollectionSpecimenImage

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

Column	Data type	Description
CollectionSpecimenID	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
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 CollectionSpecimenPart

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

Column	Data type	Description
<u>CollectionSpecimenID</u>	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) <i>Default value: (1)</i>
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 (max. 255)
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
CollectionSpecimenID	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) <i>Default value: (1)</i>
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 including the unit (e.g. 5 min) or the end of the processing starting at the processingDate (e.g. 23.05.2008)
ResponsibleName	nvarchar (255)	Name of the person or institution responsible for the determination <i>Default value:</i> [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 <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 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)
RelatedSpecimenURI	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 <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 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)
TransactionID	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. <i>Default value: user_name()</i>
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. <i>Default value: user_name()</i>
LogUpdatedWhen	smalldatetime	Date and time when the data were last updated. <i>Default value: getdate()</i>

Table <u>ExternalRequestCredentials</u>

External requestors with the permission to create a request for a loan

Column	Data type	Description
<u>RequesterLogin</u>	nvarchar (50)	Login of the person responsible for the loan requests in the collection
AdministratingCollectionID	int	The ID of the collection which gets the request for a loan. Corresponds to the AdministratingCollectionID in table Transaction.
RequestingCollectionID	int	The ID of the collection for which the requester has the permission to create a request

Table Identification

The identifications of the organisms within a specimen

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)
IdentificationSequence	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 <i>Default value:</i> [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 <i>Default value: getdate()</i>
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)
<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,
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 exsiccata.
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 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 IdentificationUnitAnalysis

The analysis values taken from an identification unit

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)
AnalysisID	int	Analysis ID, foreign key of table Analysis.
<u>AnalysisNumber</u>	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	nvarchar (50)	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 <i>Default value: getdate()</i>
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 Default value: getdate()
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) <i>Default value: (1)</i>
<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 <i>Default value: getdate()</i>
LogUpdatedBy	nvarchar (50)	Who was the last to update this dataset Default value: user_name()

Table Property

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

Data type	Description
int	Unique ID for the transaction (= Primary key)
int	The ID of a preceeding transaction of a superior transaction if transactions are organized in a hierarchy
nvarchar (50)	Type of the transaction e.g. gift in or out, exchange in or out, purchase in or out Default value: N'exchange'
nvarchar (200)	The title of the transaction as e.g. shown in an user interface
nvarchar (50)	A group defined for the transaction, e. g. a taxonomic group as used for exchange balancing
int	ID of the collection thas is responsible for the administration of the transaction.
nvarchar (MAX)	ID of the project to which the transaction belongs (Projects are defined in DiversityProjects) Default value: "
nvarchar (50)	Material category of specimen. Examples: 'herbarium sheets', 'drawings', 'microscopic slides' etc. <i>Default value: N'specimen'</i>
nvarchar (MAX)	The collectors of the material
int	The ID of the collection from which the specimen were transfered, e.g. the donating collection of a gift
nvarchar (255)	Name of the person or institution from which the specimen were transfered, e.g. the donator of a gift
varchar (255)	The URI of the transaction partner (see e.g. module DiversityAgents)
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
int	The ID of the collection to which the specimen were
	int int int int int int invarchar (50) invarchar (200) int int invarchar (MAX) invarchar (MAX) invarchar (255) int

		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 addressed 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 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 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)
<u>Date</u>	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 window 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 window 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.

· ·	History of M-0011595 (SpecimenID: 29431)								
ollec	tion specimen	CollectionEvent	CollectionGeo	graphy Colle	ctionAgent Col	lectionStorage	Identification	IdentificationUni	t
	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
	1	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

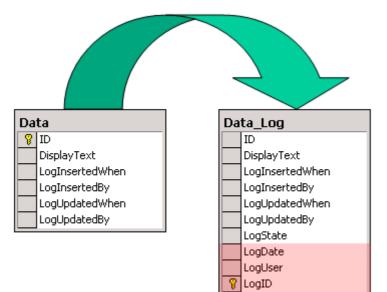
A dialog will appear where you have to select the original database file in your directory.

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 Fenster ?					
Vorgang Ansicht Extras ⇐ → 🔃 💽 🚰	3 2				
] 🔆 🐎 🕼 🔞 🖸 🔁					
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 <u>specimen</u> 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.No. M-0040397	Erysiphe aquilegiae var. ranunculi (Grev.) U. Braun	ID (Specimen / Event) 135548 / 211558	Version 3/1	Withhold. reason)
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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>
- <u>ProjectProxy</u>
- ProjectUser
- UserProxy

Table ApplicationEntityDescription

The description of the column	is in different languages
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Column	Data type	Description
TableName	varchar (50)	The name of the table within the database
<u>ColumnName</u>	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 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>

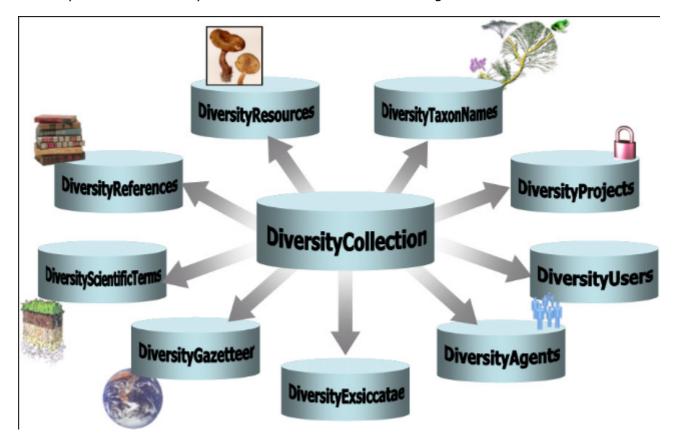
The user as stored in the module DiversityUsers

Column	Data type	Description
<u>LoginName</u>	nvarchar (50)	A login name which the user uses for access the DivesityWorkbench, Microsoft domains, etc
CombinedNameCache	nvarchar (255)	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.



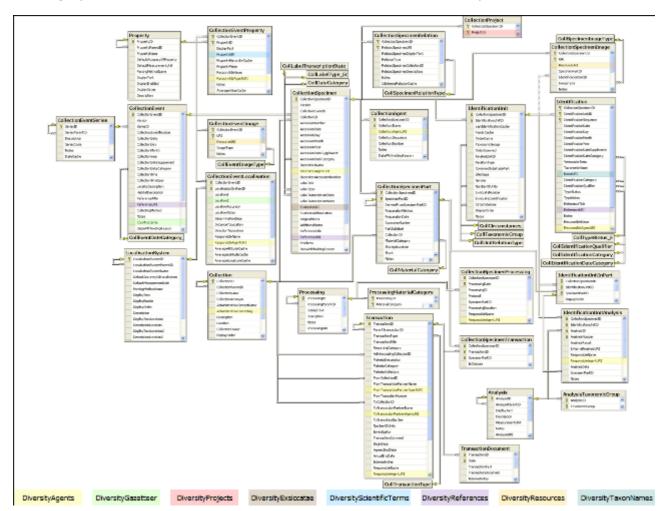
The modules communicate with each other to provide their services for the other modules.

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

Tax.name: 🔽 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 ⁶⁴ button. A window will open where you may select an entry from the foreign database.

🏁 DiversityTaxonNames 🛛 (Diversity)	TaxonNames_Plants) Server: 127.0.0.1	
i 📴 🛛 🚃		open DiversityTaxonNames (***
Query conditions	Melastoma arborescens Aubl.	ID 417384
Name • ~ melasto Rank •	Melastoma arborescens Sieber ex Presi Melastoma arboreum Schitdi. Melastoma arboreum Schitdi.	Taxonomic name Melastoma argyrophyllum Schrank & Mart. ex DC.
Authors Bas.auth. • ~	Melastoma arboreum Vell. Melastoma arboreum Vell. Melastoma argenteum Desr.	Basionym Bank
Comb.auth. • ~	Melastoma argenteum Desr. Melastoma argenteum Poir. ex Steud. Melastoma argenteum Sw.	sp. Publication
Project	Melastoma argenteum Sw. Melastoma argenteum Sw. Melastoma argyratum Presi.	Prodr. (DC.) 3: 181 1828 Validity Valid name
Project MelList	Melastoma argyrophyllum Schrank & Mar Melastoma argyrophyllum Schrank & Mar Melastoma argyrophyllum Schrank & Mar	Vaid name Hierarchy Melastoma Burm. ex L.
	Melastoma aristatum Mart, ex DC, Melastoma aromaticum Vahi Melastoma articulata Desr.	Melastomataceae Myrtales Magnoliopsida
	Melastoma articulatum Desr. Melastoma articulatum Naudin	Magnoliophyta
	Melastoma arvense Vell. Melastoma aspera L.	Synonym Synonymy type
	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.	<u>۶</u>	×	(
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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 on the \times button. If you need further information about the value, click on the \Im button. This will open a form, showing an overview of the related value.

🎏 DiversityTaxonNames	(DiversityTaxonNames_Plants)	Server: 127.0.0.1	
		open DiversityTaxon	Vames 🥳
ID			
	417384		
Taxonomic name	felastoma argyrophyllum Schrank & Mart	. ex DC.	
Basionym	20 1 2		
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 6^{4} button.

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 ^{CP} button. As with the link to modules within the Diversity Workbench a window will open where you can choose from either Diversity Workbench modules or external Webservices. See <u>Webservice</u> for further details

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 ^{CS}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. For more information see the <u>Diversity</u> <u>Workbench</u> Portal.

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. For more information see the <u>Diversity Workbench</u> Portal.

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 window will open where you can choose from either Diversity Workbench modules or external Webservices. The currently provided webservices are:

Index Fungorum

The Palaeontology Database

The Catalogue of Life

Index Fungorum - webservice

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 this webservice, click on the ⁶⁴ button. A window will open where you can choose IndexFungorum from the Database list (see below).

🥵 Index Fungorum: www.indexfungorum.org		×
Database: IndexFungorum		
http://www.indexfungorum.org/Names/Names.asp		^
Query results 37	NAME OF FUNGUS Amanita muscaria	
Amanita muscaria (L.) Lam.	Amarika Muscana	
Amanita muscaria a eu-umbrina R. Schulz	AUTHORS	
Amanita muscaria b hercynica R. Schulz	(L.) Lam.	
Amanita muscaria c sudedica R. Schulz	PUBLISHED LIST REFERENCE	=
Amanita muscaria f. aureola (Kalchbr.) J.E. Lange	Saccardo's Syll. fung. V: 13; XII: 906; XIX: 49	
Amanita muscaria f. eu-umbrina Schulz		
Amanita muscaria f. formosa (Pers.) Gonn. & Rabenh.	SPECIFIC EPITHET	
Amanita muscaria f. gussowii (Veselý) Neville & Poumarat	muscaria	_
Amanita muscaria f. muscaria (L.) Lam.	VOLUME	
Amanita muscaria f.sp. americana EJ. Gilbert	1	
Amanita muscaria subsp. americana (J.E. Lange) Singer Amanita muscaria subsp. flavivolvata Singer	P. 65	
Amanita muscaria subsp. navivovata singer Amanita muscaria subsp. muscaria (L.) Lam.	PAGE 111	
Amanita muscaria subsp. umbrina Schulz	111	
Amanita muscaria var. alba Peck	YEAR OF PUBLICATION	
Amanita muscaria var. americana J.E. Lange	1783	
Amanita muscaria var. aureola Kalchbr.	CANCTIONING AUTUOD	
Amanita muscaria var. flavivolvata (Singer) Dav. T. Jenkins	SANCTIONING AUTHOR Fr.	
Amanita muscaria var. formosa (Pers.) Bertill. 🛛 🗸 🗸	F1.	
order by: _DisplayText	RECORD NUMBER 161267	
	101207	
▼ max. results: 50 ▼ 14 -	BASIONYM RECORD NUMBER 375287	
- Query conditions	Change to basionym	
Name Amanita musc	Agaricus muscarius L.	
		-
T	Index Fungorum Partnership	^
	Acknowledgements	
	Help with searching	=
	Search Authors of Fungal Names	
	Search Index Europorum	
🔁 🔼 Index Fungoru	m Important Announcement	
index rungeru	Important Announcement	
Record Details:		
Amanita muscaria (L.) Lam., Encycl. Méth. Bot. (P.	aris) 1: 111 (1783)	
		v
· · · ·		-
Cancel	OK	

Enter the query restriction for the name in the Name field in Query conditions. The maximal

number of records you get can be set in the max. results field $\frac{\text{max. results:}}{50}$ (choose a low number if you have a slow connection to the internet). Then click on the search button \mathbb{T} to start the query. In the list of the left upper part the results of the query will be listed. In the

right part of the window 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. If available, the informations provided on the corresponding website is shown in the lower part. 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://	×	C*	I
		-	_		

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

URI of Xanthoria parietina f. excrescens	×
http://www.indexfungorum.org/IXFWebService/Fungus.asmx/NameByKeyRDF?NameLsid=	=416173
OK	

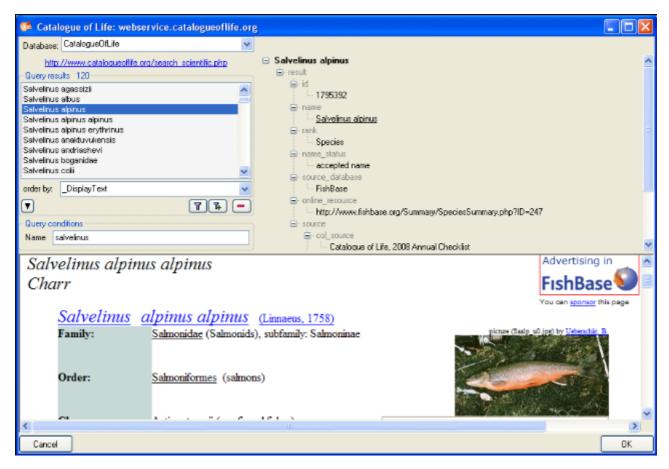
To get the whole information related to this entry as provided by the webservice, click on the button. A window will open as shown below where the informations of the webservice are listed, If available, the lower part will show the corresponding informations of a website.

🥵 Index Fungorum: www.indexfungorum.o	ng	
NAME OF FUNGUS	Amanita muscaria	
AUTHORS	(L.) Lam.	
PUBLISHED LIST REFERENCE	Saccardo's SylL fung. V: 13; XII: 906; XIX: 49	
SPECIFIC EPITHET	muscaria	
YOLUME	1	
		×
T	Index Fungorum Partnership	^
	Acknowledgements	
	Help with searching	
	Search Authors of Fungal Names Search Index Fungorum	
🛸 Index Fung	Jorum Important Announcement	
Record Details:		
Amanita muscaria (L.) Lam., Encycl. Méth	h. Bot. (Paris) 1: 111 (1783)	~

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

Catalogue of Life - webservice

Diversity Workbench provide the possibility to link your data to an external webservice. The webservice provided by the <u>Catalogue of Life</u> is possible through the module DiversityTaxonNames. To establish a connection to this external webservice, click on the ^{SS} button. A window will open where you can choose this webservice (see below).



In the field **Name** in Query conditions enter you search string and click on the **T**button to start the query. In the list of the left upper part the results of the query will be listed. In the right part of the window additional information is shown as provided by the webservice. If available, the lower part of the window will show the webpage of the related information.

😑 Salvelinus alpinus
🚊- result
🚊 id
🚊 name
🚊 - rank
🚊 name_status
🚊 genus
🚊 - species
🚊 - author
<pre>~additional_data></pre>
🚊 distribution
🚊 source_database
🚊 online_resource
🚊 - references
🚔 classification
📮 taxon
🖨 id
<u>1</u>
🖨 name
Animalia
😟 rank
💼 · url
📮 taxon
🖨 id
<u>695</u>
🖨 name
Chordata
🖨 rank
Phylum

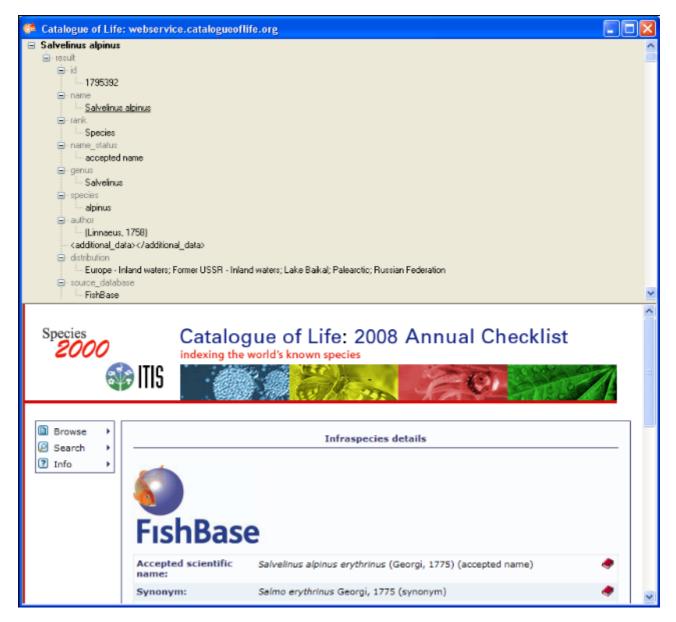
Higher taxa and for synonyms the accepted name will be shown as e.g. shown above. To inspect one of these entries, click on the linked entry of the ID - in the example above id: <u>695</u>. To take the link from the webservice into your database choose one of the entries in the list and click OK. The entry will change as shown below.

http:/ /web	X	1	
	http:/ /web	http://	http://

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

URI of Salvelinus alpinus	
http://webservice.catalogueoflife.org/annual-checklist/2008/search.php?id=1795392	2
ОК	

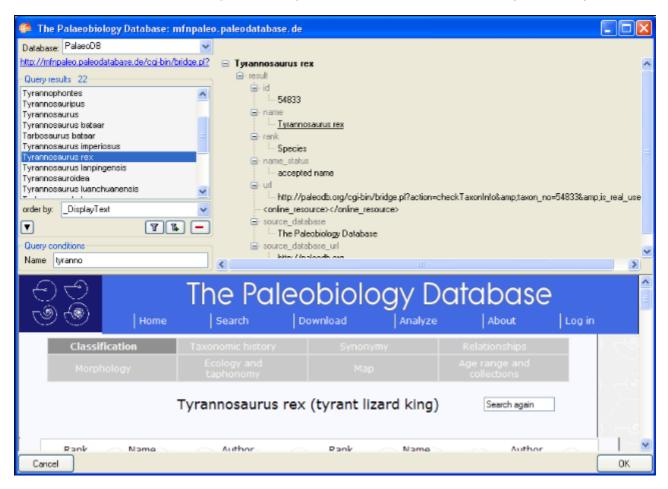
To get the information related to an entry as provided by the webservice, click on the ⁶⁵ button. A window will open as shown below where the informations of the webservice are listed in the upper part. If available, additional informations provided on a corresponding website will be shown in the lower part.



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.

The Palaeontolgy Database - webservice

Diversity Workbench provide the possibility to link your data to an external webservice. The webservice provided by the <u>Palaeontology Database</u> is possible through the module DiversityTaxonNames. To establish a connection to this external webservice, click on the St button. A window will open where you can choose this webservice (see below).



In the field **Name** in Query conditions enter you search string and click on the **T**button to start the query. In the list of the left upper part the results of the query will be listed. In the right part of the window additional information is shown as provided by the webservice. The lower part of the window will show the webpage of the related information.

😑 Tarbosaurus bataar
≟- result
🚊 - id
63705
🚊 name
<u>Tyrannosaurus bataar</u>
📮 - rank
Species
📮 name_status
synonym
📮 - url
http://paleodb.org/cgi-bin/bridge.pl?action=checkTaxonInfo&taxon_no=63705&a
<pre> <online_resource></online_resource></pre>
🖨 source_database
The Paleobiology Database
■ source_database_url
http://paleodb.org
id
<u>57254</u>
<u>Tarbosaurus bataar</u>
, ank
i⊒- name_status
url accepted name
http://paleodb.org/cgi-bin/bridge.pl?action=checkTaxonInfo&taxon_no=5725
source_database
The Paleobiology Database
□- source_database_url
i http://paleodb.org

For synonyms, the accepted name will be shown as well as e.g. shown above. To change to the accepted name, click on the linked entry of the ID - in the example above id: 57254. To take the link from the webservice into your database choose one of the entries in the list and click OK. The entry will change as shown below.

Tax.name:	Tarbosaurus bataar	http://

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

URI of Tarbosaurus bataar 🛛 🛛 🔀
http://mfnpaleo.paleodatabase.de/cgi-bin/bridge.pl?action=getTaxonomyXML&id=57254
OK

To get the information related to an entry as provided by the webservice, click on the soutton. A window will open as shown below where the informations of the webservice are listed in the upper part. If available, additional informations provided on a corresponding website will be shown in the lower part.

	rex					
🖨 result						
😑 id						
54833	1					
	nosaurus rek					
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Speci						
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- genus	isu name					
	nosaurus					
- species						
rex						
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		ridge.pl?action=checkTaxonIn	fo&taxon_no=54	833&is_real_user=0		
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ି 🔿 ୬ 🛞 Classi	Home Fication	The Pale Search Taxonomic history Ecology and taphonomy	Download Synor Ma	Analyze	About Relationships	è
ି 🔿 ୬ 🛞 Classi	Home Fication	The Pale Search Taxonomic history Ecology and taphonomy	Download Synor Ma	Analyze	About Relationships	è
ି 🔿 ୬ 🛞 Classi	Home Fication	The Pale Search Taxonomic history Ecology and	Download Synor Ma	Analyze	About Relationships Age range and collections	è
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Classi Morph	Home fication hology	The Pale Search Taxonomic history Ecology and taphonomy	Download Synor Ma ex (tyrant l	Analyze	About Relationships Age range and collections Search again	Log in
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Classi Morph	Home fication hology Name Metazoa Eúmetazoa	The Pale Search Taxonomic history Ecology and taphonomy Fyrannosaurus re Author Haeckel 1874 Butschli 1910	Download Synor Ma ex (tyrant l Rank	Analyze	About Relationships Age range and collections Search again Author Gauthier et al. (Osborn 190	Log in
Classi Morph	Home fication hology Name Metazoa Eumetazoa Triploblastica	The Pale Search Taxonomic history Ecology and taphonomy Tyrannosaurus re Author Haeckel 1874 Butschli 1910 Lankester 1877	Download Synor Ma ex (tyrant l Rank	Analyze	About Relationships Age range and collections Search again Author Gauthier et al. (Osborn 190 (Broom 192	Log in 1988 03) 24)
Classi Morph	Home fication hology Name Metazoa Eúmetazoa	The Pale Search Taxonomic history Ecology and taphonomy Fyrannosaurus re Author Haeckel 1874 Butschli 1910	Download Synor Ma ex (tyrant l Rank	Analyze	About Relationships Age range and collections Search again Author Gauthier et al. (Osborn 190 (Broom 192 Benton 198	Log in 1988 03) 24) 85

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.