Diversity Workbench

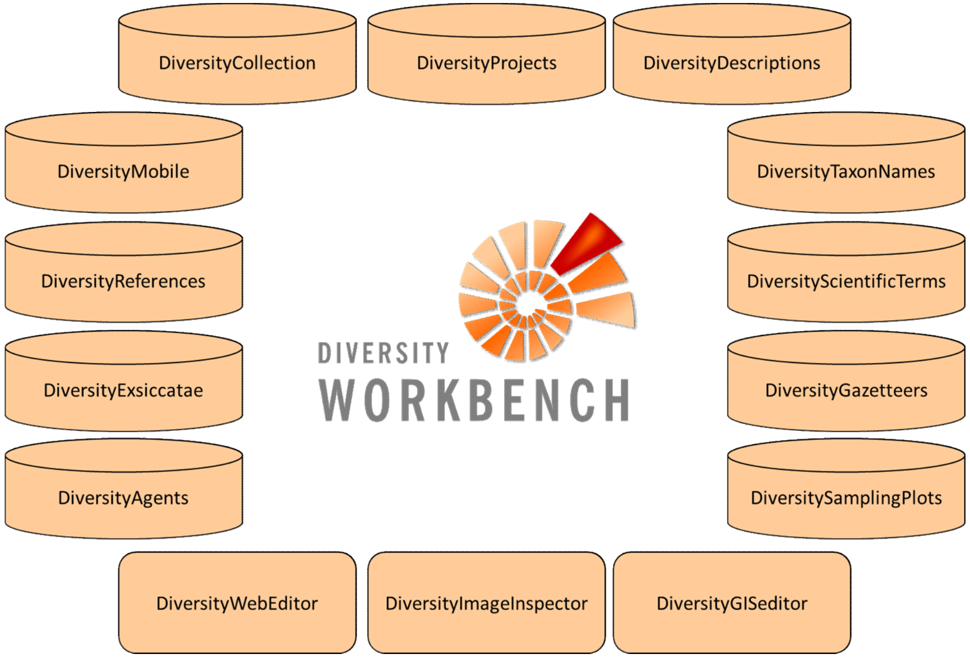
Einführung

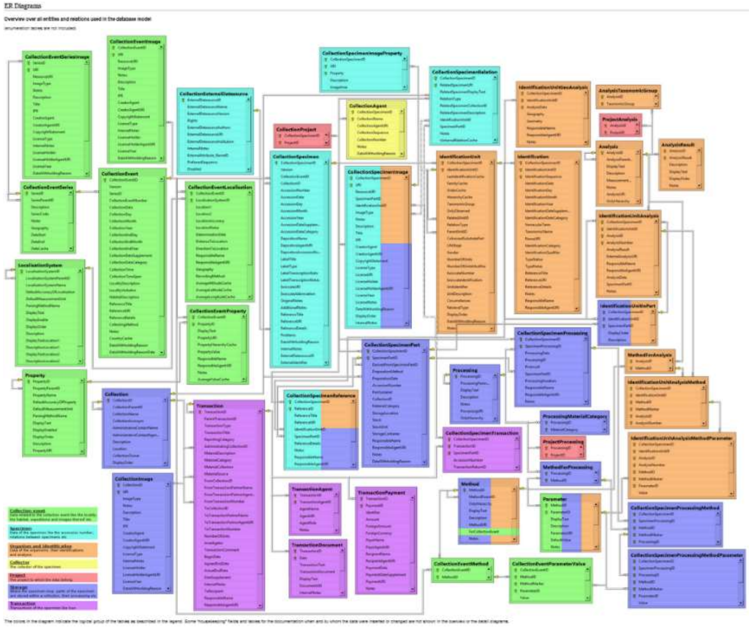
Dagmar Triebel

DWB – ein Set von Software Tools

- 11 SQL relationale Datenbanken, Schnittstellen zum Datenmanagement

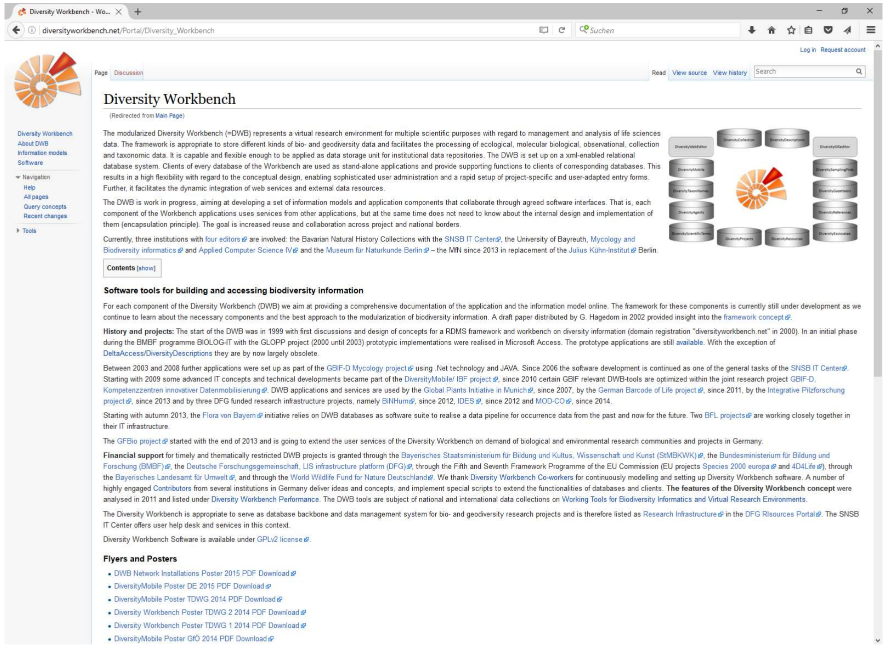
- Implementierung v. a. an den SNSB


DiversityCollection
DiversityProjects
DiversityDescriptions
DiversityMobile
DiversityTaxonNames
DiversityReferences
DiversityScientificTerms
DiversityExsiccatae
DIVERSITY WORKBENCH
DiversityGazetteers
DiversityAgents
DiversitySamplingPlots
DiversityWebEditor
DiversityImageInspector
DiversityGISeditor



DWB – Philosophie des Teams

- DWB ist definiert als Langzeit-Software Projekt (seit mehr 20 Jahren; 1999)
- Software ist frei verfügbar unter **www.diversityworkbench.net**
- **Open-Source**-Implementierung mit mehr als 1,9 Mio Code-Zeilen
- Software Design, Datenmodelle und ER-Schemata als **Open Access** publiziert
- „User-driven development“ (UDD) mit Software Tests durch derzeit mehr als 30 engagierte Anwender



Diversity Workbench

(Redirected from Main Page)

The modularized Diversity Workbench (=DWB) represents a virtual research environment for multiple scientific purposes with regard to management and analysis of life sciences data. The framework is appropriate to store different kinds of bio- and geodiversity data and facilitates the processing of ecological, molecular biological, observational, collection and taxonomic data. It is capable and flexible enough to be applied as data storage unit for institutional data repositories. The DWB is set up on a xml-enabled relational database system. Clients of every database of the Workbench are used as stand-alone applications and provide supporting functions to clients of corresponding databases. This results in a high flexibility with regard to the conceptual design, enabling sophisticated user administration and a rapid setup of project-specific and user-adapted entry forms. Further, it facilitates the dynamic integration of web services and external data resources.

The DWB 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.

Currently, three institutions with four editors are involved: the Bavarian Natural History Collections with the SNSB IT Center, the University of Bayreuth, Mycology and Biodiversity informatics and Applied Computer Science IV and the Museum für Naturkunde Berlin – the MfN since 2013 in replacement of the Julius Kühn-Institut Berlin.

Contents [show]

Software tools for building and accessing biodiversity information

For each component of the Diversity Workbench (DWB) 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 paper distributed by G. Hagedorn in 2002 provided insight into the framework concept.

History and projects: The start of the DWB was in 1999 with first discussions and design of concepts for a RDMS framework and workbench on diversity information (domain registration "diversityworkbench.net" in 2000). In an initial phase during the BMBF programme BIOLOG-IT with the GLOPP project (2000 until 2003) prototypic implementations were realised in Microsoft Access. The prototype applications are still available. With the exception of DeltaAccess/DiversityDescriptions they are by now largely obsolete.

Between 2003 and 2008 further applications were set up as part of the GBIF-D Mycology project using .Net technology and JAVA. Since 2006 the software development is continued as one of the general tasks of the SNSB IT Center. Starting with 2009 some advanced IT concepts and technical developments became part of the DiversityMobile/ IBF project, since 2010 certain GBIF relevant DWB-tools are optimized within the joint research project GBIF-D, Kompetenzzentren innovativer Datenmobilisierung. DWB applications and services are used by the Global Plants Initiative in Munich, since 2007, by the German Barcode of Life project, since 2011, by the Integrative Pilzforschung project, since 2013 and by three DFG funded research infrastructure projects, namely BiNHum, since 2012, IDES, since 2012 and MOD-CO, since 2014.

Starting with autumn 2013, the Flora von Bayern initiative relies on DWB databases as software suite to realise a data pipeline for occurrence data from the past and now for the future. Two BFL projects are working closely together in their IT infrastructure.

The GFBio project started with the end of 2013 and is going to extend the user services of the Diversity Workbench on demand of biological and environmental research communities and projects in Germany.

Financial support for timely and thematically restricted DWB projects is granted through the Bayerisches Staatsministerium für Bildung und Kultus, Wissenschaft und Kunst (StMBKWK), the Bundesministerium für Bildung und Forschung (BMBF), the Deutsche Forschungsgemeinschaft, LIS infrastructure platform (DFG), through the Fifth and Seventh Framework Programme of the EU Commission (EU projects Species 2000 europa and 4D4Life), through the Bayerisches Landesamt für Umwelt, and through the World Wildlife Fund for Nature Deutschland. We thank Diversity Workbench Co-workers for continuously modelling and setting up Diversity Workbench software. A number of highly engaged Contributors from several institutions in Germany deliver ideas and concepts, and implement special scripts to extend the functionalities of databases and clients. **The features of the Diversity Workbench concept** were analysed in 2011 and listed under Diversity Workbench Performance. The DWB tools are subject of national and international data collections on Working Tools for Biodiversity Informatics and Virtual Research Environments.

The Diversity Workbench is appropriate to serve as database backbone and data management system for bio- and geodiversity research projects and is therefore listed as Research Infrastructure in the DFG RIsources Portal. The SNSB IT Center offers user help desk and services in this context.

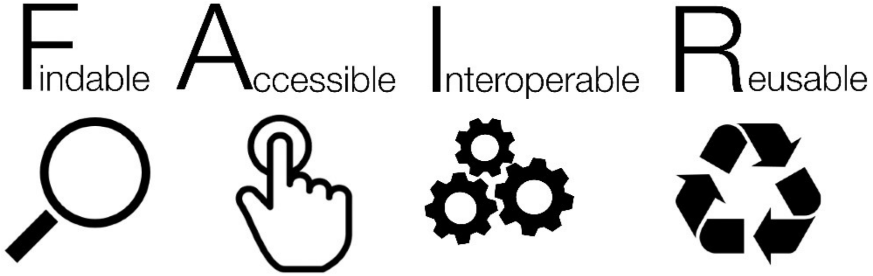
Diversity Workbench Software is available under GPLv2 license.

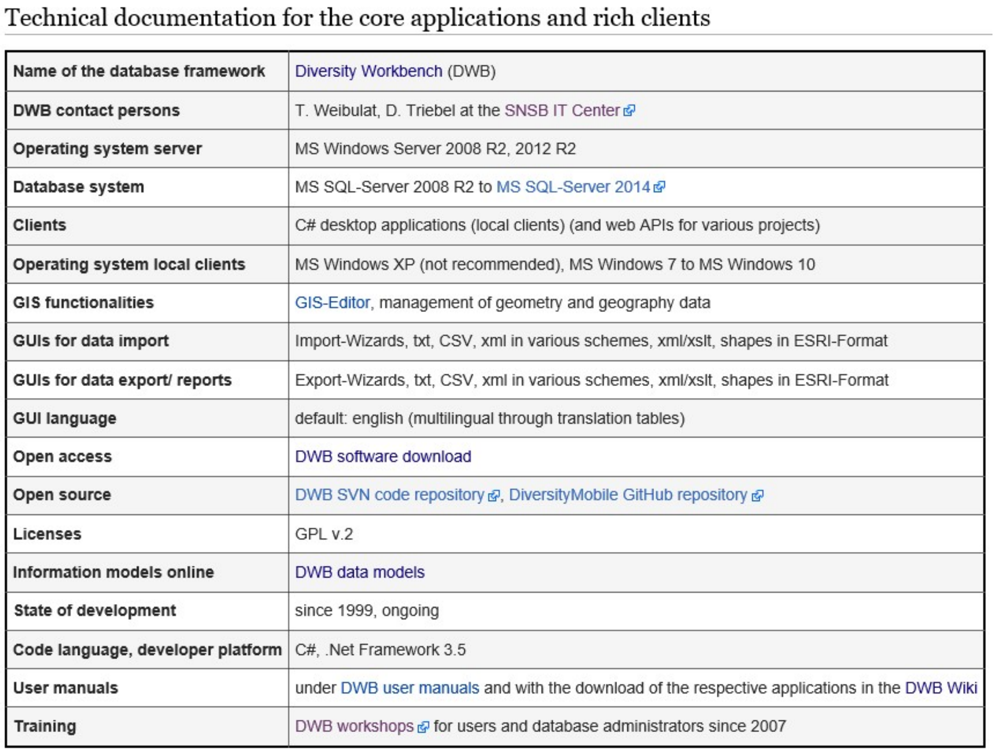
Flyers and Posters

- DWB Network Installations Poster 2015 PDF Download
- DiversityMobile Poster DE 2015 PDF Download
- DiversityMobile Poster TDWG 2014 PDF Download
- Diversity Workbench Poster TDWG 2 2014 PDF Download
- Diversity Workbench Poster TDWG 1 2014 PDF Download
- DiversityMobile Poster GfÖ 2014 PDF Download

DWB – Datenmanagement

- Fokus: Erzeugung und Prozessierung von FAIR data in Forschung und Sammlung
- DWB stellt eigene Dienste und Inhalte zur Verfügung (cloud services)
  - Terminologien
  - Vokabularien
  - Taxonomien
  - Gazetteers
- DWB wurde entwickelt für Anwender aus den Lebens- und Geowissenschaften (**Diversitätsdaten**)
- entwickelt für Datenerzeuger, die professionelle Datenkuration anstreben
- entwickelt für Datenerzeuger, die möglichst lange eine umfassende Datensouveränität behalten wollen

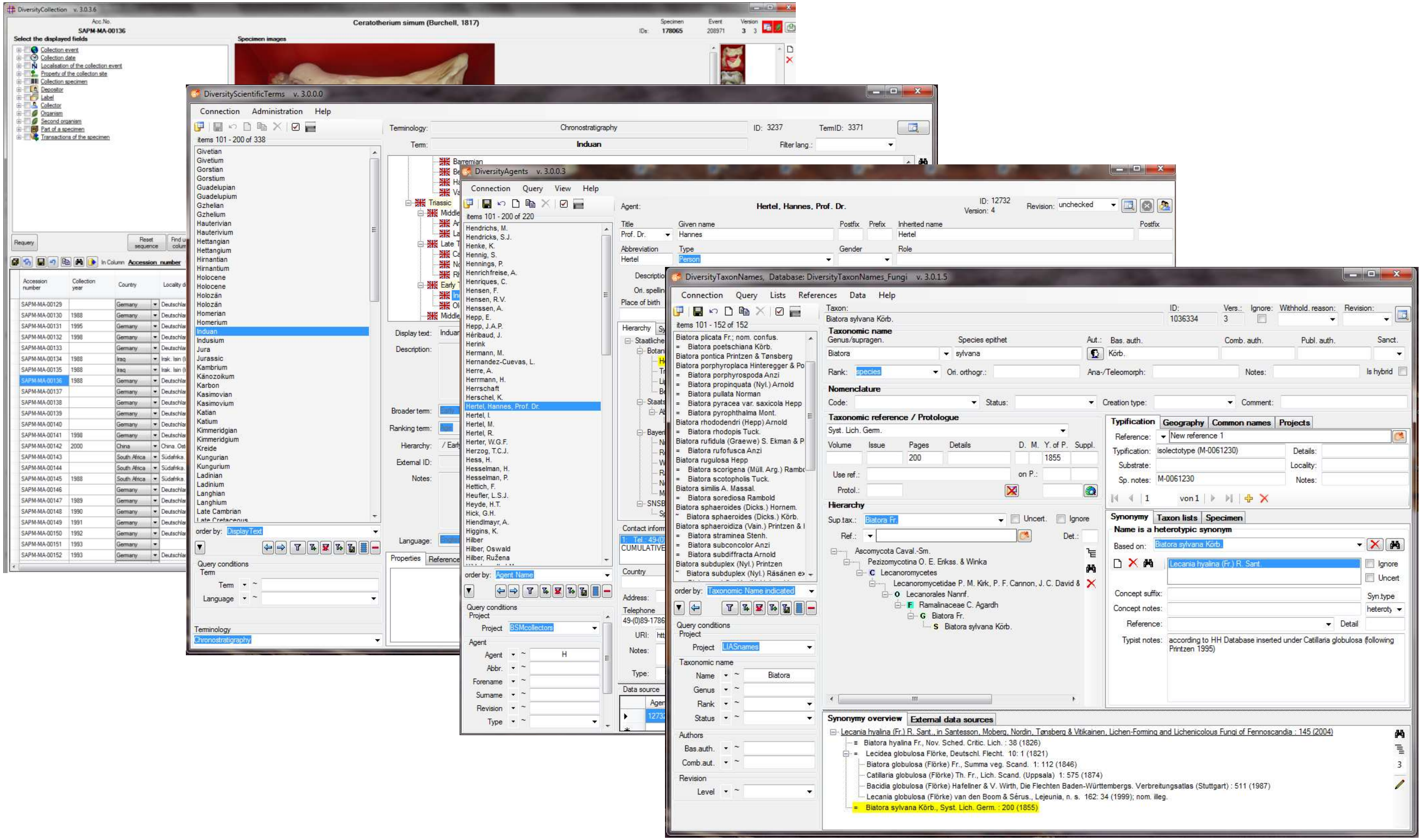




Technical documentation for the core applications and rich clients

Name of the database framework	Diversity Workbench (DWB)
DWB contact persons	T. Weibulat, D. Triebel at the SNSB IT Center
Operating system server	MS Windows Server 2008 R2, 2012 R2
Database system	MS SQL-Server 2008 R2 to MS SQL-Server 2014
Clients	C# desktop applications (local clients) (and web APIs for various projects)
Operating system local clients	MS Windows XP (not recommended), MS Windows 7 to MS Windows 10
GIS functionalities	GIS-Editor, management of geometry and geography data
GUIs for data import	Import-Wizards, txt, CSV, xml in various schemes, xml/xslt, shapes in ESRI-Format
GUIs for data export/ reports	Export-Wizards, txt, CSV, xml in various schemes, xml/xslt, shapes in ESRI-Format
GUI language	default: english (multilingual through translation tables)
Open access	DWB software download
Open source	DWB SVN code repository, DiversityMobile GitHub repository
Licenses	GPL v.2
Information models online	DWB data models
State of development	since 1999, ongoing
Code language, developer platform	C#, .Net Framework 3.5
User manuals	under DWB user manuals and with the download of the respective applications in the DWB Wiki
Training	DWB workshops for users and database administrators since 2007

Diversity Workbench – Schnittstellen zum Datenmanagement



DiversityCollection v. 3.0.3.6
Acc.No.: SAPM-MA-00136
Ceratotherium simum (Burchell, 1817)
Specimen IDs: 178065
Event: 208971

DiversityScientificTerms v. 3.0.0.0
Terminology: Chronostratigraphy
Term: Induan
ID: 3237
TermID: 3371
items 101 - 200 of 338
order by: DisplayText

DiversityAgents v. 3.0.0.3
Agent: Hertel, Hannes, Prof. Dr.
ID: 12732
Version: 4
Revision: unchecked
Title: Prof. Dr.
Given name: Hannes
Inherited name: Hertel
Abbreviation: Hertel
Type: Person
items 101 - 200 of 220
order by: Agent Name
Project: BSMcollectors

DiversityTaxonNames, Database: DiversityTaxonNames_Fungi v. 3.0.1.5

items 101 - 152 of 152

- Biatora plicata Fr.; nom. confus.
- = Biatora poetschiana Körb.
- Biatora pontica Printzen & Tønsberg
- Biatora porphyroplaca Hinteregger & Po
- = Biatora porphyrospoda Anzi
- = Biatora propinquata (Nyl.) Arnold
- = Biatora pullata Norman
- = Biatora pyracea var. saxicola Hepp
- = Biatora pyrophthalma Mont.
- Biatora rhododendri (Hepp) Arnold
- = Biatora rhodopis Tuck.
- Biatora rufidula (Graewe) S. Ekman & P
- = Biatora rufofusca Anzi
- Biatora rugulosa Hepp
- = Biatora scorigena (Müll. Arg.) Rambo
- = Biatora scotopholis Tuck.
- Biatora similis A. Massal.
- = Biatora sorediosa Rambold
- Biatora sphaeroides (Dicks.) Hornem.
- ~ Biatora sphaeroides (Dicks.) Körb.
- Biatora sphaeroidiza (Vain.) Printzen & I
- = Biatora straminea Stenh.
- = Biatora subconcolor Anzi
- = Biatora subdiffracta Arnold
- Biatora subduplex (Nyl.) Printzen
- ~ Biatora subduplex (Nyl.) Räsänen ex

order by: Taxonomic Name indicated

Query conditions
Project: LIASnames
Taxonomic name
Name: Biatora

Taxon: Biatora sylvana Körb.
ID: 1036334
Vers.: 3

Taxonomic name
Genus/supragen.: Biatora
Species epithet: sylvana
Bas. auth.: Körb.
Rank: species

Nomenclature

Taxonomic reference / Protologue
Syst. Lich. Germ.
Pages: 200
Y. of P.: 1855

Hierarchy
Sup.tax.: Biatora Fr.

- Ascomycota Caval.-Sm.
  - Pezizomycotina O. E. Erikss. & Winka
    - C Lecanoromycetes
      - Lecanoromycetidae P. M. Kirk, P. F. Cannon, J. C. David &
        - O Lecanorales Nannf.
          - F Ramalinaceae C. Agardh
            - G Biatora Fr.
              - S Biatora sylvana Körb.

Typification
Reference: New reference 1
Typification: isolectotype (M-0061230)
Sp. notes: M-0061230
1 von 1

Synonymy
Name is a heterotypic synonym
Based on: Biatora sylvana Körb.
Lecania hyalina (Fr.) R. Sant.
Syn.type: heteroty
Typist notes: according to HH Database inserted under Catillaria globulosa (following Printzen 1995)

Synonymy overview

- Lecania hyalina (Fr.) R. Sant., in Santesson, Moberg, Nordin, Tønsberg & Vitikainen, Lichen-Forming and Lichenicolous Fungi of Fennoscandia : 145 (2004)
  - ≡ Biatora hyalina Fr., Nov. Sched. Critic. Lich. : 38 (1826)
  - = Lecidea globulosa Flörke, Deutschl. Flecht. 10: 1 (1821)
    - Biatora globulosa (Flörke) Fr., Summa veg. Scand. 1: 112 (1846)
    - Catillaria globulosa (Flörke) Th. Fr., Lich. Scand. (Uppsala) 1: 575 (1874)
    - Bacidia globulosa (Flörke) Hafellner & V. Wirth, Die Flechten Baden-Württembergs. Verbreitungsatlas (Stuttgart) : 511 (1987)
    - Lecania globulosa (Flörke) van den Boom & Sérus., Lejeunia, n. s. 162: 34 (1999); nom. illeg.
  - = Biatora sylvana Körb., Syst. Lich. Germ. : 200 (1855)

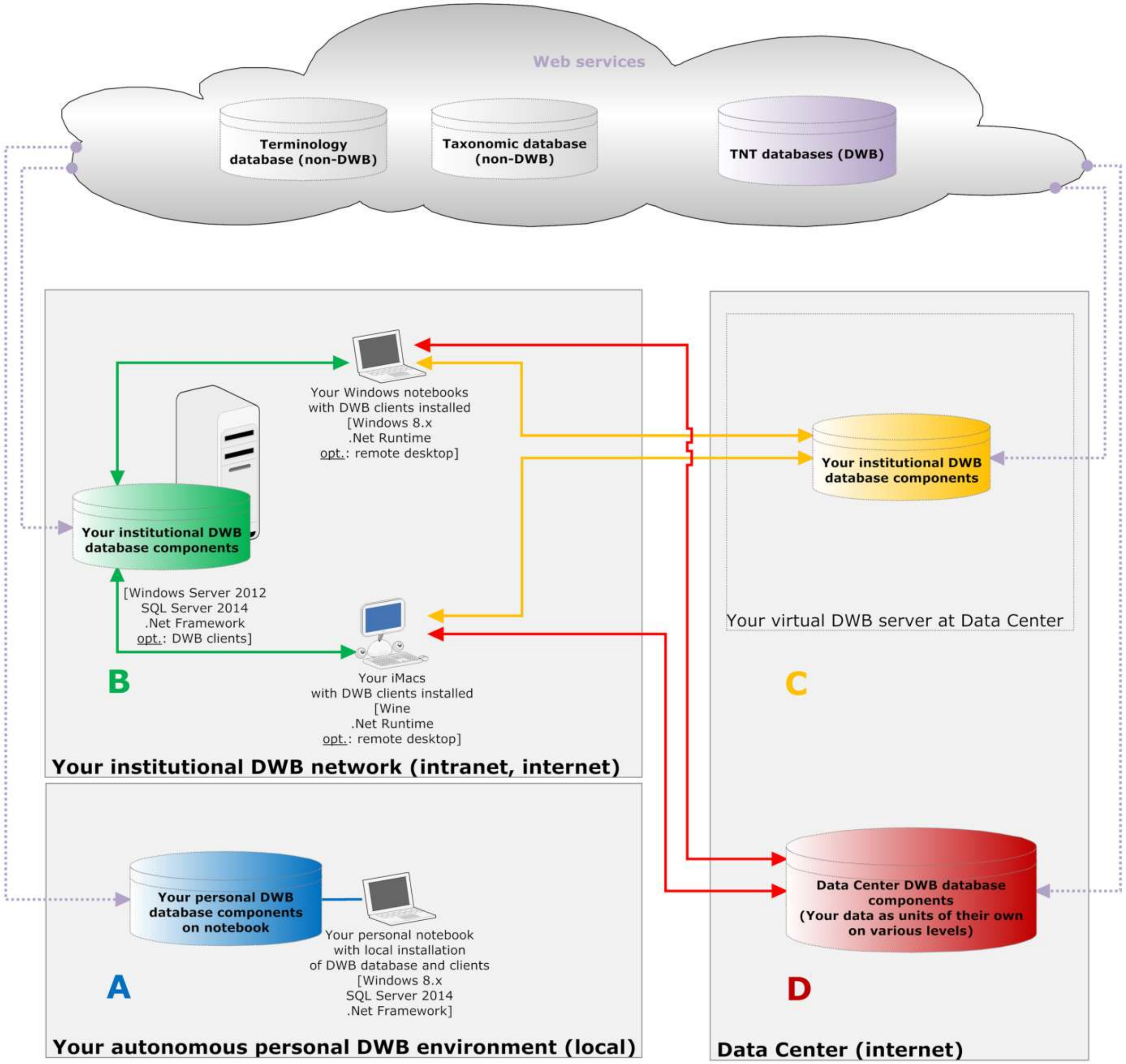
DWB – in Zahlen

- DWB Software Entwickler an den SNSB: **4**
- DWB Datenbanken auf SNSB Servern: **120**
- Aktive DWB Anwender, verwaltet in DWB Instanzen an den SNSB: **200**
- DWB Anwender geschätzt: mehr als **350**
- SNSB hostet Daten von rund **30** Organisationen, Arbeitsgruppen und Verbundprojekten aus der Forschung, verschiedene Hostingkonzepte, z. T. im Verbund mit **GFBio**
- eigenständige DWB Instanzen administrieren z.B. die SMNK, SMNS, SNSB, ZFMK

DWB – in Zahlen

- DWB Daten im **GFBio** Netzwerk: > **13.3 Mio** FAIR Daten
- DWB Daten im GBIF Netzwerk: > **14,9 Mio** FAIR Daten
- DWB Daten im Flora von Bayern-Netzwerk: > **15 Mio** FAIR Daten
- Seit 2007: mehr als **450** Teilnehmer an DWB Workshops in München (+ weitere Workshops in SMNK, SMNS und ZFMK)
- DWB Datenkuratoren an SNSB IT Center: dringend benötigt, User Help Desk: Kooperation **GFBio e.V.**

DWB – alternative Installationen und Hosting



Web services

Terminology database (non-DWB)

Taxonomic database (non-DWB)

TNT databases (DWB)

Your Windows notebooks
with DWB clients installed
[Windows 8.x
.Net Runtime
opt.: remote desktop]

Your institutional DWB database components

[Windows Server 2012
SQL Server 2014
.Net Framework
opt.: DWB clients]

Your iMacs
with DWB clients installed
[Wine
.Net Runtime
opt.: remote desktop]

B

Your institutional DWB network (intranet, internet)

Your personal DWB database components on notebook

Your personal notebook
with local installation
of DWB database and clients
[Windows 8.x
SQL Server 2014
.Net Framework]

A

Your autonomous personal DWB environment (local)

Your institutional DWB database components

Your virtual DWB server at Data Center

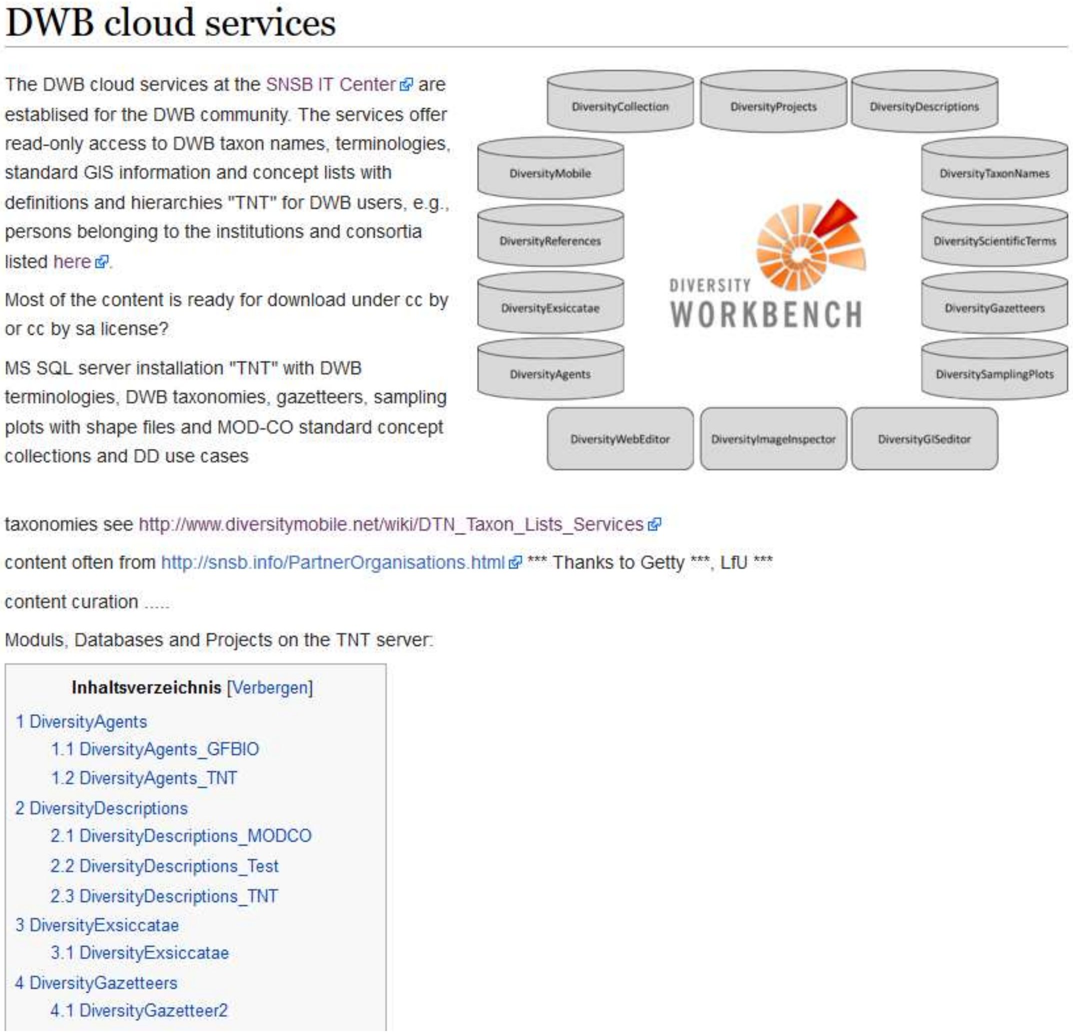
C

Data Center DWB database components
(Your data as units of their own on various levels)

D

Data Center (internet)

DWB cloud services


DiversityCollection
DiversityProjects
DiversityDescriptions
DiversityMobile
DiversityTaxonNames
DiversityReferences
DiversityScientificTerms
DIVERSITY
WORKBENCH
DiversityExsiccatae
DiversityGazetteers
DiversityAgents
DiversitySamplingPlots
DiversityWebEditor
DiversityImageInspector
DiversityGISeditor

DWB cloud services

The DWB cloud services at the SNSB IT Center are establised for the DWB community. The services offer read-only access to DWB taxon names, terminologies, standard GIS information and concept lists with definitions and hierarchies "TNT" for DWB users, e.g., persons belonging to the institutions and consortia listed here.

Most of the content is ready for download under cc by or cc by sa license?

MS SQL server installation "TNT" with DWB terminologies, DWB taxonomies, gazetteers, sampling plots with shape files and MOD-CO standard concept collections and DD use cases

taxonomies see http://www.diversitymobile.net/wiki/DTN_Taxon_Lists_Services

content often from http://snsb.info/PartnerOrganisations.html *** Thanks to Getty ***, LfU ***

content curation .....

Moduls, Databases and Projects on the TNT server:

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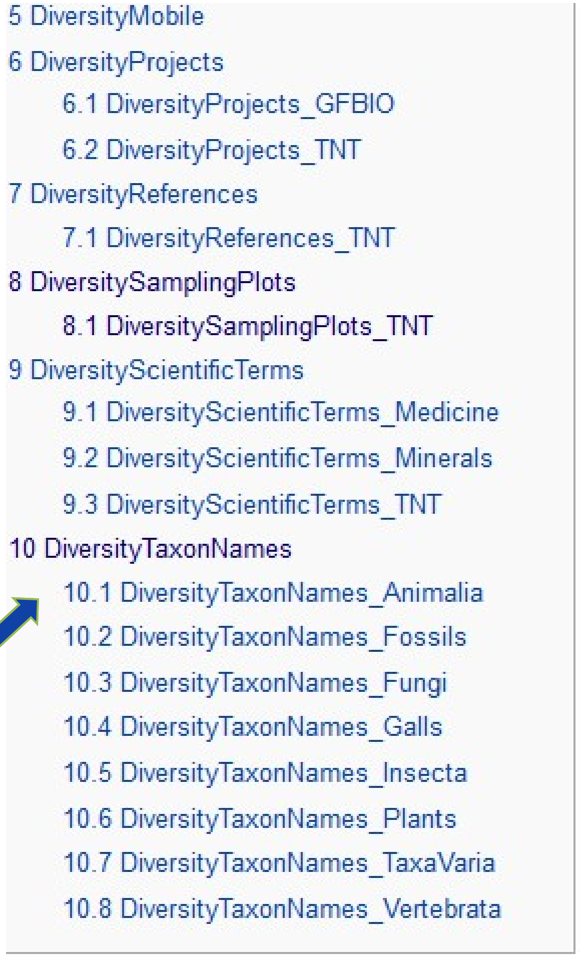
    1.1 DiversityAgents_GFBIO
    1.2 DiversityAgents_TNT
2 DiversityDescriptions
    2.1 DiversityDescriptions_MODCO
    2.2 DiversityDescriptions_Test
    2.3 DiversityDescriptions_TNT
3 DiversityExsiccatae
    3.1 DiversityExsiccatae
4 DiversityGazetteers
    4.1 DiversityGazetteer2


5 DiversityMobile
6 DiversityProjects
    6.1 DiversityProjects_GFBIO
    6.2 DiversityProjects_TNT
7 DiversityReferences
    7.1 DiversityReferences_TNT
8 DiversitySamplingPlots
    8.1 DiversitySamplingPlots_TNT
9 DiversityScientificTerms
    9.1 DiversityScientificTerms_Medicine
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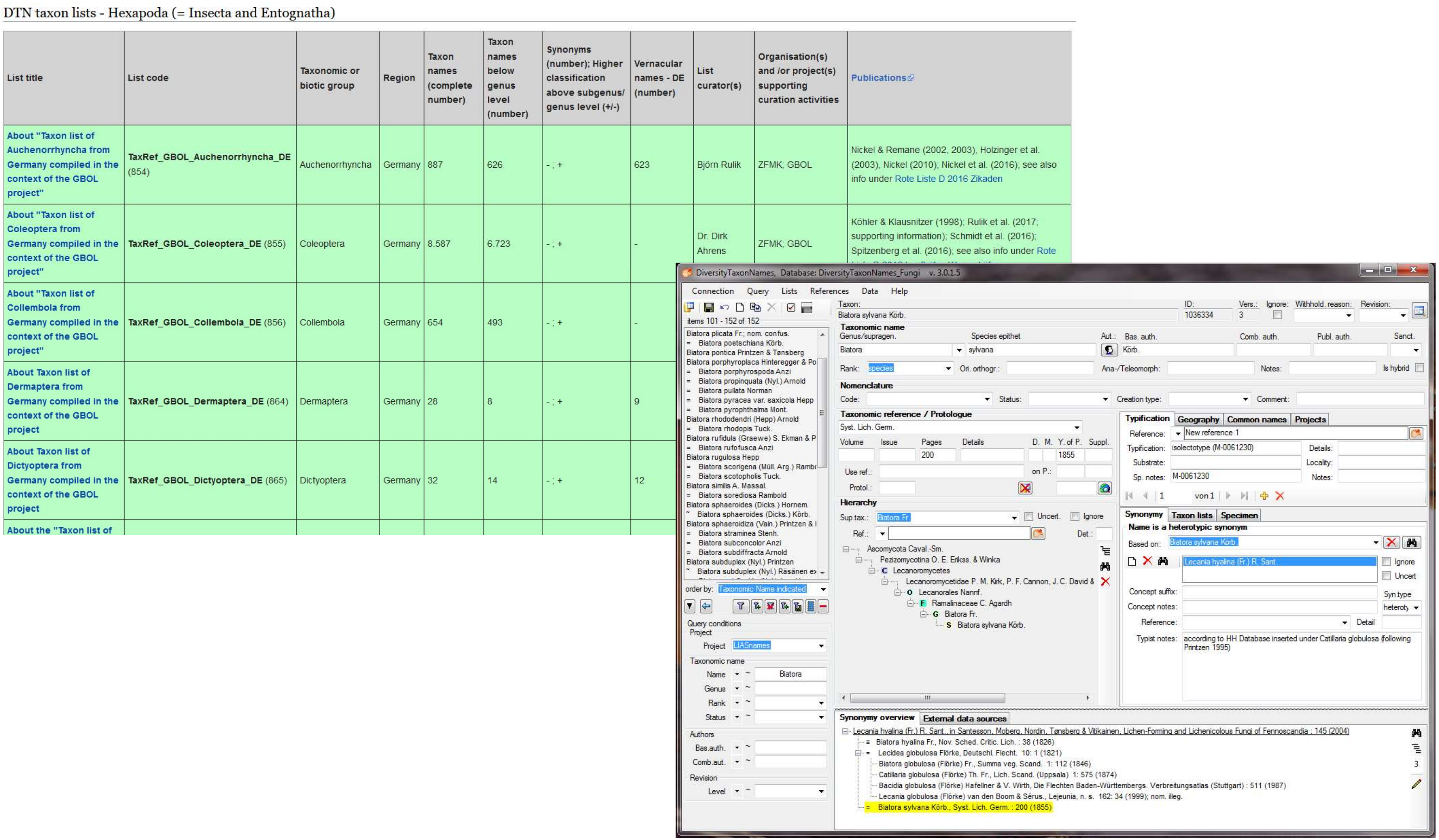
    9.3 DiversityScientificTerms_TNT
10 DiversityTaxonNames
    10.1 DiversityTaxonNames_Animalia
    10.2 DiversityTaxonNames_Fossils
    10.3 DiversityTaxonNames_Fungi
    10.4 DiversityTaxonNames_Galls
    10.5 DiversityTaxonNames_Insecta
    10.6 DiversityTaxonNames_Plants
    10.7 DiversityTaxonNames_TaxaVaria
    10.8 DiversityTaxonNames_Vertebrata

DWB cloud services – DTN



DTN taxon lists - Hexapoda (= Insecta and Entognatha)

List title	List code	Taxonomic or biotic group	Region	Taxon names (complete number)	Taxon names below genus level (number)	Synonyms (number); Higher classification above subgenus/ genus level (+/-)	Vernacular names - DE (number)	List curator(s)	Organisation(s) and /or project(s) supporting curation activities	Publications
About "Taxon list of Auchenorrhyncha from Germany compiled in the context of the GBOL project"	**TaxRef_GBOL_Auchenorrhyncha_DE** (854)	Auchenorrhyncha	Germany	887	626	- ; +	623	Björn Rulik	ZFMK; GBOL	Nickel & Remane (2002, 2003), Holzinger et al. (2003), Nickel (2010); Nickel et al. (2016); see also info under Rote Liste D 2016 Zikaden
About "Taxon list of Coleoptera from Germany compiled in the context of the GBOL project"	**TaxRef_GBOL_Coleoptera_DE** (855)	Coleoptera	Germany	8.587	6.723	- ; +	-	Dr. Dirk Ahrens	ZFMK; GBOL	Köhler & Klausnitzer (1998); Rulik et al. (2017; supporting information); Schmidt et al. (2016); Spitzenberg et al. (2016); see also info under Rote
About "Taxon list of Collembola from Germany compiled in the context of the GBOL project"	**TaxRef_GBOL_Collembola_DE** (856)	Collembola	Germany	654	493	- ; +	-			
About Taxon list of Dermaptera from Germany compiled in the context of the GBOL project	**TaxRef_GBOL_Dermaptera_DE** (864)	Dermaptera	Germany	28	8	- ; +	9			
About Taxon list of Dictyoptera from Germany compiled in the context of the GBOL project	**TaxRef_GBOL_Dictyoptera_DE** (865)	Dictyoptera	Germany	32	14	- ; +	12			
About the "Taxon list of										

DiversityTaxonNames, Database: DiversityTaxonNames_Fungi v. 3.0.1.5

items 101 - 152 of 152

Biatora plicata Fr.; nom. confus.
= Biatora poetschiana Körb.
Biatora pontica Printzen & Tønsberg
Biatora porphyroplaca Hinteregger & Po
= Biatora porphyrospoda Anzi
= Biatora propinquata (Nyl.) Arnold
= Biatora pullata Norman
= Biatora pyracea var. saxicola Hepp
= Biatora pyrophthalma Mont.
Biatora rhododendri (Hepp) Arnold
= Biatora rhodopis Tuck.
Biatora rufidula (Graewe) S. Ekman & P
= Biatora rufofusca Anzi
Biatora rugulosa Hepp
= Biatora scorigena (Müll. Arg.) Rambo
= Biatora scotopholis Tuck.
Biatora similis A. Massal.
= Biatora sorediosa Rambold
Biatora sphaeroides (Dicks.) Hornem.
~ Biatora sphaeroides (Dicks.) Körb.
Biatora sphaeroidiza (Vain.) Printzen & I
= Biatora straminea Stenh.
= Biatora subconcolor Anzi
= Biatora subdiffracta Arnold
Biatora subduplex (Nyl.) Printzen
~ Biatora subduplex (Nyl.) Räsänen ex

order by: Taxonomic Name indicated

Query conditions
Project
Project: LIASnames
Taxonomic name
Name ~ Biatora
Genus ~
Rank ~
Status ~
Authors
Bas.auth. ~
Comb.aut. ~
Revision
Level ~

Taxon: Biatora sylvana Körb.
ID: 1036334
Vers.: 3
Ignore: ☐
Withhold. reason:
Revision:

Taxonomic name
Genus/supragen.: Biatora
Species epithet: sylvana
Aut.:
Bas. auth.: Körb.
Comb. auth.:
Publ. auth.:
Sanct.:
Rank: species
Ori. orthogr.:
Ana-/Teleomorph:
Notes:
Is hybrid ☐

Nomenclature
Code:
Status:
Creation type:
Comment:

Taxonomic reference / Protologue
Syst. Lich. Germ.
Volume:
Issue:
Pages: 200
Details:
D.:
M.:
Y. of P.: 1855
Suppl.:
Use ref.:
on P.:
Protol.:

Hierarchy
Sup.tax.: Biatora Fr.
☐ Uncert.
☐ Ignore
Ref.:
Det.:

Ascomycota Caval.-Sm.
  Pezizomycotina O. E. Erikss. & Winka
    C Lecanoromycetes
      Lecanoromycetidae P. M. Kirk, P. F. Cannon, J. C. David &
        O Lecanorales Nannf.
          F Ramalinaceae C. Agardh
            G Biatora Fr.
              S Biatora sylvana Körb.

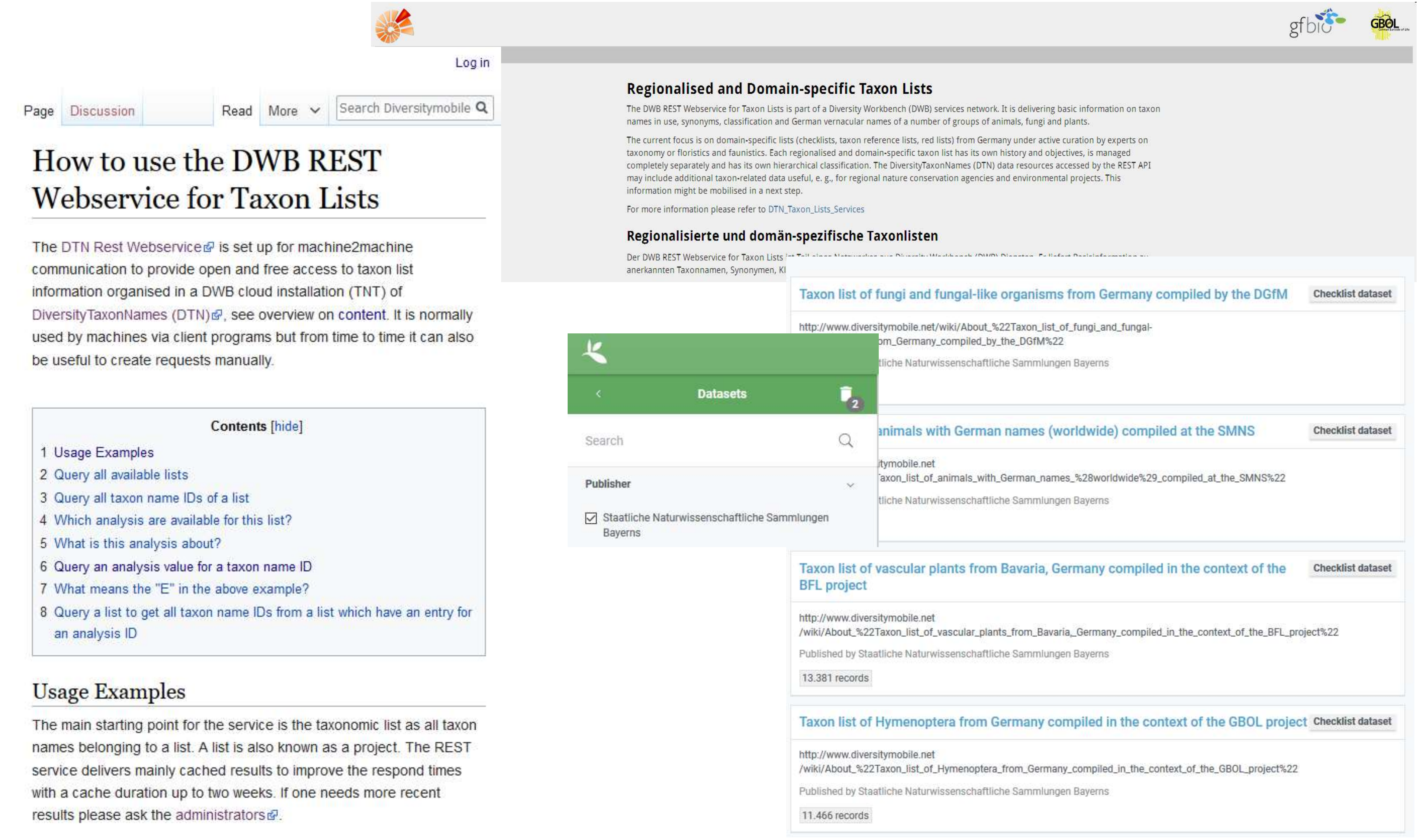
Typification | **Geography** | **Common names** | **Projects**
Reference: New reference 1
Typification: isolectotype (M-0061230)
Details:
Substrate:
Locality:
Sp. notes: M-0061230
Notes:
1 von 1

Synonymy | **Taxon lists** | **Specimen**
Name is a heterotypic synonym
Based on: Biatora sylvana Körb.
Lecania hyalina (Fr.) R. Sant.
☐ Ignore
☐ Uncert
Concept suffix:
Concept notes:
Syn.type: heteroty
Reference:
Detail:
Typist notes: according to HH Database inserted under Catillaria globulosa (following Printzen 1995)

Synonymy overview | **External data sources**

Lecania hyalina (Fr.) R. Sant., in Santesson, Moberg, Nordin, Tønsberg & Vitikainen, Lichen-Forming and Lichenicolous Fungi of Fennoscandia : 145 (2004)
  ≡ Biatora hyalina Fr., Nov. Sched. Critic. Lich. : 38 (1826)
  = Lecidea globulosa Flörke, Deutschl. Flecht. 10: 1 (1821)
    Biatora globulosa (Flörke) Fr., Summa veg. Scand. 1: 112 (1846)
    Catillaria globulosa (Flörke) Th. Fr., Lich. Scand. (Uppsala) 1: 575 (1874)
    Bacidia globulosa (Flörke) Hafellner & V. Wirth, Die Flechten Baden-Württembergs. Verbreitungsatlas (Stuttgart) : 511 (1987)
    Lecania globulosa (Flörke) van den Boom & Sérus., Lejeunia, n. s. 162: 34 (1999); nom. illeg.
  = Biatora sylvana Körb., Syst. Lich. Germ. : 200 (1855)

DWB Taxon-Referenzlisten und Webservices



How to use the DWB REST Webservice for Taxon Lists

The DTN Rest Webservice is set up for machine2machine communication to provide open and free access to taxon list information organised in a DWB cloud installation (TNT) of DiversityTaxonNames (DTN), see overview on content. It is normally used by machines via client programs but from time to time it can also be useful to create requests manually.

Contents [hide]

1 Usage Examples
2 Query all available lists
3 Query all taxon name IDs of a list
4 Which analysis are available for this list?
5 What is this analysis about?
6 Query an analysis value for a taxon name ID
7 What means the "E" in the above example?
8 Query a list to get all taxon name IDs from a list which have an entry for an analysis ID

Usage Examples

The main starting point for the service is the taxonomic list as all taxon names belonging to a list. A list is also known as a project. The REST service delivers mainly cached results to improve the respond times with a cache duration up to two weeks. If one needs more recent results please ask the administrators.

Regionalised and Domain-specific Taxon Lists

The DWB REST Webservice for Taxon Lists is part of a Diversity Workbench (DWB) services network. It is delivering basic information on taxon names in use, synonyms, classification and German vernacular names of a number of groups of animals, fungi and plants.

The current focus is on domain-specific lists (checklists, taxon reference lists, red lists) from Germany under active curation by experts on taxonomy or floristics and faunistics. Each regionalised and domain-specific taxon list has its own history and objectives, is managed completely separately and has its own hierarchical classification. The DiversityTaxonNames (DTN) data resources accessed by the REST API may include additional taxon-related data useful, e. g., for regional nature conservation agencies and environmental projects. This information might be mobilised in a next step.

For more information please refer to DTN_Taxon_Lists_Services

Regionalisierte und domän-spezifische Taxonlisten

Der DWB REST Webservice for Taxon Lists
anerkannten Taxonnamen, Synonymen, Kl

☑ Staatliche Naturwissenschaftliche Sammlungen Bayerns

Taxon list of fungi and fungal-like organisms from Germany compiled by the DGfM Checklist dataset

http://www.diversitymobile.net/wiki/About_%22Taxon_list_of_fungi_and_fungal-
om_Germany_compiled_by_the_DGfM%22

tliche Naturwissenschaftliche Sammlungen Bayerns

animals with German names (worldwide) compiled at the SMNS Checklist dataset

itymobile.net
axon_list_of_animals_with_German_names_%28worldwide%29_compiled_at_the_SMNS%22

tliche Naturwissenschaftliche Sammlungen Bayerns

Taxon list of vascular plants from Bavaria, Germany compiled in the context of the BFL project Checklist dataset

http://www.diversitymobile.net
/wiki/About_%22Taxon_list_of_vascular_plants_from_Bavaria_Germany_compiled_in_the_context_of_the_BFL_project%22

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13.381 records

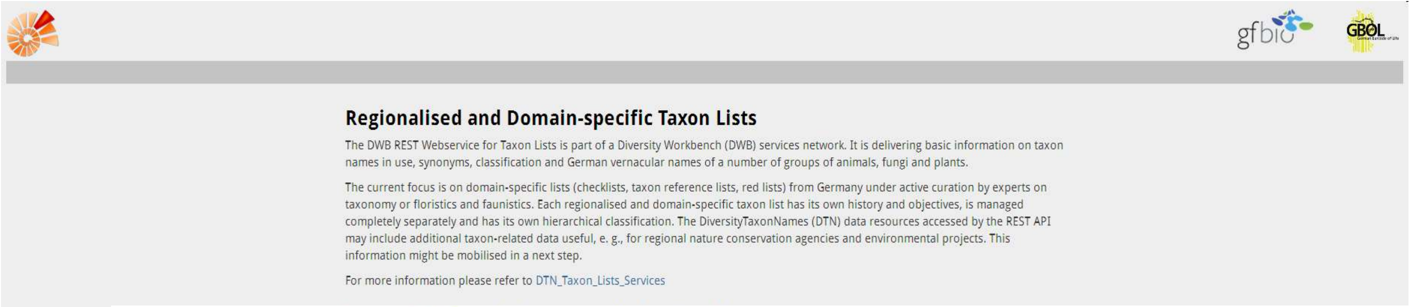
Taxon list of Hymenoptera from Germany compiled in the context of the GBOL project Checklist dataset

http://www.diversitymobile.net
/wiki/About_%22Taxon_list_of_Hymenoptera_from_Germany_compiled_in_the_context_of_the_GBOL_project%22

Published by Staatliche Naturwissenschaftliche Sammlungen Bayerns

11.466 records

DWB Taxon-Referenzlisten verbunden mit dem GFBio Terminology Server



Regionalised and Domain-specific Taxon Lists

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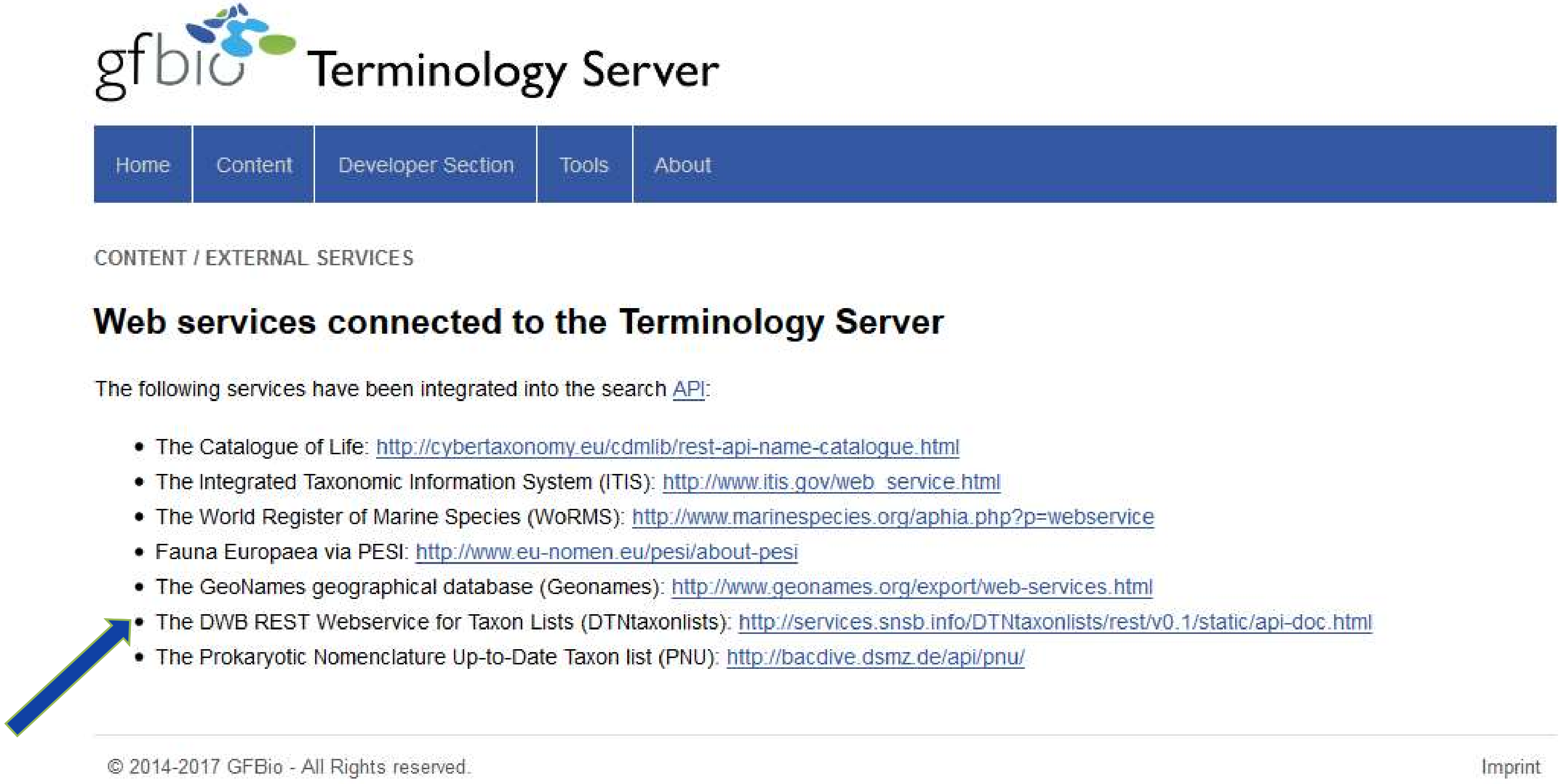

CONTENT / EXTERNAL SERVICES

Web services connected to the Terminology Server

The following services have been integrated into the search API:

- The Catalogue of Life: http://cybertaxonomy.eu/cdmlib/rest-api-name-catalogue.html
- The Integrated Taxonomic Information System (ITIS): http://www.itis.gov/web_service.html
- The World Register of Marine Species (WoRMS): http://www.marinespecies.org/aphia.php?p=webservice
- Fauna Europaea via PESI: http://www.eu-nomen.eu/pesi/about-pesi
- The GeoNames geographical database (Geonames): http://www.geonames.org/export/web-services.html
- The DWB REST Webservice for Taxon Lists (DTNtaxonlists): http://services.snsb.info/DTNtaxonlists/rest/v0.1/static/api-doc.html
- The Prokaryotic Nomenclature Up-to-Date Taxon list (PNU): http://bacdive.dsmz.de/api/pnu/

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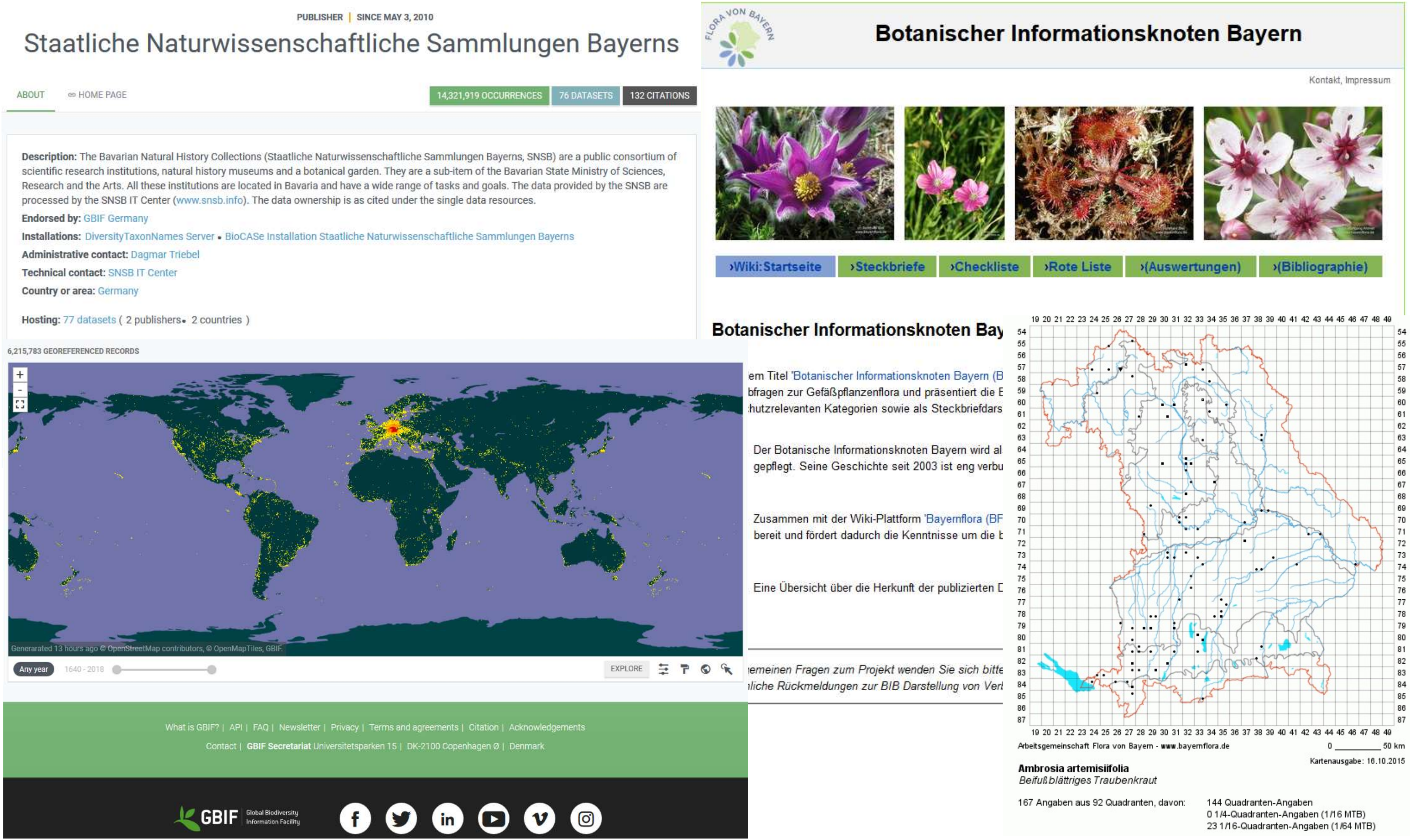
Imprint

DWB Daten in GBIF und BIB, dynamisch



PUBLISHER | SINCE MAY 3, 2010

Staatliche Naturwissenschaftliche Sammlungen Bayerns

ABOUT   HOME PAGE   14,321,919 OCCURRENCES   76 DATASETS   132 CITATIONS

Description: The Bavarian Natural History Collections (Staatliche Naturwissenschaftliche Sammlungen Bayerns, SNSB) are a public consortium of scientific research institutions, natural history museums and a botanical garden. They are a sub-item of the Bavarian State Ministry of Sciences, Research and the Arts. All these institutions are located in Bavaria and have a wide range of tasks and goals. The data provided by the SNSB are processed by the SNSB IT Center (www.snsb.info). The data ownership is as cited under the single data resources.

Endorsed by: GBIF Germany

Installations: DiversityTaxonNames Server • BioCASe Installation Staatliche Naturwissenschaftliche Sammlungen Bayerns

Administrative contact: Dagmar Triebel

Technical contact: SNSB IT Center

Country or area: Germany

Hosting: 77 datasets (2 publishers• 2 countries)

6,215,783 GEOREFERENCED RECORDS

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Contact | **GBIF Secretariat** Universitetsparken 15 | DK-2100 Copenhagen Ø | Denmark

GBIF Global Biodiversity Information Facility

FLORA VON BAYERN

Botanischer Informationsknoten Bayern

Kontakt, Impressum

›Wiki:Startseite ›Steckbriefe ›Checkliste ›Rote Liste ›(Auswertungen) ›(Bibliographie)

Botanischer Informationsknoten Bay

em Titel 'Botanischer Informationsknoten Bayern (B
bfragen zur Gefäßpflanzenflora und präsentiert die E
hutzrelevanten Kategorien sowie als Steckbriefdars

Der Botanische Informationsknoten Bayern wird al
gepflegt. Seine Geschichte seit 2003 ist eng verbu

Zusammen mit der Wiki-Plattform 'Bayernflora (BF
bereit und fördert dadurch die Kenntnisse um die b

Eine Übersicht über die Herkunft der publizierten D

emeinen Fragen zum Projekt wenden Sie sich bitte
liche Rückmeldungen zur BIB Darstellung von Ver

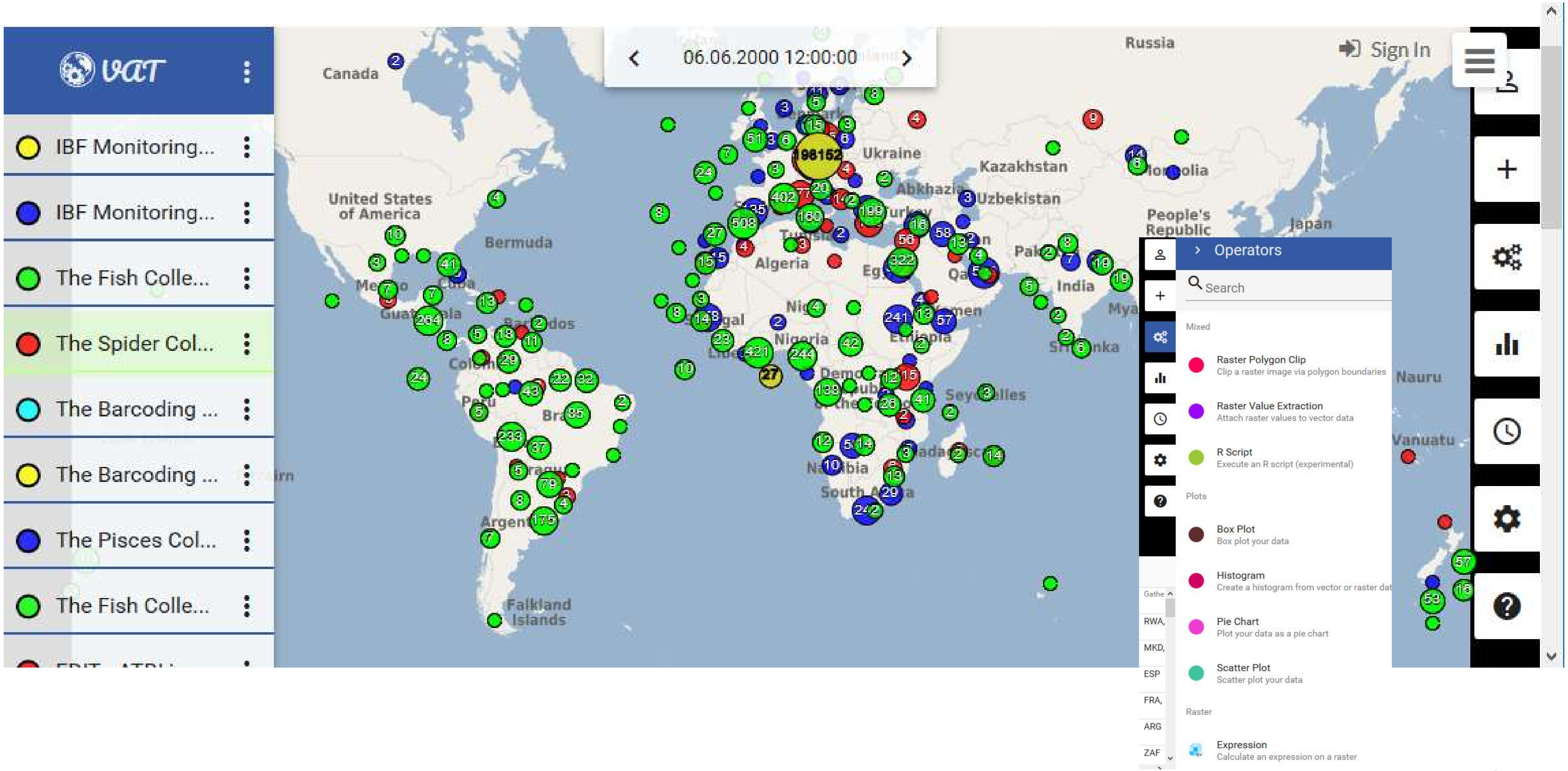
Arbeitsgemeinschaft Flora von Bayern - www.bayernflora.de   0 ______ 50 km

Kartenausgabe: 16.10.2015

Ambrosia artemisiifolia
Beifußblättriges Traubenkraut

167 Angaben aus 92 Quadranten, davon:
144 Quadranten-Angaben
0 1/4-Quadranten-Angaben (1/16 MTB)
23 1/16-Quadranten-Angaben (1/64 MTB)

DWB Daten im GFBio VAT Tool


VAT
IBF Monitoring...
IBF Monitoring...
The Fish Colle...
The Spider Col...
The Barcoding ...
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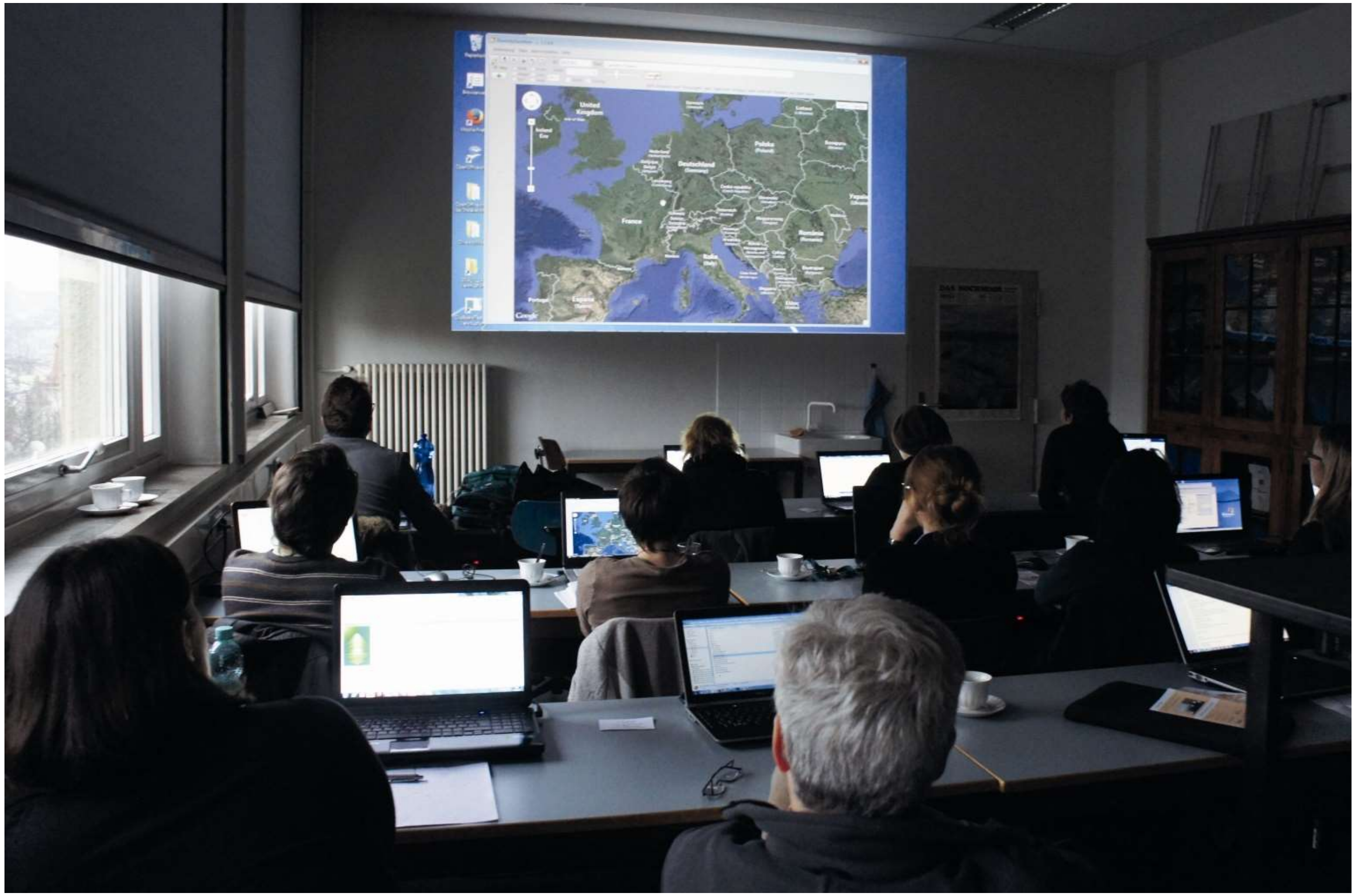
The Pisces Col...
The Fish Colle...
06.06.2000 12:00:00
Sign In
Operators
Search
Mixed
Raster Polygon Clip
Clip a raster image via polygon boundaries
Raster Value Extraction
Attach raster values to vector data
R Script
Execute an R script (experimental)
Plots
Box Plot
Box plot your data
Histogram
Create a histogram from vector or raster dat
Pie Chart
Plot your data as a pie chart
Scatter Plot
Scatter plot your data
Raster
Expression
Calculate an expression on a raster
RWA,
MKD,
ESP
FRA,
ARG
ZAF
Canada
United States of America
Bermuda
Russia
Ukraine
Kazakhstan
Uzbekistan
Algeria
India
Japan
Nauru
Vanuatu
Falkland Islands
98152

https://www.gfbio.org/data/visualizeandanalyze

DWB Workshop am 18. Oktober 2019



http://www.snsb.info/SNSBInfoOpenWiki/Wiki.jsp?page=DivWorkbenchWorkshop_38