

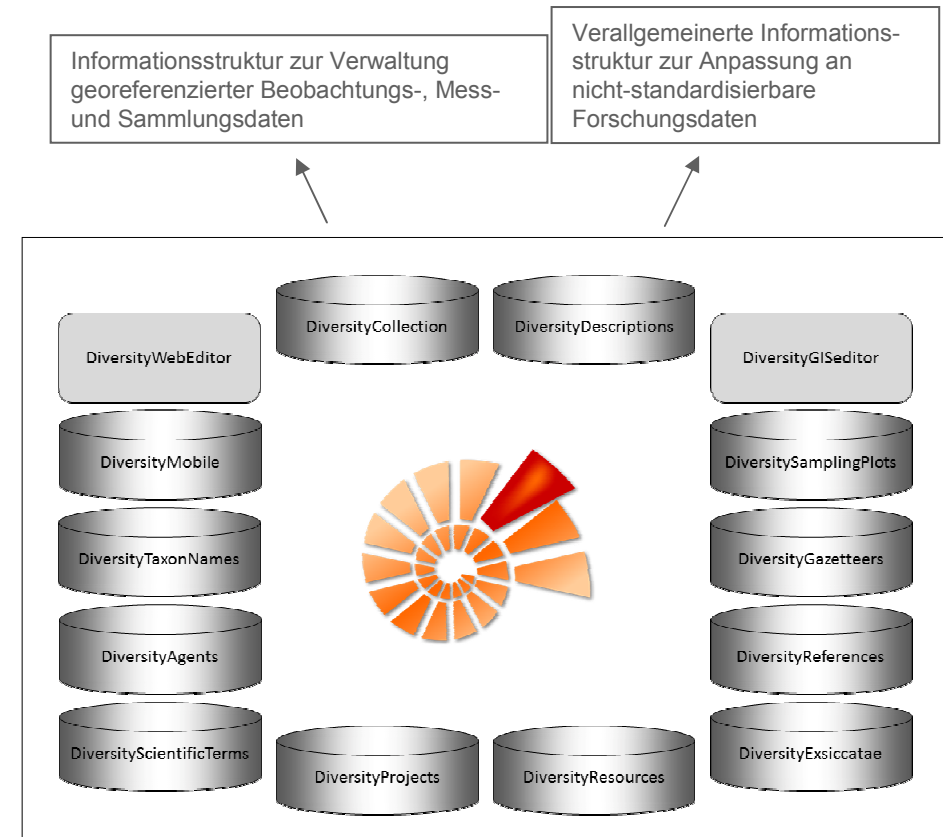
DiversityDescriptions

DD 3.0

Dagmar Triebel, Anton Link

DiversityDescriptions als Modul der DWB

- DeltaAccess / DD seit 1995
- Die erste Komponente der DWB (seit 1999)
- Modul zur Beschreibung von von Eigenschaften von Organismen, sowie jeglichen Objekten und Elementen der Diversitätsforschung



Datenmanagement von deskriptiven Daten und Messdaten

DiversityDescriptions DD

- Vorgänger-Version: v. 2.2 (MS Access); Entwickler Dr. G. Hagedorn
- Neue Version v. 3.0 (C# im .Net Framework; SQL Server) ab 2012
- **Letztes Release → Oktober 2015**

Beschreibung **von Eigenschaften (descriptors, properties, characters)**

- von Organismen, Forschungsobjekten, -ereignissen (item, element, entity)
- Trait-Daten (funktionelle Merkmale)
- Nukleinsäure- und Aminosäuresequenzen
- Ökosysteme, pflanzensoziologische Einheiten usw.
- (Sozioökonomische) Interviewdaten
- Messreihen (measurement event series)

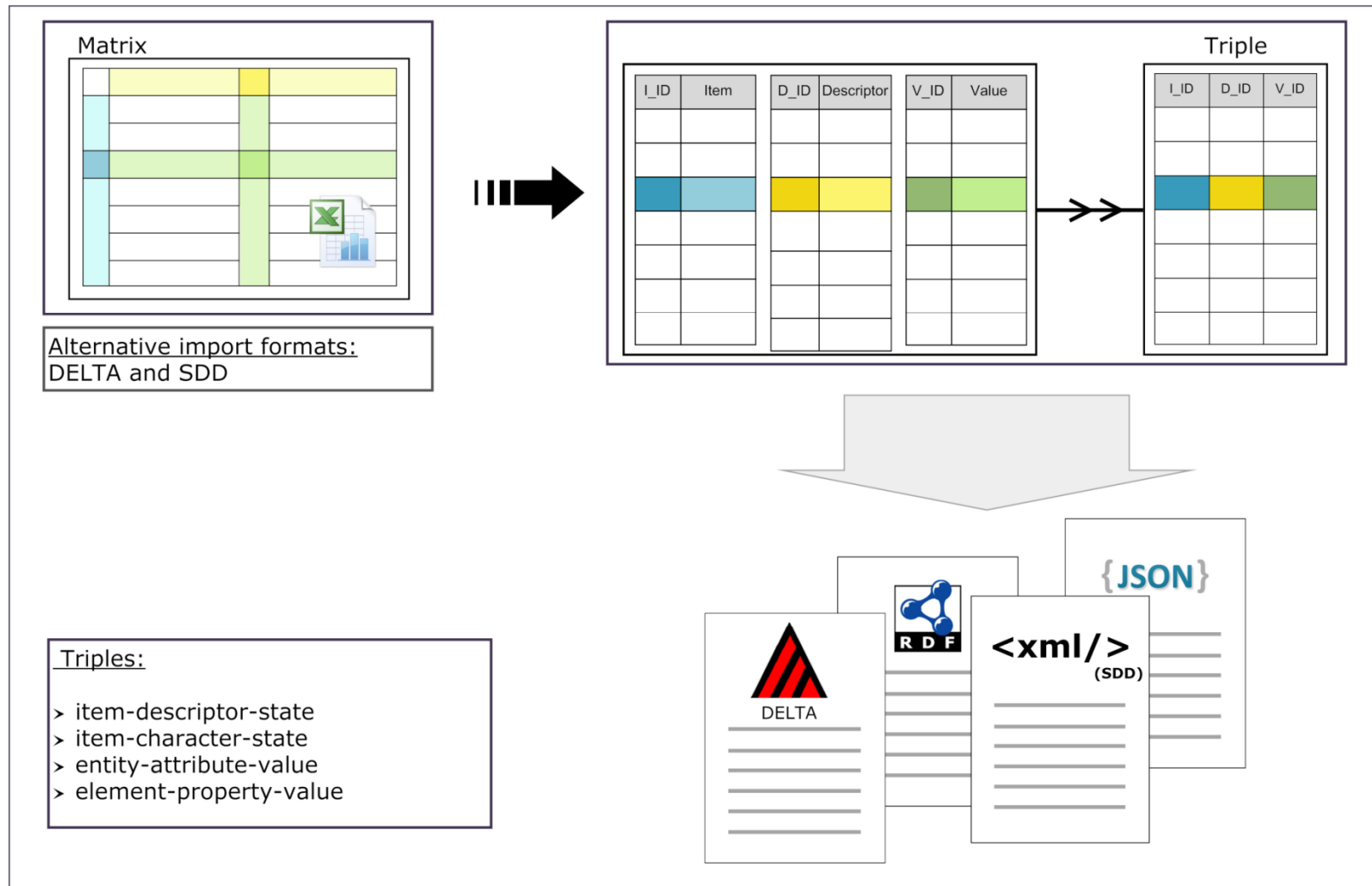
Datenmanagement von deskriptiven Daten und Messdaten

DiversityDescriptions DD

- Die **Beschreibungen** haben eine Triple-Struktur: item (element, entity) – descriptor (character, trait, variable, attribute, property, factor) – state/value
- Ein **Zustand / Wert (state/ value)** kann grundsätzlich einen der 4 Datentypen repräsentieren: Kategorie, quantitativer Wert, Molekulare Sequenz und Texteintrag.
- Die **Eigenschaften/ Deskriptoren** betreffen alle Typen von Parametern und Merkmalen, z. B. von Organismen wie auch anderen Untersuchungsobjekten, z. B. die Messwerte der Biomasse von funktionellen Gruppen mit Bezug zum Standort, die Frage in einem Fragebogen oder die Basenfolge in einer molekularen Sequenz
- Die Merkmalsstruktur ist frei definierbar

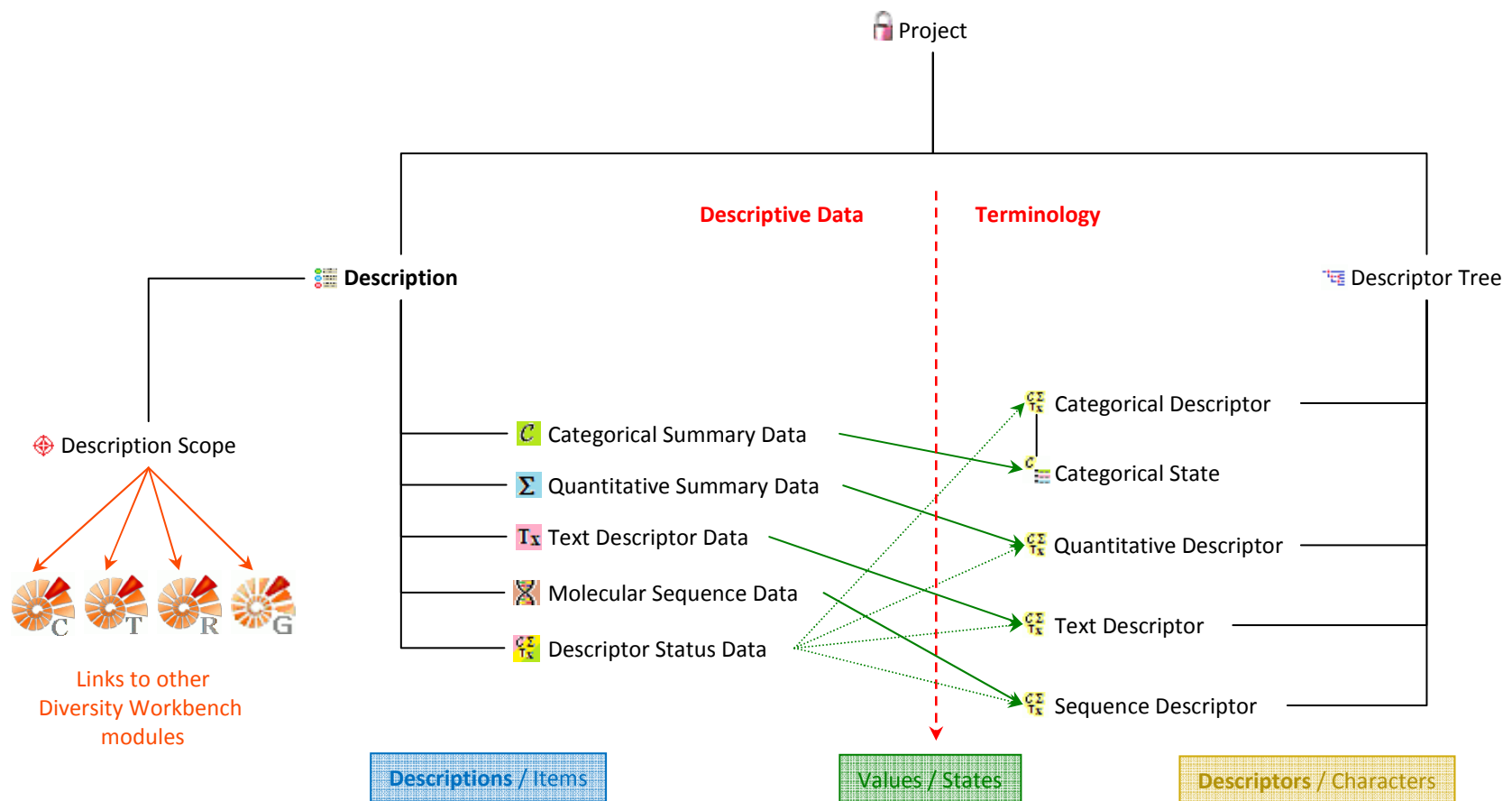
Datenmanagement

Matrixdaten → Daten in Triple-Struktur



DiversityDescriptions – Matrix-based data to triple-structured data

Daten in Triple-Struktur → DD Konzept



DiversityDescriptions – Datenbeispiel Zikaden

Morphologische Merkmale

DiversityDescriptions, Database: DiversityDescriptions3_0_6_Erythroneura v. 3.0.0.7

Connection Edit Query Data Administration Help

Erythroneura aclys McAtee Project: Erythroneura Language: en

Suchergebnisse 1 - 54

Suchkriterien: Title ~, Project Erythroneura, Descriptor, Categoric. =, Quantitati. =, Text =, Data status =, Scope: Taxon =, Geography =, Specimen =, Observati. =, Reference =, Other =

Description: Erythroneura aclys McAtee DB key: 868

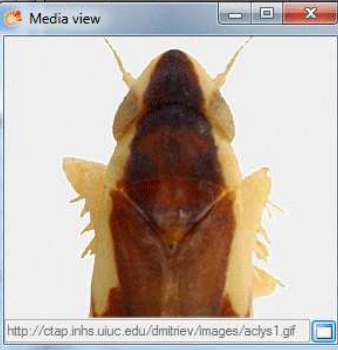
Main attributes Descriptor view Continuous view Resource links

ID	Type	Descriptor name
1	categorical	Ground color of dorsum
2	categorical	Coloration of vertex
3	categorical	Coloration of vertex midline
4	categorical	Anteclypeus coloration
5	categorical	Pronotum color pattern
6	categorical	Color pattern of mesonotum
7	categorical	Coloration of thoracic venter
8	categorical	Presence of crossbands on forewings
9	categorical	Presence of oblique pattern on forewings
10	categorical	Presence of a brown spot in forewing inner apical cell
11	categorical	Presence of distal spot in forewing apical cell II
12	categorical	Clavus color pattern
13	categorical	Length of forewing outer apical cell
14	categorical	Length of 2S abdominal apodemes (Males)
15	categorical	Length of aedeagus preatrium (Males)
16	categorical	Dorsal apodeme of aedeagus in ventral view (Males)
17	categorical	Presence of teeth in distal part of aedeagal shaft (Males)
18	categorical	Width of aedeagal shaft in lateral view (Males)
19	categorical	Position and length of aedeagus ventral processes (Males)
20	categorical	Position and length of aedeagus distal processes (Males)
21	categorical	Shape of pygofer dorsal appendages (Males)
22	categorical	Shape of pygofer lobe (Males)
23	categorical	Apex of aedeagus in ventral view (Males)
24	categorical	Apical vestiture of aedeagus (Males)

Categorical states

x	ID	State	Modifier	Frequency	Notes
☐	1	entirely pale			
☐	2	pale, with dark late...			
☒	3	entirely dark			
☐	4	pale, with dark bro...			

Media view



<http://ctap.inhs.uiuc.edu/dmitriev/images/aclys1.gif>

Edit description

DiversityDescriptions – Datenbeispiel Ektomykorrhizen

DEEMY

DiversityDescriptions, Database: DiversityDescriptions_GFBIO v. 3.0.1.12

Connection Edit Grid Query Data Administration Help

anatomy haustoria {of ectomycorrhiza former} abundance

items 101 - 200 of 498

anatomy emanating elements rhizomor
anatomy emanating elements rhizomor
anatomy emanating elements rhizomor
anatomy emanating elements septal pr
anatomy entire mycorrhiza blue granu
anatomy entire mycorrhiza blue granu
anatomy entire mycorrhiza crystals lo
anatomy entire mycorrhiza crystals pr
anatomy entire mycorrhiza emanation

Descriptor: anatomy haustoria {of ectomycorrhiza former} abundance Nr: 411 ID: 3672

Main attributes Categorical states Descriptor tree Modifier/Frequency Resource links

<http://www.deemy.de/Descriptors/CharacterDefinition.cfm?CID=411&CharID=411>
<http://pictures.snsb.info/Deemy/definition/D-0334.gif>

DiversityDescriptions, Database: DiversityDescriptions_GFBIO v. 3.0.1.12

Connection Edit Grid Query Data Administration Help

Project: Boletus edulis Bull.: Fr. + Picea

DEEMY

Description: Boletus edulis Bull.: Fr. + Picea ID: 8820

Main attributes Descriptor view Continuous view Resource links

Boletus edulis Bull.: Fr. + Picea
- Item listing -



<http://www.deemy.de/Taxa/ItemDescription.cfm?ItemID=22>

Resources

Nr.	Resource name	Ranking	Role	URL	Type	Variant
0	914		secondary	http://www.deemy.de/Taxa/ItemDescription.cfm?ItemID=22	text/html	good qu...
0	32		secondary			
0	Deemy item descrip...		secondary			

URL: /de/Taxa/ItemDescription.cfm?ItemID=22 Size Width Height Duration

Edit descriptions

/Taxa/ItemDescription.cfm

Boletus edulis Bull.: Fr. + Picea
- Item listing -



- Enlarged view -

Literature
• references

Agerer R, Gronbach E (1990) Boletus edulis. In Agerer R (ed) Colour Atlas of Ectomycorrhizae, plate 36, Einhorn-Verlag, Schwäbisch Gmünd.
Franz F, Acker G (1995) Rhizomorphs of *Picea abies* ectomycorrhizae: Ultrastructural aspects and element analysis (EELS and ESI) on hyphal inclusions. Nova Hedwigia 60 (1-2): 253-267.
Gronbach E (1988) Charakterisierung und Identifizierung von Ektomykorrhizen in einem Fichtenbestand mit Untersuchungen zur Merkmalsvariabilität in sauer berechneten Flächen. Bibl Mycol 125: 1-217.

Morphology
Morphology of the mycorrhizal system

- length
 - 0 mm Lower value of unspecified range (could be μ -s.d., but not known)
 - 14 mm Upper value of unspecified range (could be μ -s.d., but not known)
- ramification presence-type
 - monopodial-pyramidal
- ramification orders
 - 0 Lower value of unspecified range (could be μ -s.d., but not known)

URL: <http://www.deemy.de/Taxa/ItemDescription.cfm?ItemID=22>

DiversityDescriptions – Datenbeispiel Bakterienkulturen

Nukleinsäure- und Aminosäuresequenzen

>AB000263 |acc=AB000263|descr=Homo sapiens mRNA for prepro cortistatin like peptide, complete cds.|len=368
ACAAGATGCCATTGTCCCCGGCCTCCTGCTGCTGCTGCTCTCCGGGGCCACGGCCACCGCTGCCCTGCC
CCTGGAGGGTGGCCCCACCGGCCGAGACAGCGAGC
CTCCTGACTTTCTCGCTTGGTGGTTTGAGTGACCT
AAGCTCGGGAGGTGGCCAGGCGGCAGGAAGGCGCA
CTGCAGGAACCTTCTTCTGGAAGACCTTCTCCTCCTGC
TTTAATTACAGACCTGAA

- Import und Export im FASTA Format

The screenshot displays the DiversityDescriptions software interface. The main window shows the record for *Aridibacter famidurans* A22_HD_4HT. The interface is divided into several sections:

- Search Results:** A list of search results on the left, with *Aridibacter famidurans* A22_HD_4HT selected.
- Main Attributes:** A table listing various attributes of the record, such as Determination of relationship, Domain, BacDive_ID, Culture medium name, Enrichment culture temperature, Biosafety level/Risk group, Closest relative name, Description source reference, API 20NE Cupule 01 NO3, Phylum, Culture medium composition, Enrichment culture medium, Pathogenicity (human), Nucleotide identity, Strain history, PubMed ID, API 20NE Cupule 02 TRP, Subdivision, NaCl range (salt tolerance), Isolation Date, Pathogenicity (animal), and Culture collection accession number.
- Molecular Sequence:** A section showing the nucleotide sequence of the partial ribosomal sequence 16S. The sequence is displayed in a color-coded format (A: green, C: blue, G: red, T: orange) and includes a nucleotide viewer with a zoom function.
- Status Data:** A table showing the status of the record, including fields for ID, Status, and Notes. The status is currently set to "To be checked".

DD – Datenbeispiel Messungen Biomasse, Krautschicht nach funktionellen Pflanzengruppen

The screenshot displays the DiversityDescriptions software interface, version 3.0.1.12, with two overlapping windows. The background window shows a list of query results (1-100 of 756) and query conditions. The foreground window displays details for a specific functional group (Nr. 2, ID: 113182).

Query results (Background Window):

- Query results: 1 - 100 of 756
- Order by: Description
- Query conditions:
 - Title: ~
 - Project: BEFCH
 - Descriptor:
 - Categoric.: =
 - Quantitati.: =
 - Text: =
 - Sequence: =

Functional group details (Foreground Window):

Descriptor: functional group Nr: 2 ID: 113182

Categorical states:

Nr.	Categorical state	Abbreviation	Details	Wording
1	woody			
2	climber			
3	monocotyl herbs			
4	dicotyl herbs			
5	fem			
6	graminaea			
7	legume			

Resources:

Nr.	Resource name	Ranking	Role	URL	Type	Variant

DiversityDescriptions – Datenbeispiel Interview

(Sozioökonomische) Interviewdaten

- ☐ 10: Tomato
- ☐ 11: Adenophora triphylla var. japo
- ☐ 12: Pimpinella brachycarpa (Kom.)
- ☐ 13: Spinach
- ☐ 14: Cabbage
- ☐ 15: Perilla seed
- ☐ 16: Broccoli
- ☐ 17: Chinese gooseberry
- ☐ 18: Codonopsis lanceolata Traut
- ☐ 19: Lettuce
- ☐ 20: Sweet pepper
- ☐ 21: Red cabbage
- ☐ 22: Phaseolus angularis W. F. Wig
- ☐ 23: Pleurospermum camtschaticu
- ☐ 24: Aster scaber Thunb. (kind of)
- ☐ 25: Leek
- ☐ 26: Aster scaber Thunb. (kind of) ['
- ☐ 27: Cirsium sp.
- ☐ 28: Allium microdictyon Prokh
- ☐ 29: Maize
- ☐ 30: Platy Codon
- ☐ 31: Kalopanax pictus (Thunb.) Nak
- ☐ 32: Bracken
- ☐ 33: Aralia elata
- ☐ 34: Cucumber
- ☐ 35: Rice
- ☐ 36: Carrot
- ☐ 37: Onion
- ☐ 38: head lettuce
- ☐ 39: Sesam vegetable
- ☐ 40: Shallot
- ☐ 41: Chinese cabbage growing veg

- ☐ 74: Pilose Asiabell
- ☐ 75: Madonna Lily ['9288' added to
- ☐ 76: Sesam vegetable_2
- ☐ 77: Ginseng
- ☐ 78: Astragal
- ☐ 79: Yacon
- ☐ 80: Radish k
- ☐ 81: Salad pl
- ☐ 82: Sorghum
- ☐ 83: Morus al

- ☐ 1: Low profit
- ☐ 2: Increased number of imported a
- ☐ 3: Because of affecting areas caus
- ☐ 4: Low quality

45. [A5-1-1] Interview reason to have no

- ☐ 1: Low profit
- ☐ 2: Increased
- ☐ 3: Because
- ☐ 4: Low quality
- ☐ 5: Difficulties
- ☐ 6: Other rea

46. [A5-1-2] Interview reason to have no

- ☐ 1: Low profit
- ☐ 2: Increased
- ☐ 3: Because
- ☐ 4: Low quality
- ☐ 5: Difficulties
- ☐ 6: Other rea

47. [A5-2-1] Interview reason to have no

- ☐ 1: Low profit
- ☐ 2: Increased

DiversityDescriptions, Database: DiversityDescriptions3_0_8_Interview v. 3.0.0.9

Connection Edit Query Data Administration Help

Suchergebnisse: 1 - 100 von 238

101

Project: B19_WP4_02_int Language: en

DB key: 2707

Description: 101

Main attributes Descriptor view Continuous view Resource links

Nr.	Type	Descriptor name
1	categorical	[SQ1] Interview partner - Living site district [Where d...
2	categorical	[SQ2] Interview partner - Living location in the same...
3	categorical	[SQ2-1] Interview partner - Farm areas where famer...
4	categorical	[SQ2-2] Interview partner - Farmland location admini...
5	quantitative	[A1] Interview partner - Years of farming experience ...
6	categorical	[A2] Interview partner - Designated distributors or m...
7	categorical	[A3] Interview partner - Cultivated main crops in 201...
8	categorical	[A4] Interview partner - [obsolete]
9	categorical	[A4-1] Interview partner - Conventional farming - Cult...
10	categorical	[A4-2] Interview partner - Conventional farming - Cult...
11	categorical	[A4-3] Interview partner - Conventional farming - Cult...
12	categorical	[A4-4] Interview partner - Conventional farming - Cult...
13	categorical	[A4-5] Interview partner - Conventional farming - Cult...
14	quantitative	Cultivated area 1 - Rice paddy - [obsolete]
15	quantitative	Cultivated area 1 - Annual crops - [obsolete]
16	quantitative	Cultivated area 1 - Perennial crops - [obsolete]
17	quantitative	Cultivated area 1 - Vinyl greenhouse crops - [obsolete]
18	quantitative	Cultivated area 1 - Others - [obsolete]
19	categorical	Farming techniques - Rice paddy 1 - [obsolete]
20	categorical	Farming techniques - Annual crops 1 - [obsolete]
21	categorical	Farming techniques - Perennial crops 1 - [obsolete]
22	categorical	Farming techniques - Vinyl greenhouse crops 1 - [ob...
23	categorical	Farming techniques - Others 1 - [obsolete]
24	categorical	[A4-6] Interview partner - Environmental friendly fam...

ordnen nach: Description

Suchkriterien

Description

Title ~

Project = Project: B1

Descriptor

Categoric. =

Quantitati. =

Text =

Data status

=

Scope

Taxon =

Geography =

Specimen =

Observati. =

Reference =

Editorial description

Categorical states

x	Nr.	State	Notes
☐	1	Rice paddy	
☒	2	Annual crops	
☐	3	Perennial crops	
☐	4	Vinyl greenhouse crops	
☐	5	Others	

Status data

x	ID	Status
☐	!	To be checked
☐	o	Not to be recorded
☐	-	Not applicable
☐	?	Data unavailable
☐	#	Not interpretable
☐	\$	Data withheld
☐	0	Missing data

Standards und SDD

[illegible]

- ABCD

- EML

- SDD

- http://gfbio.biowikifarm.net/wiki/Data_exchange_standards,_protocols_and_formats_relevant_for_the_collection_data_domain_within_the_GFBio_network

SDD xml zum Datenaustausch

- SDD **Meta**-Standard
- SDD xml archives für GFBio
- Ausblick: Die Merkmalsbäume von DD-Projekten können als **Ontologien** exportiert und in den GFBio Terminology Server übernommen bzw. als Parameter in PANGAEA integriert werden.



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Veronica Sanz Talk Preferen

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GFBio collection archives - SDD DIPs

in phase 1:

- two exemplary SDD xml-files will be mobilised for GFBio: IT responsible in München: Anton Link
- underlying master database: [DiversityDescriptions](#) (=DD) with functionality to import and export data in SDD standard
- see Data and terminology mobilization for licenses and other information on [DEEMY](#) (content curation in DD: Veronica Sanz) and [Bacteria descr](#) (content curation in DD: Dr. Carola Söhngen)
- for the GFBio documentation of the SDD metastandard SDD V. 1.1 see http://gfbio.biowikifarm.net/minimal/Data_exchange_standards_protocols_and_formats_relevant_for_the_collection_data_domain_within_the_GFBio_network

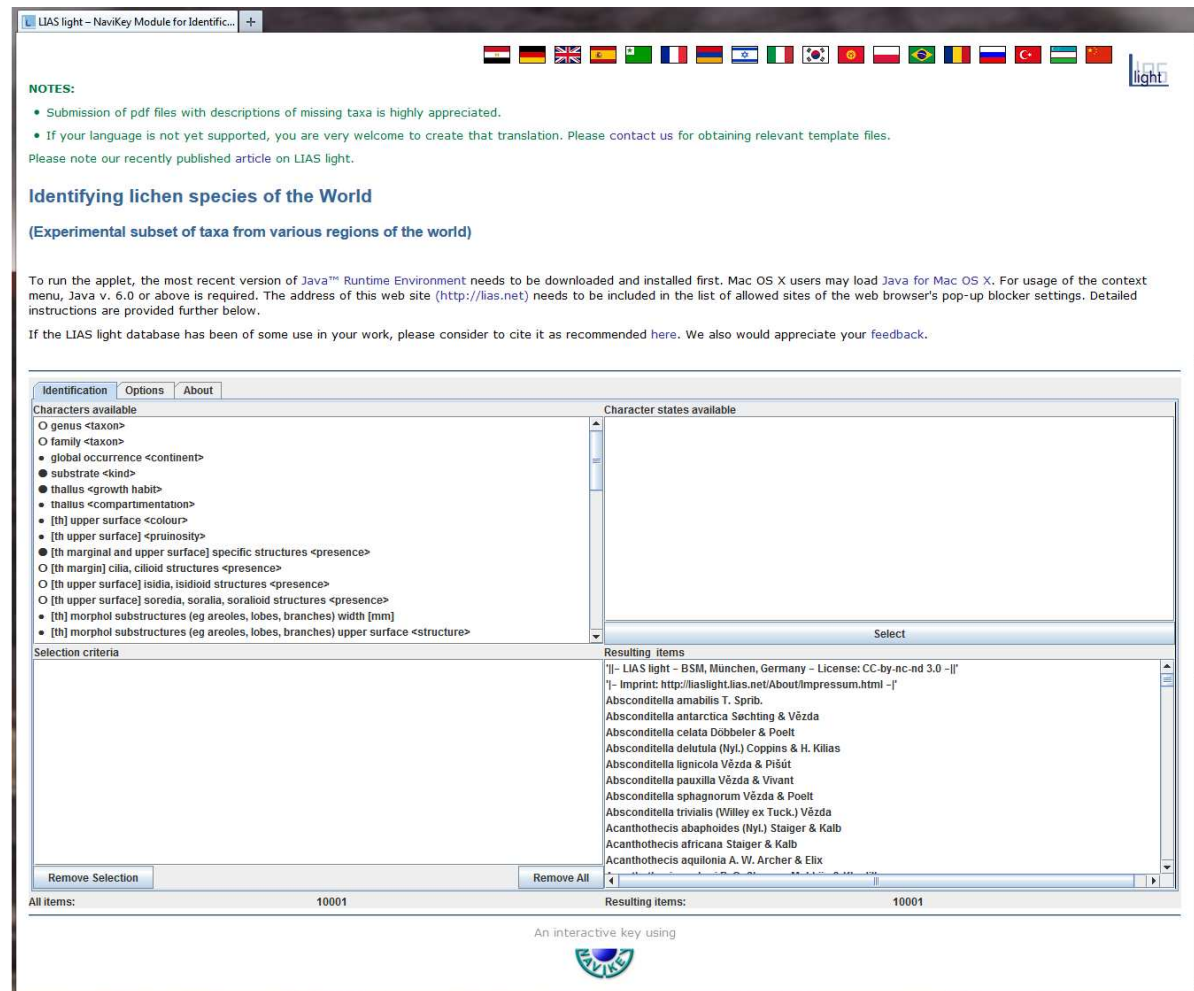
in phase 2:

- Belmont Forum Open Data Survey, September – November 2014, by the Open Data working group of the E-Infrastructure and Data Management Collaborative Research Action [Belmont Forum OD Survey 2014](#) (content curation in DD: Veronica Sanz)

SDD XML Archive (page with description)	exemplary zip-Archiv for download	number of items (descriptions)	number of item (description) values	number of descriptors	number of categorical states	scope of items/ descriptions	taxonomic names - kingdom	sensible data	link to multimedia data	link to other resources (appropriate landing page)
Bacteria descr	BacDive Bacteria DSMZ SDD 1.1 2015-05-28	5	589 categorical state values, 158 quantitative values, 208 text values, 4 molecular sequence values	310 total, 200 categorical, 56 quantitative, 54 text, 1 sequence	680	bacterial strains (isolates, axenic culture)	item names: bacteria	-	-	+
DEEMY	DEEMY Ectomycorrhizae SNSB SDD 1.1 2015-06-10	554	63,806 categorical state values, 38,270 quantitative values, 928 text values	498 total, 341 categorical, 154 quantitative, 3 text	1,336	ectomycorrhizae	item names: fungi and plantae	-	177 images of items, 59 images of descriptors, 596 images of categorical states	+
Belmont Forum OD Survey 2014	Belmont Forum OD Survey SNSB SDD 1.1 2015-06-24	1,328	63,123 categorical state values, 1,490 text values	80 total, 69 categorical, 11 text	238	survey about view and experience on data publishing, access and use, worldwide	-	+(data without IP)	-	-
UJ-Diptera-Phyldescr	UJ-Diptera-Phyldescr ZFMK SDD 1.1 2015-09-08	71	4,345 categorical state values	146 total, 146 categorical	337	Data from the DFG project: The Evolution of larval and adult features in Diptera (Insecta). (DFG 1789/6-1)	item names: animalia	-	-	-
BEFCHINADESCR 185	BEF-HLPbiomassdesc SNSB SDD 1.1 2015-10-13	756	2,268 categorical state values	5 total, 3 categorical, 1 quantitative, 1 text	38	Data from the BEF-CHINA project: Herb layer plant biomass in the CSPs, separated into functional groups (2008)	-	-	-	-
LIAS light in DD3 (to be done)	file for download under http://liaslight.lias.net/identification/Navkey/World/en_CB/index.html ; suitable for import in DD3	more than 10,000	?	71 total, 58 categorical, 6 quantitative, 7 text	2,961	lichens worldwide	item names: lichens	-	?	?

DiversityDescriptions – Datenbeispiel LIAS

Phänotypische Daten: Webschnittstelle NaviKey: www.navikey.net



DiversityDescriptions V. 3

- Software-Demonstration: Anton Link

