

ITCER Workshop, Oct 09<sup>th</sup> to 10<sup>th</sup> 2023



Introduction to the EthnoMycAfrica  
database project, workflows and data  
pipelines as published by Kinge et al.

2023

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Siaya County Government



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*The Lichenologist*



**The Lichenologist**

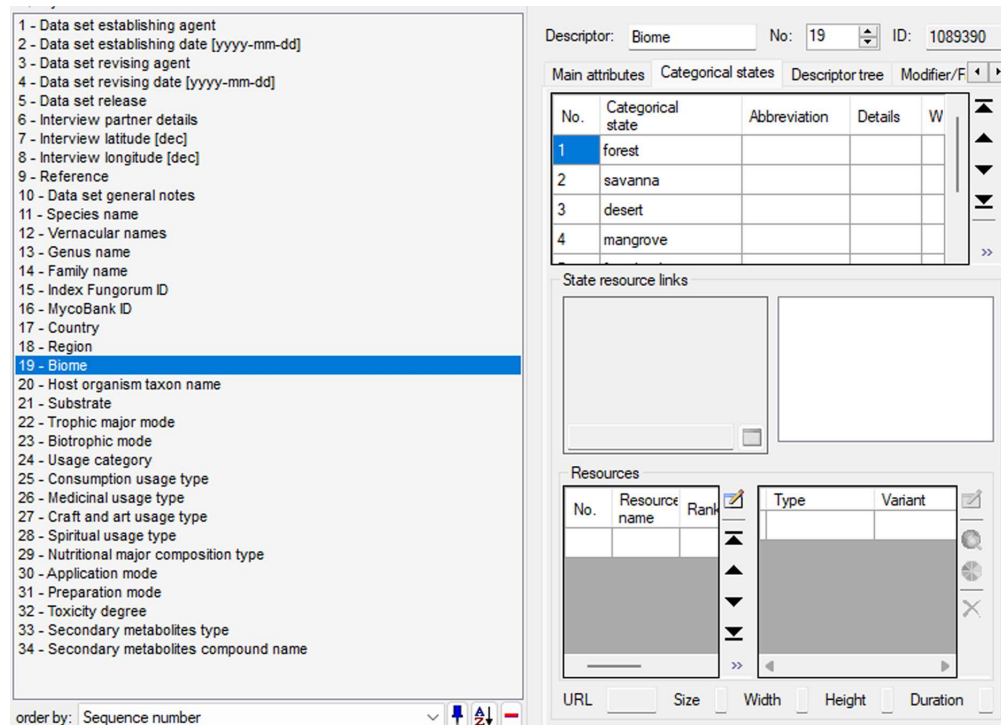
## Management and publication of scientific data on traditional mycological and lichenological knowledge in Africa

Published online by Cambridge University Press: **22 September 2023**

Tonjock Rosemary Kinge , Joyce Mnyazi Jefwa , Roël D. Houdanon ,  
Héritier Milenge Kamalebo , Ahmed M. Abdel-Azeem , Marieka Gryzenhout ,  
Dagmar Triebel , Tanja Weibulat  and Gerhard Rambold 

## Descriptive structured data

- Descriptors
  - Descriptor name
  - Descriptor values being of data types:
    - Text
    - Numerical values (integers, real numerics)
    - Categorical states (ordered, unordered)



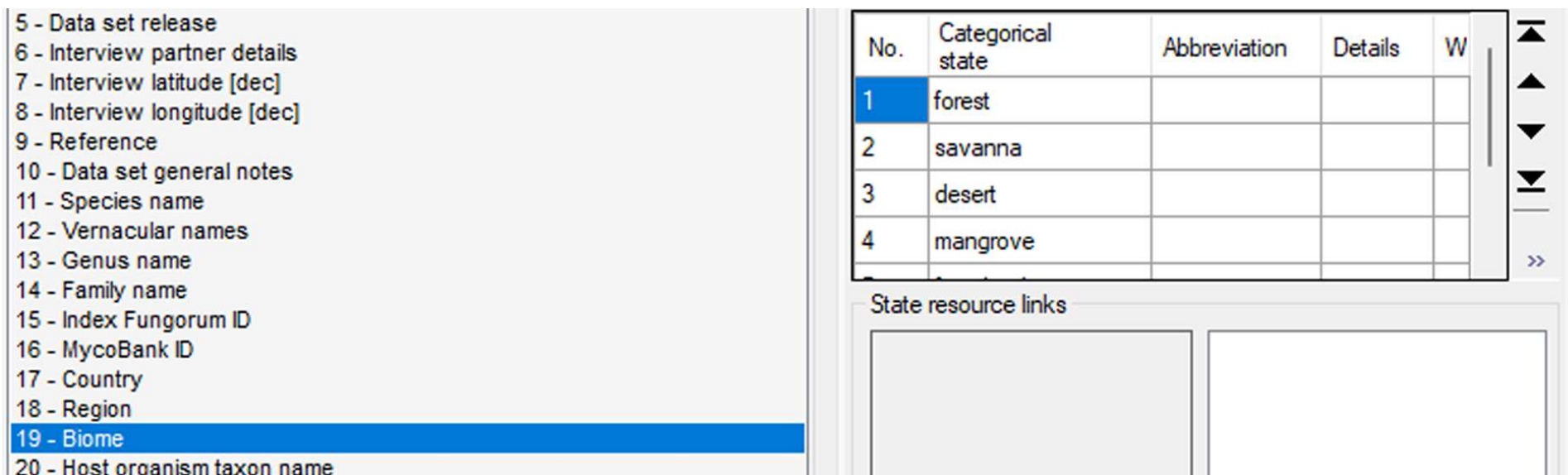
The screenshot displays the DiversityDescriptions client interface. On the left, a list of descriptors is shown, with '19 - Biome' selected. On the right, the detailed view for the 'Biome' descriptor is shown, including a table of categorical states and a resources section.

No.	Categorical state	Abbreviation	Details	W
1	forest			
2	savanna			
3	desert			
4	mangrove			

Resources section:

No.	Resource name	Rank	Type	Variant

Descriptors and descriptor states of the EthnoMycAfrica database application as seen in the descriptor view of the DiversityDescriptions client.



5 - Data set release  
6 - Interview partner details  
7 - Interview latitude [dec]  
8 - Interview longitude [dec]  
9 - Reference  
10 - Data set general notes  
11 - Species name  
12 - Vernacular names  
13 - Genus name  
14 - Family name  
15 - Index Fungorum ID  
16 - MycoBank ID  
17 - Country  
18 - Region  
**19 - Biome**  
20 - Host organism taxon name

No.	Categorical state	Abbreviation	Details	W
1	forest			
2	savanna			
3	desert			
4	mangrove			

State resource links

Descriptors and descriptor states of the EthnoMycAfrica database application as seen in the **descriptor** form view of the DiversityDescriptions client.

## Descriptive structured data

- Objects, items, samples, taxa
  - Object ... name
  - Object described by descriptor names and values

Query results 1 - 96

Psathyrella candolleana  
Psathyrella cf. ovaticystis  
Psathyrella spadicea  
Psathyrella tuberculata-01  
Psathyrella tuberculata-02  
Psathyrella tuberculata-03  
Psathyrella tuberculata-04  
Psathyrella tuberculata-05  
Psathyrella tuberculata-06  
Psathyrella tuberculata-07  
Psathyrella tuberculata-08  
Psathyrella-01  
Psathyrella-02  
Psathyrella-03  
**Pseudevernia furfuracea-01**  
Pseudevernia furfuracea-02  
Pseudevernia sp.  
Pseudocraterellus laeticolor  
Pseudocyphellaria aurata  
Pseudohydnum gelatinosum  
Psilocybe aquamarina  
Psilocybe congolensis  
Psilocybe cubensis  
Psilocybe mairei  
Psilocybe natalensis  
Pycnoporus sanguineus-01  
Pycnoporus sanguineus-02  
Pycnoporus sanguineus-03  
Pycnoporus sanguineus-04

order by: Description

esc

Description: Pseudevernia furfuracea-01 AID: ID: 1092464

Main attributes Descriptor view Continuous view Resource links Sample data

No.	Type	!	Descriptor name
15	categorical	•	Country
16	text		Region
17	text		Interview latitude [dec]
18	text		Interview longitude [dec]
19	categorical		Biome
20	text		Host organism taxon name
21	categorical		Substrate
22	categorical	•	Trophic major mode
23	categorical	•	Biotrophic mode
24	categorical	•	Usage category
25	categorical		Consumption usage type
26	categorical	•	Medicinal usage type
27	categorical		Craft and art usage type
28	categorical		Spiritual usage type

Descriptor tree: Restricted

Categorical states

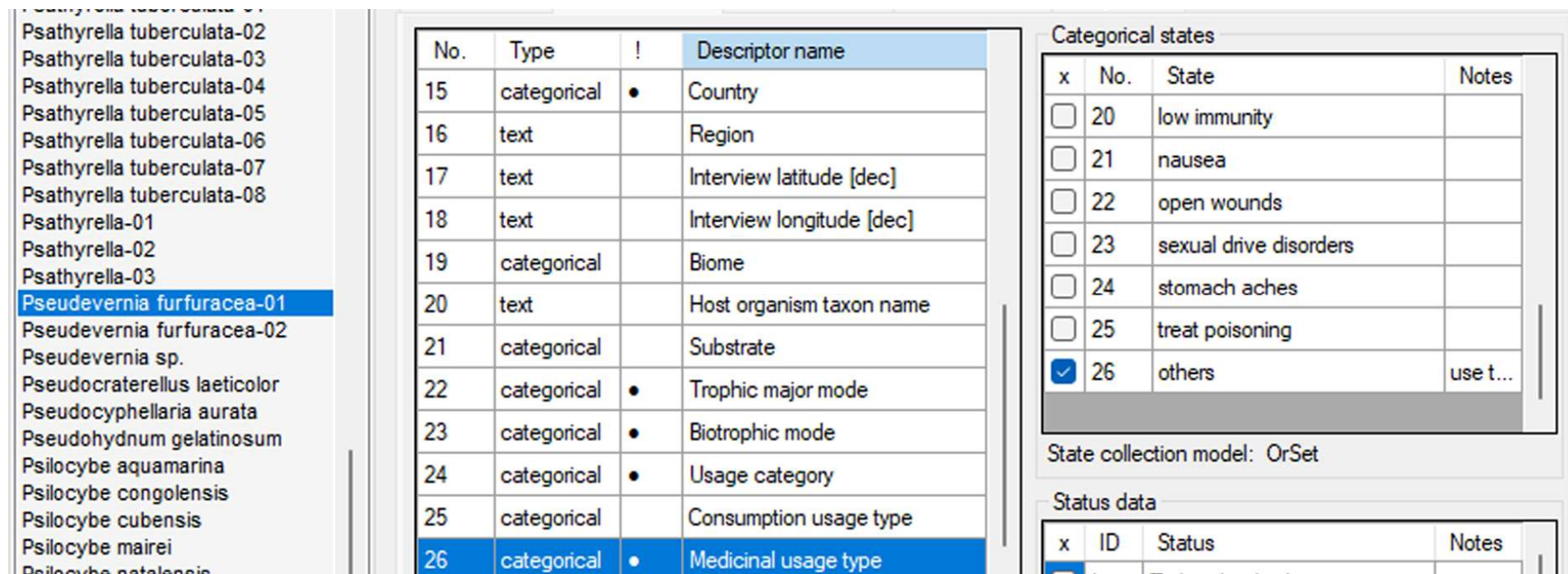
x	No.	State	Notes
<input type="checkbox"/>	20	low immunity	
<input type="checkbox"/>	21	nausea	
<input type="checkbox"/>	22	open wounds	
<input type="checkbox"/>	23	sexual drive disorders	
<input type="checkbox"/>	24	stomach aches	
<input type="checkbox"/>	25	treat poisoning	
<input checked="" type="checkbox"/>	26	others	use t...

State collection model: OrSet

Status data

x	ID	Status	Notes
<input checked="" type="checkbox"/>	!	To be checked	
<input type="checkbox"/>	∅	Not to be recorded	
<input type="checkbox"/>	-	Not applicable	
<input type="checkbox"/>	?	Data unavailable	

Descriptor states for medicinal usage type of the EthnoMycAfrica database application as seen in the description form view of the DiversityDescriptions client.



The screenshot displays the 'description' form view in the DiversityDescriptions client. On the left, a list of fungal species is shown, with *Pseudevernia furfuracea-01* selected. The central table lists descriptors with their IDs, types, and names. Descriptor 26, 'Medicinal usage type', is highlighted. To the right, the 'Categorical states' table shows various states, with state 26 ('others') checked. Below this, the 'Status data' table is partially visible.

No.	Type	!	Descriptor name
15	categorical	•	Country
16	text		Region
17	text		Interview latitude [dec]
18	text		Interview longitude [dec]
19	categorical		Biome
20	text		Host organism taxon name
21	categorical		Substrate
22	categorical	•	Trophic major mode
23	categorical	•	Biotrophic mode
24	categorical	•	Usage category
25	categorical		Consumption usage type
26	categorical	•	Medicinal usage type

x	No.	State	Notes
<input type="checkbox"/>	20	low immunity	
<input type="checkbox"/>	21	nausea	
<input type="checkbox"/>	22	open wounds	
<input type="checkbox"/>	23	sexual drive disorders	
<input type="checkbox"/>	24	stomach aches	
<input type="checkbox"/>	25	treat poisoning	
<input checked="" type="checkbox"/>	26	others	use t...

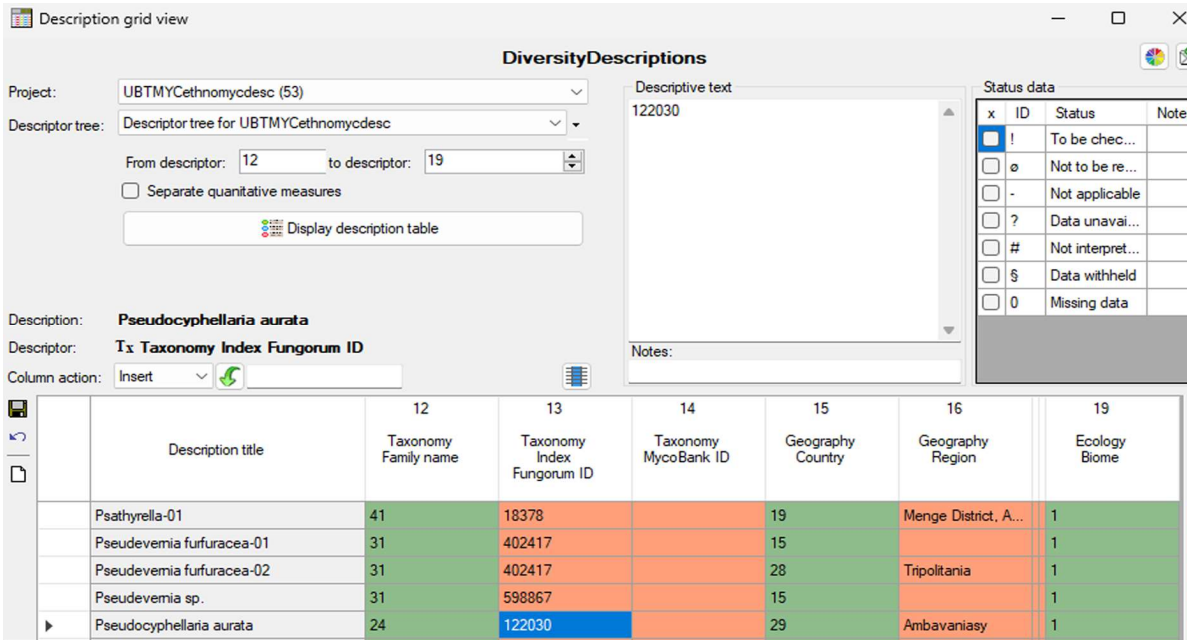
State collection model: OrSet

x	ID	Status	Notes
<input checked="" type="checkbox"/>			

Descriptor states for medicinal usage type of the EthnoMycAfrica database application as seen in the **description** form view of the DiversityDescriptions client.

## Descriptive structured data

- Objects, items, samples, taxa
  - Object ... name
  - Object described by descriptor names and values



**Description grid view**

Project: UBTMYCethnomycdesc (53)

Descriptor tree: Descriptor tree for UBTMYCethnomycdesc

From descriptor: 12 to descriptor: 19

Separate quantitative measures

Display description table

Description: **Pseudocypbellaria aurata**

Descriptor: **Tx Taxonomy Index Fungorum ID**

Column action: Insert

Description title	12 Taxonomy Family name	13 Taxonomy Index Fungorum ID	14 Taxonomy MycoBank ID	15 Geography Country	16 Geography Region	19 Ecology Biome
Psathyrella-01	41	18378		19	Menge District, A...	1
Pseudevemia furfuracea-01	31	402417		15		1
Pseudevemia furfuracea-02	31	402417		28	Tripolitania	1
Pseudevemia sp.	31	598867		15		1
Pseudocypbellaria aurata	24	122030		29	Ambavaniasy	1

Data items of the EthnoMycAfrica database application as seen in the description grid view of the DiversityDescriptions client.

Project:

Descriptor tree:

From descriptor:  to descriptor:

Separate quantitative measures

Description: **Pseudocyphellaria aurata**

Descriptor: **Tx Taxonomy Index Fungorum ID**

Column action:

Descriptive text: 122030

Status data:

x	ID	Status	Notes
<input checked="" type="checkbox"/>	!	To be chec...	
<input type="checkbox"/>	∅	Not to be re...	
<input type="checkbox"/>	-	Not applicable	
<input type="checkbox"/>	?	Data unavai...	
<input type="checkbox"/>	#	Not interpret...	
<input type="checkbox"/>	\$	Data withheld	
<input type="checkbox"/>	0	Missing data	

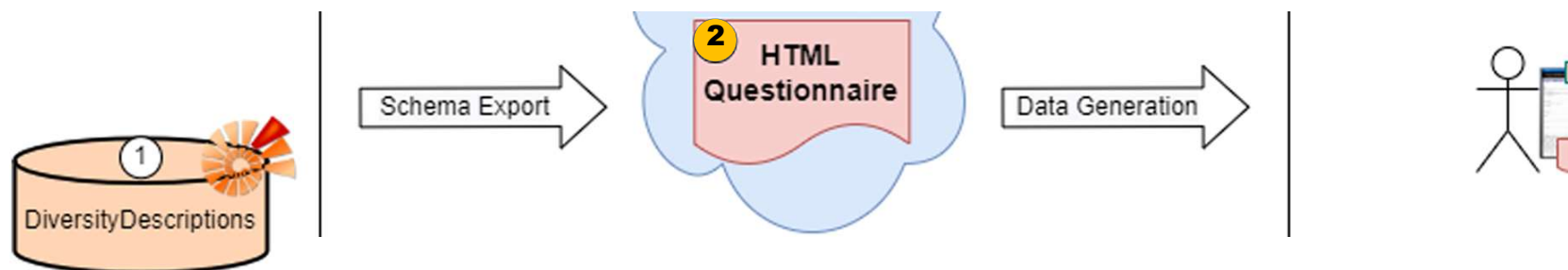
	12	13	14	15	16	19
	Taxonomy Family name	Taxonomy Index Fungorum ID	Taxonomy MycoBank ID	Geography Country	Geography Region	Ecology Biome
Psathyrella-01	41	18378		19	Menge District, A...	1
Pseudevemia furfuracea-01	31	402417		15		1
Pseudevemia furfuracea-02	31	402417		28	Tripolitania	1
Pseudevemia sp.	31	598867		15		1
▶ Pseudocyphellaria aurata	24	122030		29	Ambavaniasy	1

Data items of the EthnoMycAfrica database application as seen in the description grid view of the DiversityDescriptions client.

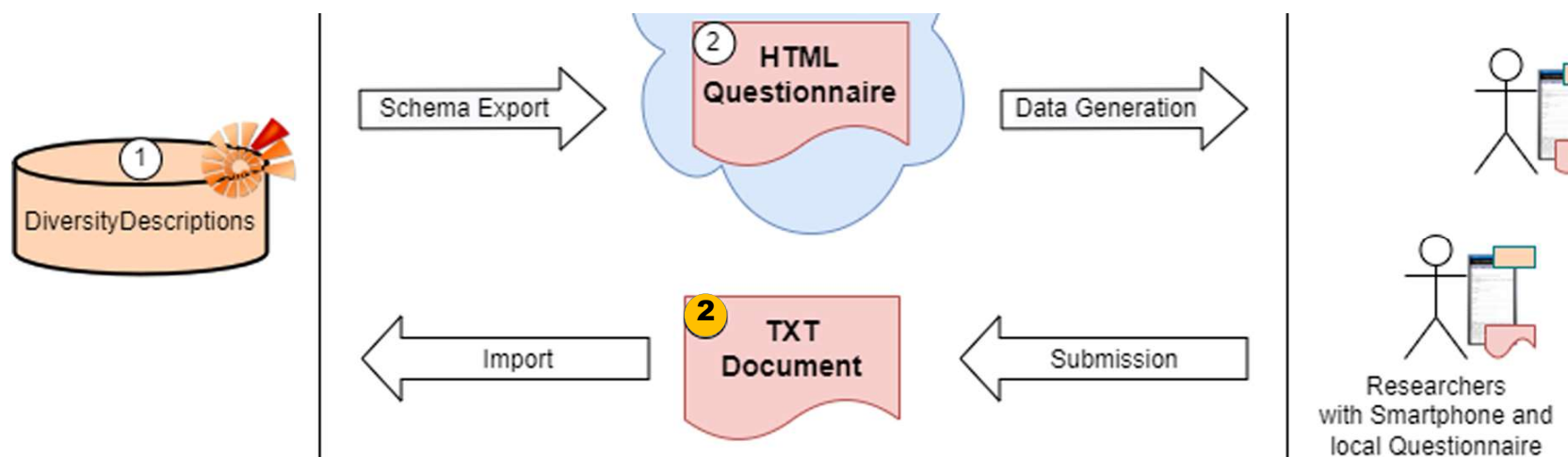




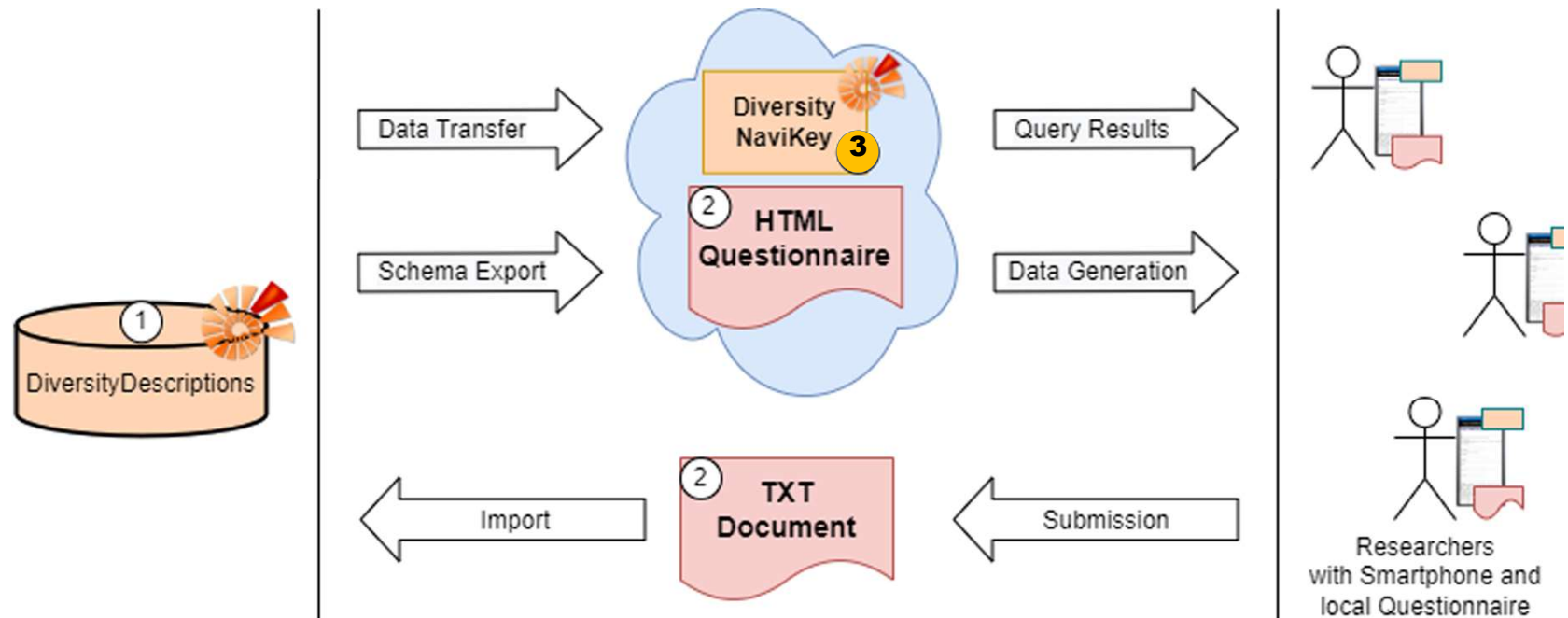
Segments 1–4 of the EthnoMycAfrica data pipeline. **Segment 1**: long-term scientific data curation



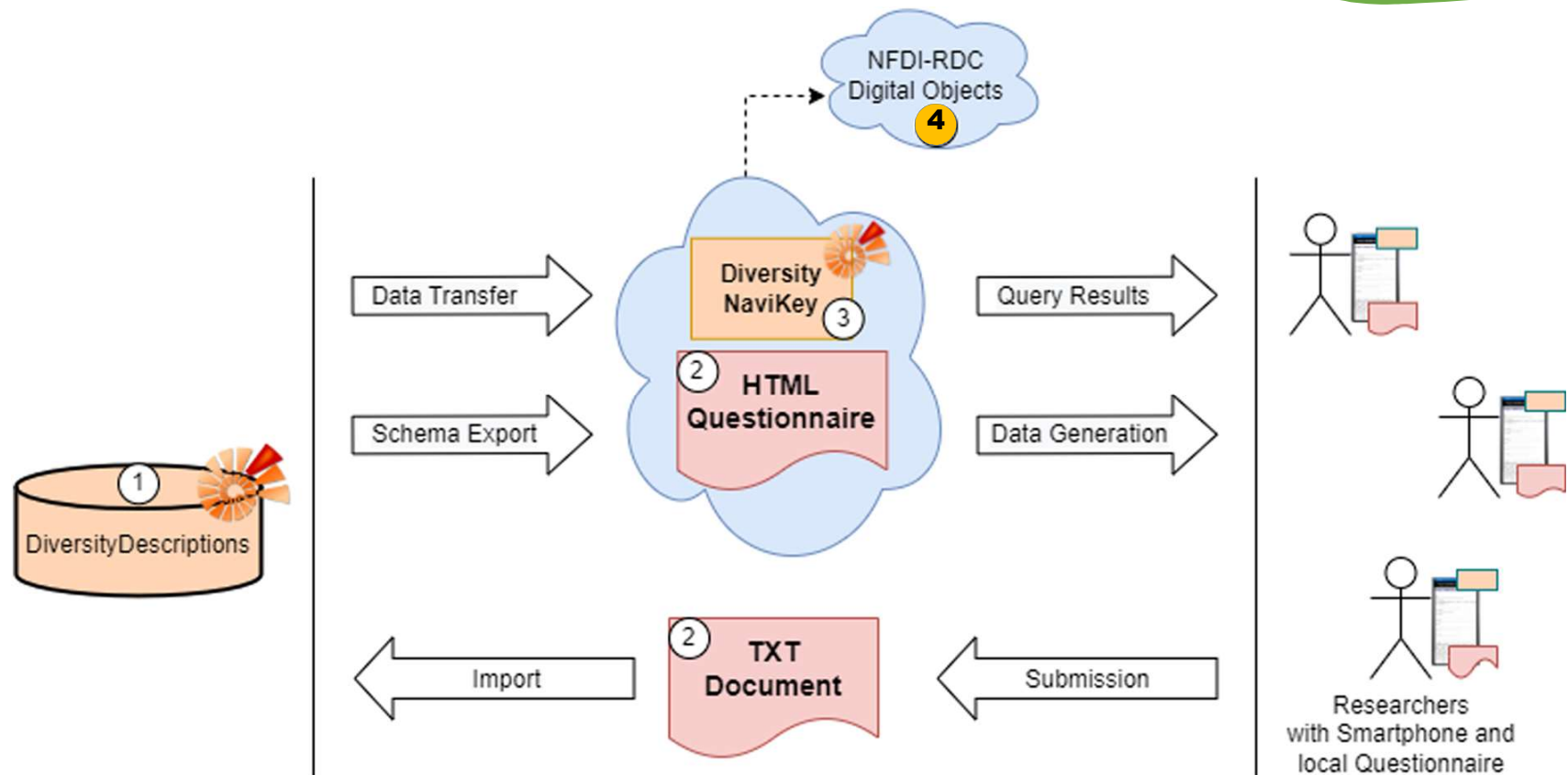
Segments 1–4 of the EthnoMycAfrica data pipeline. Segment 1 is for long-term scientific data curation; **segment 2** for online and offline data generation via HTML questionnaires;



Segments 1–4 of the EthnoMycAfrica data pipeline. Segment 1 is for long-term scientific data curation; **segment 2** for online and offline data generation via HTML questionnaires;



Segments 1–4 of the EthnoMycAfrica data pipeline. Segment 1 is for long-term scientific data curation; segment 2 for online and offline data generation via HTML questionnaires; **segment 3** is for organizing the data publication via the DiversityNaviKey architecture

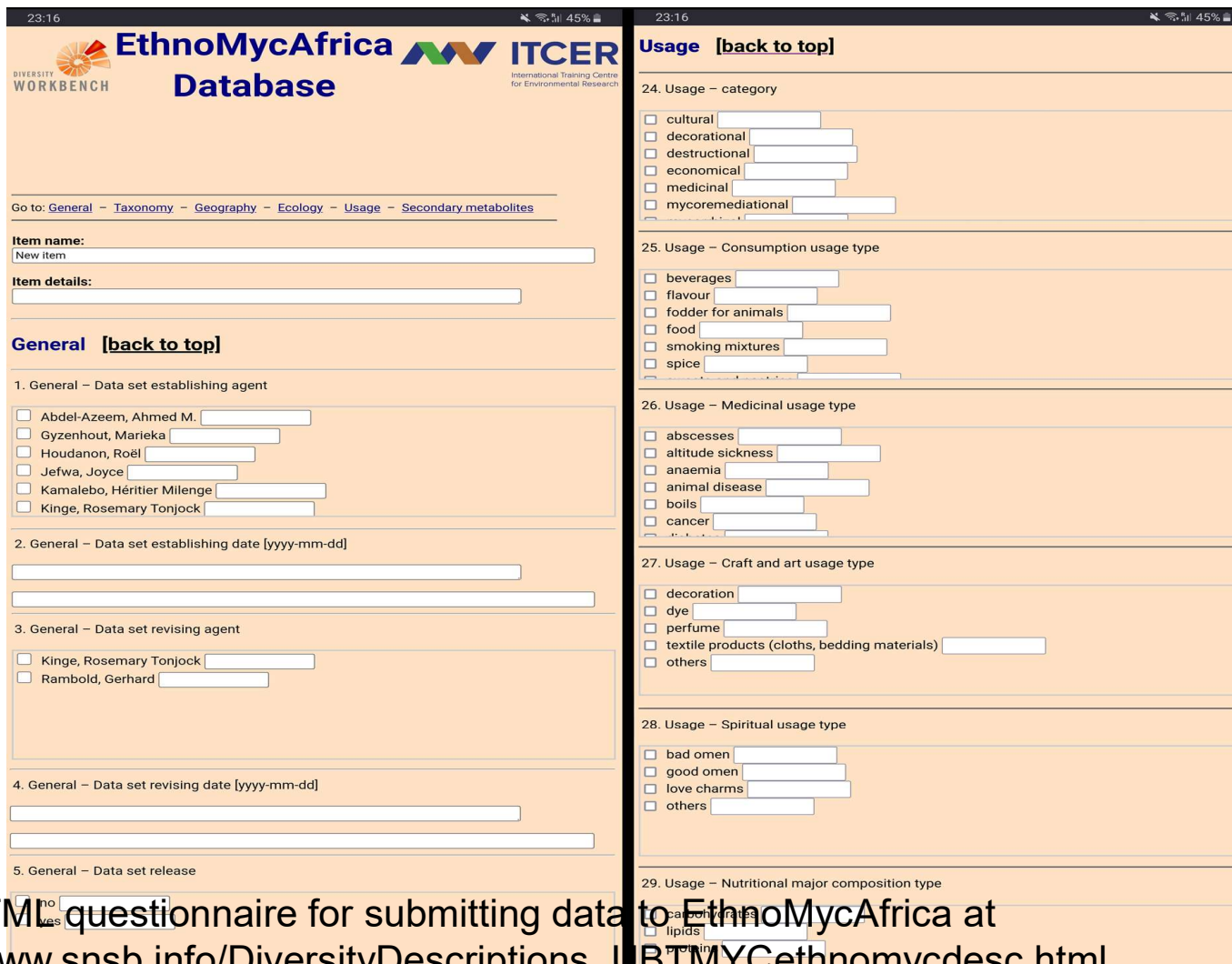


Segments 1–4 of the EthnoMycAfrica data pipeline. Segment 1 is for long-term scientific data curation; segment 2 for online and offline data generation via HTML questionnaires; segment 3 is for organizing the data publication via the DiversityNaviKey architecture; **segment 4** is an envisaged parallel data publication via structured digital data objects.



## HTML Forms:

- Data entry
  - Online / offline option: internet connection availability not a problem
  - Suitable for data entry only (not for data management)
  - Touchscreen-enabled (tablet)



23:16 45%

**EthnoMycAfrica Database** ITCER International Training Centre for Environmental Research

DIVERSITY WORKBENCH

Go to: [General](#) - [Taxonomy](#) - [Geography](#) - [Ecology](#) - [Usage](#) - [Secondary metabolites](#)

**Item name:**  
New Item

**Item details:**

**General [back to top]**

1. General - Data set establishing agent

Abdel-Azeem, Ahmed M.

Gyzenhout, Marieka

Houdanon, Roël

Jefwa, Joyce

Kamalebo, Héritier Milenge

Kinge, Rosemary Tonjock

2. General - Data set establishing date [yyyy-mm-dd]

3. General - Data set revising agent

Kinge, Rosemary Tonjock

Rambold, Gerhard

4. General - Data set revising date [yyyy-mm-dd]

5. General - Data set release

**Usage [back to top]**

24. Usage - category

cultural

decorational

destructional

economical

medicinal

mycoremediational

25. Usage - Consumption usage type

beverages

flavour

fodder for animals

food

smoking mixtures

spice

26. Usage - Medicinal usage type

abscesses

altitude sickness

anaemia

animal disease

boils

cancer

27. Usage - Craft and art usage type

decoration

dye

perfume

textile products (cloths, bedding materials)

others

28. Usage - Spiritual usage type

bad omen

good omen

love charms

others

29. Usage - Nutritional major composition type


carbohydrates

lipids


proteins

The HTML questionnaire for submitting data to EthnoMycAfrica at [http://www.snsb.info/DiversityDescriptions\\_UBTMYCethnomycdesc.html](http://www.snsb.info/DiversityDescriptions_UBTMYCethnomycdesc.html).

23:16
45%



## EthnoMycAfrica Database



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Go to: [General](#) - [Taxonomy](#) - [Geography](#) - [Ecology](#) - [Usage](#) - [Secondary metabolites](#)

**Item name:**

**Item details:**

---

**General** [\[back to top\]](#)

---

**Usage** [\[back to top\]](#)

24. Usage – category

- cultural
- decorative
- destructional
- economical
- medicinal
- mycoremediational

---

25. Usage – Consumption usage type

- beverages
- flavour
- fodder for animals
- food
- smoking mixtures
- spice

The HTML questionnaire for submitting data to EthnoMycAfrica at [http://www.snsb.info/DiversityDescriptions\\_UBTMYCethnomycdesc.html](http://www.snsb.info/DiversityDescriptions_UBTMYCethnomycdesc.html).





DWB DD client:

- Data entry
  - Online option only: internet connection availability sometimes a problem
  - Suitable for data management
  - Not touchscreen-enabled

DiversityDescriptions v. 3.0.2.7

Connection Edit Grid Query Data Administration Help

Agaricus campestris

Project: UBTTYCethnomycdes Language: en

Description: Agaricus campestris AID: ID: 1092595

Main attributes Descriptor view Continuous view Resource links Sample data

No.	Type	!	Descriptor name
1	categorical	•	Data set establishing agent
2	text		Data set establishing date [yyyy-mm-dd]
3	categorical		Data set revising agent
4	text		Data set revising date [yyyy-mm-dd]
5	categorical		Data set release
6	text		Interview partner details
7	text	•	Reference
8	text		Data set general notes
9	text	•	Species name
10	text	•	Vernacular names
11	categorical	•	Genus name
12	categorical	•	Family name
13	text	•	Index Fungorum ID
14	text		Mycobank ID
15	categorical	•	Country
16	text		Region
17	text		Interview latitude [dec]
18	text		Interview longitude [dec]
19	categorical	•	Biome
20	text		Host organism taxon name
21	categorical	•	Substrate
22	categorical	•	Trophic major mode
23	categorical	•	Biotrophic mode
24	categorical	•	Usage category
25	categorical	•	Consumption usage type
26	categorical		Medicinal usage type

Descriptor tree:  Restricted

Category states

x	No.	State	Notes
<input checked="" type="checkbox"/>	1	Abdel-Azeem, Ahmed M.	
<input type="checkbox"/>	2	Gyzenhout, Marieka	
<input type="checkbox"/>	3	Houdanon, Roël	
<input type="checkbox"/>	4	Jefwa, Joyce	
<input type="checkbox"/>	5	Kamalebo, Héritier Milenge	
<input checked="" type="checkbox"/>	6	Kinge, Rosemary Tonjock	

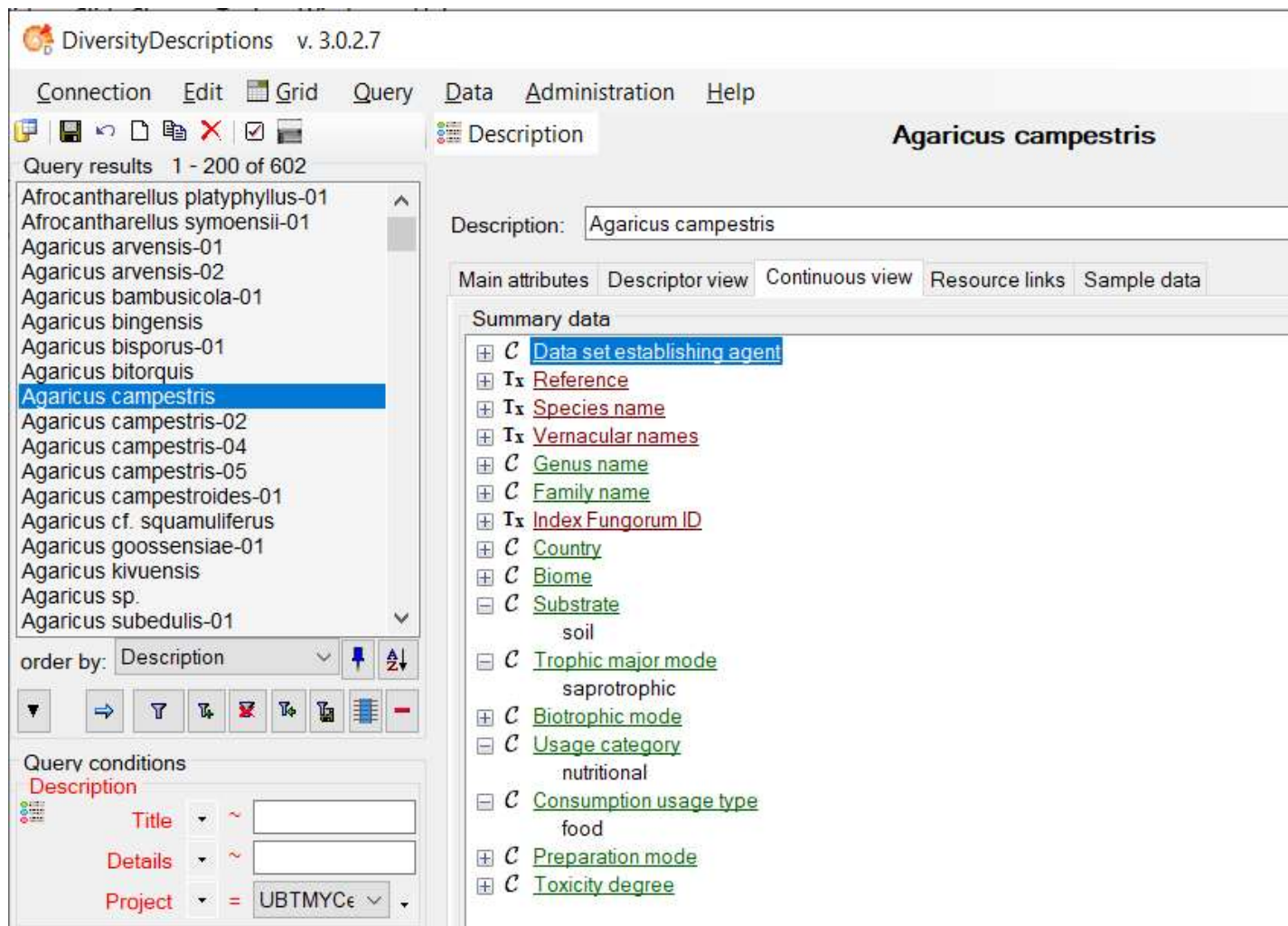
State collection model: OrSet

Status data

x	ID	Status	Notes
<input checked="" type="checkbox"/>	!	To be checked	
<input type="checkbox"/>	∅	Not to be recorded	
<input type="checkbox"/>	-	Not applicable	
<input type="checkbox"/>	?	Data unavailable	
<input type="checkbox"/>	#	Not interpretable	
<input type="checkbox"/>	§	Data withheld	
<input type="checkbox"/>	0	Missing data	

Edit descriptions -

## The DWB DD client for maintaining data of EthnoMycAfrica



DiversityDescriptions v. 3.0.2.7

Connection Edit Grid Query Data Administration Help

Query results 1 - 200 of 602

Agaricus campestris

Description: Agaricus campestris

Main attributes Descriptor view Continuous view Resource links Sample data

Summary data

- + C Data set establishing agent
- + Tx Reference
- + Tx Species name
- + Tx Vernacular names
- + C Genus name
- + C Family name
- + Tx Index Fungorum ID
- + C Country
- + C Biome
- C Substrate
  - soil
- C Trophic major mode
  - saprotrophic
- + C Biotrophic mode
- C Usage category
  - nutritional
- C Consumption usage type
  - food
- + C Preparation mode
- + C Toxicity degree

order by: Description

Query conditions

Description

Title ~

Details ~

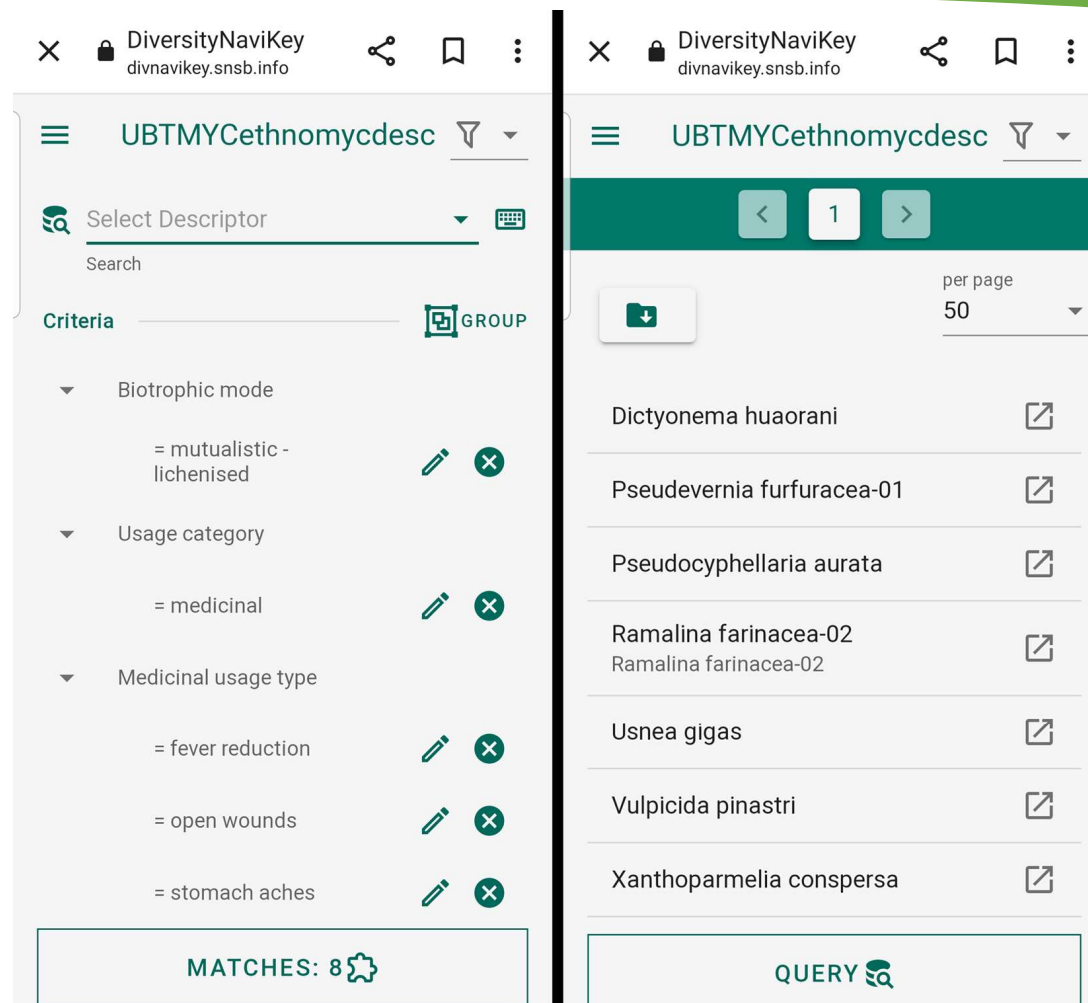
Project = UBTMYCε

The DWB DD client for maintaining data of EthnoMycAfrica



## DiversityNaviKey:

- Data queries
  - Online / offline option: internet connection → not a problem
  - Even sophisticated queries
  - Multilingual options (to be implemented)



The screenshot displays the DiversityNaviKey web application interface. The browser address bar shows 'DiversityNaviKey divnavikey.snsb.info'. The main content area is titled 'UBTMYCethnomycdesc'. On the left, a 'Criteria' panel allows filtering by 'Biotrophic mode' (mutualistic-lichenised), 'Usage category' (medicinal), and 'Medicinal usage type' (fever reduction, open wounds, stomach aches). A 'MATCHES: 8' button is at the bottom of this panel. The right panel shows a list of results with a 'per page 50' dropdown and a 'QUERY' button at the bottom. The results list includes:

Species Name	Action
Dictyonema huaorani	[Link]
Pseudevernia furfuracea-01	[Link]
Pseudocyphellaria aurata	[Link]
Ramalina farinacea-02 Ramalina farinacea-02	[Link]
Usnea gigas	[Link]
Vulpicida pinastri	[Link]
Xanthoparmelia conspersa	[Link]

The DiversityNaviKey web app interface with EthnoMycAfrica database content.