## CANATHIST Biological Data Acquisition and Encoding in DaRWIN Database

Collection Department – 2024

April 2024 – Huye, Rwanda



### Workshop – CANATHIST

### Biological Data Acquisition and Encoding in DaRWIN Database

This workshop aims to provide an overview of the DaRWIN database and its tools for encoding biological data.

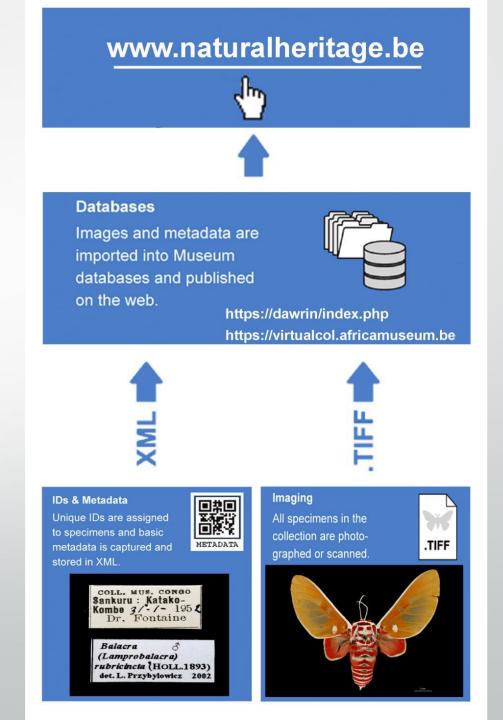
- New acquisition, new Global Inventory Number (N°IG)
  - The first step to register any new material in the RMCA collection
- Introduction to DaRWIN Database
  - Public and Admin interfaces
- Using the Excel Template for Metadata Import
  - Ideal for large amount of data
- Navigating the DaRWIN Interface
  - On how to make and save specific searches
- Introduction to Virtual Collection
  - Image processing and file preparation to import in Virtual Collection

## **Collection Department**

(ex. Biological collection and data management)

### • Objectives:

- To conserve, manage, and make available the rich collections of African organisms and associated data
- Develop tools to facilitate and accelerate access to specimens and associated data





### **Acquisition Policy**

### IG number = numéro d'Inventaire Général – N°IG

First step in the process of collection registration Number given to material coming from an expedition (in situ) or ex situ (donation, exchange,...) before any study

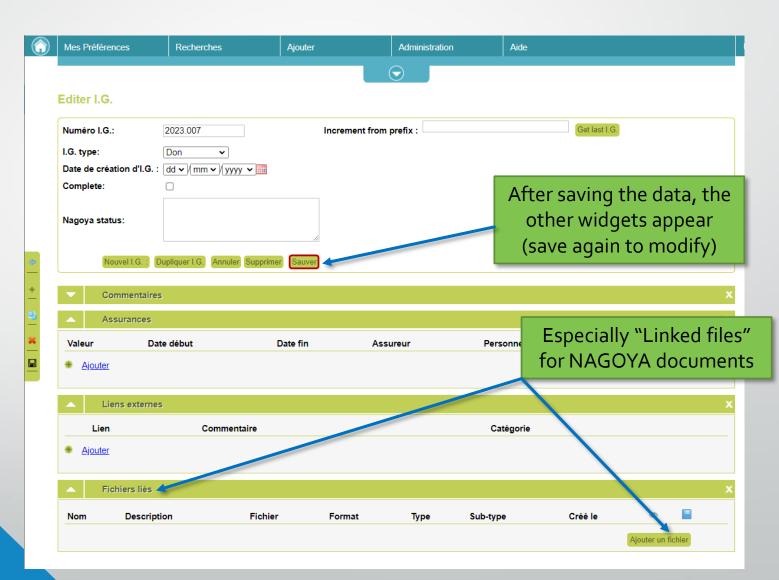
### Acquisition number

The acquisition number (= collection number) is given when the specimen is incorporated to the MRAC collection, after a possible phase of study and / or identification

## The IG sheet

Each IG number is accompanied by a complete documentation, which can be composed of different documents from various sources:

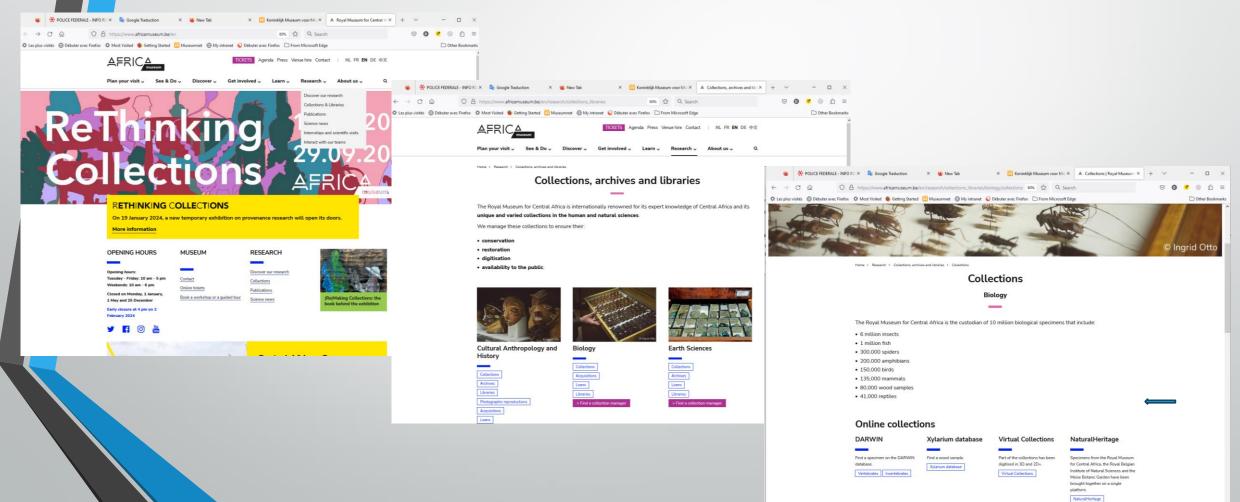
- ✓ Inventory (Excel, Word...)
- photographs of the collection (overview)
- ✓ Statement of state
- Associated documents (export, import permits, Nagoya doc. etc....)

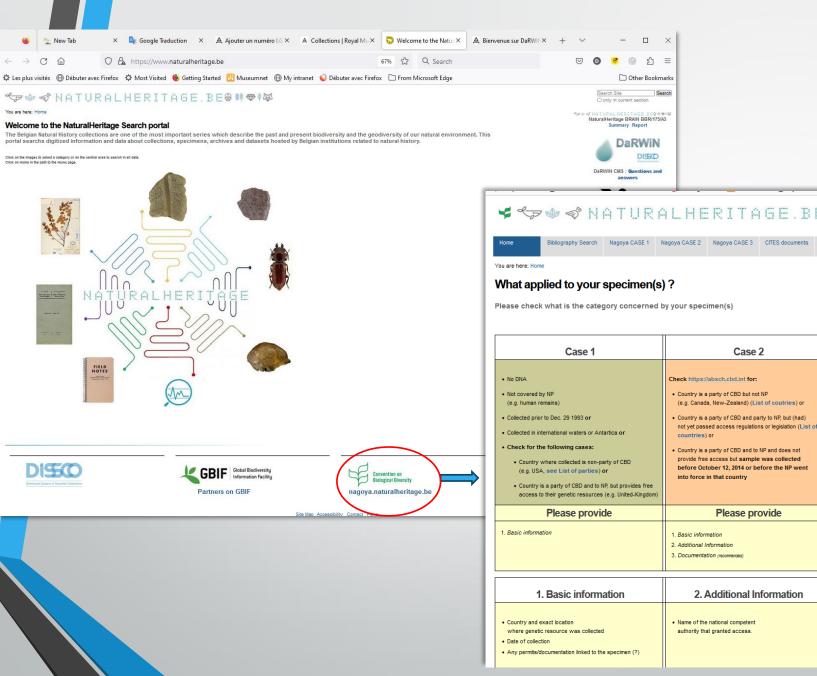


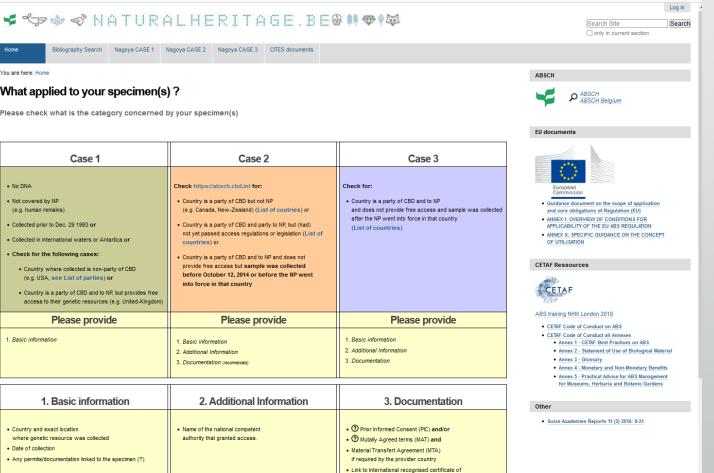
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Since October 12<sup>th</sup> 2014, in order to comply with Access and Benefit Sharing (ABS) regulation, the MRAC will acquire only Biological material that has been legally accessed (whether from in situ or ex situ source)

#### What documents?







### Tool for access to the metadata: DaRWIN

### **Before 2013** Data available in 10 different systems

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### Today

### One CMS for all zoological collections

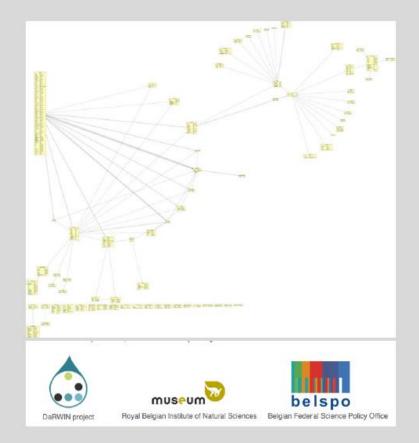




### Why DaRWIN? (Data Research Warehouse Information Network)

DaRWIN is an **open-source** on-line system for the management of <u>Natural History</u> and <u>paleontological</u> collections which has been developed and maintained by the Royal Belgian Institute of Natural Sciences in Brussels since 2010 and is also being used by the Royal Museum for Central Africa since 2013.

The maintenance of the CMS DaRWIN is carried out by the same people at the IRSNB and at the RMCA: Franck Theeten, Phillipe Vignaux and Jean-Marc Herpers





### Advantages and disadvantages of DaRWIN

DaRWIN web interface very complete

- $\rightarrow$  Very useful when 1 or 2 specimens to encode
- $\rightarrow$  Powerful to search for specimens, create labels, loans
- ightarrow Data can be export to international ... GBIF
- $\rightarrow$  Time consuming if a lot of specimens
- → No common template for data coming from outside RMCA
- ightarrow Need to be connected to DaRWIN server

Spreadsheet templates for data import in DaRWIN



## **DaRWIN Collection Management System**

### Via Natural Heritage: <u>https://www.naturalheritage.be/</u>

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#### 🔧 🕪 🗬 NATURALHERITAGE.BEB 🕪 🗇 🛱

🔿 🔒 https://www.naturalheritage.be

You are here: Home

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#### Welcome to the NaturalHeritage Search portal

The Belgian Natural History collections are one of the most important series which describe the past and present biodiversity and the geodiversity of our natural environment. This portal searchs digitized information and data about collections, specimens, archives and datasets hosted by Belgian institutions related to natural history

#### lick on the images to select a category or on the central area to search in all dat lick on Home in the path to the Home page.





GBIF GODAL Biodiversity

Convention on Biological Diversity nagoya.naturalheritage.be

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Partners on GBI



#### naturalheritage.be/darwin/QandA/#c2=all&b\_start=0 ← $\rightarrow$ C

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You are here: Home / DaRWIN / Questions and Answers

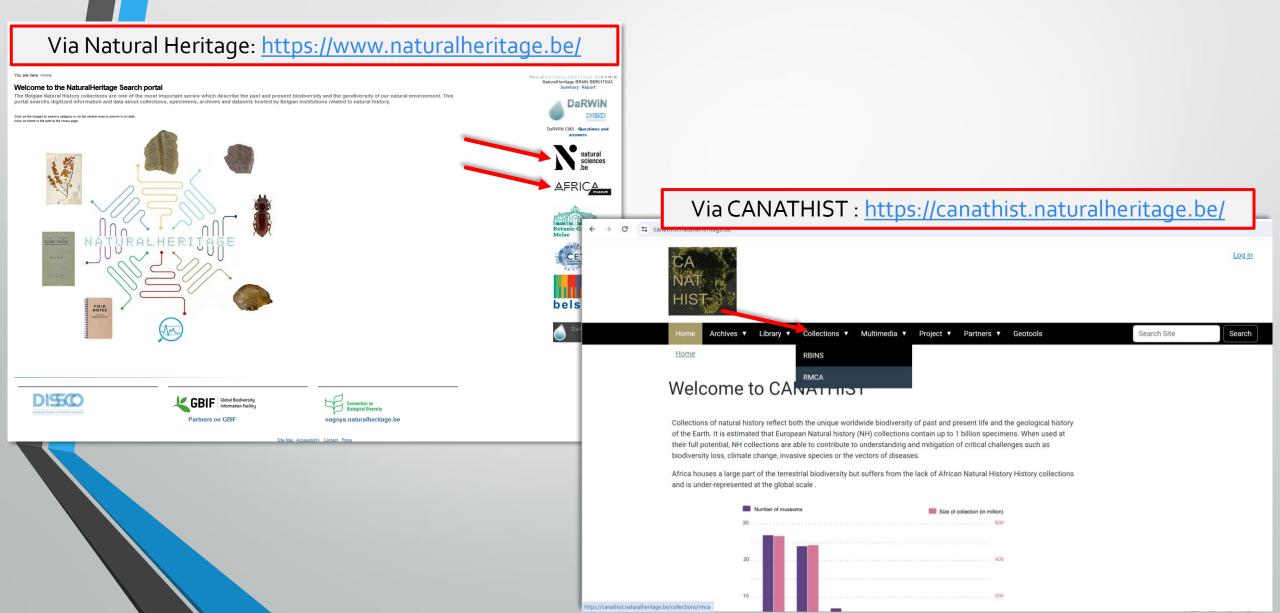
#### Questions about the DaRWIN Collection Management System

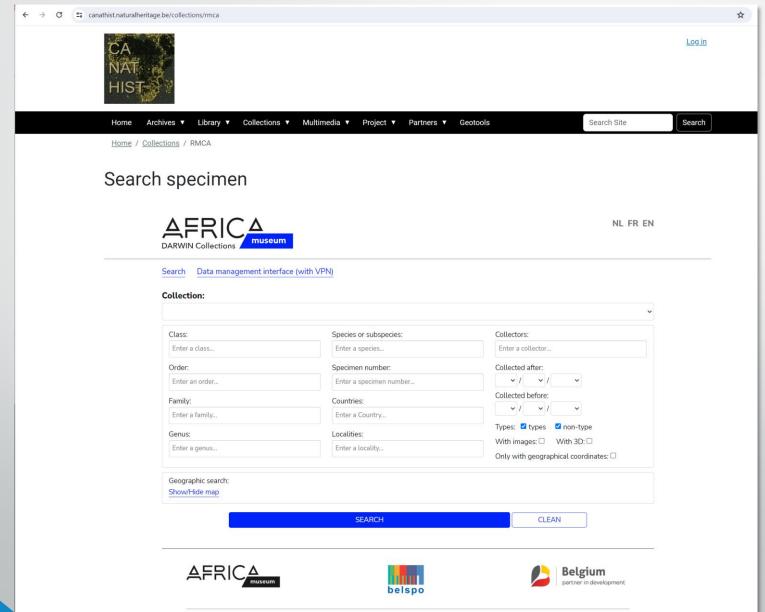
Category	Show 100 v entries	Search: First Previous 1
All (102) Attachments (10) Business model	Items	tags
(7) Client-specific customization (8)	1. How many years has the CMS been in use?	Business model
DaRWIN (1) Data entry, import, export and validation (8) Data	1. 2. How large is the current software development team?	Business model
normalization/standardisation (9) Data querying (10) Geography (11) Legal	1 . 3. What is the roadmap and schedule for future developments and new releases?	Business model
requirements (2) Management tools (9)	. 4. What is the CMS distribution approach (on-premise, cloud or hybrid)?	Business model
Public access (2) Technical details (8) Technical support and documentation (12)	5. What kind of pricing model is applied?	Business model
User management/security (6)	. 6. Is the CMS open-source or proprietary?	Business model
VirtualCollections (1) Vision/main customers (4)	1. 7. How are change requests from users submitted and how are they prioritized?	Business model
	. 8. How are users consulted about planned changes to the CMS?	Vision/main customers
	3. 9. What are the key characteristics that differentiate your CMS?	Vision/main customers
	10. What are your target customers?	Vision/main customers
	1. 11. How many institutions are customers?	Vision/main customers
	12. What is the underlying database system (e.g. MySQL/PostgreSQL/)?	Technical details
	13. Which other main technologies were used to build the CMS?	Technical details
	14. Which operating systems are supported (Windows/Mac/Linux)?	Technical details
	15. What are the system storage limits?	Technical details
	16. What is the maximum number of users?	Technical details
	17. What is the maximum number of concurrent users?	Technical details
	18. How are backups and data recovery managed?	Technical details
	🕒 . 19. Does the CMS support API's to communicate with different databases/applications? If so, what request methods are supported?	Technical details
	1 . 20. Is there a customer helpdesk to deal with general questions and issues?	Technical support and documentation
	1. 21. Is the helpdesk email only or is telephone support also available?	Technical support and documentation
	1. 22. Is the helpdesk available year-round?	Technical support and documentation
	1. 23. What sort of response time can be expected from the helpdesk?	Technical support and documentation

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Search Site

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### Search specimen



NL FR EN

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CLEAN

#### Search Data management interface (with VPN)

#### Lowest taxon: species

#### **Collection:**

/Invertebrates/Arachnomorphae/

#### /Invertebrates/Arachnomorphae/

Class:	Species or subspecies:	Collectors:
Enter a class	Ctenus anahitaeformis Benoit, 1981 $ imes$	Enter a collector
Order:	Specimen number:	Collected after:
Enter an order	Enter a specimen number	
Family:	Countries:	Collected before:
Enter a family	Rwanda	
Genus:	Rwanda	Types: 🗹 types 🗹 non-type
Enter a genus	Enter a locality	With images: With 3D: 🗆
		Only with geographical coordinates: $\Box$
Geographic search:		
Show/Hide map		

SEARCH

Search specimen NL FR EN **DARWIN** Collections Search Data management interface (with VPN) wamagana Kabaronde Muhanga Parc nation de Kahuzi-Kibunac Kibaya Katana centr Buhanda Kaduha Nyanza Muborore Kirundo Vumbi-Bukuba Muving rangara Kiremba Kabarore 8.8 ... Kavanza Kolula Gitaramuka Buhiga Kigamba Mishiha Karuzi © OpenStreetMap contributors. 1 found specimens

Page 1 / 1 (25 specimens in page) 1 specimens with coordinates (page) 1 specimens with coordinates (total)

Sort Specimen number 🗸 🤇	Ascending O Descending				
Specimen number	Taxonomical name	Types	Country	Locality	Specimen count
BE_RMCA_ARA.Ara.665 67	Ctenus anahitaeformis Benoit, 1981	Holotype	Rwanda	Forêt de Rugege, Marais de Mukokola;Africa;Rwanda; Rugege (Forêt)	1

NL FR EN



#### Search Data management interface

#### Ctenus anahitaeformis Benoit, 1981

BE\_RMCA\_ARA.Ara.66567

> Stable CETAF identifier (permalink)

> Image link

Collection: /Invertebrates/Arachnomorphae/Araneae/
Specimen number: BE_RMCA_ARA.Ara.66567
Taxonomical name: Ctenus anahitaeformis Benoit, 1981
Class: Arachnida
Order: Araneae
Family: Ctenidae
Begin of collecting period: 11/8/1949
End of collecting period: 17/8/1949
Collectors: Laurent (Dr.)
Donator:
History of scientific identifications: <ul> <li>1979-xx-xx: Ctenus anahitaeformis Benoit, 1981</li> </ul>
Zoological type: Holotype
Specimen count: 1

Specimen count (females):

#### Show/Hide Map

Country: Rwanda

administrative area:
 Continent: Africa
 Country: Rwanda

Municipality: Rugege (Forêt)

• Exact\_site: Forêt de Rugege, Marais de Mukokola

Locality:

• area:

Latitude: -2.5 Longitude: 29.25







https://virtualcol.africamuseum.be/providence/pawtucket/service.php/IIIF/represe

Data management interface (with VPN)

### Search specimen



Class:	Species or subspecies:	Collectors:
Enter a class	Enter a species	Enter a collector
Order:	Specimen number:	Collected after:
Enter an order	Enter a specimen number	
Family:	Countries:	Collected before:
Enter a family	Enter a Country	
Genus:	Localities:	Types: 🗹 types 🔽 non-type
Enter a genus	Enter a locality	With images: With 3D: Only with geographical coordinates:

SEARCH

CLEAN

NL FR EN

Data management interface (with VPN)



#### Welcome to the RBINS-collection database

The Royal Belgian Institute of Natural Sciences houses a precious collection of zoological, anthropological, paleontological, mineralogical and geological materials and data. The renowned Iguanodons from Bernissart, ambassadors of the Belgian science institute in Brussels, represent a natural history collection currently estimated to hold over 37 million specimens.

The roots of the present day collection reach far back in history. It evolved from the Natural History collection of Karel of Lotharingen, governor of The Netherlands (1712-1780) and was part of didactic materials owned by the Central School of the City of Brussels. After the independence of Belgium, the City of Brussels donated the collection to the Belgian Government and became part of the autonomous "Royal Natural History Museum" in 1846, known as the "Royal Belgian Institute of Natural Sciences" since 1948. Fieldwork by researchers and collaborators, in Belgium and abroad, donations and purchases have been expanding the assets ever since.

The darwin website is the main gate to glimpse the extent and diversity of the collections. Today, the darwin database manages information on about 350.000 specimens stored in the institute's depositories. This number rises on a daily basis thanks to the continued efforts of curators and their adjuncts that are responsible for maintaining the stored specimens and information. Our online database provides information about the collections of the Vertebrates, Invertebrates and Entomology. The application will soon be expanded with paleontological data.

Information on the Anthropological collection is maintained on a parallel system: mars (Multimedia Archaeological Research System). This data can be consulted following: http://www.naturalsciences.be/mars. The Department of Geology and the Department of Marine Ecosystems provide information on different systems. More information on these departments can be found on <a href="http://www.sciencesnaturelles.be/institute/structure/geology/gsb">www.sciencesnaturelles.be/institute/structure/geology/gsb</a> website And <a href="http://www.naturalsciences.be/mars">www.sciencesnaturelles.be/institute/structure/geology/gsb</a> website And <a href="http://www.naturalsciences.be/mars">www.naturalsciences.be/mars</a>. The Department of Geology and the Department of Marine Ecosystems provide information on different systems. More information on these departments can be found on <a href="http://www.sciencesnaturelles.be/institute/structure/geology/gsb">www.sciencesnaturelles.be/institute/structure/geology/gsb</a> website And <a href="http://www.numm.ac.be">www.numm.ac.be</a>

The corner stone of the darwin database is the specimen and the information about its origin and its status. Although the status of the specimens follow the current regulations of the <u>International Code on Zoological Nomenclature</u> other status specifications not treated by the ICZN regulations (eg. topotype) have been maintained as supplementary information about the specimen(s) in question.

Enjoy your virtual visit through our collections!

#### Discover some random specimens :

- Xylarium / Monodora angolensis Welw.
- Xylarium / Gaertnera paniculata Benth.
- Mammalogy / Crocidura jacksoni

### Data management interface (with VPN)

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Searches

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Manage

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Administration

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Add new Specimen

#### Add new taxon

#### <u>Add new Taxon</u>

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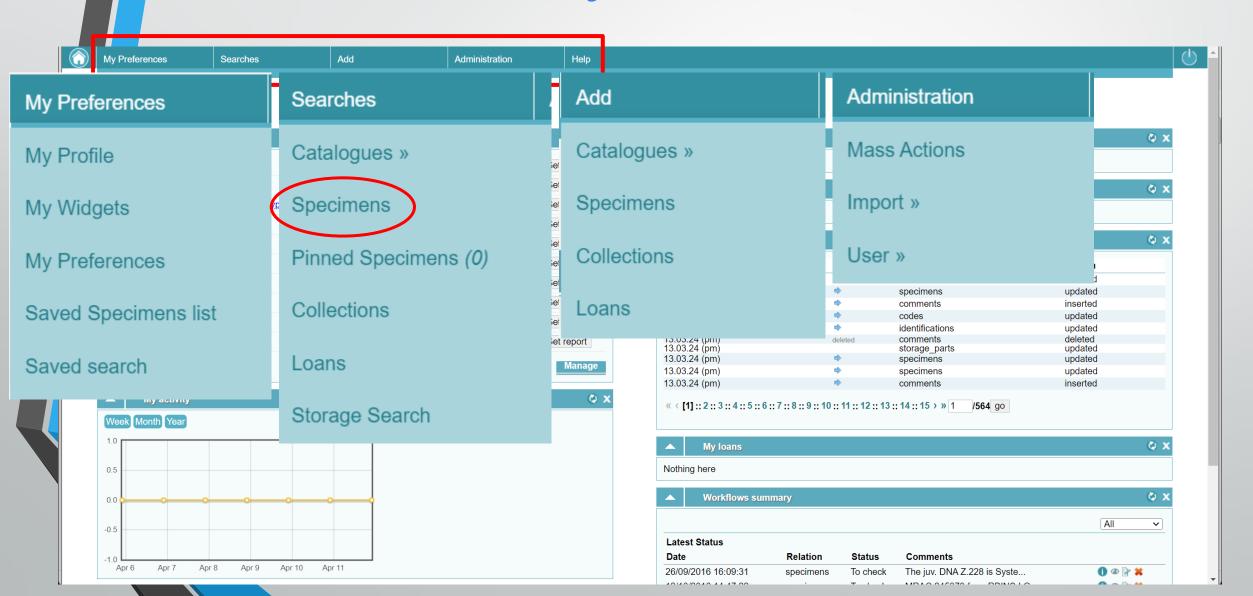
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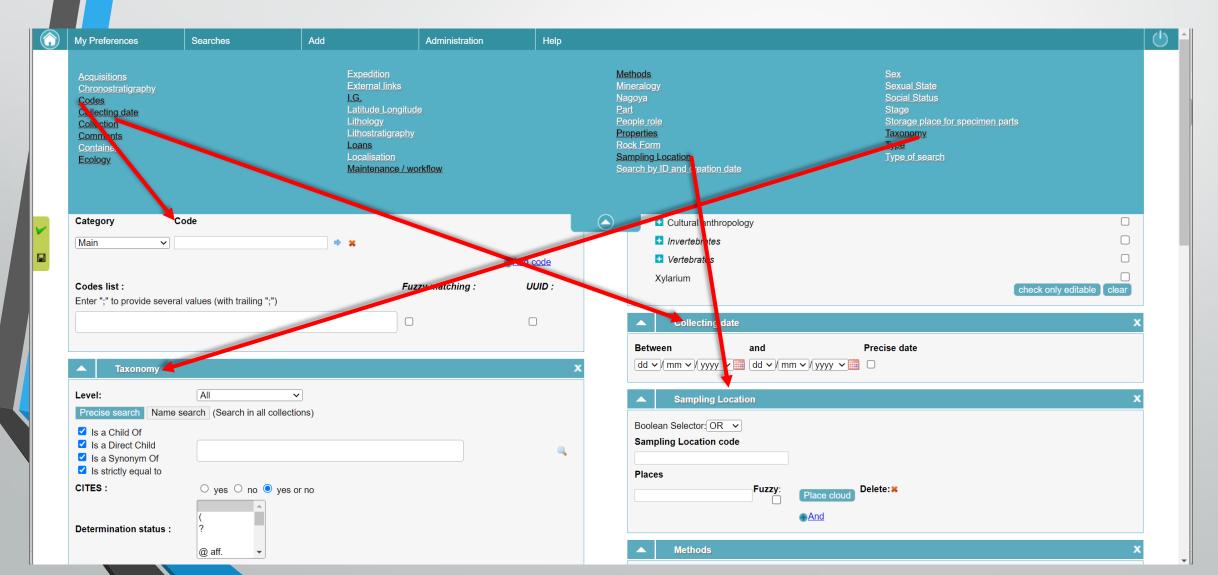
### Data management interface (with VPN)



### The DaRWIN Interface Widgets

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### The DaRWIN Interface Widgets



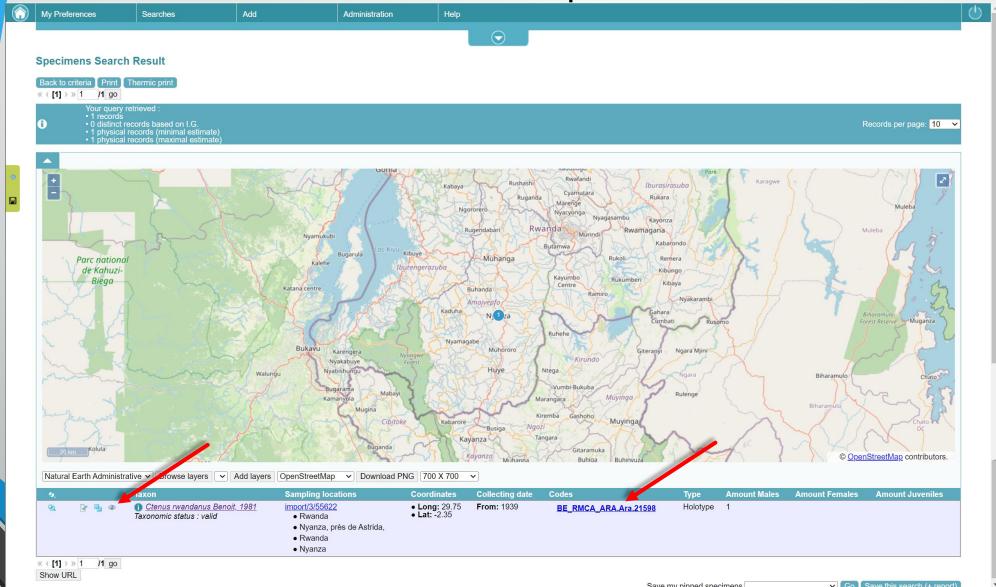
### The DaRWIN Interface Widgets

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### The DaRWIN Interface Search for Specimens

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### Search for Specimens



### The DaRWIN Interface Search for Specimens

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### The DaRWIN Interface Search for Specimens

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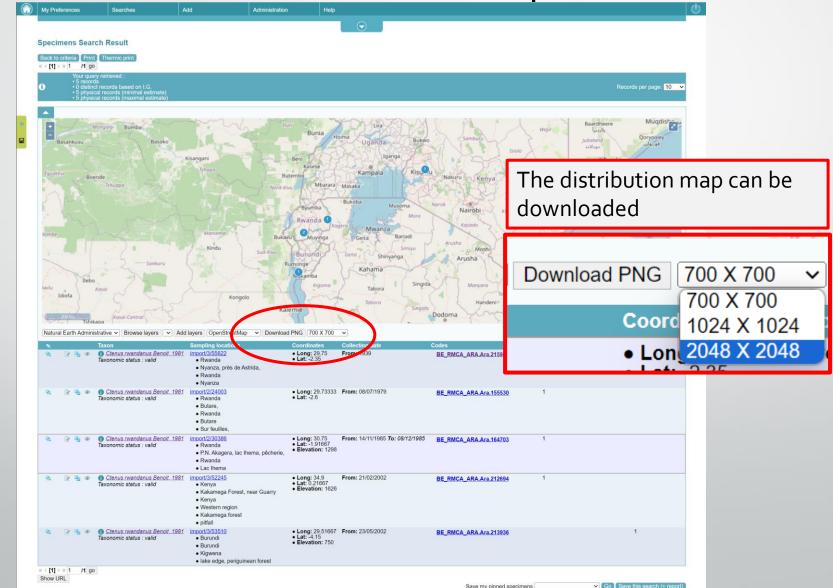
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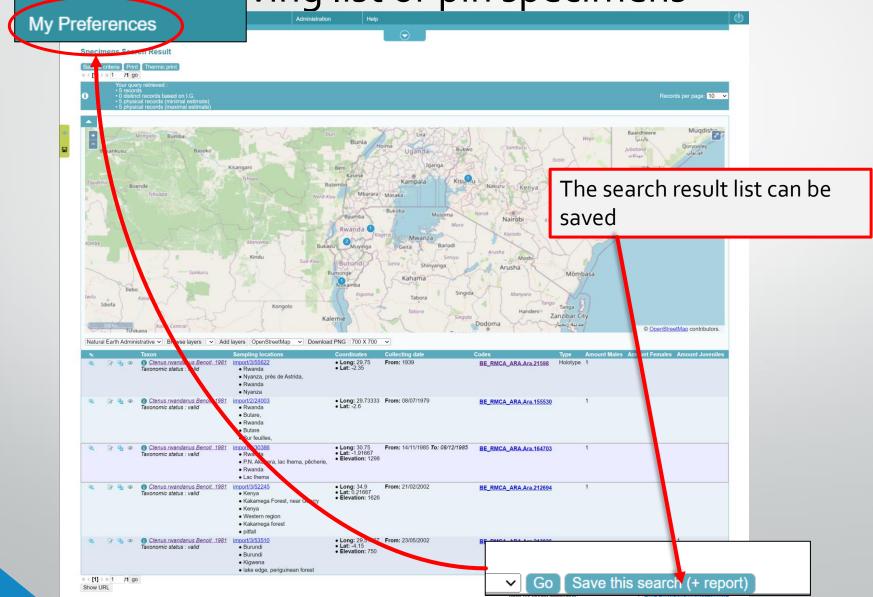
### Search for Specimens

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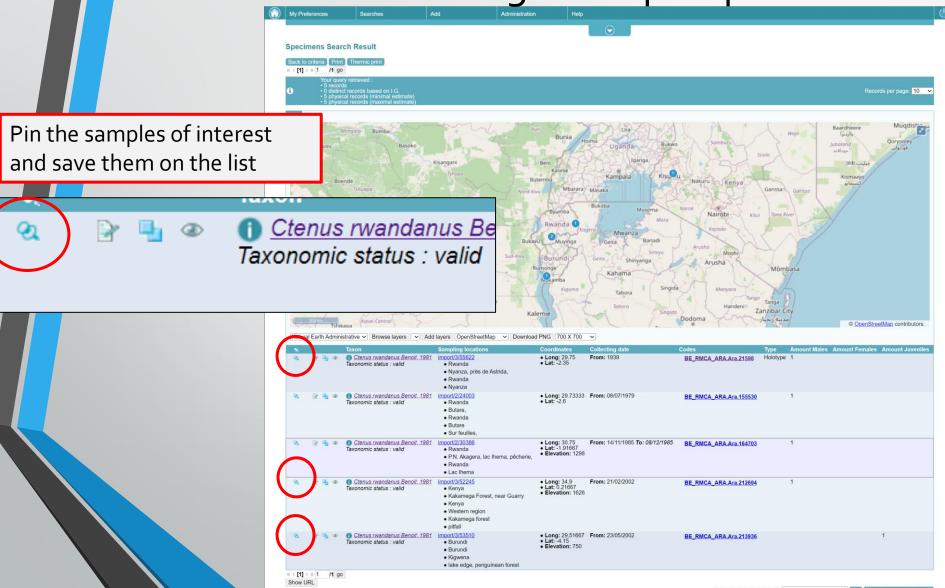
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### Saving list or pin specimens

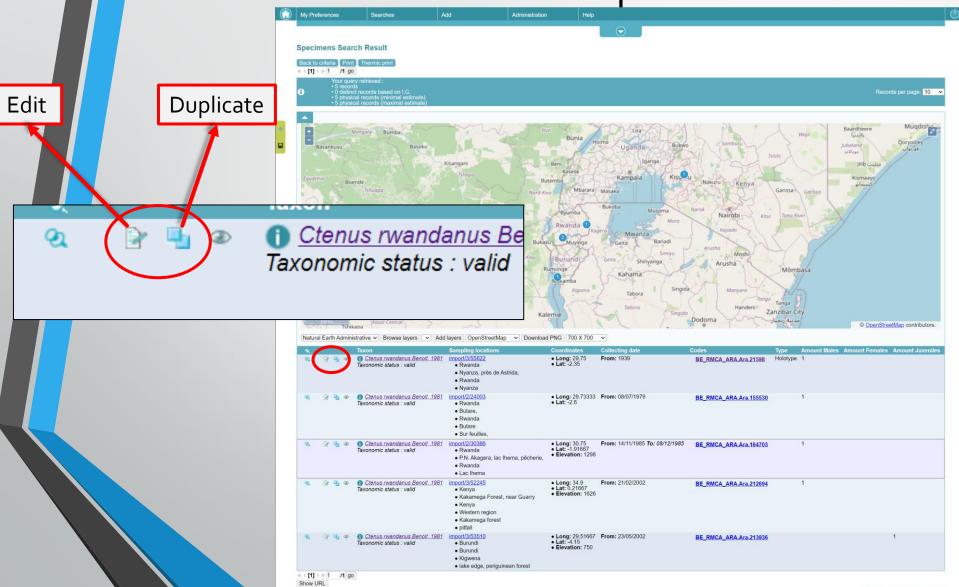


### Saving list or pin specimens



### Edit and duplicate functions

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### Edit and duplicate functions

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### The DaRWIN Interface Add specimen

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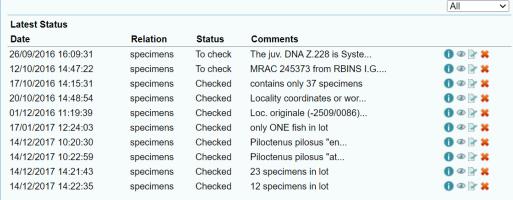
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Workflows summary

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### The DaRWIN Interface Add specimen

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### The DaRWIN Interface Add location

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# Using the Excel Template for Metadata Import in Darwin

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## Navigating the DaRWIN Interface

 How to make and save specific searches <u>http://darwin/backend.php/</u>

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## Thank you !

