AFRICA
museum

AFRICA museum

AFRICA museum

Cultural Anthropology and History

Our scientists study the languages, colonial history, ancient societies, political systems,

Biology

Our biologists study the biodiversity of various animal groups and help promote the sustainable management of Africa's tropical forests.

Earth Sciences

Our researchers study mineral resources, geodynamics, surface environments and natural hazards in Central Africa.

A research institution

- Find out more at: https://www.africamuseum.be/
- PR Movie : https://www.youtube.com/watch?v=UjwCgTHNQQM&t=100s (12 min)

A rich african collections

Cultural Anthropology & History

120,000 ethnographic artefacts

75,000 archaeological artefacts

9,000 musical instruments

3,000 published ancient maps

500,000 historical photographs

20,000 historical objects and Western artworks

3 km historical archives

650 historical films on the Belgian Congo, Rwanda and Burundi (1940-1960)

Biology

10,000,000 specimens among which:

6,000,000 insects

1,000,000 fishes

500,000 butterflies

300,000 spiders

195,000 amphibians

150,000 birds

135,000 mammals

80,000 wood samples

45,000 reptiles

17,000 snakes

Earth Sciences

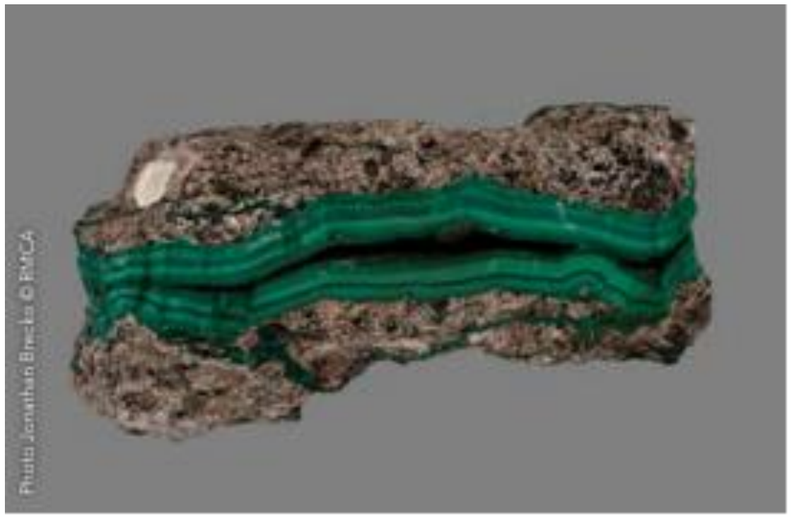
180,000 rock samples

200,000 aerial photographs

20,000 geological maps

18,000 palaeontological specimens

17,000 minerals



The collections of the Africa Museum (RMCA), the Royal Belgian Institute of Natural Sciences (RBINS) and the federal collection of Meise Botanic Garden (MBG) form together the richest collection (estimation of about 10 million specimens and more than 100000 type specimens) related to Central Africa due to the colonial history of Belgium.

There is a need to give access or provide to overseas countries the FAIR access to the digital collections related to their own country

CANAHIST

CONTACT

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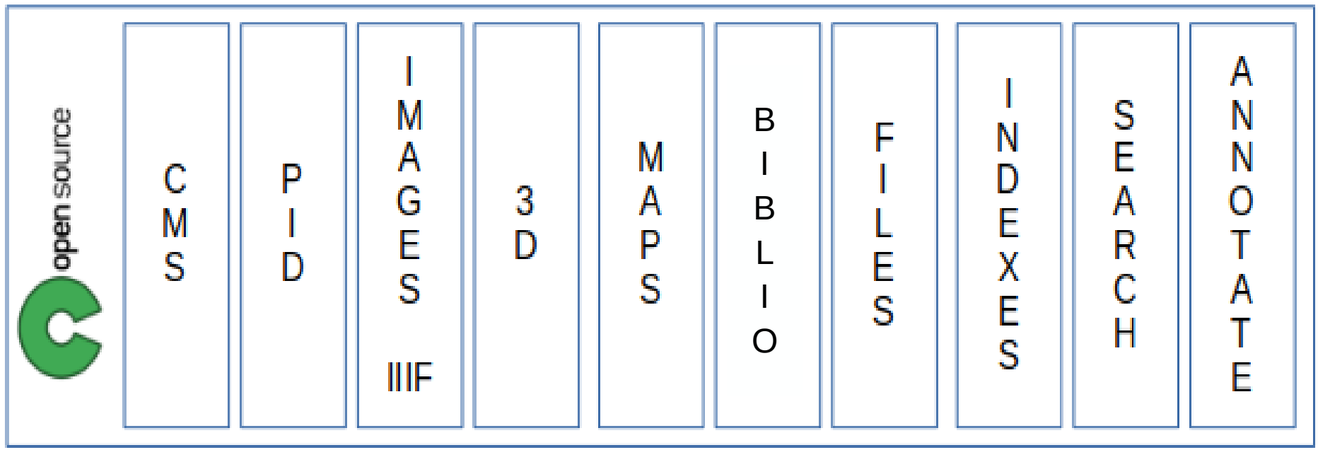
Vautier Street, 29
1000 Brussels
Belgium

The Natural History collections collected in central Africa by Belgian institutions

Rwanda 04.24

OBJECTIVE

- The main objective of the CANATHIST project is to build a portfolio of integrated open source tools/services for accessing the Belgian collections



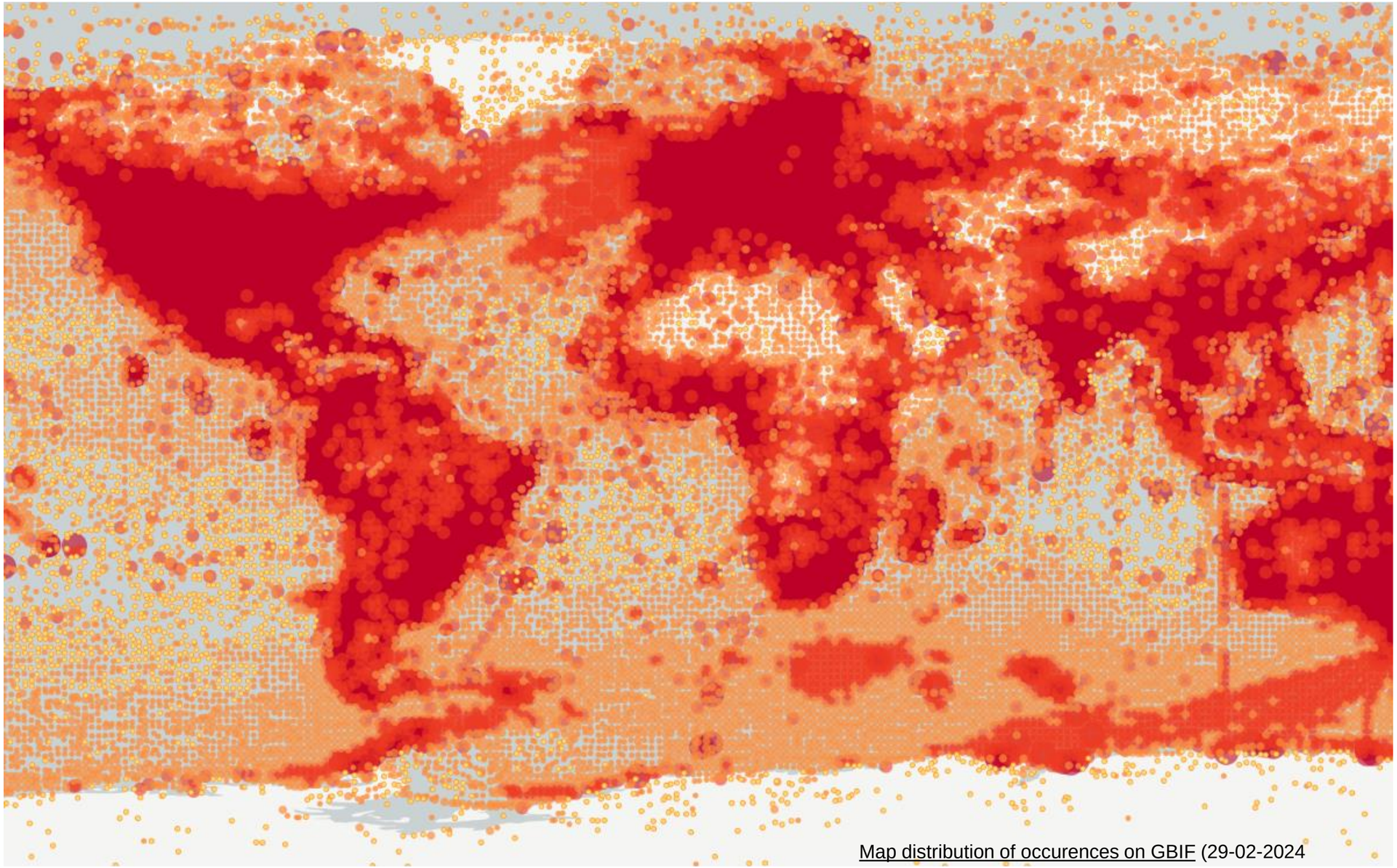
The portfolio of Open Source blocks building the CANATHIST infrastructure

Full time High speed internet connection	Part-time High speed internet connection	Part-time Low speed internet connection or no connection
Cloud servers & storage	*Local servers & storage*	*Standalone workstation*

CASE STUDY:

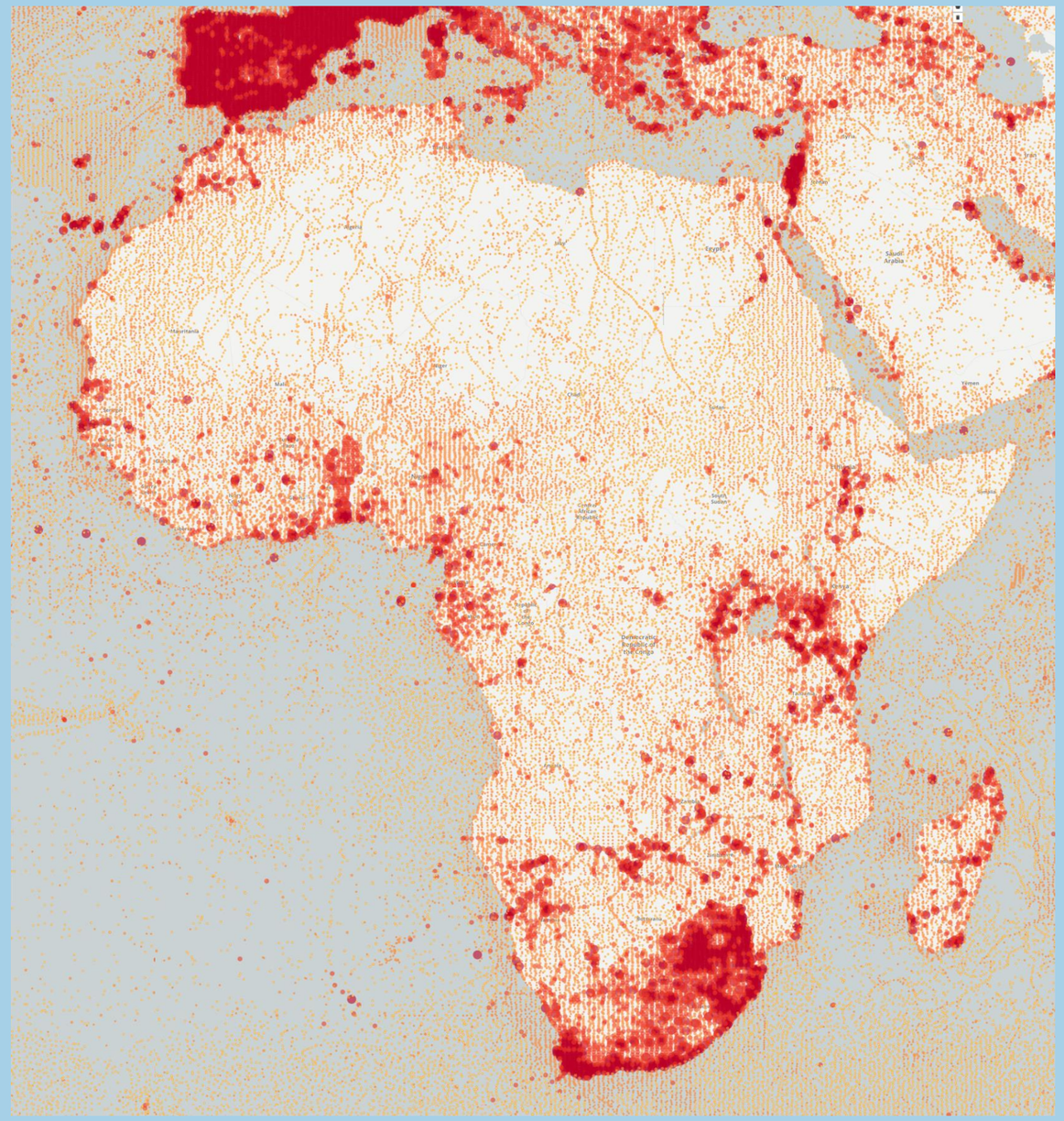
The case studies of the CANATHIST project are the Natural History collections mainly collected by the FSIs in Central Africa, during the colonial period. These samples/specimens were often divided between the Royal Museum of Central Africa (RMCA), the Royal Belgian Institute of Natural Sciences (RBINS) and the Meise botanic garden (MBG).

Why Natural history collections Central Africa?



Map distribution of occurences on GBIF (29-02-2024

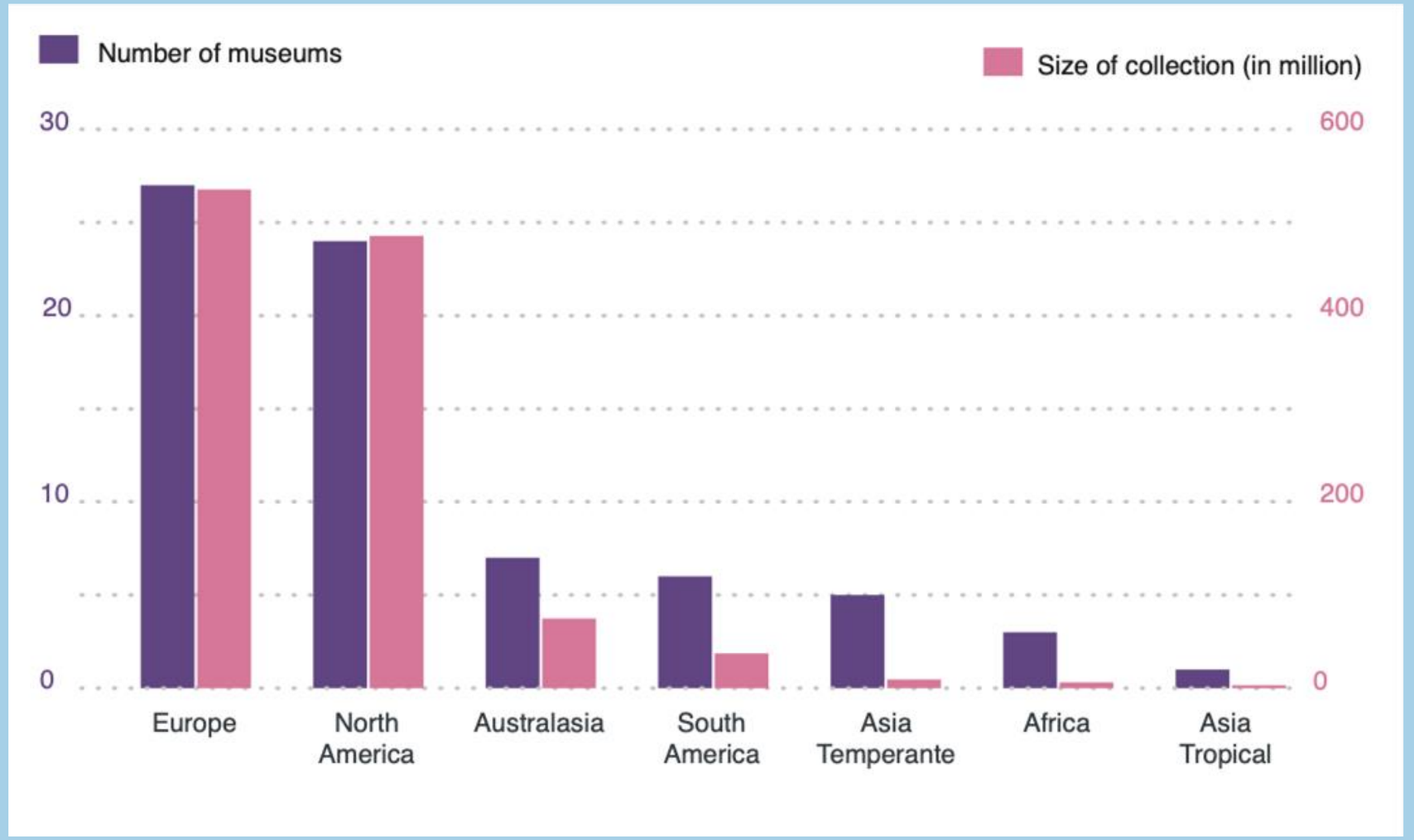
Why Natural history collections Central Africa?



Map distribution of occurences on GBIF (29-02-2024)

Map distribution GBIF members

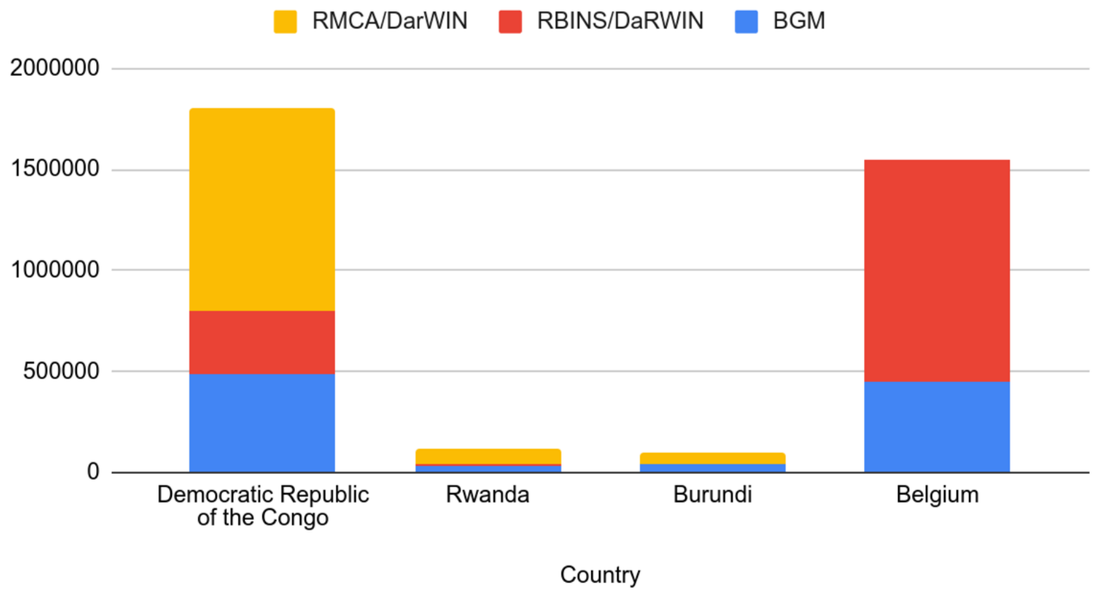
Why Natural history collections Central Africa?



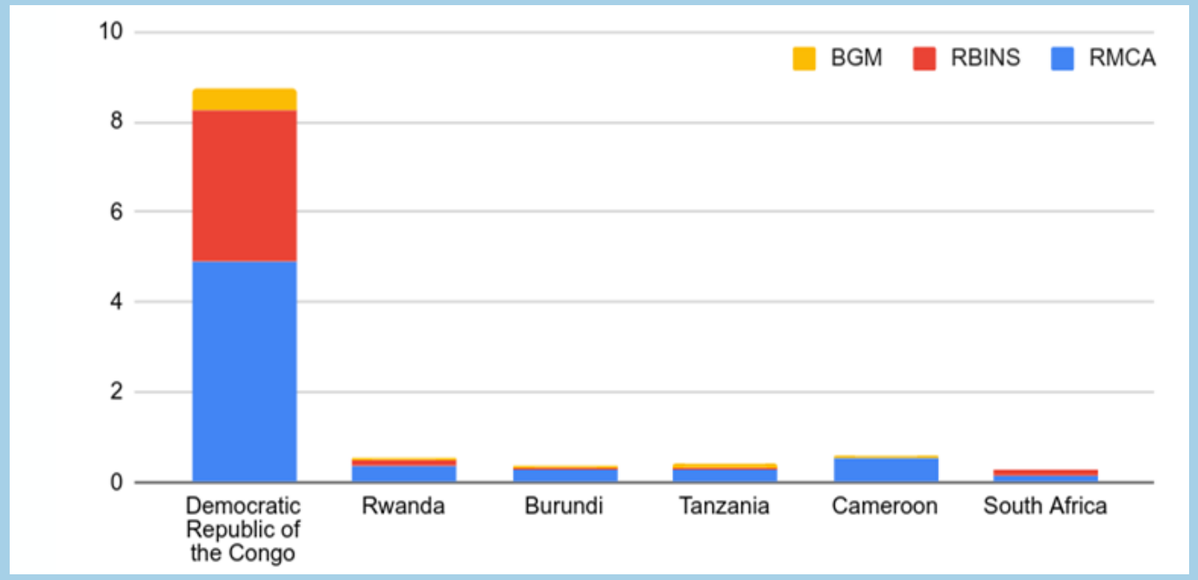
Ranked histogram of number of museums and their collection sizes, grouped by geographic region. From Johnson *et al.*, 2023. Science, Supplementary Fig. 1.

Why RMCA, IRSNB & BGM ?

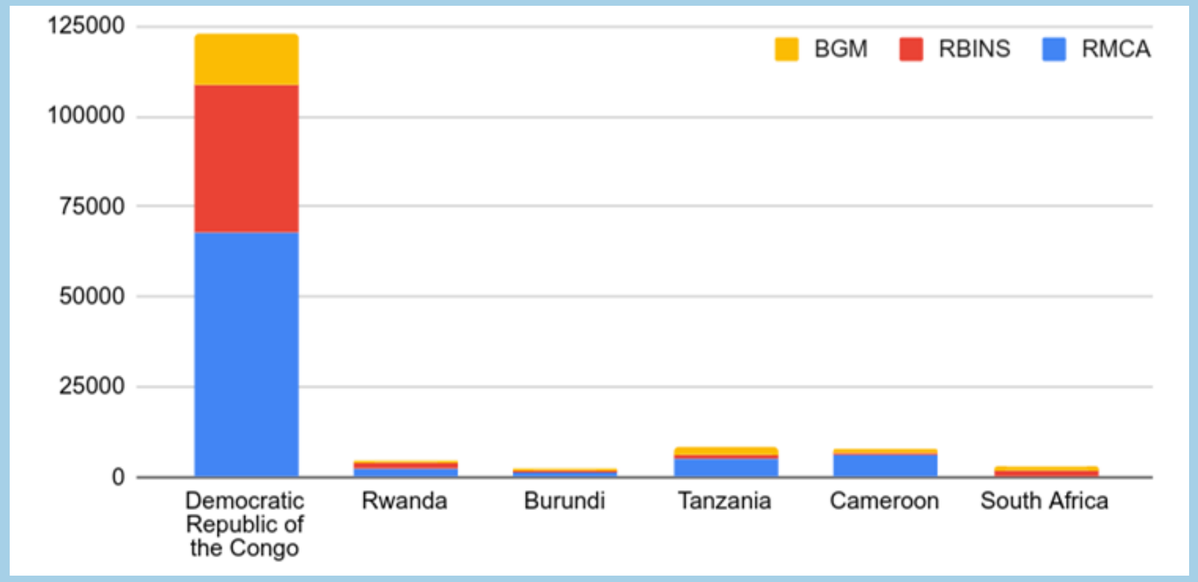
Natural history collections Central Africa



Number of specimens encoded in the CMS of RMCA, RBINS and MBG



Evaluation of the number of specimens housed by RMCA, RBINS and MBG



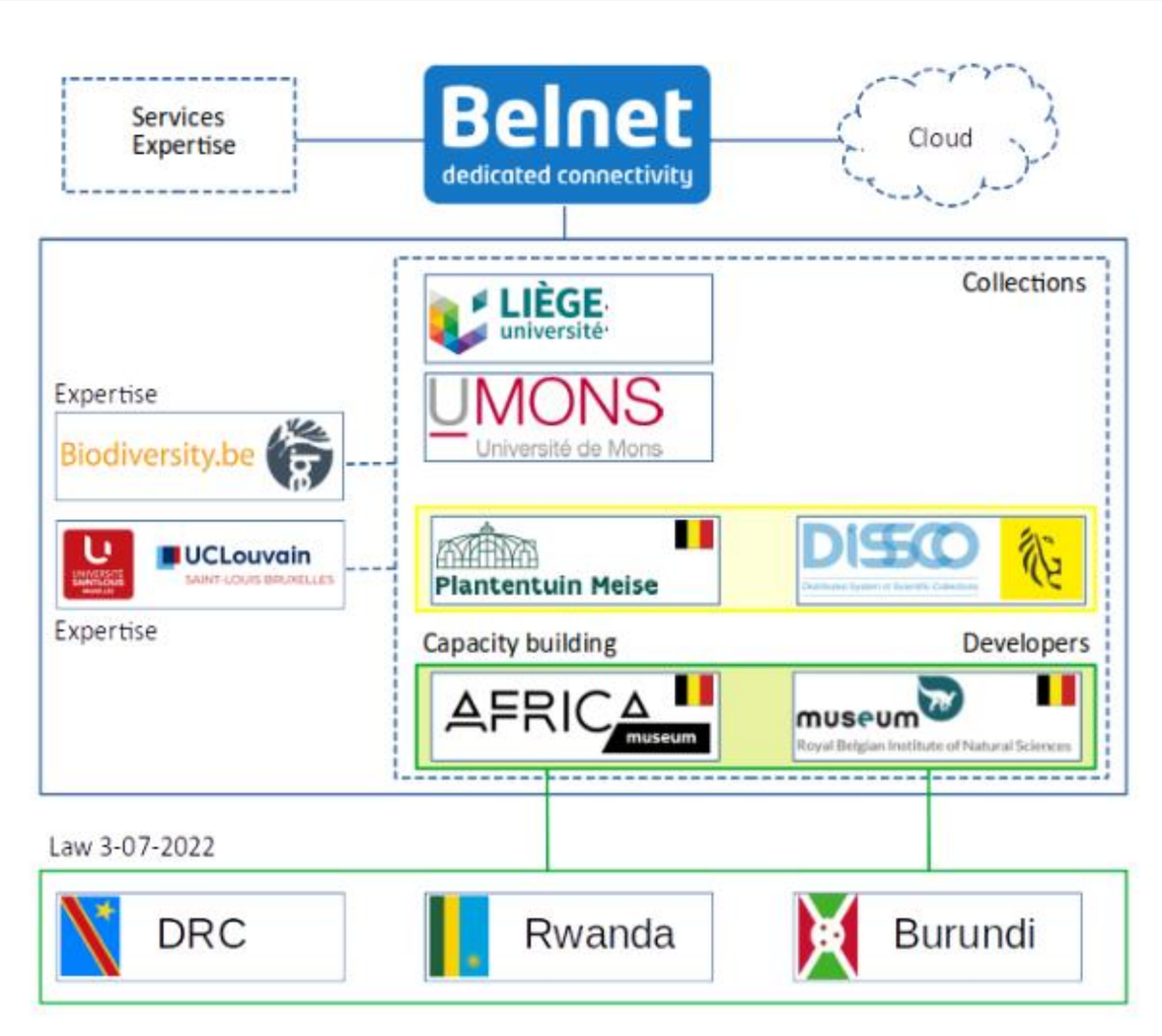
Evaluation of the number of type specimens housed by RMCA, RBINS and MBG

Restitution

After the independence of the Congo, a part of the collection was also prepared for repatriation and stored in the RMCA, still waiting for a formal agreement with a host institution in DRC. In 1961 it was decided to prepare a fourth of the entomological collection collected in the national parks of Congo for a restitution to RDC. About 20 years of work was necessary to sort out the specimens and prepare more than 6000 boxes. Since 1980, the material has been ready for restitution to African institutions, but has never been completed. Forty years later the boxes are still at the Africamuseum, but no longer have been curated by the museum(s)

In July 3 2022, the Federal Parliament adopted a Bill Recognizing the Alienability of Goods Linked to the Belgian State's Colonial Past and Determining a Legal Framework for Their Restitution and Return (hereafter 'Restitution Bill'). The collections in this project fall into the scope of the Restitution Bill. Restitution is also prominently present in the European and international debate, as more and more former colonizing countries are exploring avenues toward some form of restitution.

CANAHIST - Consortium

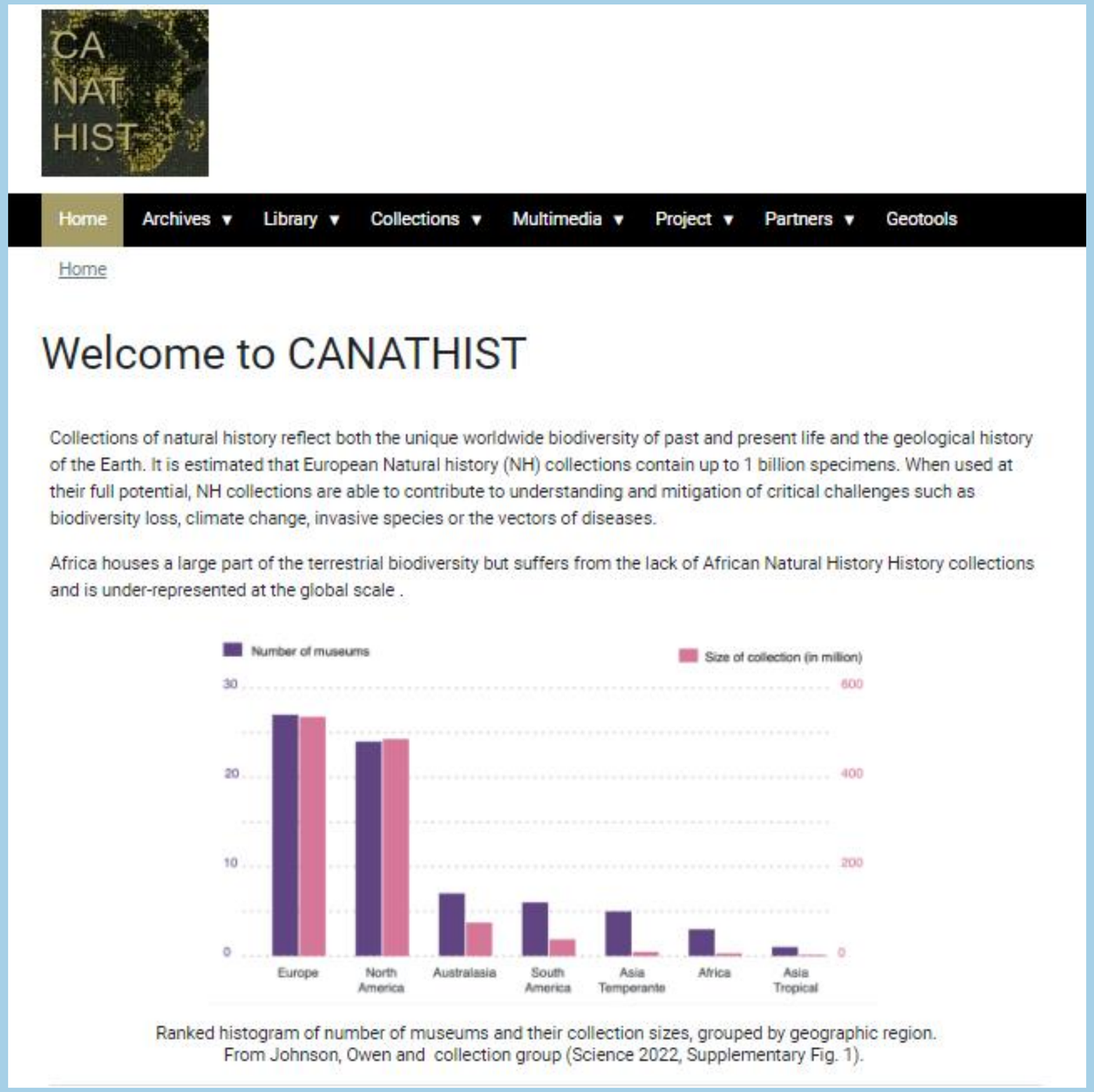


The CANATHIST consortium composed by 7 Belgian partners and 3 African partners

The 3 funding pillars of the proposed infrastructure

CANATHIST – state of the art

https://canathist.naturalheritage.be/



Archives

Archives - of the former National Parks of Belgian Congo

ARSOM - KAOW - RAOS Biographies

Archives Royal Museum for Central Africa

Archives Royal Belgian Institute of Natural Sciences

Archives Meise Botanic Garden

Search in archives

Search in archives

ishango Search

all items

in current results

Current search

x **Search in archives**

x ishango

- Hide filters x Remove all

Show 10 entries Search:

Type	Items	Tags
File	DE HEINZELIN DE BRAUCOURT (Jean).pdf	

Library

Publications of the Institute of the National Parks of Belgian Congo

Publications of the Royal Museum for Central Africa

Annales du Musée du Congo Belge - Annalen van het Museum van Belgisch Congo

Zoologie - Dierkunde

Publications of the Royal Belgian Institute of Natural Sciences

ABC Taxa

Search in Annales du Musée du Congo Belge - Annalen van het Museum van Belgisch Congo

Search reference

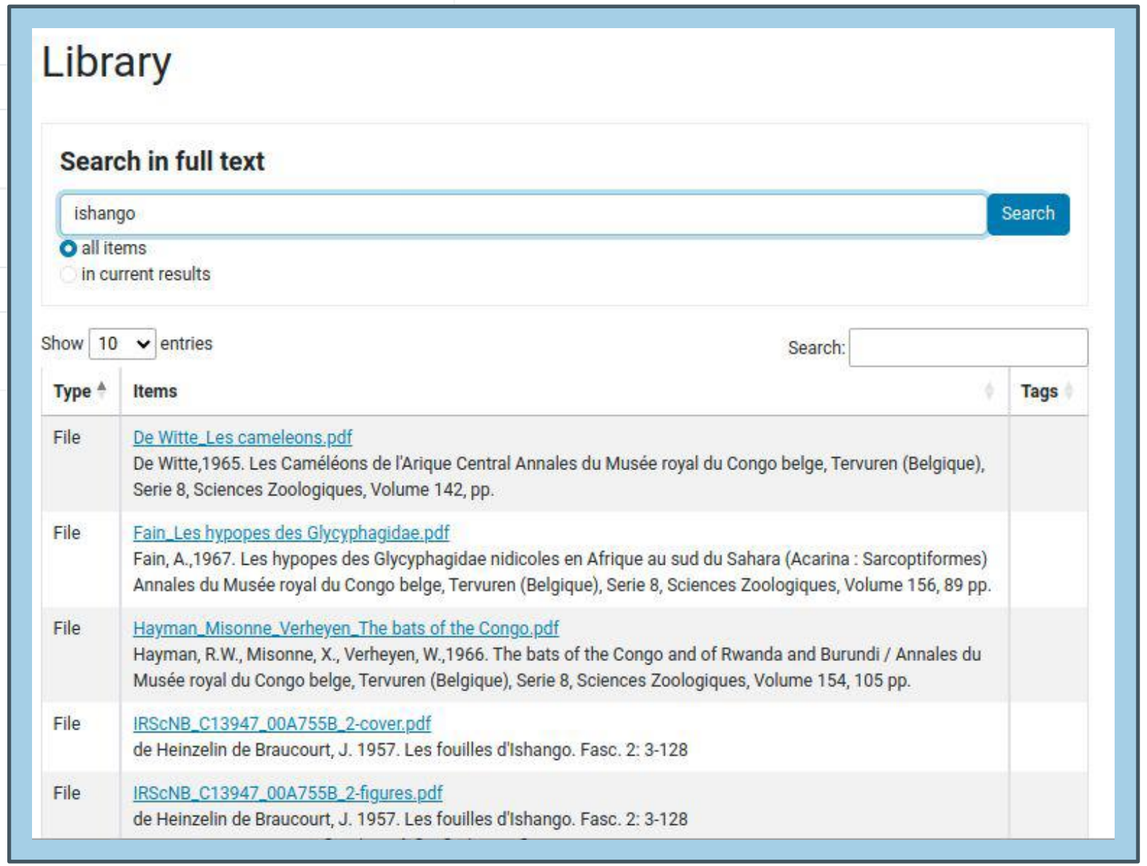
Type author, title, year

all items
in current results

Search full text

Type text and use wildcard (*)

all items
in current results



Log in

Home | Archives | Library | Collections | Multimedia | Project | Partners | Geotools | Search Site | Search

Home / Collections / RMCA

- RBINS
- RMCA

Search specimen

AFRICA museum
DARWIN Collections

NL FR EN

Search | Data management interface (with VPN)

Collection:

Class: Enter a class...
Order: Enter an order...
Family: Enter a family...
Genus: Enter a genus...

Species or subspecies: Enter a species...
Specimen number: Enter a specimen number...
Countries: Enter a Country...
Localities: Enter a locality...

Collectors: Enter a collector...
Collected after: / /
Collected before: / /
Types: types non-type
With images: With 3D:
Only with geographical coordinates:

Geographic search:
Show/Hide map

SEARCH CLEAN

About Specimens Partners Literature DoeDat News and events Helpdesk

English

Table Gallery Map Download

Occurrence status | Scientific name | Year | Country or area : Congo, The Democratic Republic ... × | Issues and flags | more

488,710 results

Scientific name	Features	Country or area	Coordinates	Year	Basis of record	Dataset	Publisher
Bridelia ferruginea Benth.		Congo, The Democratic Republic of the	4.60S, 15.17E	2005	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Tarenna Gaertn.		Congo, The Democratic Republic of the		2005	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Cola millenii K.Schum.		Congo, The Democratic Republic of the	7.01N, 5.55W	2015	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Ritchiea albersii Gilg		Congo, The Democratic Republic of the		1951	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Landolphia camptoloba (K.Schum.) Pichon		Congo, The Democratic Republic of the	4.32S, 15.32E	2013	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Cucurbitaceae Cucurbitaceae indet.		Congo, The Democratic Republic of the		2014	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Craterispermum schweinfurthii Hiern		Congo, The Democratic Republic of the		2014	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Cyperaceae Cyperaceae indet.		Congo, The Democratic Republic of the	5.02S, 15.18E	2014	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Mitracarpus Zucc.		Congo, The Democratic Republic of the	4.98S, 15.15E	2014	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Murdannia Royle		Congo, The Democratic Republic of the	5.03S, 15.17E	2014	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Malvaceae Malvaceae indet.		Congo, The Democratic Republic of the		2014	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Hymenocoleus scaphus (K.Schum.) Robbr.		Congo, The Democratic Republic of the	2.44N, 25.06E	2015	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Blighia welwitschii (Hiern) Radlk.		Congo, The Democratic Republic of the	5.63S, 13.10E	2015	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Petersianthus macrocarpus (P.Beauv.) Liben		Congo, The Democratic Republic of the	5.62S, 13.10E	2015	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden
Haplocoelum congolanum Hauman		Congo, The Democratic Republic of the	2.70S, 25.14E	2015	Preserved specimen	Meise Botanic Garden Herbarium (BR)	Meise Botanic Garden

Geo API

A Google Sheet with different links to API allowing to retrieve geocoordinates for a list of locality names. You should make a copy with a valid google account and allow the Appscript macro when google will display a security alert message.

Data Source		Input	Erase	
				Source TAB where you can fill a the localities
View a source sheet example				
Geoservices	**Search**	**Results**	**Erase**	
Nominatim				Nominatim is the geocoding software that powers the official OSM site www.openstreetmap.org
GeoNames				The GeoNames geographical database covers all countries and contains over eleven million placenames
photon				Search as you type with OpenStreetMap / Komoot
natural sciences .be DaRWIN DISCO				Webservice of the DaRWIN CMS of RBINS
AFRICA museum DaRWIN DISCO				Webservice of the DaRWIN CMS of RMCA

The HowTo page of the GeoTool is available here

Google sheet client :

https://docs.google.com/spreadsheets/d/1yiQWAO7Mta43X6oyZBUAaQaUpp9CS5zOxdmTLkTICCU/edit#gid=0

Google Sheet with AppScript querying several webservices

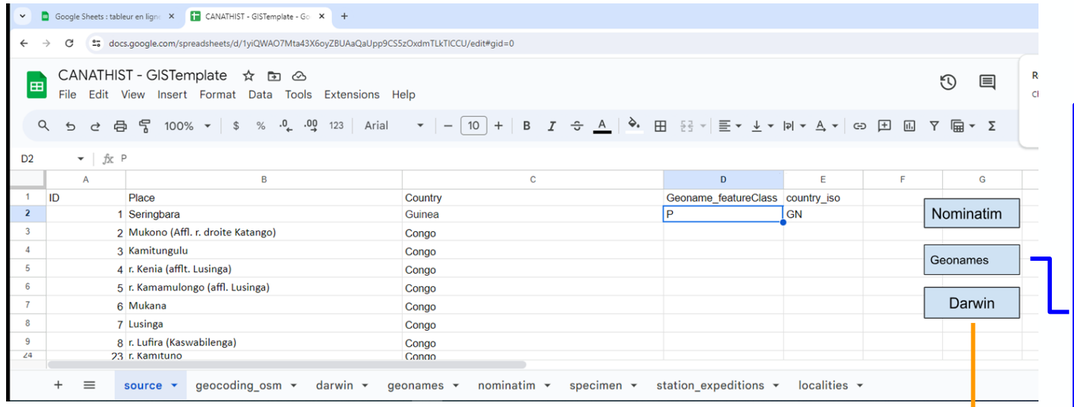
From place name to coordinates:

- Nominatim
- GeoNames
- Darwin RMCA for African data

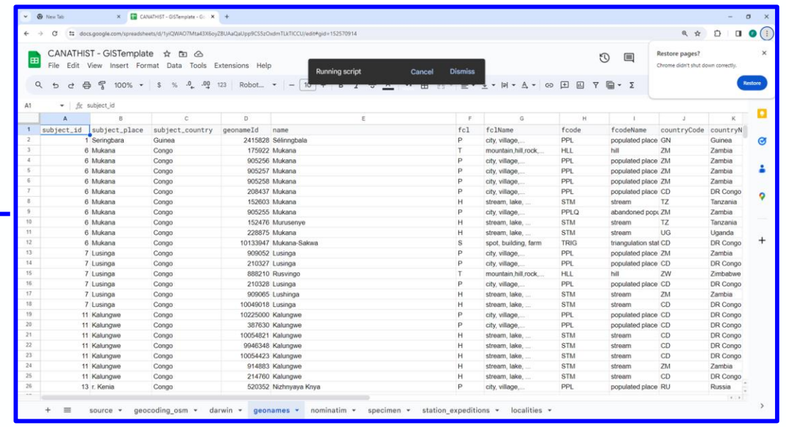
From coordinates to placename:

- Nominatim
(OSM Search engine and API)

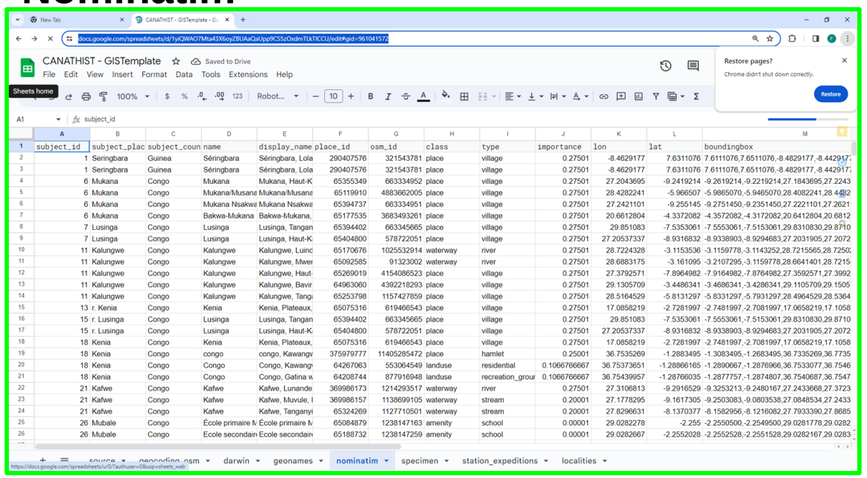
Google sheet client with AppScript

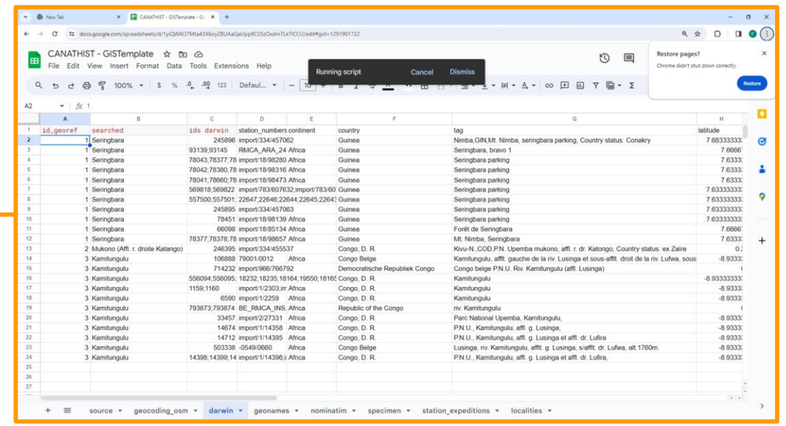


Geonames



Nominatim





MapOCR:

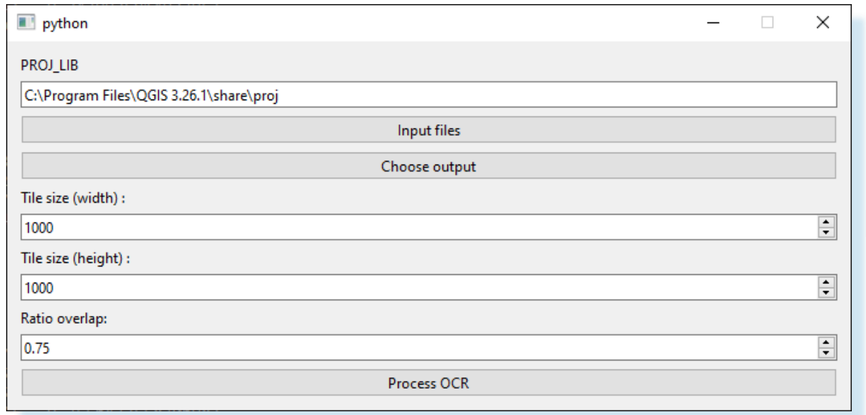
georef_ocr_gui.py:

Python script parsing referenced GeoTiff and extracting text placed on the map to assign them geocoordinates.

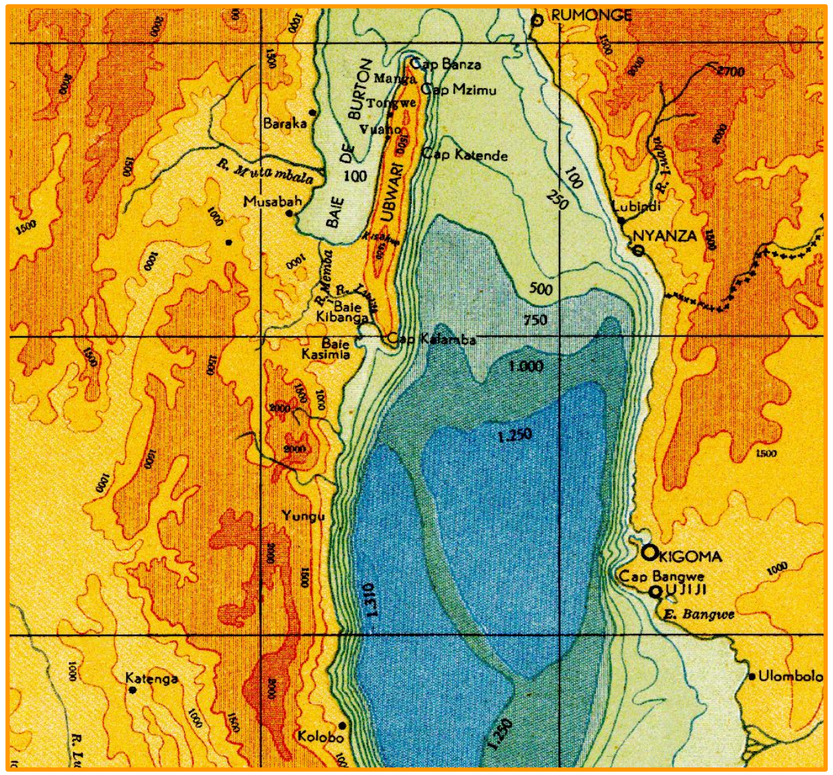
Uses

- Keras OCR
  (TensorFlow API + pre-trained OCR model)
- PIL
- OpenCV
- Rioxarray
  (images and geographical raster libs)
- Shapely
  (georeferecing of vectors)
- PROJ4
  (projections and geoids)
- PySide

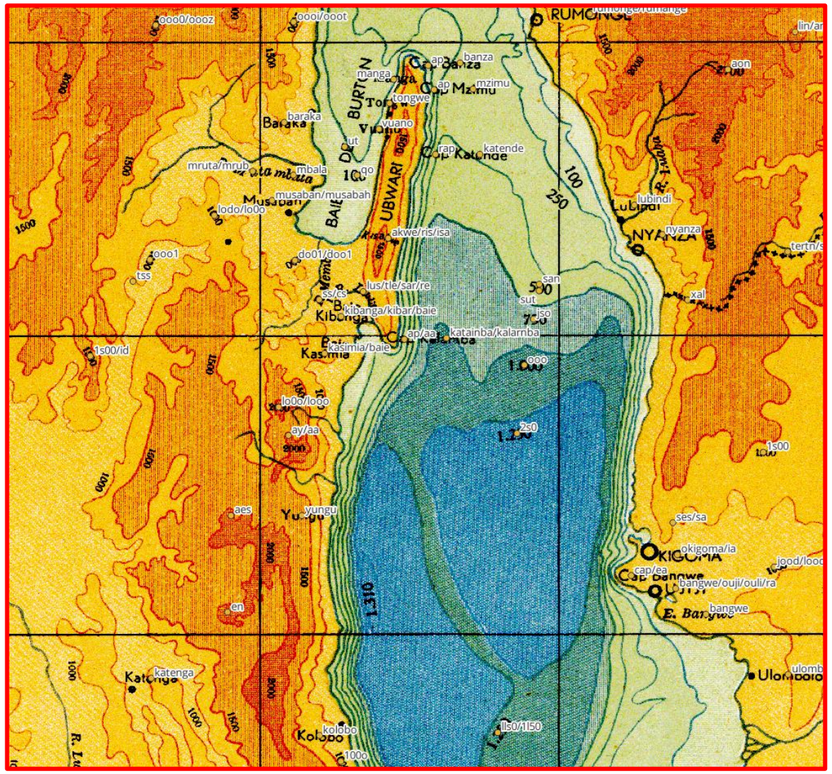
GUI MapOCR



Original map



Map in QGIS after OCR



Names and coordinates

		label	bbox	area	longitude	latitude	distance_from_top_left_origin
236	82	montshungwe/montskungwe/wollungu	[[29.74037747994459, -6.1	0.006454	29.8301	-6.244801604	3.924439724
237	83	zo	[[29.8901276294623 38, -6	0.000421	29.90913	-6.223851496	3.937180435
238	84	lu	[[29.79536282870704, -6.2	0.000384	29.80952	-6.270019256	3.939604484
239	260	cooo	[[29.89153287256 6142, -6	0.0006	29.90497	-6.257902198	3.966511372
240	144	ftoo	[[30.75672245458725, -5.7	0.000502	30.7744	-5.76577114	3.99869651
241	88	1o0o	[[29.865043493866366, -6	0.000618	29.87968	-6.338799584	4.03038022
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243	228	embwe/ecd	[[29.33828331225527, -6.5	0.001724	29.38423	-6.523589081	4.038412149
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249	89	mugelwe/bay/say/rs	[[29.97296696590973, -6	0.002283	30.00718	-6.435735957	4.170644454
250	296	ls00	[[30.749320951592427, -6	0.000537	30.76689	-6.037688367	4.210338141

Databasing Entomological collections

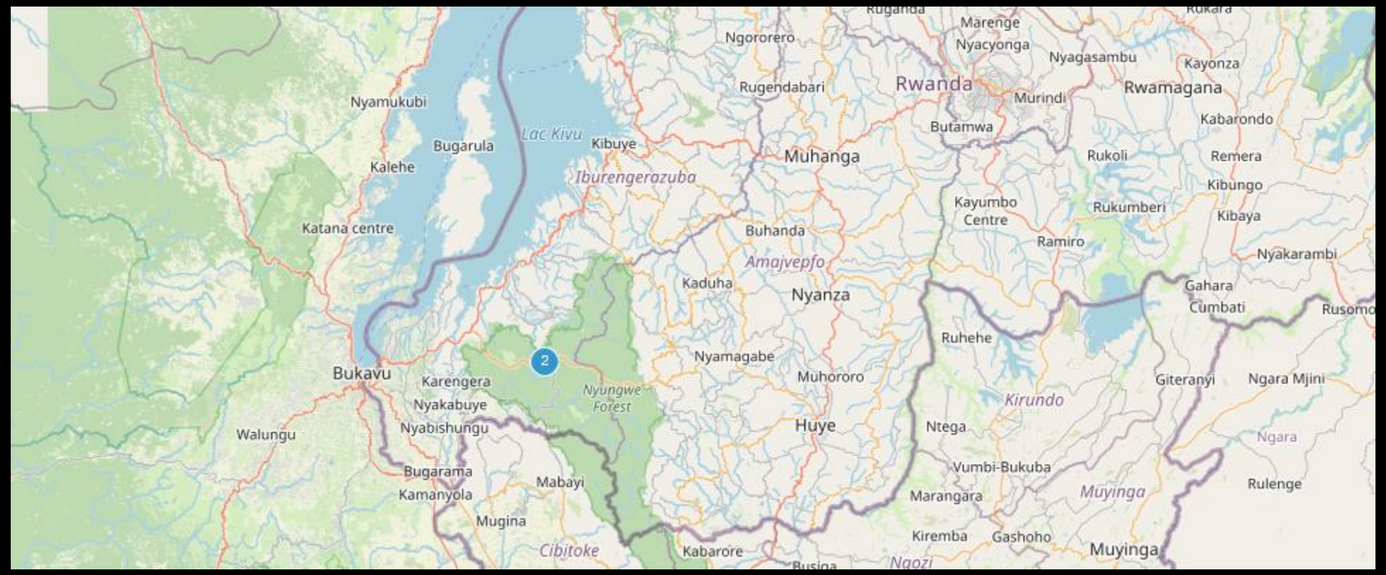
Specimens Search Result

INSECTS from RWANDA

Your query retrieved :
- 30704 records
- 7385 distinct records based on I.G.
- 83331 physical records (minimal estimate)
- 83331 physical records (maximal estimate)

Taxon	Type	Sex	Stage
Cymothoe collarti werneri *Taxonomic status : valid*	Holotype	Male	
Cymothoe collarti werneri *Taxonomic status : valid*	Allotype	Female	

« ‹ [1] › » 1 /1 go



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Digitization, a multitude of formats

Container level

Inventory Box CR2

by mars — last modified Apr 04, 2020 03:07 PM — History Copyright: RBINS / DIGIT-4 Belspo Licence: CC BY NC ND

BE-RBINS-ENT Collection Rophalocera Ronald Brabant

Switch to multiple tables view

Search:

Download as CSV

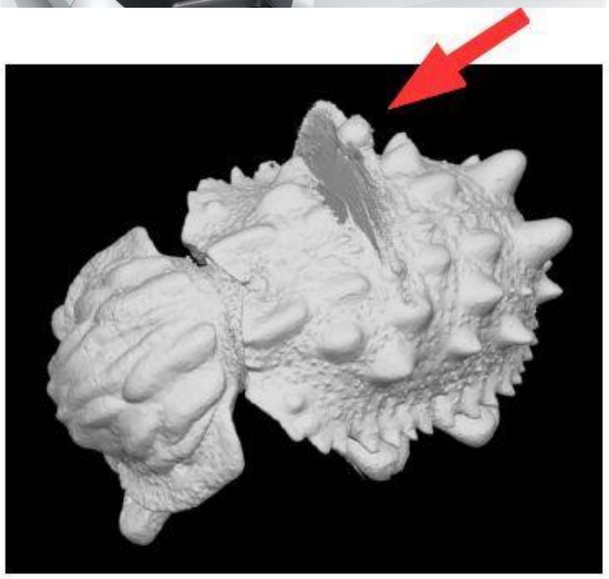
Stable CETAF identifier	Cabinet	Specimen ID	Box UID	Taxon	Sex	Stage	Specimen Number	Country	Place	Date of collect	Collector	Determination	Type	Other Labels	Latin Date
https://darwin.naturalsciences.be/darwin/search/view/uuid/820eda4e-45fc-407d-a81d-0cc96dad32bb	CR2	619881	Nymphalidae Rafinesque, 1815	Tithorea tarricina pinthias Godman & Salvin, 1879	male	adult	1	Costa Rica	Ciudad Colón;Finca Hamadryas			Brabant Ronald (Dhr.)	specimen		
https://darwin.naturalsciences.be/darwin/search/view/uuid/27cc605d-23ef-4a59-9fad-a103b52ed95f	CR2	619882	Nymphalidae Rafinesque, 1815	Tithorea tarricina pinthias Godman & Salvin, 1879	female	adult	1	Costa Rica	Finca Hamadryas;Ciudad Colón			Brabant Ronald (Dhr.)	specimen		

Digitization, a multitude of formats

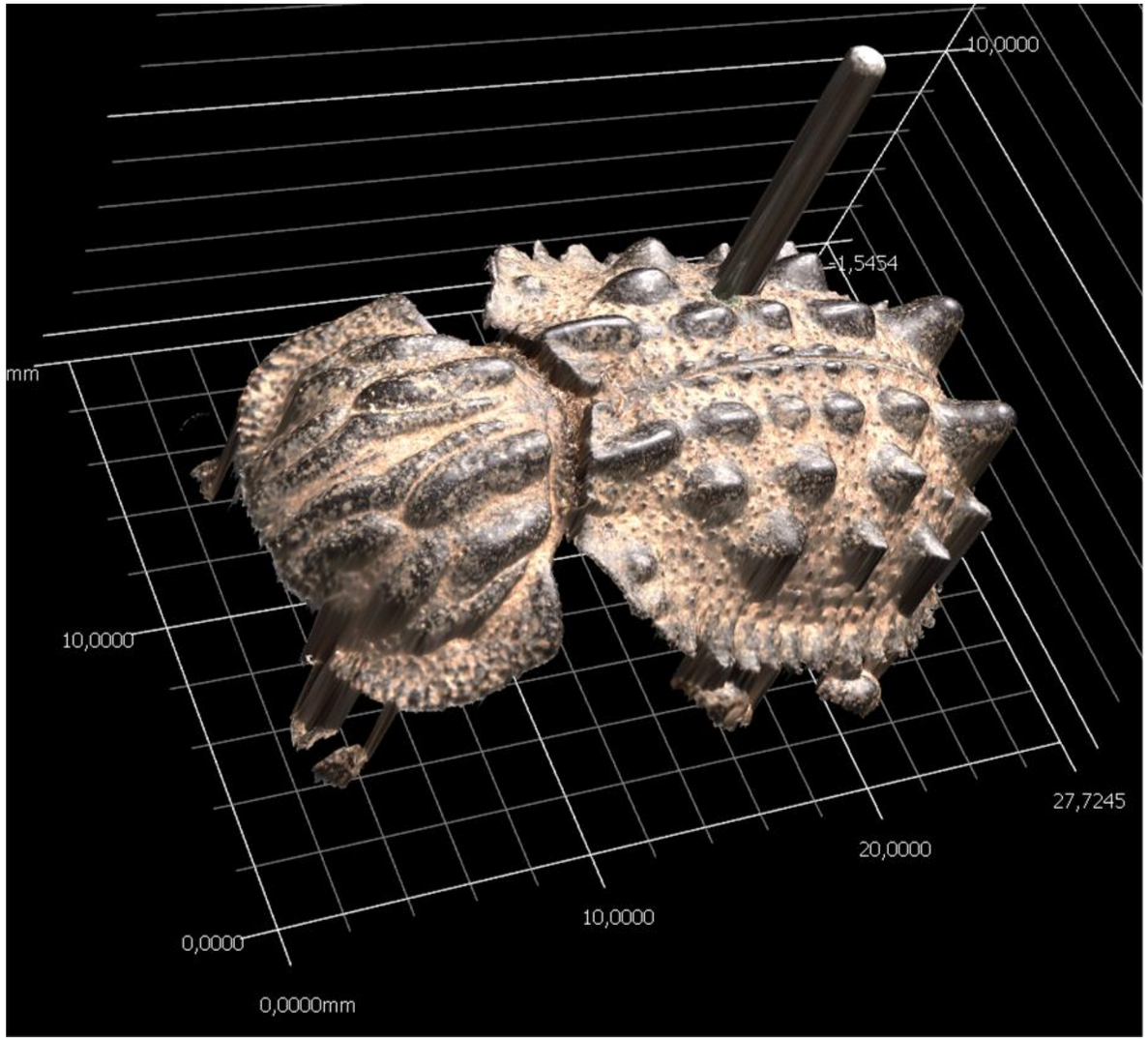
2D+ Specimen level

Digitization, a multitude of formats

3D Specimen level



Pictures: J. Brecko DIGIT-3

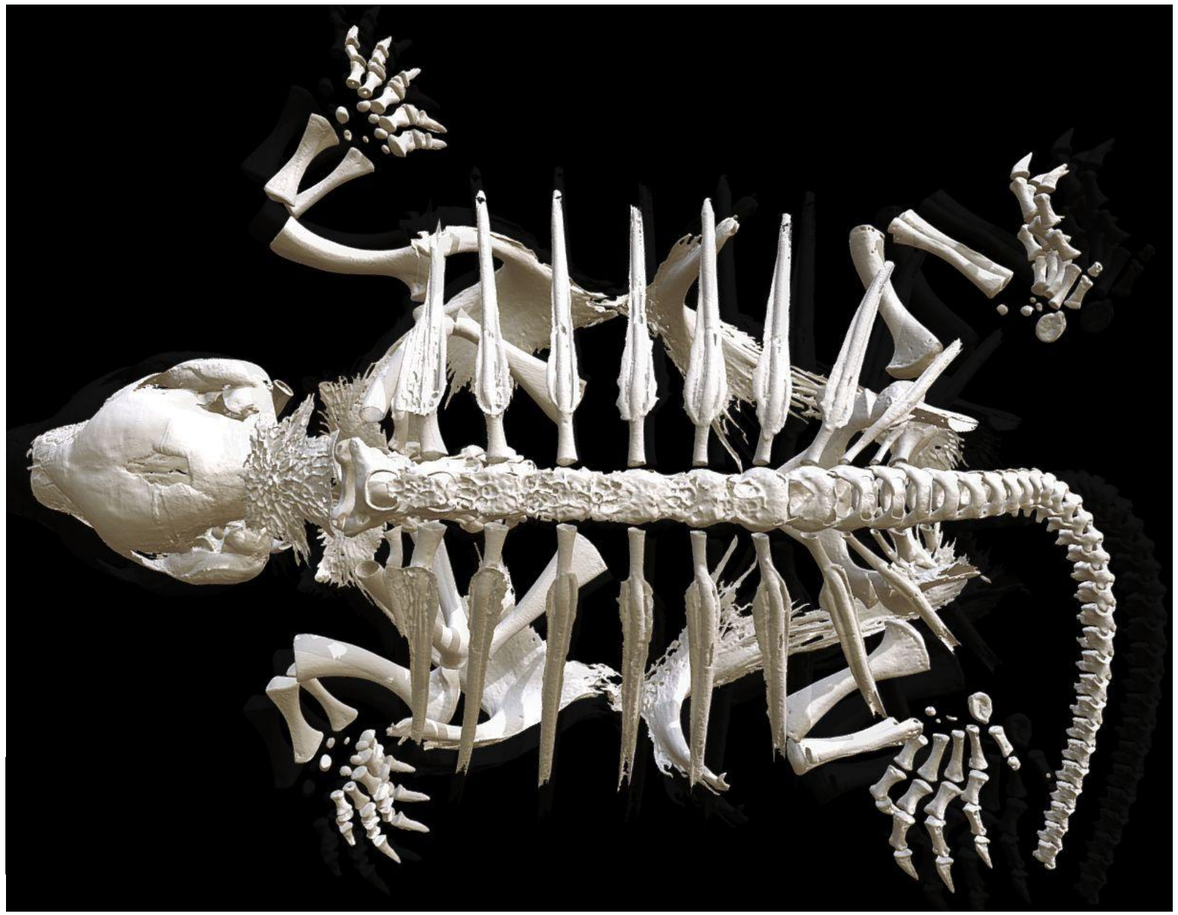


Digitization, a multitude of formats

3D Specimen level

RX Solution EasyTom
150Kv source
Max 3 µm/resolution
Large & high density samples

- vertebrates
- fossils
- geology
- large mollusks
- large echinoderms



Pictures: J. Brecko DGIT-3

Multimedia

2D

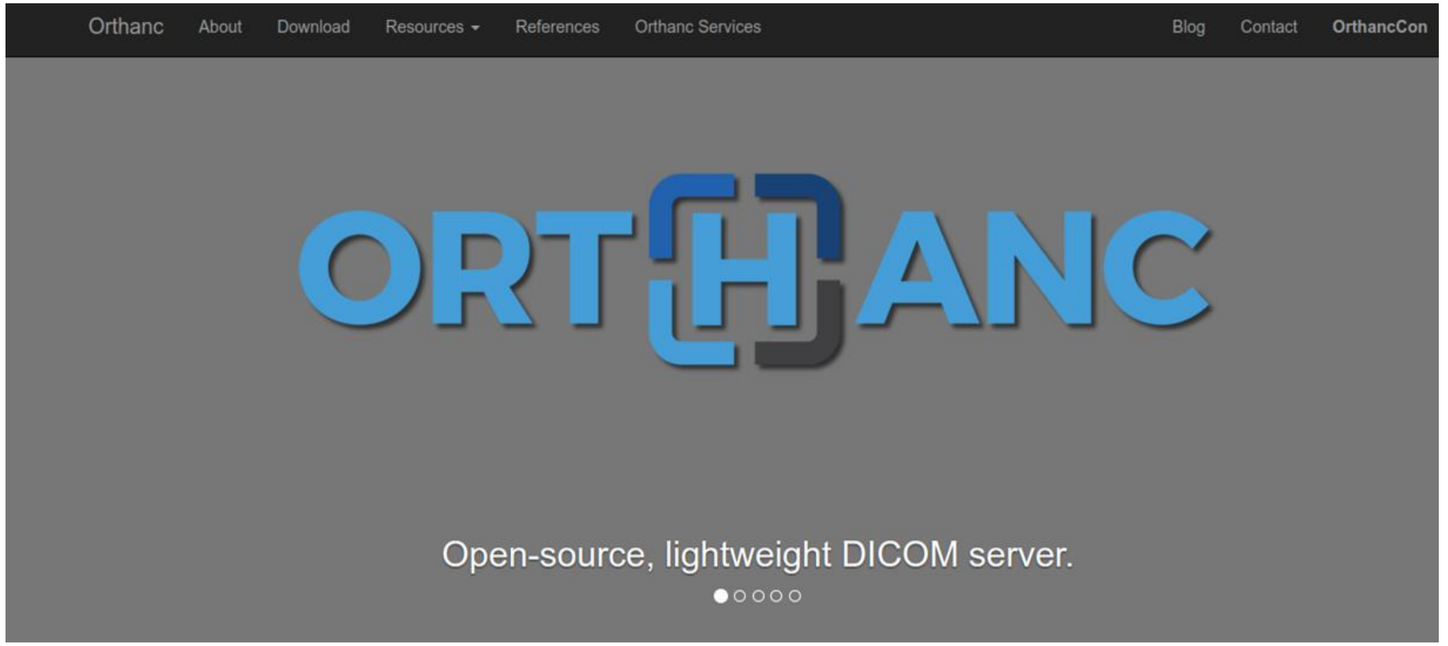
View

3D

View

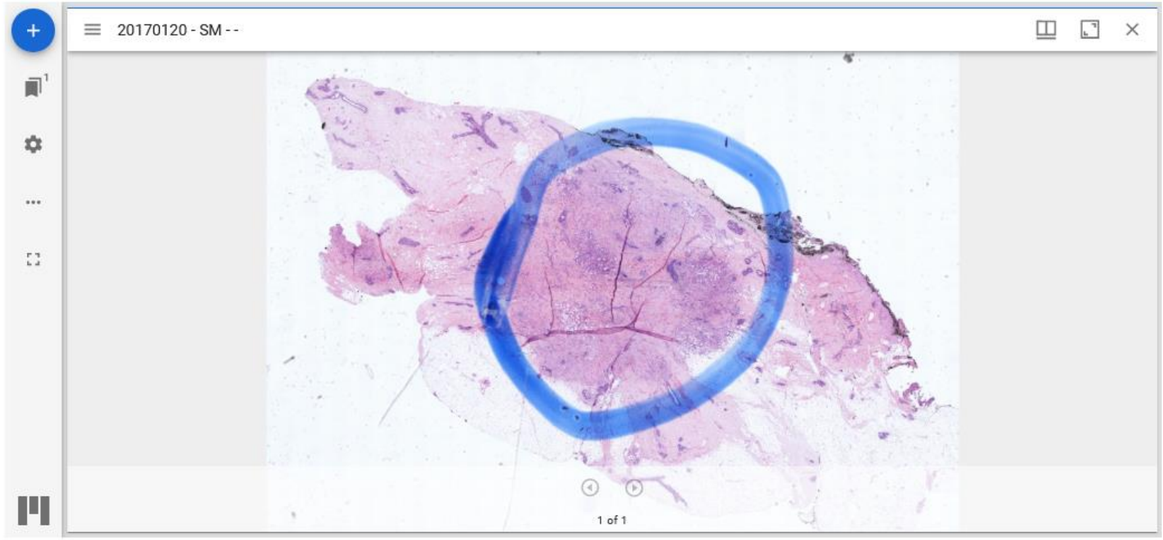
Tools

View



Microscopic Slice

ORTHANC 2D IIIF Mirador Viewer



IIIF image using ORTHANC as server and MIRADOR or OpenLayer as viewer

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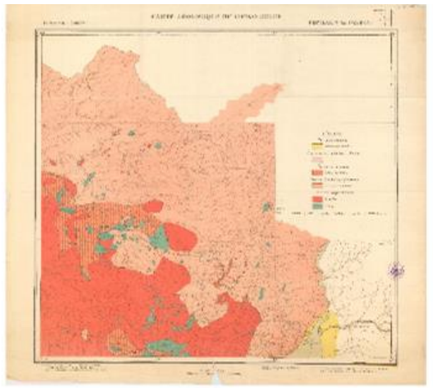
Sphaeroptica

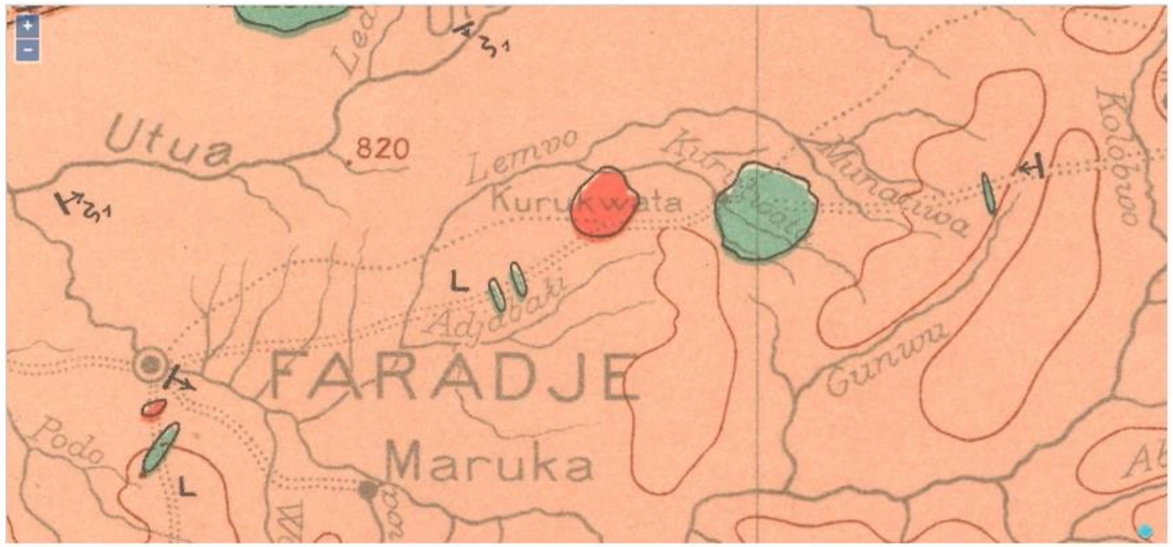
Home / Multimedia / 2D / Maps / ORTHANC 2D Map

ORTHANC 2D Map

by plone6-psemal — last modified Dec 19, 2023



IIIF image using ORTHANC as server and OpenLayer as viewer



https://www.orthanc-server.com/

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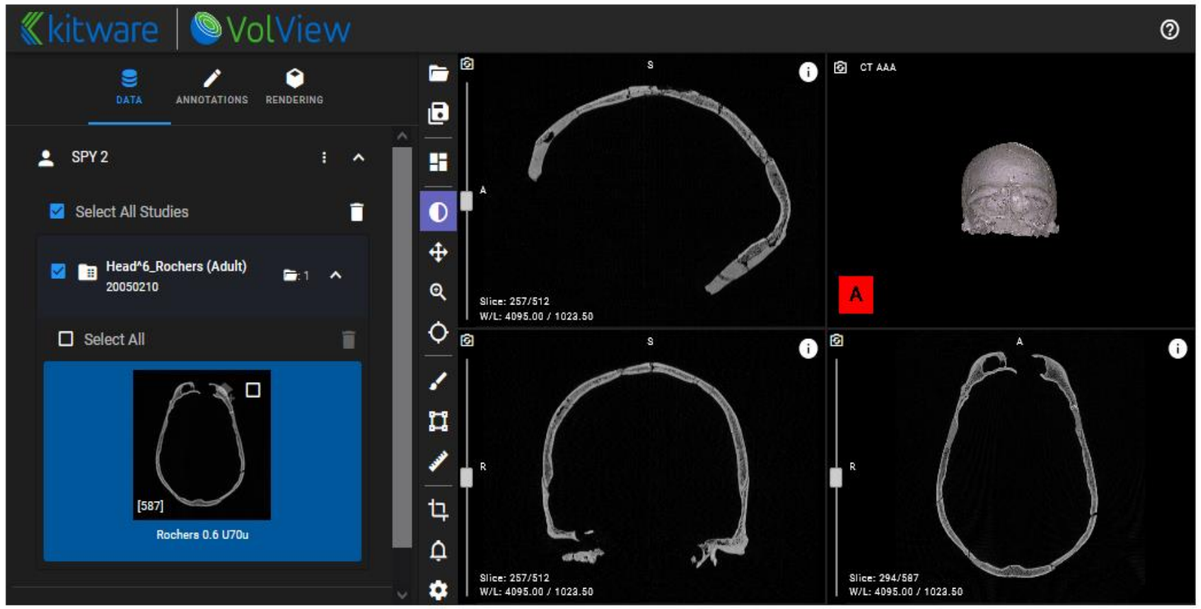
ORTHANC CT 3D view



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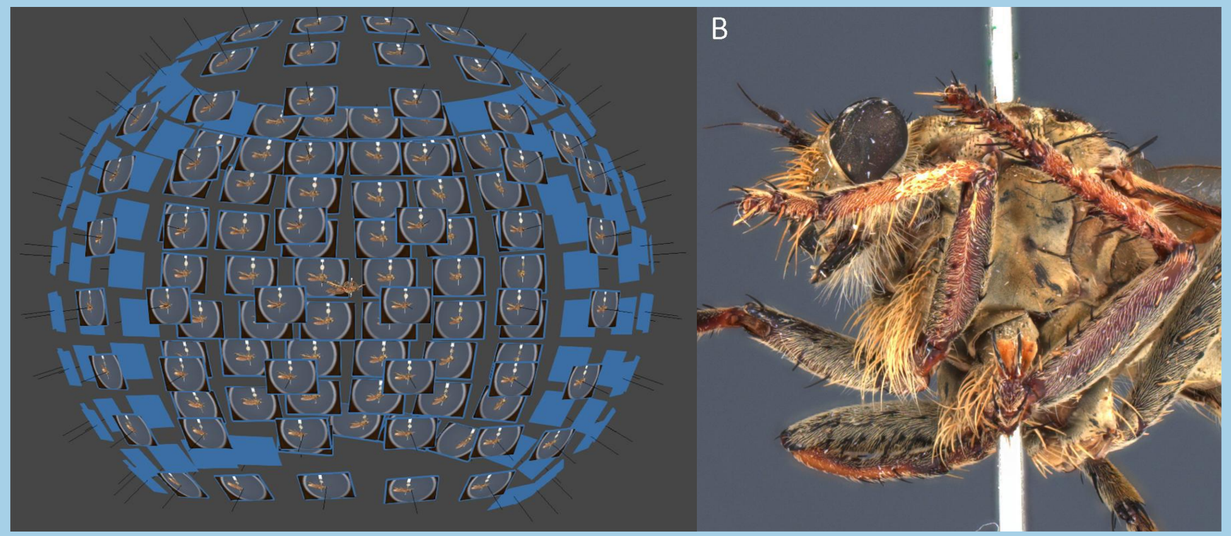
3D Surfacic model using ORTHANC as server and 3DHOP as viewer

3D Scene with surfacic models derived from microCT
using ORTHANC as server and 3DHOP as viewer



3D Spher of 2D stacked images using ORTHANC as server and Sphaeroptica as viewer

	Mon 15/04	Tue 16/04	Wed 17/04	Thu 18/04	Fri 19/04
8h30-10h30	Flight to Kigali	Travel Kigali-Huye	Presentation of the CMS DaRWIN, and Importation Template	Presentation of Virtual Collection	Printing labels with DaRWIN and preservation of specimens
10h30-12h			Cartographic tools with DaRWIN. Comparison with SYMBIOTA	Visit of the Zoological collection housed at COEB	Discussion on the need of the UR and presentation of the Cantral Africa GBIF portal
12h-13h		Lunch time	Lunch time	Lunch time	Lunch time
13h-14h30		Welcome at Huye abd CoEB, introdution to the team, visit	Demonstration of sampling methods to collect spiders and Diplopods in the Arboretum	Use of the collection sampled in the Arboratum as case study to test the CMS and Virtual Collection	Back to Kigali
14h30-16h30		Visit of the CoEB, facilities and collections			
Evening	Arrival at Kigali	/	Night collecting (20h-22h)?	/	