



Georeferencing at the MnhnL

MOBILISE Georeferencing workshop, February 10th-12th, Warsaw, Poland

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Musée national *d'histoire naturelle* Luxembourg





MnhnL: specimen and observation data

Collections based data:

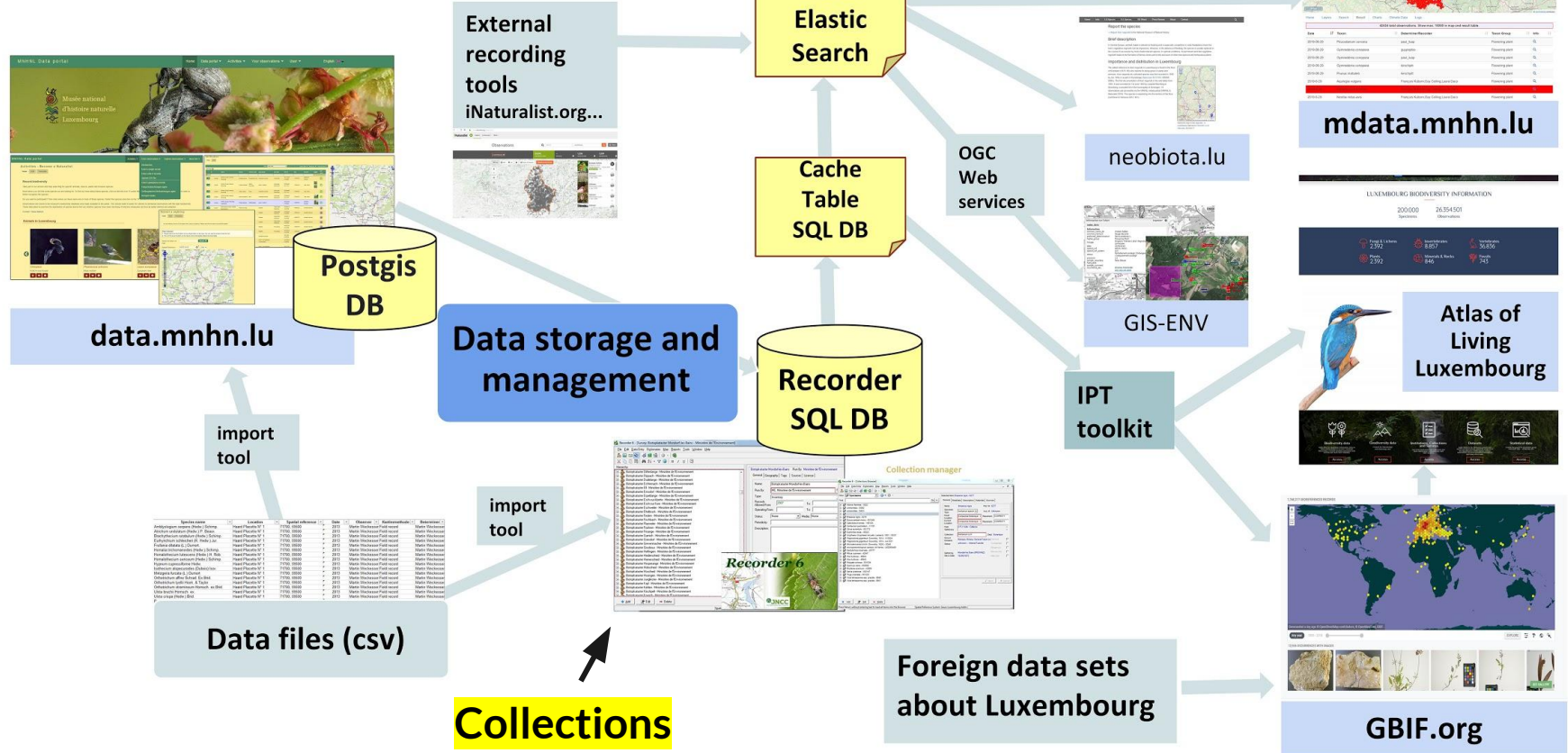
- Zoology: mounted specimens, pinned specimens, alcohol specimens (3.000.000)
- Botany: plant and fungi herbarium (110.000)
- Palaeontology: macro-micro fossil specimens (40.000)
- Mineralogy/petrology: mineral and rock specimens (35.000)
- DNA & tissue samples

Observation based data (MnhnL = national database on biodiversity):

- Historic observation data
- Current research projects
- Citizen science projects
- Some 2.000.000 recorded observations

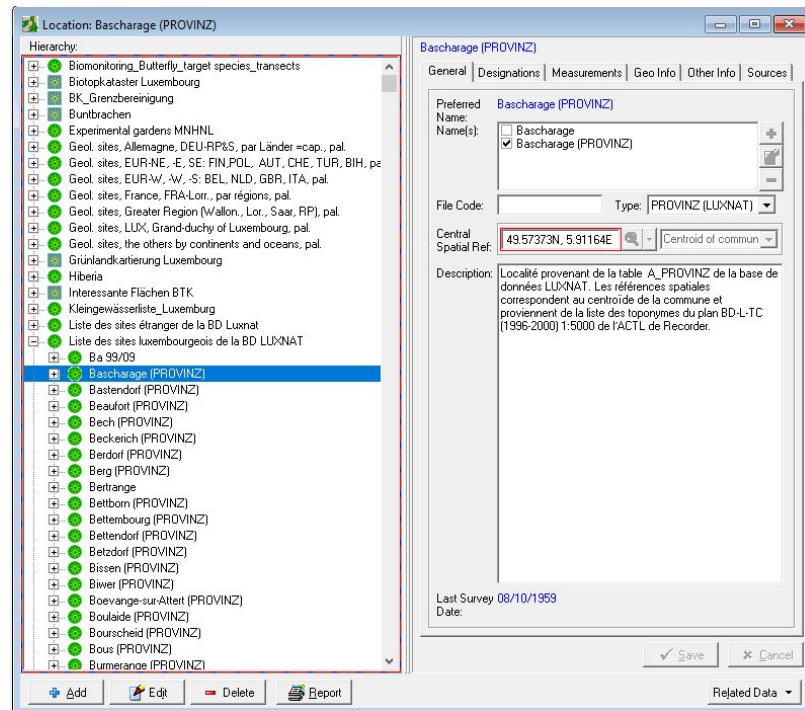
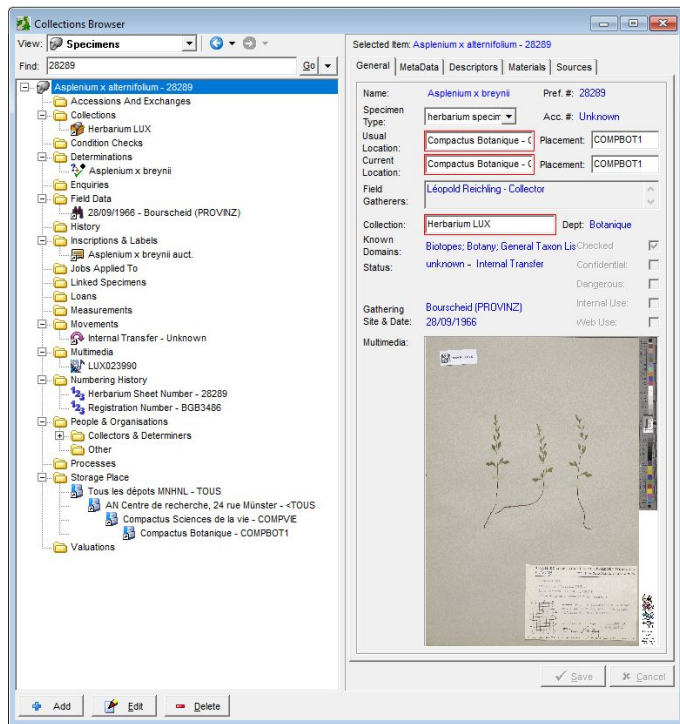
Recording and validation

Online publishing



Recorder 6 & collection module

Management system for collection and observation data





Georeferencing use cases

From precise to coars geolocalisation

Geographic coordinates are known

Data from research projects (observations & specimens)

- Imported with precise coordinates (lat/long WGS84)
- Recording additional metadata very limited and rarely used

	A	B	C	D	E	F	G	H
1	Gathering Date	Gathering Location Name	Gathering Spatial Reference	Field number	Number of males	Number of females	Number of Individuals	Taxon Determination
2	27/04/2018	Koerich	49.683239; 5.940683	Koe1			1	Pelophylax lessonae
3	27/04/2018	Koerich	49.683239; 5.940683	Koe2			1	Pelophylax kl. esculentus
4	27/04/2018	Koerich	49.683239; 5.940683	Koe3			1	Pelophylax kl. esculentus
5	27/04/2018	Koerich	49.683239; 5.940683	Koe4			1	Pelophylax lessonae
6	27/04/2018	Koerich	49.683239; 5.940683	Koe5			1	Pelophylax lessonae
7	08/05/2018	Peppange	49.520276; 6.118073	Pep1	1			Pelophylax kl. esculentus
8	08/05/2018	Peppange	49.520276; 6.118073	Pep2	1			Pelophylax lessonae
9	08/05/2018	Peppange	49.520276; 6.118073	Pep3	1			Pelophylax kl. esculentus
10	08/05/2018	Peppange	49.520276; 6.118073	Pep4	1			Pelophylax kl. esculentus
11	08/05/2018	Peppange	49.520276; 6.118073	Pep5	1			Pelophylax kl. esculentus
12	08/05/2018	Peppange	49.520276; 6.118073	Pep6	1			Pelophylax lessonae
13	09/05/2018	Peppange	49.520276; 6.118073	Pep7	1			Pelophylax_lessonae/ridibundus
14	09/05/2018	Peppange	49.520276; 6.118073	Pep8	1			Pelophylax_lessonae/ridibundus
15	09/05/2018	Peppange	49.520276; 6.118073	Pep9	1			Pelophylax kl. esculentus
16	09/05/2018	Peppange	49.520276; 6.118073	Pep10	1			Pelophylax kl. esculentus
17	09/05/2018	Peppange	49.520276; 6.118073	Pep11	1			Pelophylax kl. esculentus
18	09/05/2018	Peppange	49.520276; 6.118073	Pep12	1			Pelophylax_lessonae/ridibundus
19	09/05/2018	Peppange	49.520276; 6.118073	Pep13	1			Pelophylax kl. esculentus
20	10/05/2018	Peppange	49.520276; 6.118073	Pep14	1			Pelophylax_lessonae/ridibundus
21	10/05/2018	Peppange	49.520276; 6.118073	Pep15	1			Pelophylax_lessonae/ridibundus
22	10/05/2018	Peppange	49.520276; 6.118073	Pep16	1			Pelophylax_lessonae/ridibundus
23	14/05/2018	Wintrange	49.50629; 6.35001	Win1	1			Pelophylax kl. esculentus
24	14/05/2018	Wintrange	49.50629; 6.35001	Win2		1		Pelophylax lessonae
25	14/05/2018	Wintrange	49.50629; 6.35001	Win3	1			Pelophylax lessonae
26	14/05/2018	Wintrange	49.50629; 6.35001	Win4	1			Pelophylax lessonae
27	14/05/2018	Wintrange	49.50629; 6.35001	Win5	1			Pelophylax lessonae
28	14/05/2018	Wintrange	49.50629; 6.35001	Win6		1		Pelophylax lessonae

Collections Browser

View: Specimens

Find: bullfrog

Selected Item: 27/04/2018 - Koerich

General | Geo. Areas

Survey Name: Pelophylax of Luxembourg - Hannah Weigand

Event Location: Koerich

Location Name: Koerich

Spatial Ref: 49.683241

Gathering Method: Caught by hand

Date: 27/04/2018

Field Collectors: Name
Roland Proess
Hannah Weigand

Details are for the Gathering Event

Save Cancel

Add Edit Delete

Association of record to reference location

- Toponyms from topographic map
- Multilingualism of location names



Reference locations are known

Possibility to add additional information.
Manage location separately from occurrence.

Additional data rarely filled in.

General | Designations | Measurements | Geo Info | Other Info | Sources

Measurement	Qualifier	Data	Unit	Accuracy
Accuracy	Spatial reference	23	m	Estimate
Altitude	Max	3000	metres	Exact
Accuracy	Spatial reference		m	

Accuracy
Altitude
Area
Distance
Futterwert/
Humidity
Lighting cc
Mineralstof

General | Designations | Measurements | Geo Info | Other Info | Sources

Administrative Areas | Grid Squares | Land Parcel | Boundaries

Square	Type
	100km
	10km
	1km
	Hectare
	Tetrad

Location: Born, Buremillen, moulin de Born

Hierarchy:

- Geol., Lux. sites, Bajocien =baj<L, pal.
- Differdange, Baraque bleue, carr. au NE de la bar., pal.
- dom4, calc. corallien d'Audun-le-Tiche - Geology
- Differdange, Grousbebsch, carrières au SW de Differd.,
- Differdange, plateau entre Niederborn et Lasauvage, pal.
- Differdange, Vesquenhalf =ferme, pal.
- Rumelange, hénnscht Heed, carr., pal.
- Rumelange, Hutberg, Bajocien, pal.
- Rumelange, op der Heed, carrières, pal.
- Tétange, carrière Poeckes à la frontière française
- Geol., Lux. sites, Buntsandstein & fac. littoral =bun<L, pal.
- Bettborn, "ledert", entre Pratz et Folschette, carrière Feid
- Born, Buremillen, moulin de Born**
- Buntsandstein, so1 - Geology
- Measurements
- tranchée de la rue au N de Buremillen - Topography
- Erpeldange/Ingeldorf, au SE de la Molkerei Laduno à cô
- Ingeldorf, talus au côté W du cimetière
- Préizerdau, Schankegricht
- Reimberg, Préizerdau
- Schengen, talus, côté de CR125B
- Geol., Lux. sites, Cenozoic =cen<L, pal.
- Echternach, carr. de tuff calc. CR364, SW de Bel'Air, pal
- Loschbour, environs de L. <ld<cenoc<L, pal.
- Moseltterrassen, virtuel Pt: Wormeldingen =site ceno.<L
- Oetrange, Kackert =site fouillé par MHN<cenoc<L, pal.
- diacalse dans Hettangien, grès de Luxembourg - Ger
- Measurements
- Oetrange, sans l-d, autour de Heed =site fouillé par MHN
- Oetrange, Schlaed, Schleed =site fouillé par MHN<cenoc<L
- Reilandermillen, vallée Ernz Noire <ld<cenoc<L, pal.
- Remerschen, Flouer, Baggerweieren, gravières, pal.
- Geol., Lux. sites, Hettangian outcrops but no quarries =hett<L
- Geol., Lux. sites, Hettangian, quarries =h2s<L, pal.
- Geol., Lux. sites, Keuper =keu<L
- Geol., Lux. sites, Lower Devonian =dev<L, pal.
- Geol., Lux. sites, Minette =min<L, pal.
- Geol., Lux. sites, Muschelkalk =mk<L, pal.

Born, Buremillen, moulin de Born

General | Designations | Measurements | Geo Info | Other Info | Sources

Preferred Name: Born, Buremillen, moulin de Born

Name(s): ☒ Born, Buremillen, moulin de Born
☐ Franck, N°1403

File Code: Type: site géologique

Central Spatial Ref: 49.771N, 6.506E [Estimated from Map]

Description:

Last Survey 20/08/2011
Date:

Save Cancel

Add Edit Delete Report

Related Data

LD 0 9	10 x 10 km
LD 00 90	1 x 1 km
LD 001 906	100 x 100 m
LD 0015 9053	10 x 10 m

Gauss-Krüger –
Koordinaten
↓
Y=120 →

$Y=100 \rightarrow$

A blank Cartesian coordinate system with a horizontal x-axis and a vertical y-axis. The x-axis is labeled with a blue 'x' at its right end, and the y-axis is labeled with a blue 'y' at its top end. The axes are black lines with arrowheads at their ends.



Grid data - LUGRID

ex. LA 710 105 = grid cell 100m x 100m

HERBIER DU MUSÉE D'HISTOIRE NATURELLE DE LUXEMBOURG
N° 28289 FLORE du Grand-Duché de LUXEMBOURG

ASPLENIACEAE.
Asplenium X breynii RETZ.
f. alternifolium (WULF)CHRIST
Forme d'ombre à frondes très grandes!

Provenance: Nord de Goebelsmühle, versant gauche de la Wiltz, pied d'un rocher à l'ombre des Prunelliers.

Date: 28.9.1966. Leg.: J. LAMBINON et L. REICHLING.

Determ.: L. Reichling

Ci-dessus, localisation dans: A) le «carré» (16 km²) du réseau I. F. B. (1 : 2.500.000). B) la «case» (1 km²) de ce carré (1 : 625.000).

General | Geo. Areas

Survey Name: Herbarium - MNHNL, Musée National d'Hi [Q] [✓]

Event Location: Bourscheid (PROVINZ) [Q] [✓]

Location Name: "N. de Goebelsmühle, versant gauche de la W

Spatial Ref: LA 710 10 [Q] [Imported] [✓]

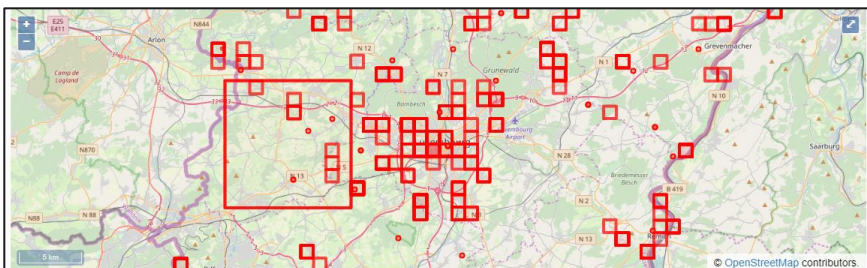
Gathering Method: Unknown [✓]

Date: 28/09/1966 [✓]

Field Collectors: Name [+]
Léopold Reichling [-]

Grid data - LUGRID

Publication



144716 total observations. Show max. 1000 in map and result table.

Date	Taxon	Determiner/Recorder	Taxon Group	Info
1996-9-5	<i>Daucus carota</i>	Léopold Reichling	Flowering plant	Q LUG
1995-10-15	<i>Cirsium arvense</i>	Léopold Reichling	Flowering plant	Q LUG
1995-8-5	<i>Cirsium</i>	Léopold Reichling	Flowering plant	Q LUG
1995-8-5	<i>Epilobium hirsutum</i>	Léopold Reichling	Flowering plant	Q LUG
1995-8-5	<i>Stachys sylvatica</i>	Léopold Reichling	Flowering plant	Q LUG
1995-2-11	<i>Salix</i>	Léopold Reichling	Flowering plant	Q LUG

Previous 1 Next

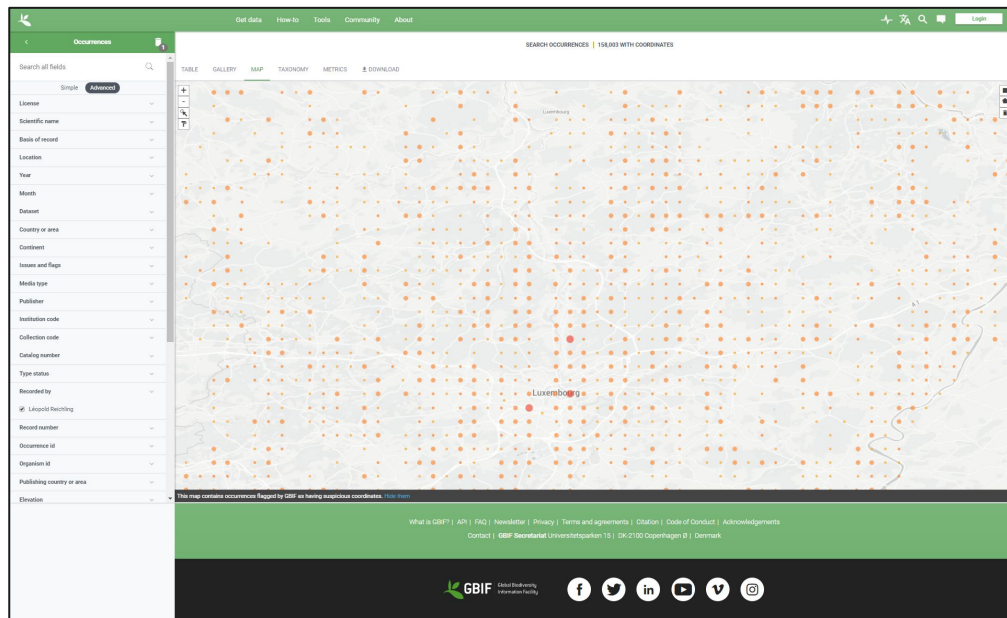
Search:

Reset

Data Download

Index: moln2 | Observations: 1902809 | Update: 2020-02-06 07:02:08

MNHN Luxembourg - Species Observation Database



- Determiner: Léopold Reichling
- Entered By: van Breda John
- Entry Date: 2010-05-09
- Specimen Entered By: van Breda John
- Specimen Entered Date: May 9 2010 1:38PM
- Abundance: No specimen data
- Spatial ref.: LA 710 105
- Spatial ref. system: LUGR
- Lat/Long: 49.9289 6.04276
- Location: Bourscheid (PROVINZ)
- Location details: "N. de Goebelsmühle, versant gauche de la Wiltz."
- List:
 - ALL TAXA LUXNAT - working taxonomy list of the MNHN
- Survey: Herbarium

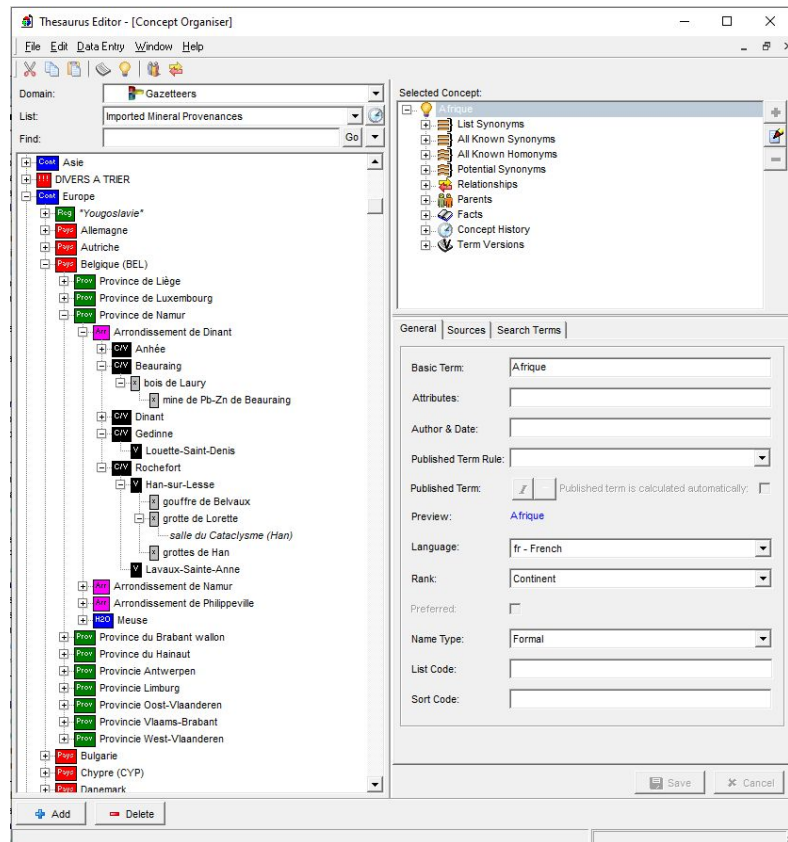
Geographic areas

Thesaurus/gazetteer with reference locations

- Hierarchical list
- No coordinate information associated
- Multilingual terms

Imported from previous databases

- Herbarium sites imported from BG-BASE
- Mineralogy/Petrology sites
- Currently not displayed on map (0,0)
- Lists are currently being cleaned



Geographic areas

Specimen Finder

Finder | Results

To filter the search results, select a filtering property below as well as the desired comparison operation
[please select] [please select]

Drag items you are interested in:
Yugoslavie

Data Selection Mode:
☒ Find Specimens that are associated with all of the above criteria (logical AND)
☐ Find Specimens that are associated with any of the above criteria (logical OR)

Thesaurus Browser

Back Forward Open in New Window

Domain: Gazetteers

List: Imported Mineral Provenances

Find: Go

Thailand

Tibet

Timor oriental

Turkmenistan

Turquie

Vietnam

Yemen

DIVERS A TRIER

Europe

Yugoslavie*

Bosnie-Herzégovine

Bosnie centrale

Gornji Vakuf

Covarnica

Touarnica

Croatie

Kosovo (KOS)

Serbie

Slovénie

YUG

Allemagne

Autriche

Belgique (BEL)

Bulgarie

Chypre (CYP)

Danemark

Espagne

Estonie (EST)

Finlande

Details Relationships

"Yugoslavie"

All Known Synonyms

- "Yugoslavie"

Facts

[A propos](#)

La Yougoslavie est un ancien État d'Europe du Sud-Est, qui a existé sous différentes formes entre 1929 et 2003. Il regroupait les actuels pays de Slovénie, Croatie, Bosnie-Herzégovine, Monténégro, Serbie, Macédoine, ainsi que le Kosovo.

Specimen Finder

Finder | Results

151 Results Sort By: Alphabetically

Specimens	Current Location	Placem...
Rebultite - VC460	Unplaced	
Roche - OG026	Unplaced	
Roche - P1329	Unplaced	
Roche - P1331	Unplaced	
Roche - P1342	Unplaced	
Roche - P1353	Unplaced	
Roche - P1354	Unplaced	
Siderite - E433	Unplaced	
Simonite - VC462	Unplaced	
Sphalerite - IB040	Unplaced	
Sphalerite - IB041	Unplaced	
Sphalerite - IB075	Unplaced	
Sphalerite - IB083	Unplaced	
Sphalerite - IB100	Unplaced	
Sphalerite - IB101	Unplaced	
Sphalerite - IB102	Unplaced	
Sphalerite - S149	1	
Sphalerite - S383	1	
Sphalerite - WR406	Unplaced	
Stevensite - VC2926	Unplaced	
Telluronevskite - VC8...	Unplaced	
Telluronevskite - VC9...	Unplaced	
Tetrahedrite - FB067		
Tetrahedrite - FC006	Unplaced	
Tetrahedrite - FC007	Unplaced	
Tetrahedrite - IE003	Unplaced	
Tetrahedrite - S413		
Timocite - P1304	Unplaced	
Vivianite - WR144	Unplaced	
Wulfite - TX050	Unplaced	
Wulfite - TX009	Unplaced	

Action Select Refresh Action Select Clear

Geographic areas

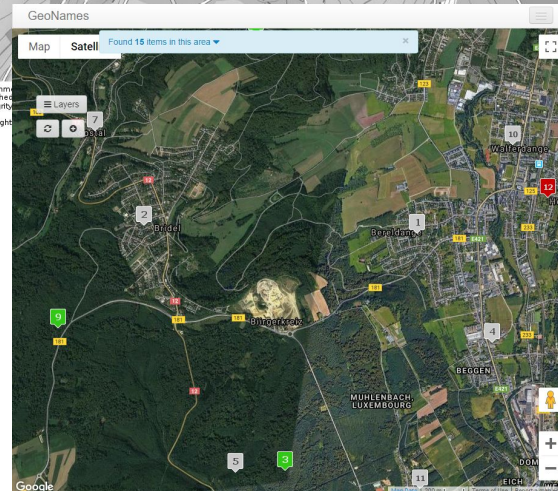
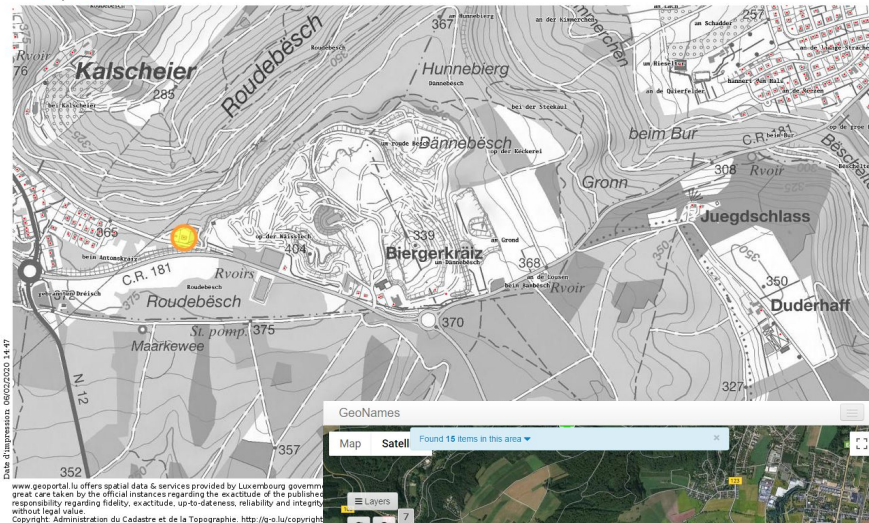
- Many sites are well defined locations that can be pinpointed
- Linking of sites to reference lists

MUSÉE D'HISTOIRE NATURELLE LUXEMBOURG	
1) Date d'entrée	<i>Leguminosae</i>
2) Numéro d'ordre du catalogue d'entrée	<i>Trifolium</i>
3) Numéro de l'objet	<i>apocynum (L.) Schreb.</i>
Déterminateur:	<i>L. Reichling</i>
Provenance:	<i>Bifurcation des routes Bidel-Bireldange et Bidel- Juegdschlass, talus sur grès de Luxlg. exposé au Nord. 26.7.51. Leg. L. Reichling.</i>



LE GOUVERNEMENT
DU GRAND-DUCHÉ DE LUXEMBOURG
Administration du cadastre
et de la topographie

map.geoportail.lu
The official geoportail for the Grand-Duchy of Luxembourg





What we need to do

- Continue georeferencing
- Use georeferencing protocols & document them
- Raise awareness & demand more complete data from providers
- Use the tools that we already have (make use of fields in database)
- Populate more Darwin Core fields for publication