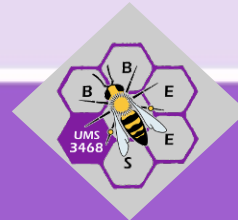


TDWG
2021

The 8 Years of Existence of Xper3: State of the art and future developments of the platform

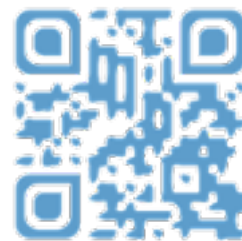
Adeline Kerner, Sylvain Bouquin,
Rémy Portier & Régine Vignes Lebbe

In Symposium SYM02



UMR | SYEB

XPER3



Web platform that

- manages descriptive data
- provides interactive identification keys
- Used for various taxonomic groups.
- Compatible with TDWG's Structured Descriptive Data (SDD) format.

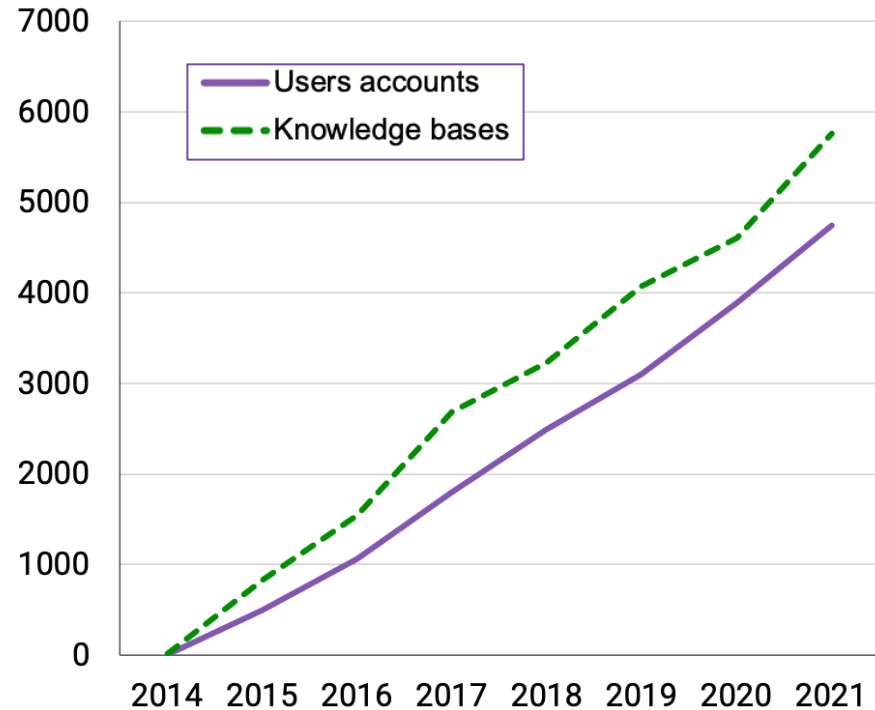
The screenshot displays the XPER3 web platform interface. At the top, the user is logged in as 'adeline kemer (adeline.kemer@orange.fr)'. The main heading is 'Archaeocyathan knowledge base (Ca...'. A search bar is visible. The left sidebar shows a list of 310 items, with '73 Hyptocyathus' selected. The main content area shows the 'Definition' tab for 'Hyptocyathus'. The 'Name' field contains 'Hyptocyathus' and the 'Detail' field contains 'Hyptocyathus KRUSE, 1978'. Below this, the 'Alternative name' field contains 'Thale cress'. The 'Unique id (for xperience)' field contains 'optional'. An 'Update' button is present. Below the definition, there are three images of 'Hyptocyathus' (m145, m146, m147). At the bottom, there are buttons for 'Delete all', 'Choose from Dropbox', and 'Add from Url'.

www.xper3.fr

XPER3

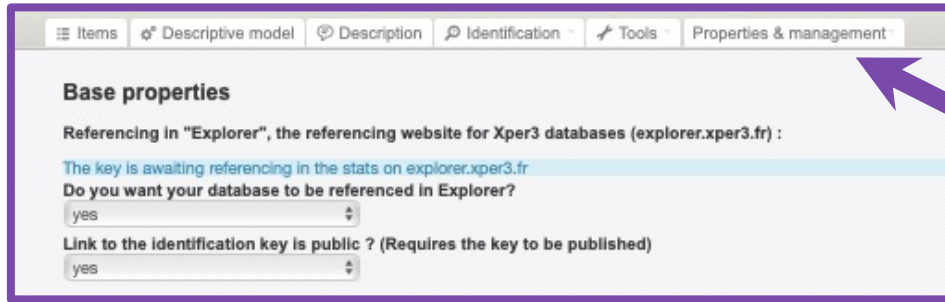
Pay attention to:

- the evolution and maintenance of Xper3
- the transformation of partially FAIR data into fully FAIR data.



FAIR: Findability, Accessibility, Interoperability, Reusability

EXPLORER: METADATA IN XPER 3



Items Descriptive model Description Identification Tools Properties & management

Base properties

Referencing in "Explorer", the referencing website for Xper3 databases (explorer.xper3.fr) :

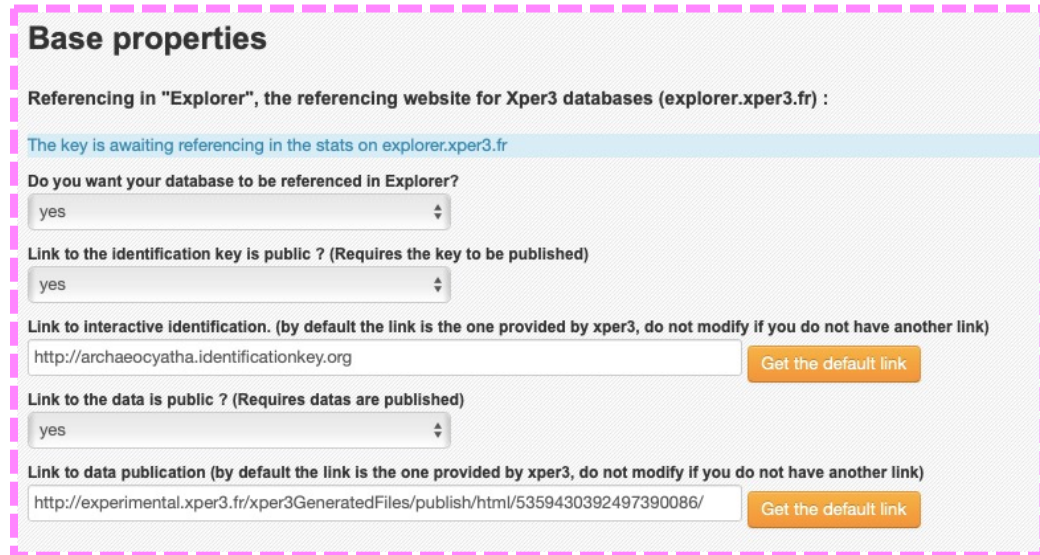
The key is awaiting referencing in the stats on explorer.xper3.fr

Do you want your database to be referenced in Explorer?

yes

Link to the identification key is public ? (Requires the key to be published)

yes



Base properties

Referencing in "Explorer", the referencing website for Xper3 databases (explorer.xper3.fr) :

The key is awaiting referencing in the stats on explorer.xper3.fr

Do you want your database to be referenced in Explorer?

yes

Link to the identification key is public ? (Requires the key to be published)

yes

Link to interactive identification. (by default the link is the one provided by xper3, do not modify if you do not have another link)

Link to the data is public ? (Requires datas are published)

yes

Link to data publication (by default the link is the one provided by xper3, do not modify if you do not have another link)

— Online

- - - On the test server

EXPLORER: METADATA IN XPER 3

Geographies

--select an option--

World

Habitats

--select an option-- **Add** (several options possible)

Marine

Seas and oceans

Coral reefs

Stratigraphies

--select an option-- **Add** (several options possible)

Cambrian

Study field

palaeontology

Taxa type

Fossil

Item taxonomy Rank

Genus

Bio geography info

eg. tropical zone

Other link

eg. <http://archaeocyatha.infosyslab.fr>

Available on the "Biodiversicle" application ?

no

Default citation

Archaeocyatha : a knowledge base

Alternative citation

eg. Recognize common trees of France from the leaves

Main Publication

Kerner A, Debrenne F, Vignes-Lebbe R (2011) Cambrian archaeocyathan metazoans: revision

Main Publication DOI

<https://doi.org/10.3897/zookeys.150.1566>

Key language

English

Taxonomy

Level :

Phylum Porifera

Keywords list (words separate by comma)

Archaeocyatha,archaeocyathan,archaeocyath

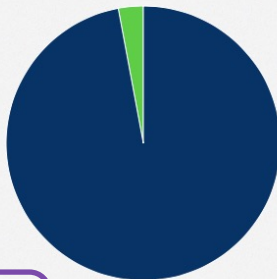
EXPLORER: WEBSITE



Bienvenue sur Xper³ Explorer, le moteur de recherche d'Xper³ ! Ce portail vous permet de rechercher des contenus dont les auteurs ont accepté de dévoiler l'existence. Vous pouvez lister les bases de connaissances en fonction des critères qui vous intéressent et consulter leurs métadonnées. Cette page vous propose une recherche simple à partir d'un seul terme et les boutons ci-dessus vous offrent des fonctionnalités supplémentaires. L'onglet "Statistiques" présente des statistiques descriptives sur les contenus référencés uniquement.



Référencement des contenus



Proportion de bases Xper³ référencées (i.e. **visibles sur ce portail**) par rapport au nombre total de contenus.

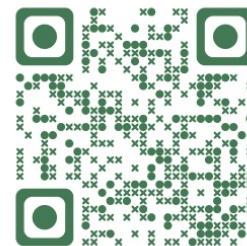
Contenus référencés	11	(2.93%)
Contenus non référencés	364	(97.07%)

— Online

- - - On the test server

www.explorer.xper3.fr

TDWG
2021



EXPLORER: WEBSITE

Accueil Recherche avancée Géographie Taxonomie Tous les contenus Statistiques

Langue : Sélectionnez une langue Base illustrée : OUI NON Indifférent Clef publiée en ligne : OUI NON Indifférent

Groupe taxonomique : Porifera Taxons : Sélectionnez un taxon

Région géographique : Sélectionnez un type de région -- OU -- Région biogéographique : Sélectionnez une région

Habitat : Sélectionnez un habitat

Lancer la recherche Réinitialiser



Archaeocyatha multi-levels
Anglais - Spécialistes - Dernière M&J :13 Oct 2021

ARCHAEOCYATHA MULTI-LEVELS

INFORMATIONS GÉNÉRALES

Descriptif : None

Langue d'édition : Anglais -- **Domaine** : Palaeontology

Contexte de création de la clé : Academic

Projet/Financement :

Clé utilisable pour : research

Public visé : Spécialistes

Copyrights : Adeline Kerner

Site web associé : <http://archaeocyatha.infosyslab.fr>

Publication concernant la base/clef : Kerner A, Debrenne F, Vignes-Lebbe R. 2011. Cambrian archaeocyathan metazoans: revision of morpholog <https://doi.org/10.3897/zookeys.150.1566>

INFORMATIONS TAXONOMIQUES

Taxons englobant tous les items : Porifera

Type(s) de taxons : Fossile

Rang des items : Genre

INFORMATIONS (BIO)GÉOGRAPHIQUES

Région(s) géographique(s) : Monde

Région biogéographique : intertropical zones

Habitat(s) : Récifs coraliens - Marin - Aquatique

INFORMATIONS STRATIGRAPHIQUES

Répartition stratigraphique : Cambrien Paleozoïque

ÉTAT ACTUEL DE LA BASE

309 items - 288 descripteurs - 1185 ressources.

Dernière mise à jour : 13 Oct 2021

EXPLORER: WEBSITE



Accueil



Recherche avancée



Géographie



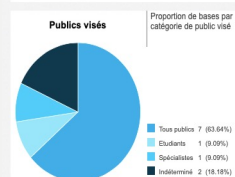
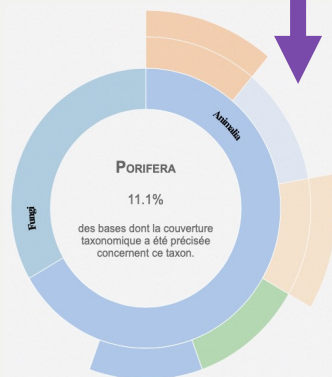
Taxonomie







Tous les contenus



Statistiques

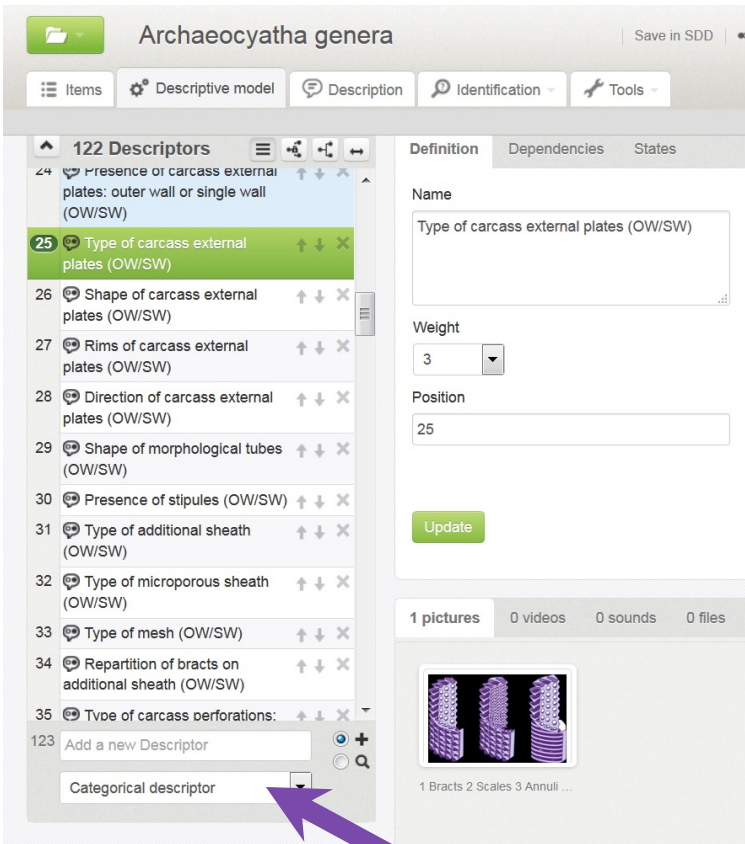


Langue Accessible à Trier par Réinitialiser 10/page

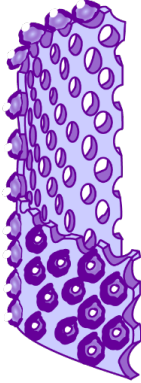
-  **Archaeocyatha multi-levels**
Anglais - Spécialistes - Dernière MAJ : 08 Oct 2021
-  **InsectAquatique**
Français - Tous publics - Dernière MAJ : 12 Oct 2021
-  **Bolets de France métropolitaine**
Français - Tous publics - Dernière MAJ : 07 Oct 2021
-  **Champignons supérieurs de France V1.10 (10/12/89)**
Français - Tous publics - Dernière MAJ : 13 Oct 2021

CALCULATED DESCRIPTORS

- Automatically computed from other descriptors by using logical operators
- Did not exist in Xper2 version
- Do not exist in SDD format => exported as categorical descriptors, losing the origin of the values.
- List of conditions using: AND, OR, SELECTED, NOT SELECTED



CALCULATED DESCRIPTORS



The screenshot shows a software interface with a list of 129 descriptors on the left and a 'Calculated States' panel on the right. The descriptors list includes:

- perforations per intersept (OW/SW)
- 95 C8. Size of carcass pores (OW/SW)
- 96 C9. Direction of carcass canals tubes (OW/SW)
- 97 C10. Origin of carcass canals (OW/SW)
- 98 C11. Presence of carcass bumps (OW/SW)

The 'Calculated States' panel shows a list of states:

- 1 None
- 2 Multiperforate tumuli
- 3 Simple tumuli
- 4 Pustulae
- 5 Add a new Calculated State

A purple arrow points to the 'Add a new Calculated State' option.

Pustulae

Presence of carcass bumps: outer State: Present is: selected

AND Number of perforation on carcass State: Simple is: selected

AND Direction of carcass bumps perforation State: Central opening is: selected

Add Condition Delete All Conditions

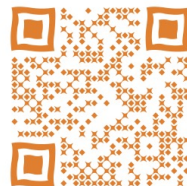
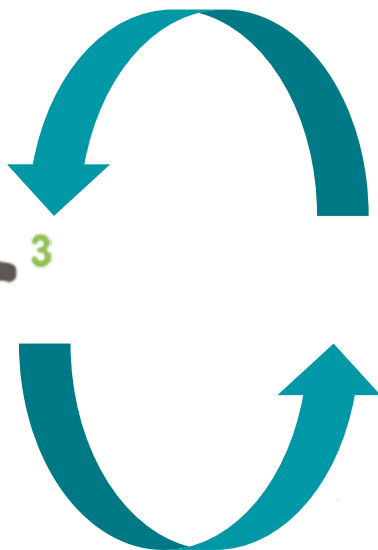
XPER3 & RECOLNAT ANNOTATE

Xper3

<http://www.xper3.fr/>

Recolnat Annotate

<https://www.recolnat.org/en/annotate>



Collections
Databases

XPER 3 & RECOLNAT ANNOTATE


Selection 1 +


Project: archaeo Model: Archaeocyatha - species (type: xper³) Library (7/7/7)


Images folders (1/1) +
Number of images in selection: 7
Images

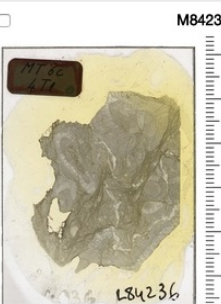
Tags (0/12) +
Show images with all selected tags.
Automatic tags 0


Manual order OFF Details sidebar OFF Display images metadata OFF
Manual order ASC


A22799

author: Elise POEZ X
DPI = 1200 X GPS: no X

A22799

author: Elise POEZ X
DPI = 1200 X GPS: no X

A22799

author: Elise POEZ X
DPI = 1200 X GPS: no X

M84236

author: Elise POEZ X
DPI = 1200 X GPS: no X

M84236

author: Elise POEZ X
DPI = 1200 X GPS: no X

M82004

author: Elise POEZ X
DPI = 1200 X GPS: no X

XPER 3 & RECOLNAT ANNOTATE



Architectural Pattern: Study of orchid architecture using tools to take quick measurements of virtual specimens

Architectural Pattern: Study of orchid architecture using tools to take quick measurements of virtual specimens
 Aureore Gouraud ^{ORNS}, Régine Vignes Lebbe ^{ORNS}, Adeline Kernef ^{ORNS}, Marc Pignal ^{ORNS}

TOWS 2021

New Caledonia is an archipelago in the Pacific Ocean, a French overseas territory located east of Australia. It is one of the 36 biodiversity hotspots in the world.

Dendrobium Sacc. is one of the largest genera in the orchid family (over 1220 species), with 60 species in New Caledonia.

In his monsoon of the 1870s, H. Hallé (1877) defined 14 architectural groups of *Dendrobium*, into which he divided the 63 species known at that time. These models are based on those defined by F. Hallé and Orléans (1970). But they are clearly involved for group species together for identification purposes.

Virtual specimens in collection databases → **RECOLNAT ANNOTATE** (Measurement tool) → **XPER 3** (Biodiversity collaborative management platform)

RECOLNAT ANNOTATE is a free tool for observing quantitative features and making physical measurements (length, length, area) of images. It can be used offline and downloaded from <https://www.recolnat.org/fr/annotator>.

The software is based on the setting up observation projects that group together a batch of herbarium images to be studied, associating it with a descriptive model (imported from XPER3 through a 3000 format (Structured Descriptive Data) (1). A list of measurements can be exported as comma separated value (csv) format for further analysis and as 3000 format for filling a XPER3 database (2).

XPER 3 allows the cross-referencing of items (in the case architectural groups) and descriptors for characters. It allows the development of free access identification keys (it means without fixed sequence of identification trees). The user can be used directly online. But it also offers to produce single-access keys, with or without using character weighting and dependencies between characters.

The descriptive model (characters and character states) is developed within the framework of <https://www.recolnat.org/fr/annotator>.

Other XPER3 specimens can be compared, or several descriptors can be merged to build the description of a specimen.

The joint use of **RECOLNAT ANNOTATE** and **RECOLNAT ANNOTATE** to manage both herbarium specimens and architectural patterns has proven to be relevant. Moreover, the measurements on the virtual specimens are fast and reliable.

H. Hallé (1977) had produced a dichotomous single-access key that allowed the identification and attribution of a pattern to a plant observed in the field or in a herbarium. The project to build a performance and interactive key with **RECOLNAT ANNOTATE** required compiling the observations to give a status for each character of each negative architectural model.

RECOLNAT ANNOTATE was used to produce observations from herbarium network in France. The use of **RECOLNAT ANNOTATE** has allowed us to modify these models in the light of new data from the herbaria and to publish the interactive key available at <https://www.recolnat.org/fr/annotator>.

The production of an interactive key (left) made it possible to identify the architectural pattern of a *Dendrobium* specimen from New Caledonia (right, *Dendrobium opacum* in architectural pattern n°3).

Bibliographie
 Hallé F, Orléans R (1970) Essai sur l'architecture et la dynamique de croissance des arbres tropicaux. 6. Monographies de Botanique et de Biologie végétale, 192 pp.
 Hallé H (1977) Orchidées, Flore de la Nouvelle-Calédonie et dépendances, 2. Muséum National d'Histoire Naturelle, Paris, 565 pp.

Références en ligne
 MNHN, liste des collections du MNHN, <https://www.mnhn.fr/fr/collectif>
 ENCI, Océanarium de la Nouvelle-Calédonie, <https://www.ency.com.nc/>
 RECOLNAT (M1-11-NBS-000), <https://www.recolnat.org/fr/annotator>
 RECOLNAT (M1-11-NBS-000), RECOLNAT search, <https://www.recolnat.org/search/botanique/typenote>
 Annotat <https://www.recolnat.org/fr/annotator>

RECOLNAT

Full Agenda | My Agenda

< Thu Oct 21 | Fri Oct 22 >

See 1 upcoming meet-ups in the community
 9 people are attending meet-ups

Checkout meet-ups!

2:30 PM

Posters, Lightning Talks, Wild Ideas
 2:30 PM - 4:30 PM

View Session | Remove from Agenda

XPER 3 & RECOLNAT ANNOTATE

Xper3

<http://www.xper3.fr/>

Recolnat Annotate

<https://www.recolnat.org/en/annotate>



XPER 3 & RECOLNAT ANNOTATE

Project: Demo Model: Without model Annotations models

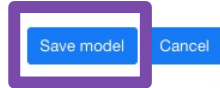
Create a new Annotate model Import a XPER model

Select	Model name	Type	Version	Date imported/created
<input type="radio"/>	Feuilles	Xper 3	2019100301	04/03/2020
<input type="radio"/>	Fleurs	Xper 3	2019100201	04/03/2020
<input type="radio"/>	Fougères	Xper 3	2019100201	04/03/2020

Create a new Annotate model Import a XPER model Active model: Archaeocyatha - species Deactivate

Select	Model name	Type	Version	Date imported/created
<input checked="" type="radio"/>	Archaeocyatha - species	Xper 3	0	10/02/2021
<input type="radio"/>	Feuilles	Xper 3	2019100301	04/03/2020
<input type="radio"/>	Fleurs	Xper 3	2019100201	04/03/2020
<input type="radio"/>	Fougères	Xper 3	2019100201	04/03/2020

XPER 3 & RECOLNAT ANNOTATE



Model descriptors found in file "liste-descripteurs.xml":

Character name: **cup diameter**
Character values:

Character name: **Cup shapes**
Character values:

- Cylindrical-conical
- Subspherical
- Domal
- Discoid

Character name: **Shape of cup bulges**
Character values:

- Longitudinally plicate (outer wall)
- Longitudinally plicate (inner wall)
- Outer wall shows folds
- Inner Wall shows folds
- Both walls show folds
- None

Character name: **General shape of folds affecting both walls**
Character values:

- Longitudinal folds (stellate transverse section)
- Transverse folds
- Irregular folds

Character name: **Shape of folds affecting both walls**
Character values:

- Shallow and distant
- Deep and close

Character name: **Number of walls**
Character values:

- 1
- 2

XPER 3 & RECOLNAT ANNOTATE

Selection 1 +

Project: archaeo Model: Archaeocyatha - species (type: *xper*)

View and annotate

Picture 7/7 in current selection - Catalog n° M82004 - Filename: f1862a31-6c7...

Metadata Annotations Calibration

Oldest to newest

diametre
Character Choose a character
Value 4.78mm

septe
Character Main intervallar structures
Value

nombre septe
Character Choose a character
Value #17

LIN-1
Character Choose a character
Value 0.98mm

LIN-2
Character Choose a character
Value 2.80mm

LIN-3
Character Choose a character
Value 0.10mm

Characters	#	M	SD
------------	---	---	----

Finish Cancel

REC-1

septe

Leaflet

XPER 3 & RECOLNAT ANNOTATE



XPER 3 & RECOLNAT ANNOTATE

Selection 1 +

Project: archaeo Model: Archaeocyatha - species (type: xper³) Tabular view and exports of annotations

Characters Annotations Collections Metadata

Export results ▾

- Use semicolon separator
- Use comma separator
- Export to Xper

Character type	Value	Item	Annotation type	Number of measures	Color
	Vertical intervallar structures only	M82004	CATEGORICAL	1	#ff0000

1

1 Items

- 1 M82004

148 Descriptors

- External plates types (IW)
 - Shape of the interlocking of successive annuli (IW)
 - Annuli organization according to tabulae (IW)
 - Bracts localization (IW)
 - External plates orientation (IW)
 - External plates rims (IW)
 - External plates shape (IW)
 - Shape of morphological tubes (IW)
 - Presence of stipules (IW)
- Main intervallar structures

Description

Possible states list:

- Unknown values
- Vertical intervallar structures ...
- Vertical intervallar structures ...
- Tabulae only
- Calicles
- Syringes
- empty

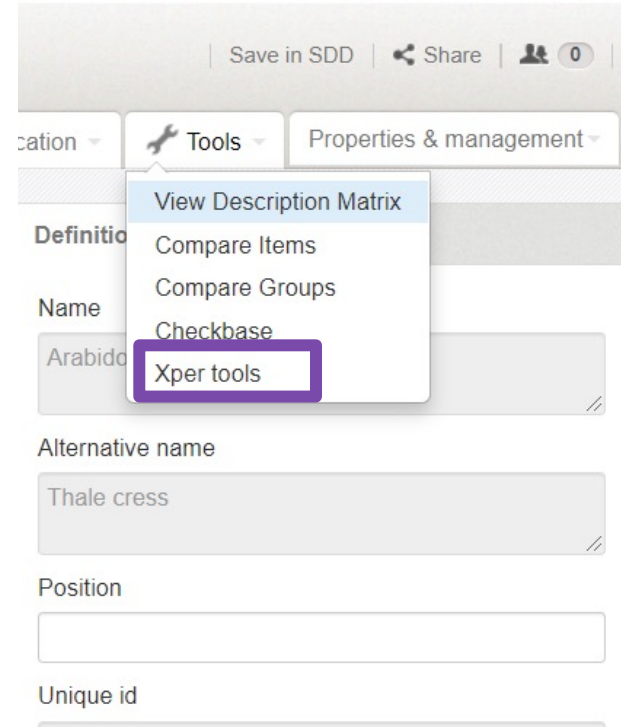
ANALYSIS TOOLS

The screenshot displays the 'Archaeocyatha multi-levels' application window. The title bar includes a folder icon, the text 'Archaeocyatha multi-levels', and buttons for 'Save in SDD', 'Share', and a user icon with a '0' notification. Below the title bar is a navigation bar with tabs: 'Items', 'Descriptive model', 'Description', 'Identification', 'Tools', and 'Properties & management'. The 'Tools' tab is active, and its dropdown menu is open, showing options: 'View Description Matrix', 'Compare Items', 'Compare Groups', 'Checkbase', and 'Xper tools'. The 'Xper tools' option is highlighted with a purple border. On the left, a list of 309 items is shown, with the first seven items visible: 1 Archaeolynthus, 2 Kyarocyathus, 3 Palaeoconularia, 4 Butakoviccyathus, 5 Tumuliolynthus, 6 Sajanolynthus, and 7 Propriolynthus. On the right, a detailed view for an item is shown, with fields for 'Definition', 'Name' (containing 'Arabido...'), 'Alternative name' (containing 'Thale cress'), and 'Position'.

..... On the test server

ANALYSIS TOOLS

- Computing similarities between items or descriptors
- Minimum list of descriptors sufficient to discriminate all items
- Minimum set of descriptors to discriminate an item
- Description in natural language
- Proposing to merge states without loss of discriminating power



ANALYSIS TOOLS

Xper tools

The tools below are in testing. They rely on SDD to work. In some cases, not identified the tool does not work properly. This son generates too expensive calculations.

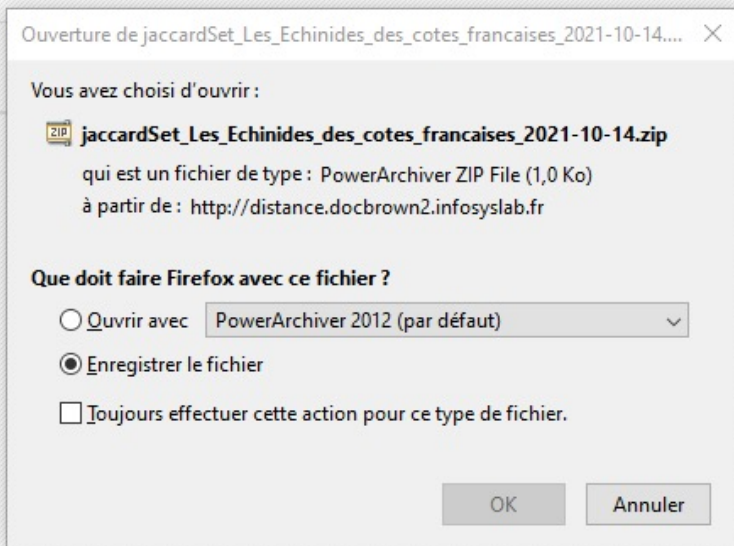
If the SDD is too old, it may need to be re-generated

Distance Jaccard

method using algo truc and bidul machin

- items Distance
- items Similarity
- descriptor Distance
- descriptor Similarity

Compute



ANALYSIS TOOLS

	A	B	C	D	E	F	G	H	I	J	K	L	M														
1		<u>Cidaris cidaris</u>	<u>Centrostephanus longispinus</u> (Philippi, 1845)	<u>Stylocidaris affinis</u>	<u>Arbacia lixula</u> (Linnaeus, 1758)	<u>Arbaciella elegans</u> Mortensen, 1910	<u>Genocidaris maculata</u> A. Agassiz, 1869	<u>Echinus acutus</u> Lamour., 1816	<u>Echinus mado</u> Lamour., 1816	<u>Echinus esculentus</u> Linnaeus, 1758	<u>Psammochinus miliaris</u> (P.L.S. Müller-Gmelin, 1771)	<u>Psammochinus microtuberculatus</u> (Blainville, 1825)	<u>Sphaerechinus granularis</u> (Lamarck, 1816)	<u>Paracentrotus lividus</u> (Lamarck, 1816)	<u>Echinocardium mediterraneum</u> (Forbes, 1844)	<u>Echinocardium flavescens</u> (O.Fr. Müller, 1776)	<u>Echinocardium cordatum</u> (Pennant, 1777)	<u>Echinocardium montense</u> Thierry, 1909	<u>Echinocardium pennatifidum</u> Norman, 1868	<u>Spatangus purpureus</u> O.Fr. Müller, 1776	<u>Echinocardium fenauxi</u> Piquignat, 1963	<u>Spatangus inermis</u> Mortensen, 1913	<u>Brissus unicolor</u> (Leske, 1778)	<u>Brissopsis lyrifera</u> (Forbes, 1841)	<u>Schizaster canaliferus</u> (Lamarck, 1816)	<u>Echinocyamus pusillus</u> (O.Fr. Müller, 1776)	
2		0																									
3		0,0	0																								
4		0,000	0,000	0,000																							
5		0,840	0,840	0,840	0,000																						
6		0,922	0,922	0,922	0,615	0,000																					
7		0,875	0,875	0,875	0,429	0,727	0,000																				
8		0,000	0,000	0,000	0,840	0,922	0,875	0,000																			
9		0,000	0,000	0,000	0,840	0,922	0,875	0,000	0,000																		
10		0,000	0,000	0,000	0,840	0,922	0,875	0,000	0,000	0,000																	
11		0,000	0,000	0,000	0,840	0,922	0,875	0,000	0,000	0,000	0,000																
12		0,000	0,000	0,000	0,840	0,922	0,875	0,000	0,000	0,000	0,000	0,000															
13		0,000	0,000	0,000	0,840	0,922	0,875	0,000	0,000	0,000	0,000	0,000	0,000														
14		0,000	0,000	0,000	0,840	0,922	0,875	0,000	0,000	0,000	0,000	0,000	0,000	0,000													
15		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
16		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
17		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
18		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
19		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
20		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
21		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
22		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
23		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
24		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
25		0,286	0,286	0,286	0,885	0,942	0,920	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286	0,286
26		0,375	0,375	0,375	0,846	0,923	0,923	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375	0,375

UUID: UNIVERSALLY UNIQUE IDENTIFIERS

Taxa

Definition

Name
Archaeolynthus

Alternative name
Thale cress

Position
1

Unique id
Archaeolyn_1566462115865_224

Detail
Archaeolynthus TAYLOR, 1910 (p.158)
Specimen-type: *Monocyathus porosus* lectotype, R. BEDFORD & W. R. BEDFORD, 1934, p.2 fig.1, NHM S4140, London
Systematics:
Order: MONOCYATHIDA Okulitch, 1935
Family: MONOCYATHIDAE R. Bedford & W. R. Bedford, 1934
GBIF occurrences
Synonyms:
- *Ventriculocyathus* Vologdin, 1928, p.31 (nom. nud.); *Ventriculocyathus*

Update

UUID: UNIVERSALLY UNIQUE IDENTIFIERS

Descriptors

Definition Dependencies States

Name

Weight

Position

Unique id

Update

States

Update a state

Name

Unique id

Position

Detail

Cancel Update

UUID: UNIVERSALLY UNIQUE IDENTIFIERS

Definition Dependencies States

Name

Cup shapes

Weight

3

Position

1

Unique id

Cupshapes_1566462112540_527

Update

- Currently:
Entity & quality => Common ID
- Future:
entity ID & quality ID

ACKNOWLEDGEMENTS

- XPER users
- Our institutions
- National projects: ReColnat, e-Col+
- My friends & neighbours, and my stuffed Eeyore for the unfailing support

