

# The new Catalogue of Life

*A key taxonomic service*

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16 February 2021, Naturhistorisches Museum Wien

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## WHAT IS CATALOGUE OF LIFE?

THE INTERNATIONAL COMMUNITY FOR LISTING SPECIES

*Podiceps grisegena* (Boddaert, 1783)

*The most complete authoritative list of the world's species*

- ✓ Nearing 2 million accepted species from 163 databases
- ✓ maintained by hundreds of global taxonomists
- ✓ 20-25 years of taxonomic services to thousands of users

# NEW COL INFRASTRUCTURE LIVE

- **COL infrastructure project:** 1<sup>st</sup> products of the new COL infrastructure powered by GBIF
  - New portal: <https://catalogueoflife.org>
  - COL ChecklistBank: <https://data.catalogueoflife.org>
  - New API: <https://api.catalogueoflife.org>

[support@catalogueoflife.org](mailto:support@catalogueoflife.org)



species 2000



ILLINOIS NATURAL  
HISTORY SURVEY  
PRAIRIE RESEARCH INSTITUTE

# COL Portal

## Public portal

- <https://catalogueoflife.org>

## Data access to latest release

- Search, browse
- Taxon & dataset details
- Source datasets, citations

## COL informations

- About pages completely rewritten
- News

The screenshot shows the Catalogue of Life website homepage. At the top, there is a navigation menu with links for HOME, DATA, ABOUT, NEWS, and CONTACT. Below the navigation, a banner states: "The most complete authoritative list of the world's species - maintained by hundreds of global taxonomists - [Learn more](#)".

The main content area features a blue box on the left with the text "Animalia" and "1,339,412 species in COL". To the right of this box are three images: a cluster of orange flowers, a close-up of orange flowers, and a microscopic view of a cell. Further right, there are two news items:

- OCTOBER 18, 2020**  
**NEW CATALOGUE OF LIFE: INFRASTRUCTURE**  
The Catalogue of Life has developed new infrastructure to support the COL Checklist and the management of checklist datasets
- OCTOBER 15, 2020**  
**CATALOGUE OF LIFE PARTNERING TO SUPPORT CONSERVATION**  
The Catalogue of Life is contributing actively to the new IUBS Working Group on the Governance of Taxonomic Lists

Below the news items is a search bar with the text "Find taxon" and a search icon. Underneath the search bar is a list of taxonomic groups with their estimated species counts and associated providers:

- unranked: **Biota** • Multiple providers
- kingdom: **Animalia** • 1525728 est. spp. • Multiple providers
- kingdom: **Archaea** • 502 est. spp. • ITIS
- kingdom: **Bacteria** • 10358 est. spp. • ITIS
- kingdom: **Chromista** • 12936 est. spp. • Multiple providers
- kingdom: **Fungi** • 140000 est. spp. • Species Fungorum Plus
- kingdom: **Plantae** • 382000 est. spp. • Multiple providers
- kingdom: **Protozoa** • 15078 est. spp. • Multiple providers
- kingdom: **Viruses** • 4216 est. spp. • ICTV MSL

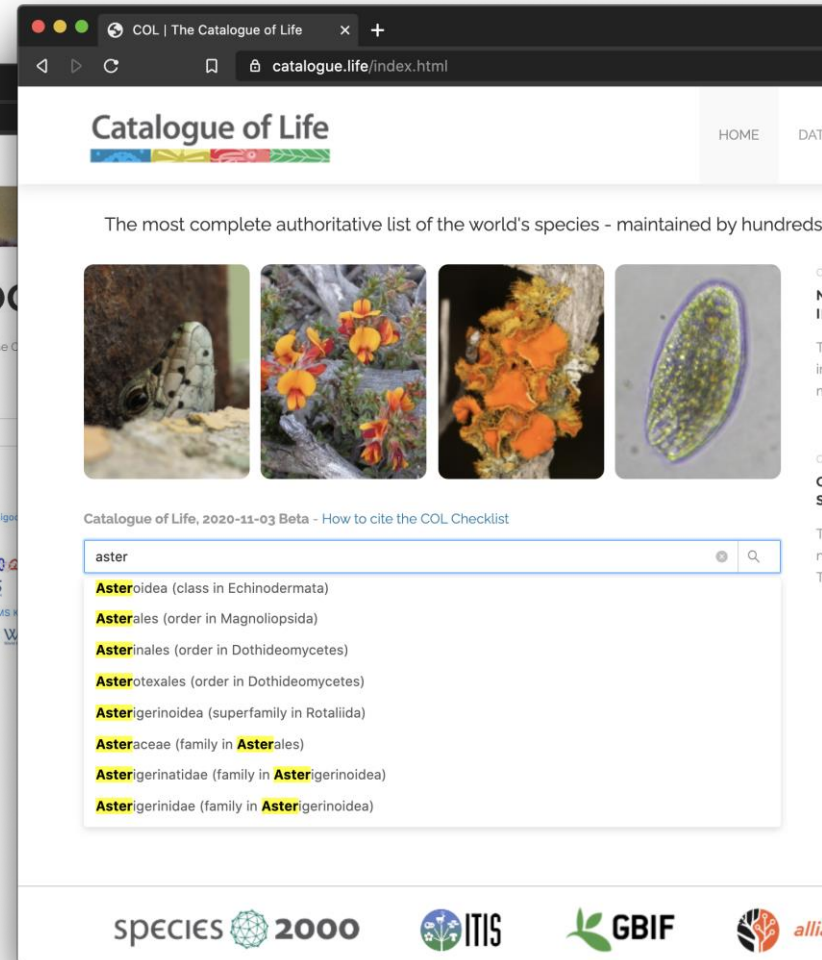
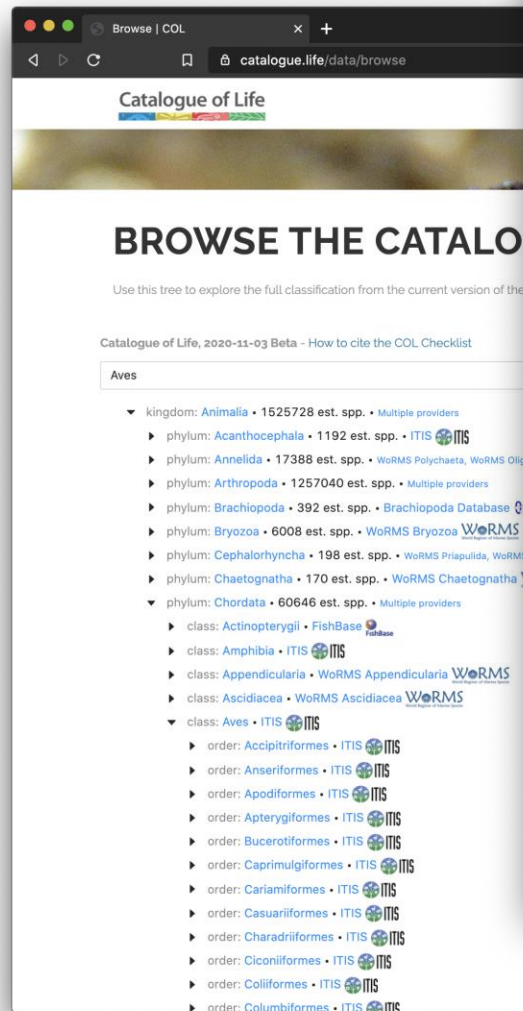
At the bottom of the page, there are logos for **species 2000**, **ITIS**, **GBIF**, and **alliance for biodiversity knowledge**. Below these logos is a footer section with a colorful graphic on the left and three columns of text on the right:

- LINKS**  
About COL  
Browse the COL Checklist  
COL ChecklistBank
- RECENT POSTS**  
New Catalogue of Life: infrastructure  
Catalogue of Life partnering to support conservation
- CONTACT US**  
Phone: +31 (0)71 7519 362  
Email: [sp2000@sp2000.org](mailto:sp2000@sp2000.org)  
Species 2000 Secretariat, Naturalis,  
Darwinweg 2, 2333 CR Leiden, The Netherlands

The URL in the browser's address bar is <https://www.catalogueoflife.org/index.html?taxonKey=JES>.

# Tree Browser

- Navigate classification
- Quick search
- Species estimates - tbd
- Species counts - tbd.



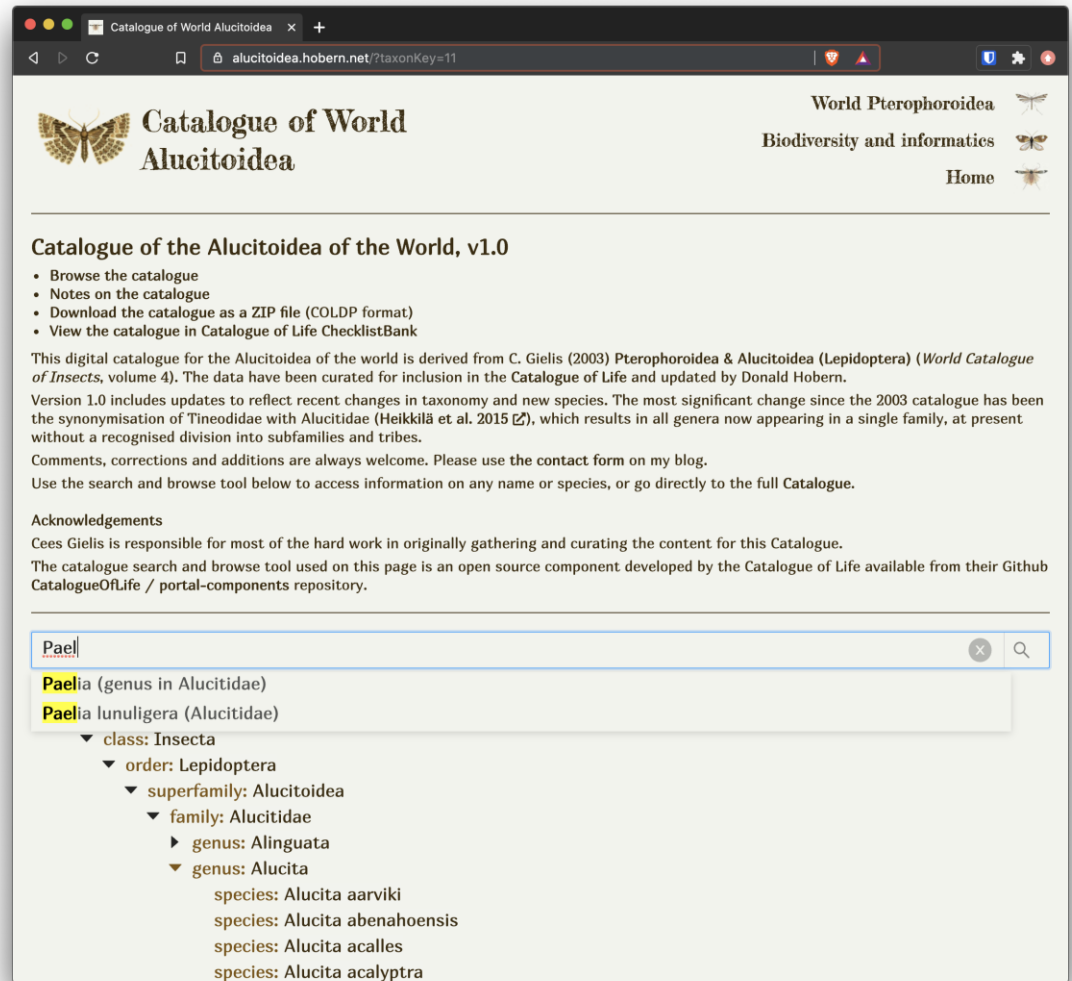
# Dynamic Data Components

## JS React library

- Search, browse & details
- Reuseable JS React lib
- Any ChecklistBank dataset
- Style can be adapted

<https://pterophoroidea.hobern.net/>

<https://alucitoidea.hobern.net/>



The screenshot shows a web browser window with the URL `alucitoidea.hobern.net/?taxonKey=11`. The page title is "Catalogue of World Alucitoidea". The header includes a butterfly icon, the site name, and navigation links for "World Pterophoroidea", "Biodiversity and informatics", and "Home".

### Catalogue of the Alucitoidea of the World, v1.0

- Browse the catalogue
- Notes on the catalogue
- Download the catalogue as a ZIP file (COLDP format)
- View the catalogue in Catalogue of Life ChecklistBank

This digital catalogue for the Alucitoidea of the world is derived from C. Gielis (2003) *Pterophoroidea & Alucitoidea (Lepidoptera) (World Catalogue of Insects, volume 4)*. The data have been curated for inclusion in the Catalogue of Life and updated by Donald Hobern. Version 1.0 includes updates to reflect recent changes in taxonomy and new species. The most significant change since the 2003 catalogue has been the synonymisation of *Tineodidae* with *Alucitidae* (Heikkilä et al. 2015), which results in all genera now appearing in a single family, at present without a recognised division into subfamilies and tribes.

Comments, corrections and additions are always welcome. Please use the [contact form](#) on my blog.

Use the search and browse tool below to access information on any name or species, or go directly to the full Catalogue.

#### Acknowledgements

Cees Gielis is responsible for most of the hard work in originally gathering and curating the content for this Catalogue. The catalogue search and browse tool used on this page is an open source component developed by the Catalogue of Life available from their Github [CatalogueOfLife / portal-components](#) repository.

- Paelia** (genus in Alucitidae)
- Paelia lunuligera** (Alucitidae)
  - class: Insecta
    - order: Lepidoptera
      - superfamily: Alucitoidea
        - family: Alucitidae
          - genus: Alinguata
          - genus: Alucita
            - species: *Alucita aarviki*
            - species: *Alucita abenahoensis*
            - species: *Alucita acalles*
            - species: *Alucita acalyptra*

# Taxon & Higher Taxon pages

The screenshot shows a web browser window with the URL [catalogue.life/data/taxon/QSYF](https://catalogue.life/data/taxon/QSYF). The page title is "Catalogue of Life" and the main heading is "Agalinis linifolia (Nutt.) Britton". The page includes a navigation menu with "HOME", "DATA", "ABOUT", "NEWS", and "CONTACT". A "WORLD PLANTS" logo is visible on the right. The main content area is divided into several sections: "Name", "Published in", "Checklist status", "Synonyms", "Classification", "Vernacular names", "Distributions", "References", and "Source database".

Name	Agalinis linifolia (Nutt.) Britton			
Published in	Britton. In: Britton & Brown, III. Fl. Ed. 2, 3: 209. (1913).			
Checklist status	accepted species			
Synonyms	= Agalinis perennis Raf. = Gerardia linifolia Nutt.			
Classification	Unranked	Biota		
	Kingdom	Plantae		
	Phylum	Tracheophyta		
	Class	Magnoliopsida		
	Order	Lamiales Bromhead		
	Family	Orobanchaceae Vent.		
	Genus	Agalinis Raf.		
	Species	Agalinis linifolia (Nutt.) Britton		
Vernacular names	Original name	Transliterated name	Language	Country of use
	Coastal false foxglove	Coastal false foxglove		
Distributions	USA (Alabama, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Virginia); Cuba			
References	Britton. In: Britton & Brown, III. Fl. Ed. 2, 3: 209. (1913).			
Source database	World Plants: Synonymic Checklists of the Vascular Plants of the World 100% ★★★★★			

**LINKS**  
About COL  
Browse the COL Checklist  
COL ChecklistBank

**RECENT POSTS**  
New Catalogue of Life: infrastructure  
Catalogue of Life partnering to support conservation

**CONTACT US**  
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# Contributing Datasets

- List of all sources
- Quick stats & citation



The data in the current version 2020-12-01 of the COL Checklist have been provided by the resources listed below. Most datasets include one or more sectors that feed into COL and cover all of the world's species in a particular group of organisms. These result from collaboration and editing by many expert taxonomists, whose names are found in the information for each dataset.

A few datasets are listed as containing no species. These contribute to the higher classification for the Catalogue of Life.

Source datasets: 163

Title	English name of the group	Living Species	Extinct Species
+ <a href="#">3i Auchenorrhyncha</a>	Cicadas, leafhoppers & treehoppers	10,448	522
+ <a href="#">3i Curculio</a>	Broad-nosed weevils	13,369	23
+ <a href="#">Alucitoidea</a>	Many-plume moths, false-plume moths	0	0
+ <a href="#">Animal Biodiversity</a>	Animal classification	0	0
<a href="#">AnnonBase</a>	Custard apples	2,440	0
Living species		2,440	
Extinct species		0	
Genus		122	
Family		1	
Synonyms		2,553	
Common names		2,641	
Total number of names		5,297	
Citation			
Rainer H., Chatrou LW. (eds.) (2020). AnnonBase: Annonaceae GSD (version Jan 2014). In: Roskov Y., Ower G., Orrell T., Nicolson D., Bailly N., Kirk P. M., Bourgoin T., DeWalt R. E., Decock W., van Nieukerken E. J., Penev L. (eds.). Species 2000 & ITIS Catalogue of Life, 2020-12-01. Digital resource at www.catalogueoflife.org. Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-8858.			
+ <a href="#">BdelloideaBase</a>	Bdellid and cunaxid mites	664	0
+ <a href="#">Brachiopoda Database</a>	Lamp-shells	396	0



# Dataset Details

- Metadata
- Citation
- Taxonomic coverage  
Linked to taxa
- Quick metrics

## Annonaceae GSD



Short name	AnnonBase
Full name	Annonaceae GSD
Version	Jan 2014 Received by Col: 2014-01-22
Editors	Rainer H., Chatrou L.W.
Taxonomic coverage	Plantae > Tracheophyta > Magnoliopsida > Magnoliales: <a href="#">Annonaceae</a>
English name of the Group	Custard apples
Living species	2,440
Extinct species	0
Genus	122
Family	1
Synonyms	2,553
Common names	2,641
Total number of names	5,297
Abstract	AnnonBase includes all published names of Annonaceae of any rank worldwide. The idea of this development is to serve as a concise taxonomic backbone for basic as well as applied scientific studies. The AnnonBase source database also includes references to type material and their location of deposit. This releases includes information on vernacular names, distributional data and links to relevant information sources. Database development and maintenance has been done at the Austrian Academy of Sciences, the Natural History Museum of Vienna, and the University of Vienna and was partly funded by the European Commission.
Organisation	Annonaceae Working Group
Website	<a href="http://herbarium.botanik.univie.ac.at/">http://herbarium.botanik.univie.ac.at/</a>
Geographic scope	Global
Completeness	100
Checklist Confidence	★★★★★
Citation	Rainer H., Chatrou L.W. (eds.) (2020). AnnonBase: Annonaceae GSD (version Jan 2014). In: Roskov Y., Ower G., Orrell T., Nicolson D., Bailly N., Kirk P. M., Bourgoin T., DeWalt R. E., Decock W., van Nieukerken E. J., Penev L. (eds.). Species 2000 & ITIS Catalogue of Life, 2020-12-01. Digital resource at <a href="http://www.catalogueoflife.org">www.catalogueoflife.org</a> . Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-8858.
License	other



### LINKS

COL API  
Browse the COL Checklist  
COL ChecklistBank



### RECENT POSTS

New Catalogue of Life infrastructure  
Live  
New Catalogue of Life: infrastructure  
Catalogue of Life partnering to  
support conservation

### CONTACT US

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Netherlands

# Previous Editions

## Docker container

- original PHP & MySQL software
- needs to be maintained

## Annual Editions 2005-2019

- Annual Checklist Interface
- Webservices
- DwC-A & MySQL downloads

The image shows two overlapping browser windows. The top window displays the 'Catalogue of Life' website's 'PREVIOUS VERSIONS' page, which lists historical annual checklists from 2003 to 2019. The bottom window shows a search results page for 'Puma' in the 'Catalogue of Life: 2019 Annual Checklist'. The search results table lists various subspecies and synonyms of *Puma concolor*.

Name	Rank	Name status	Group	Source database
<a href="#">Puma</a>	Genus		Animalia	
<a href="#">Puma concolor</a> (Linnaeus, 1771)	Species	accepted name	Animalia	
<a href="#">Puma concolor acrocladia</a> (Goldman, 1943)	Intraspecific taxon	synonym for <i>Puma concolor anthonyi</i> (Nelson and Goldman, 1931)	Animalia	
<a href="#">Puma concolor anthonyi</a> (Nelson and Goldman, 1931)	Intraspecific taxon	accepted name	Animalia	
<a href="#">Puma concolor araucanus</a> (Osgood, 1943)	Intraspecific taxon	synonym for <i>Puma concolor puma</i> (Molina, 1782)	Animalia	
<a href="#">Puma concolor azteca</a> (Merriam, 1901)	Intraspecific taxon	synonym for <i>Puma concolor cougar</i> (Kerr, 1792)	Animalia	
<a href="#">Puma concolor bangsi</a> (Merriam, 1901)	Intraspecific taxon	synonym for <i>Puma concolor concolor</i> (Linnaeus, 1771)	Animalia	
<a href="#">Puma concolor borbensis</a> (Nelson and Goldman, 1933)	Intraspecific taxon	synonym for <i>Puma concolor anthonyi</i> (Nelson and Goldman, 1931)	Animalia	
<a href="#">Puma concolor browni</a> (Merriam, 1903)	Intraspecific taxon	synonym for <i>Puma concolor cougar</i> (Kerr, 1792)	Animalia	
<a href="#">Puma concolor cabreræ</a> Pocock, 1940	Intraspecific taxon	accepted name	Animalia	
<a href="#">Puma concolor californica</a> (May, 1896)	Intraspecific taxon	synonym for <i>Puma concolor cougar</i> (Kerr, 1792)	Animalia	

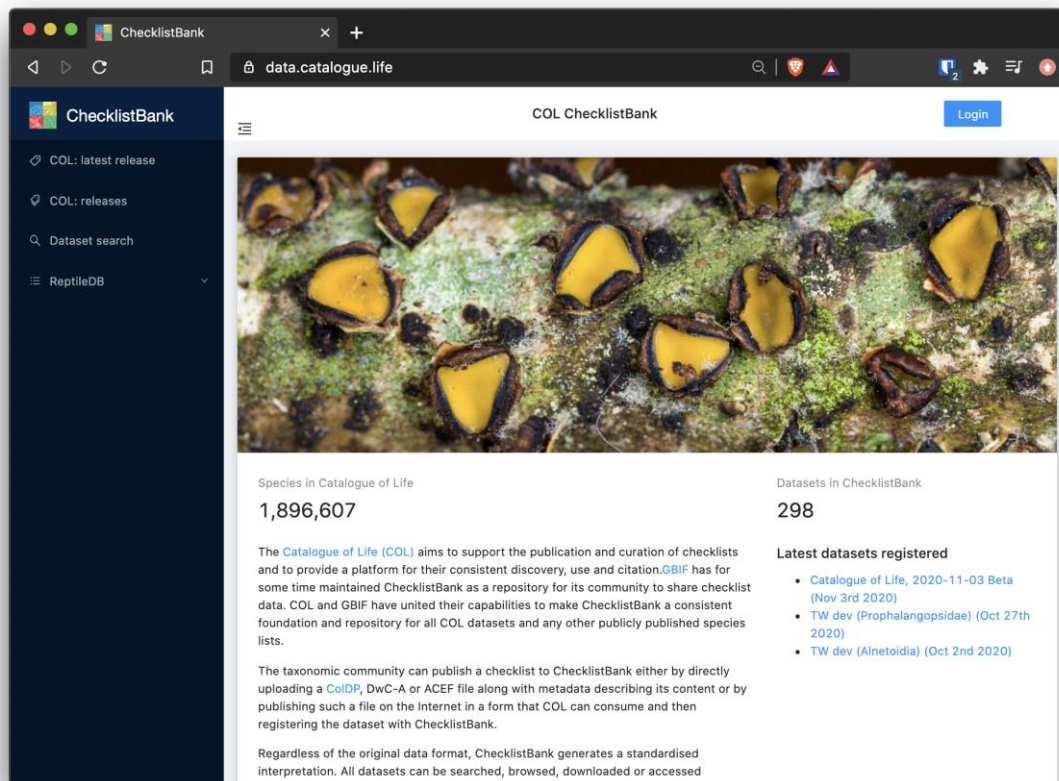
# Checklist Bank

## Checklist repository

- Also non COL datasets
- Standard representation
- Search & browse
- Verbatim browser

## Editorial Tool / Workbench

- Multiple projects
- Classification editor
- Sector assembly
- Editorial decisions

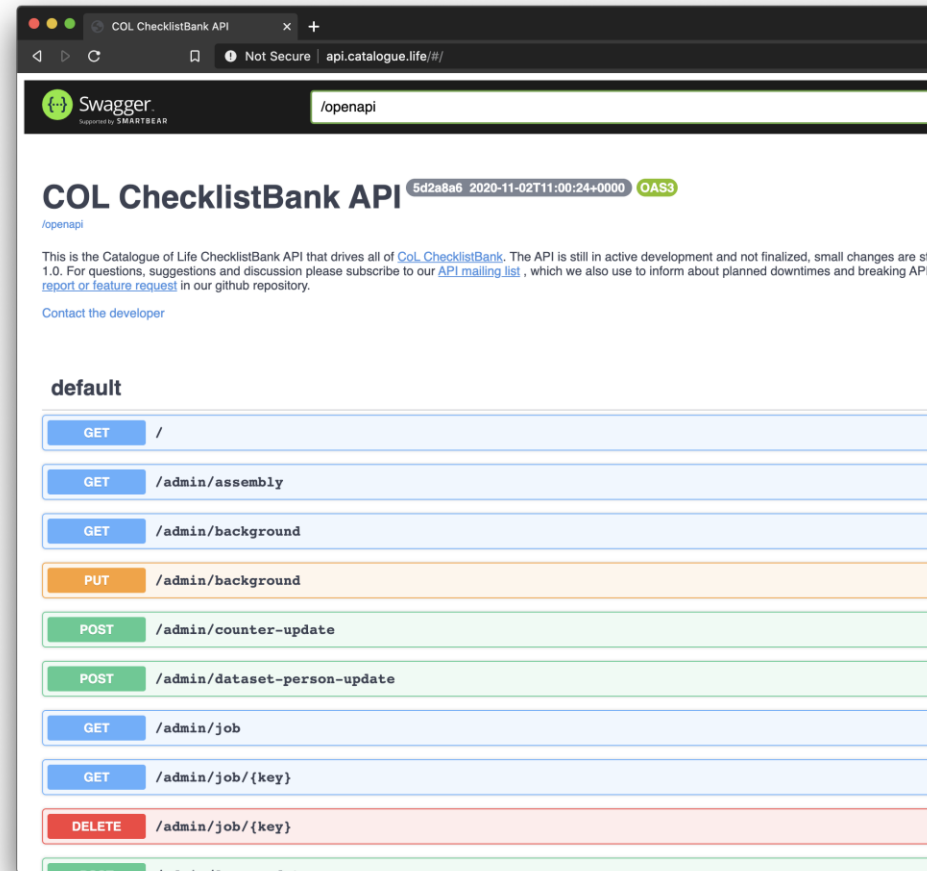


The screenshot shows the ChecklistBank website interface. The browser address bar displays 'data.catalogue.life'. The page title is 'COL ChecklistBank' with a 'Login' button in the top right. A large image of yellow and black lichens is featured prominently. Below the image, the text reads 'Species in Catalogue of Life' followed by the number '1,896,607'. To the right, it says 'Datasets in ChecklistBank' followed by '298'. Underneath, there is a section titled 'Latest datasets registered' with a list of recent datasets, including 'Catalogue of Life, 2020-11-03 Beta (Nov 3rd 2020)', 'TW dev (Prophalangopsidae) (Oct 27th 2020)', and 'TW dev (Alnetoidia) (Oct 2nd 2020)'. A paragraph of text explains the mission of the Catalogue of Life (COL) and its partnership with GBIF to maintain ChecklistBank as a repository for species checklists. It also describes the process of publishing a checklist to the platform and notes that all datasets are standardized for search and access.

<https://data.catalogueoflife.org/>

# COL Checklist Bank API

- Drives Portal and ChecklistBank UI
  - Changes expected with Extended COL
- Private datasets
  - COL release candidates
- Magic dataset keys (COL)
  - LR=Latest Release (3LR)
  - LRC=Latest Release Candidate (3LRC)
- Swagger documentation
- Stable name IDs



# COL Checklist Bank API

- ColDP importer
  - All but NameReference
- Legacy API ported
- Varnish cache
- Access to original archives
- Taxize R package
  - <https://github.com/ropensci/taxize>

<https://api.catalogueoflife.org>

The screenshot shows a REST client interface for the Catalogue of Life API. The request is a GET to `/dataset/{datasetKey}/taxon/{id}/info` with a status of 200 OK. The response body is a JSON object with the following structure:

```
{
  "taxon": {
    "created": "2020-07-18T06:10:10.206965",
    "createdBy": 103,
    "modified": "2020-07-18T06:10:10.206965",
    "modifiedBy": 103,
    "datasetKey": 2230,
    "id": "32222",
    "sectorKey": 532,
    "name": {
      "created": "2020-07-18T06:10:10.206965",
      "createdBy": 103,
      "modified": "2020-09-30T03:26:50.345944",
      "modifiedBy": 103,
      "datasetKey": 2230,
      "id": "2fca6c74-6a91-4a81-9e53-6ef008ceb689",
      "sectorKey": 532,
      "verbatimKey": 17302366,
      "homotypicNameId": "2fca6c74-6a91-4a81-9e53-6ef008ceb689",
      "nameIndexId": 2096029,
      "nameIndexMatchType": "exact",
      "scientificName": "Diphucrania nitidiventris",
      "authorship": "(Carter, 1934)",
      "rank": "species",
      "genus": "Diphucrania",
      "specificEpithet": "nitidiventris",
      "basionymAuthorship": {
        "authors": [
          "Carter"
        ],
        "year": "1934"
      },
      "code": "zoological",
      "publishedInId": "c2ba573f-bc75-40b9-b1b5-8087e12993",
      "origin": "source",
      "type": "scientific",
      "parsed": true
    },
    "status": "accepted",
    "origin": "source",
    "parentId": "ZWZ",
    "link": "http://coleospsoc.org/buprestidae/WorldCat/gen",
    "scrutinizer": "C.L. Bellamy",
    "scrutinizerDate": "2014",
    "extinct": false,
    "environments": [
      "terrestrial"
    ],
    "label": "Diphucrania nitidiventris (Carter, 1934)",
    "labelHtml": "<i>Diphucrania nitidiventris</i> (Carter"
  },
  "synonyms": [
    {
      "created": "2020-07-18T06:11:16.730784",
      "store.books[*].author"
    }
  ]
}
```



an alliance for biodiversity knowledge

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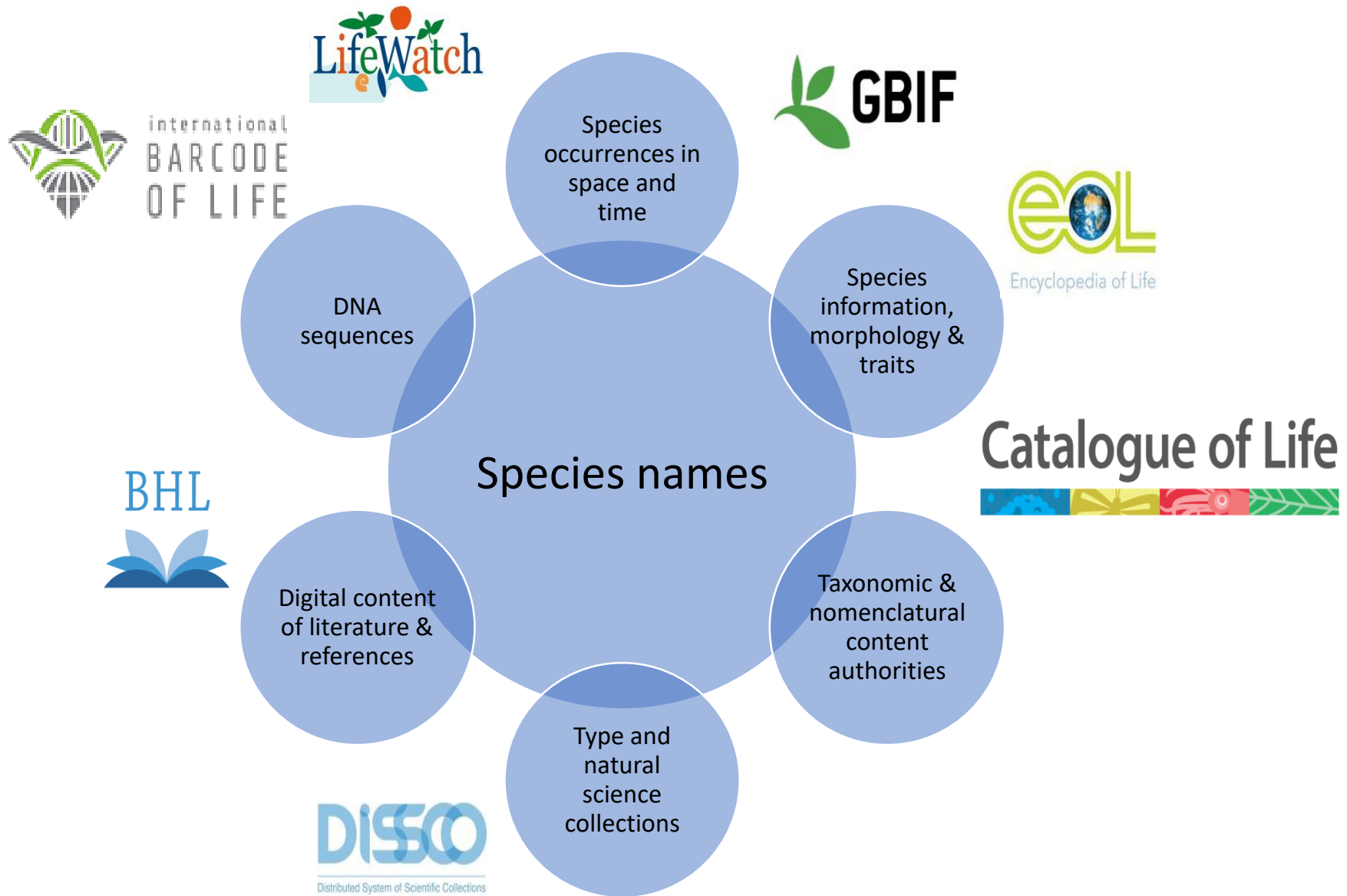


# GLOBAL BIODIVERSITY INFORMATICS OUTLOOK



*Complete and maintain an expert-curated catalogue of all species, including data on names, classification and phylogeny, and incorporating taxa lacking formal names.*

# ALL SPECIES INFORMATION IS TIED TO A NAME



# DATA FOR OPEN SCIENCE

## *Working towards*

- **Open data licenses** (adoption of CC-0 & CC-BY) and community data standards (DwCA, ColDP)
- **Improved services**: establishing new accreditation services (e.g. DOI), user statistics, feedback mechanisms for taxonomic communities, connection with taxonomic editing tools
- **Core Trust seal certification** in line with the Global Biodiversity Information Facility

Catalogue of Life

