GBIF | Global Biodiversity Information Facility

Name matching in GBIF

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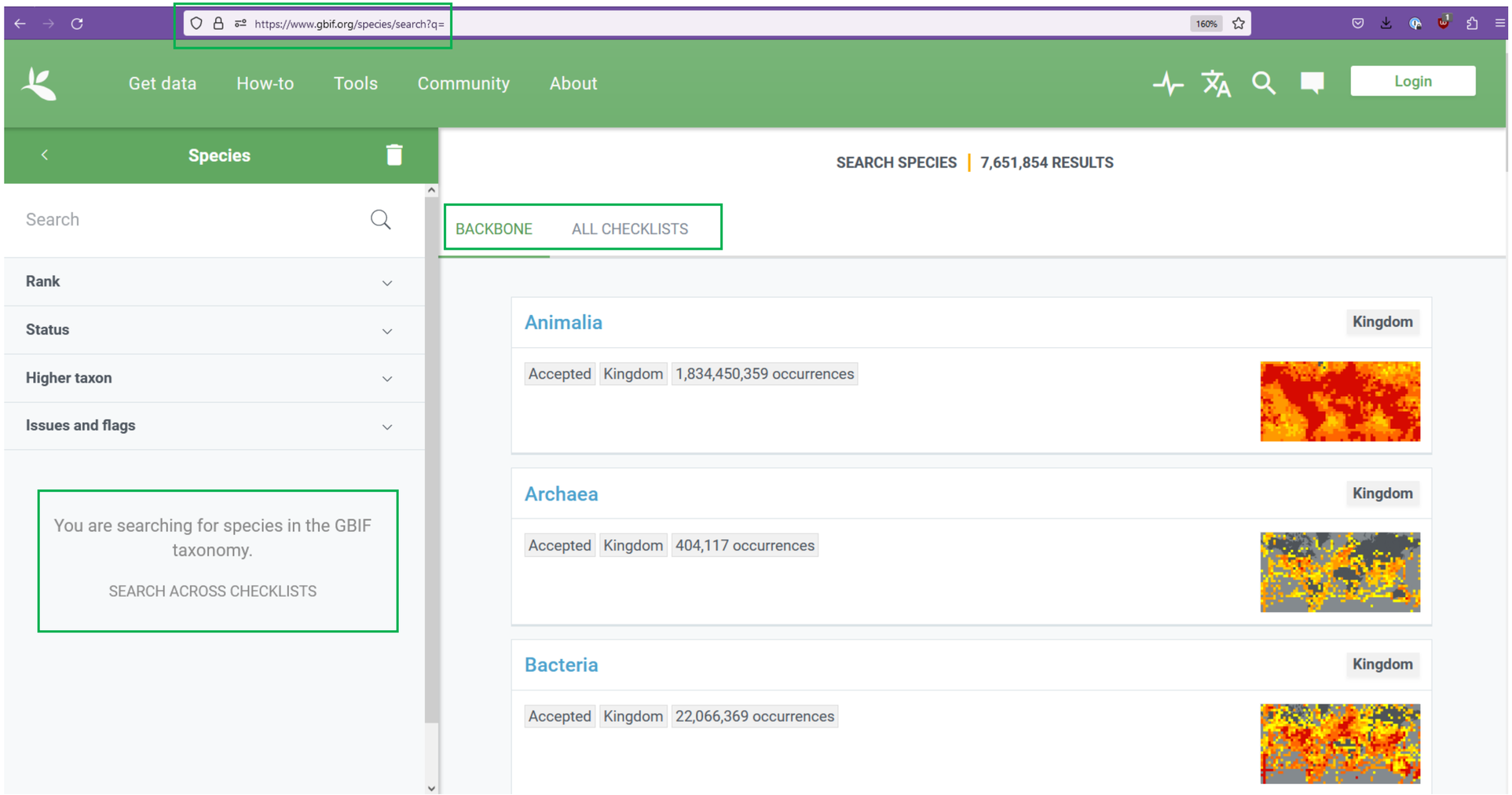
Names on GBIF.org | searching names



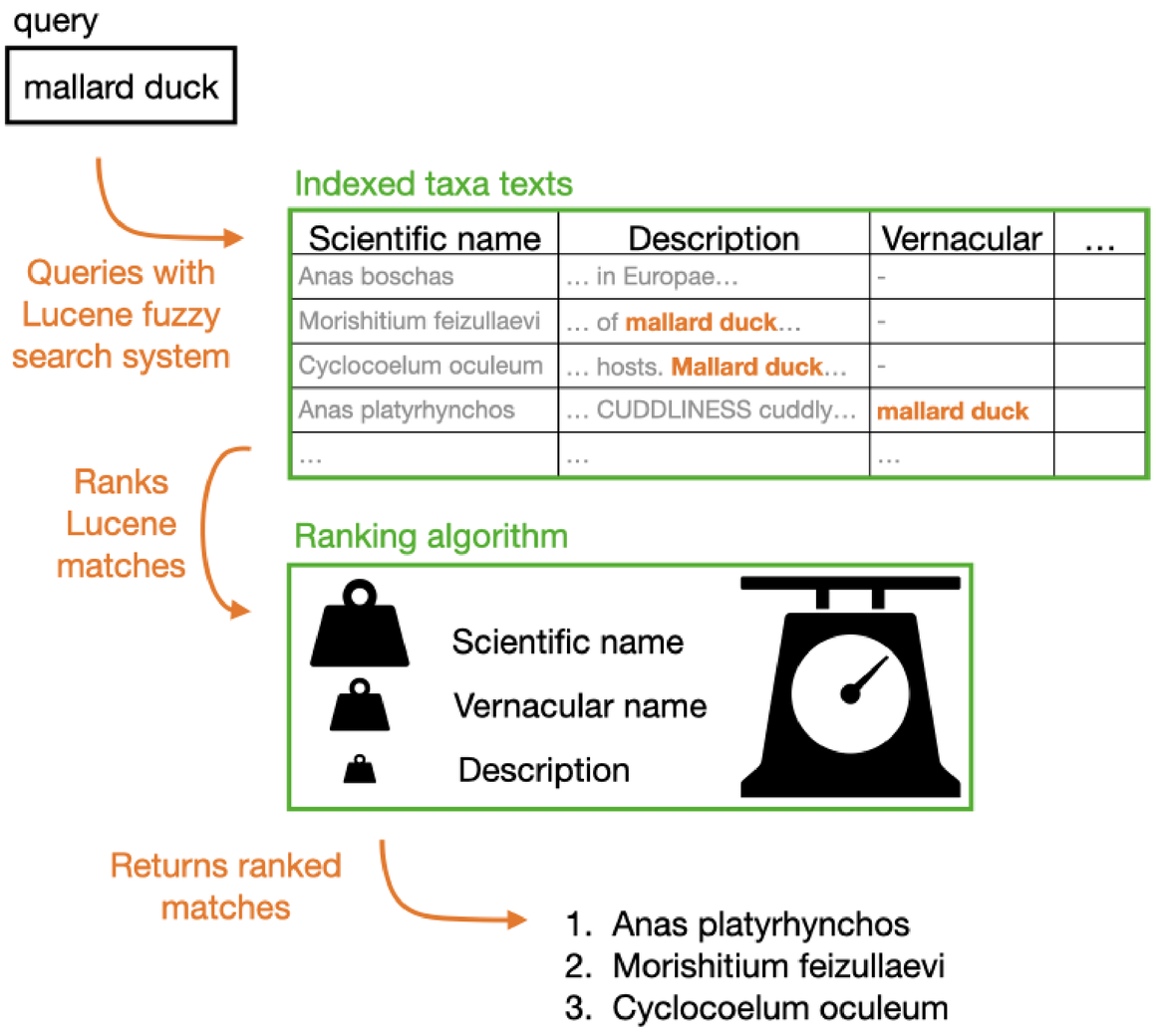
https://www.gbif.org/species/search?q=

Searching names on GBIF.org

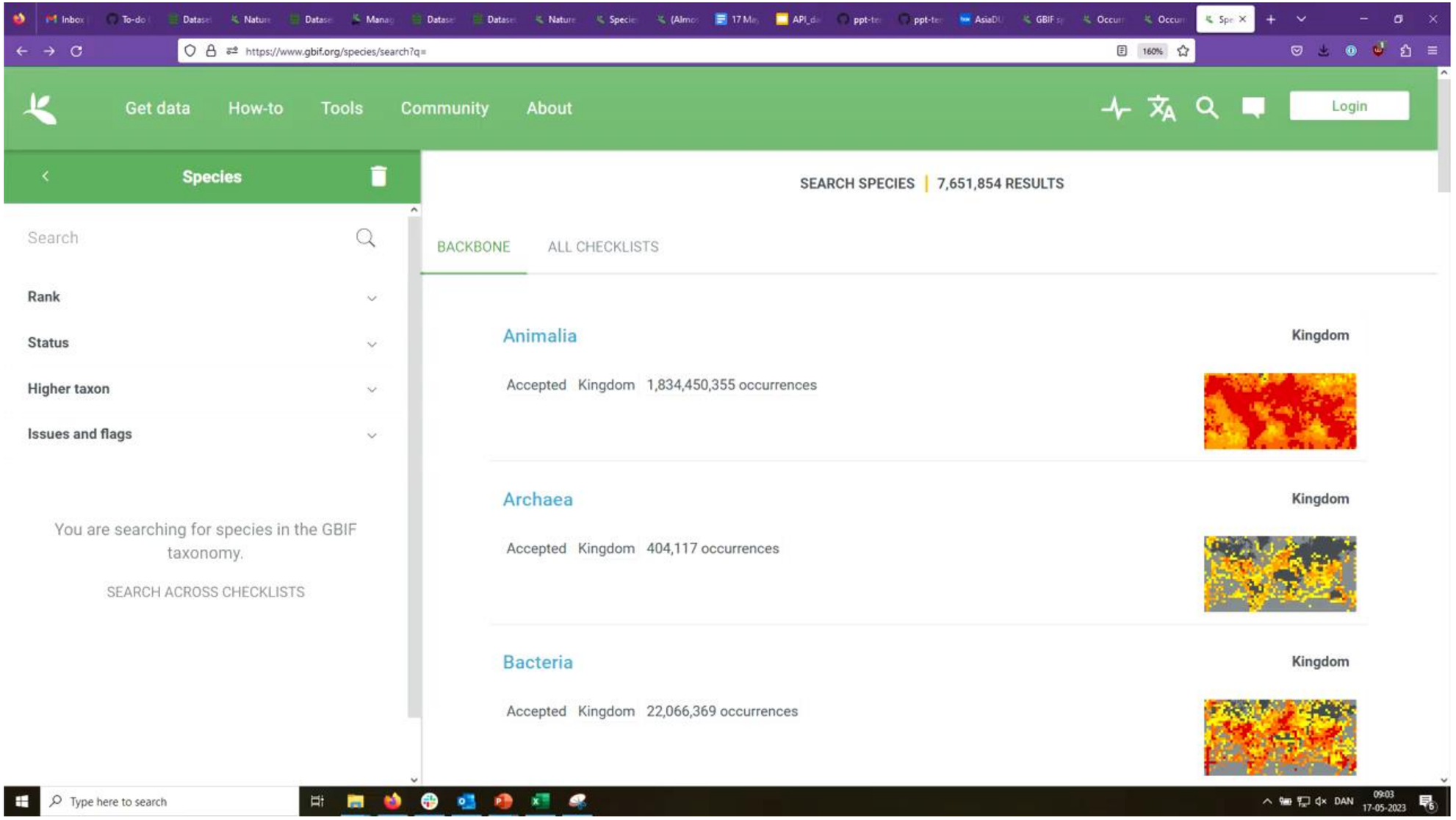
The search function is a full text search of name usages covering

- the scientific and vernacular name
- the species description
- distribution
- the entire classification across all name usages of all or some checklists

Search API



https://data-blog.gbif.org/post/gbif-species-api/


https://www.gbif.org/species/search?q=
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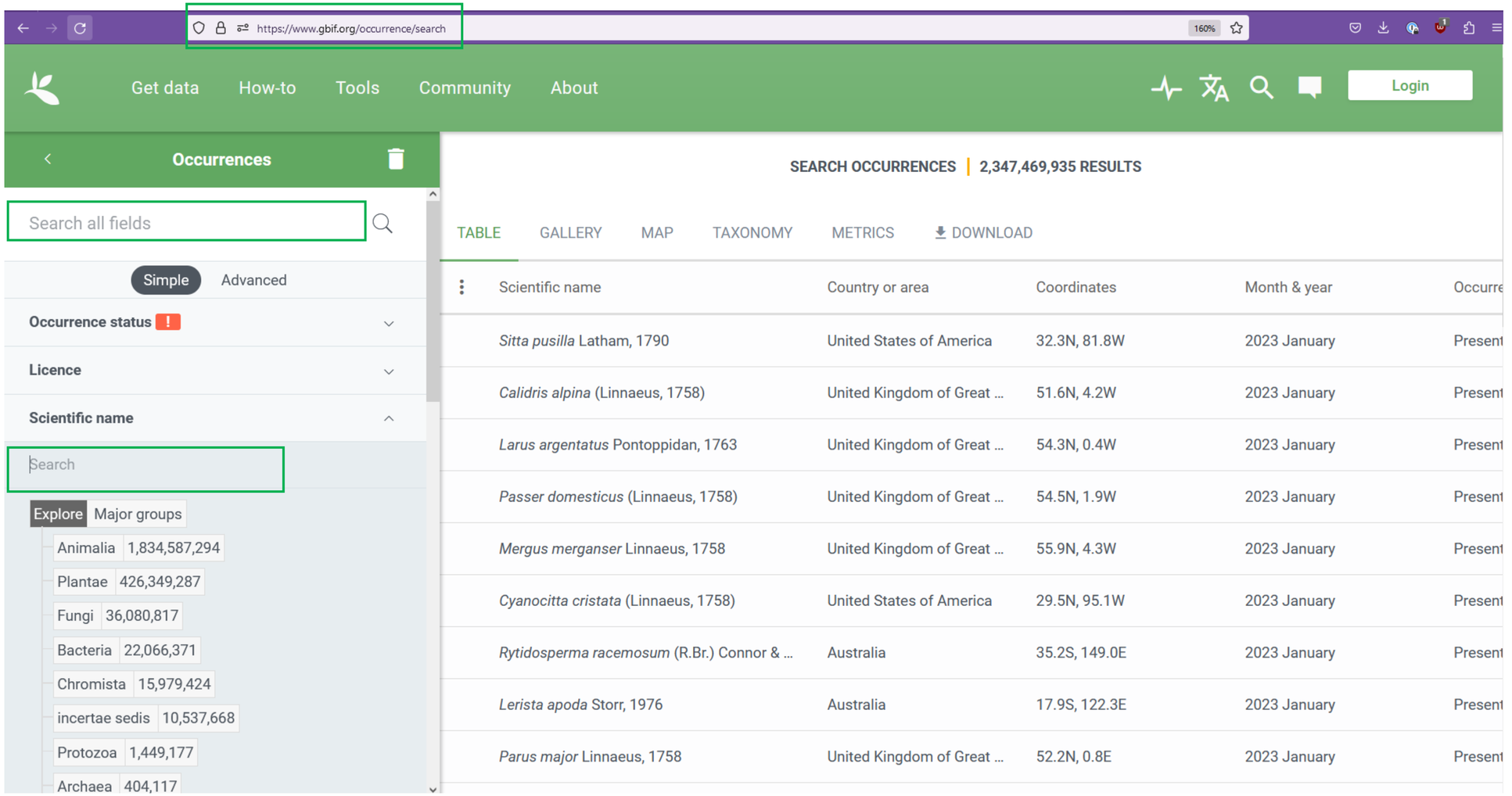
Issues and flags
You are searching for species in the GBIF taxonomy.
SEARCH ACROSS CHECKLISTS
SEARCH SPECIES | 7,651,854 RESULTS
BACKBONE
ALL CHECKLISTS
Animalia
Kingdom
Accepted Kingdom 1,834,450,355 occurrences
Archaea
Kingdom
Accepted Kingdom 404,117 occurrences
Bacteria
Kingdom
Accepted Kingdom 22,066,369 occurrences
Type here to search
DAN
09:03
17-05-2023

Names on GBIF.org | searching occurrences



https://www.gbif.org/occurrence/search

Matching names on GBIF.org

The match function will do a

- fuzzy matching on canonical names
- generates candidate matches
- the scientific authorships are excluded for the first step of the matching
- the resulting matches are then scored according to their taxonomy, authorship, status and rank.

Match API

query

Name: Agathis montana
Kingdom: Plantae

Queries with Lucene fuzzy search system

Normalized and indexed canonical Scientific Names

Canonical scientific Name	Authorship	Kingdom	…
Anas platyrhynchos	Linnaeus, 1758	Animalia	
Agathis montana	Shestakov, 1932	Animalia	
Agathis montana	de Laub.	Plantae	
Agathon montanus	(Kitakami, 1931)	Animalia	
Agallis montana	Phil.	Plantae	
…	…	…	

Compute taxonomy, authorship, status and rank scores

Normalized and indexed taxonomy, Authorship, rank, etc.

Canonical scientific Name	Authorship	Kingdom	…
Agathis montana	Shestakov, 1932	Animalia	
Agathis montana	de Laub.	Plantae	
Agathon montanus	(Kitakami, 1931)	Animalia	
Agallis montana	Phil.	Plantae	

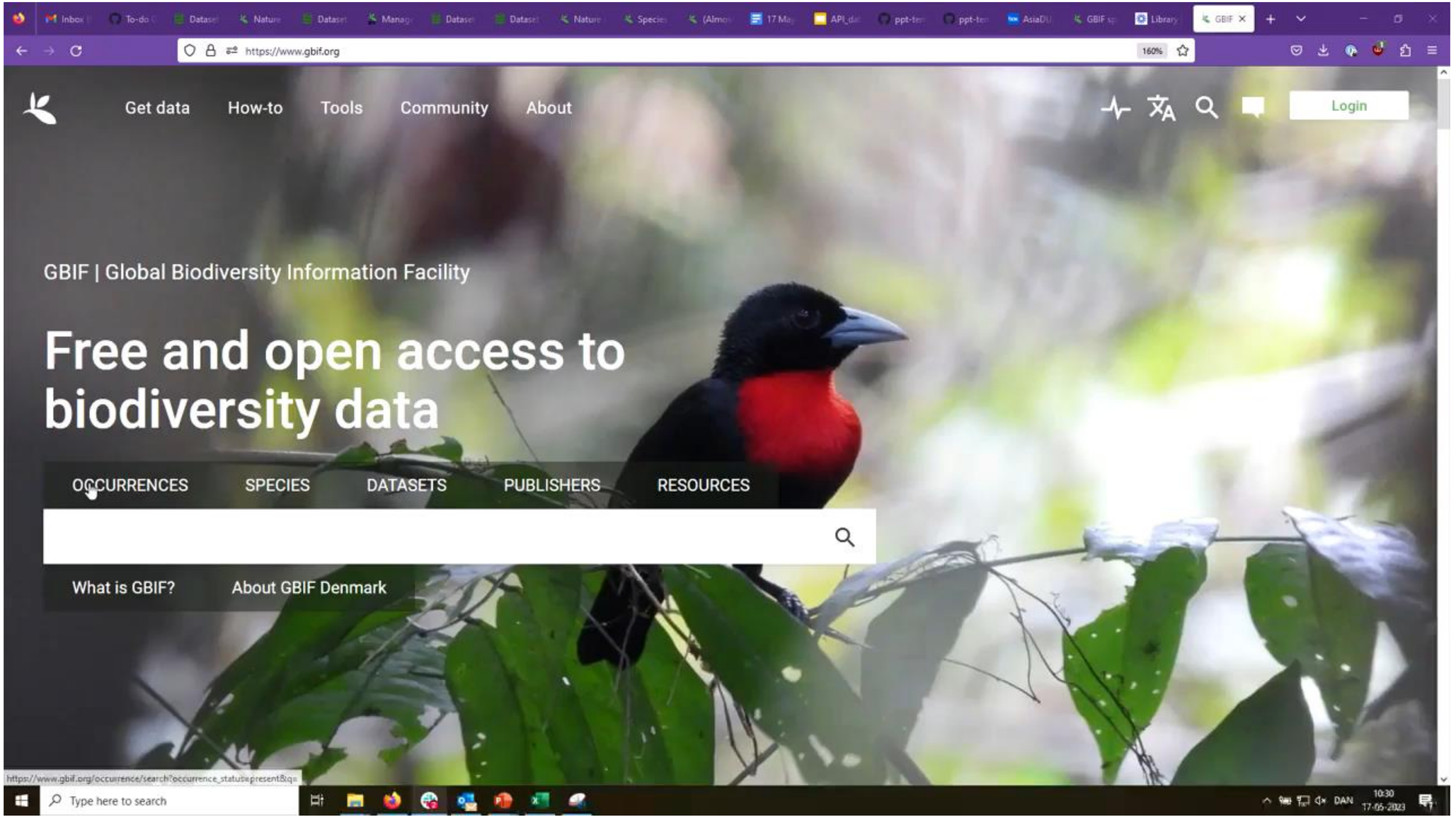
Returns main match and alternatives or no match if the scores are the same

Main match: Agathis montana de Laub.

Alternatives:

1. Agallis montana Phil.
2. Agathis montana Shestakov, 1932
3. Agathon montanus (Kitakami, 1931

https://data-blog.gbif.org/post/gbif-species-api/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The match function outputs data quality flags

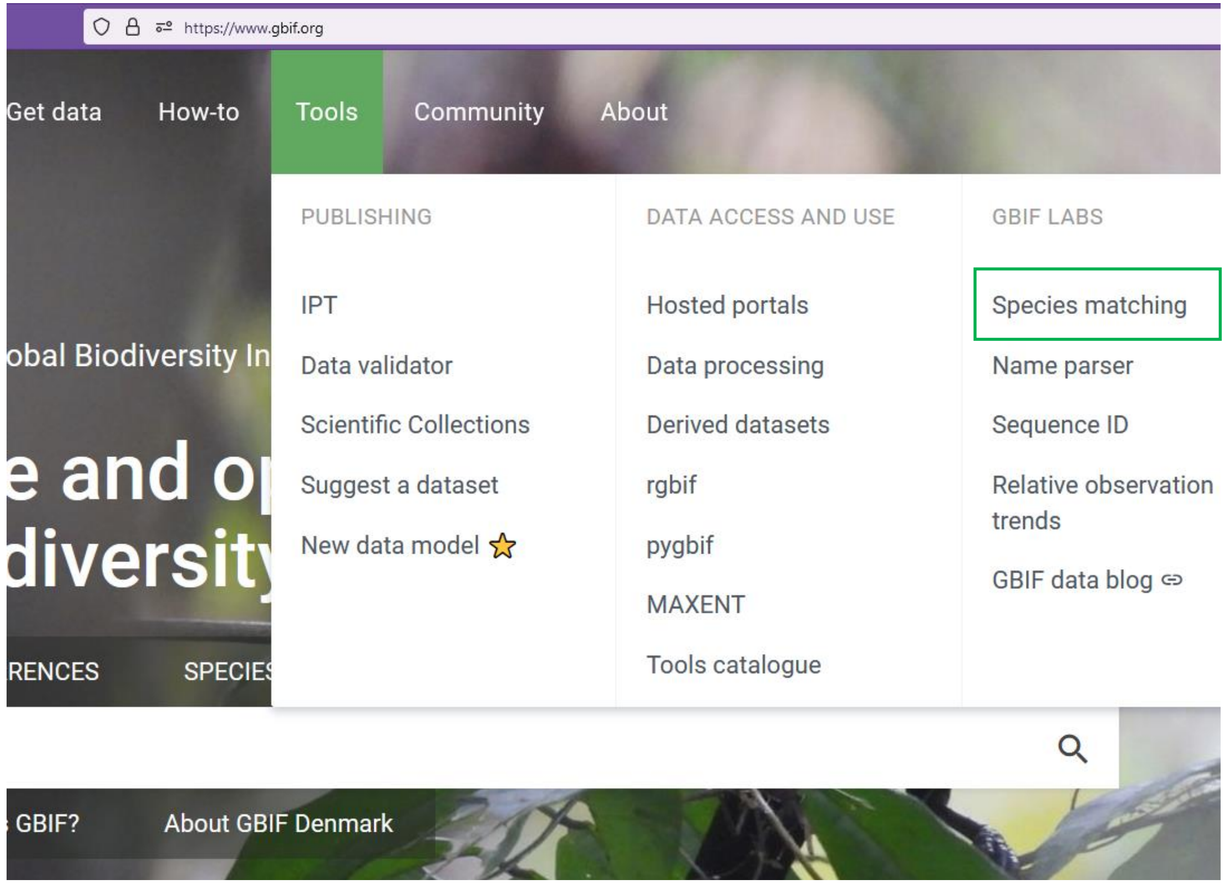
Data quality flags are associated with occurrences and as outputs of downloads or API calls. Relevant flags for names are:

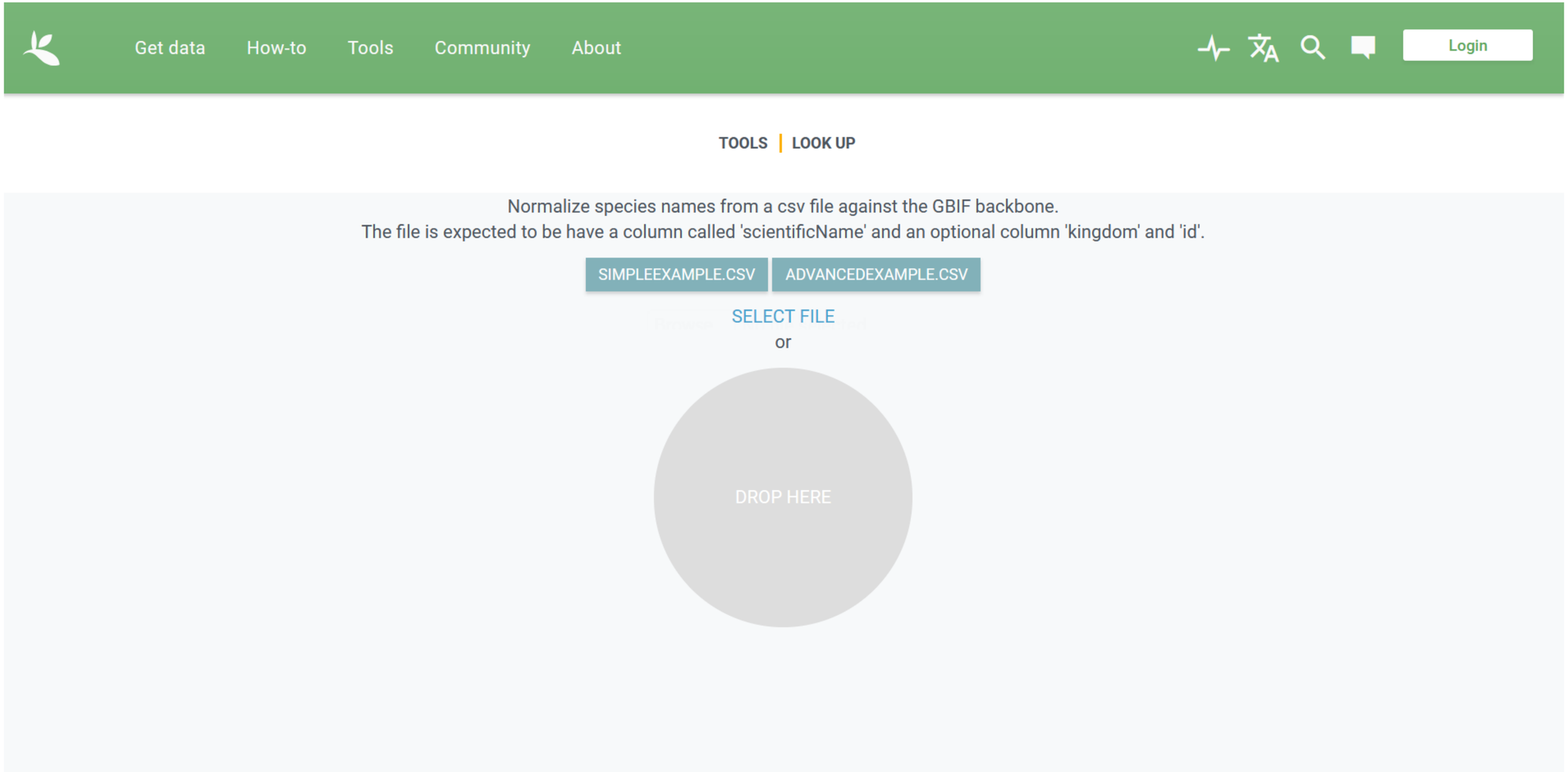
- Taxon match fuzzy
- Taxon match higher rank
- Taxon match none

https://data-blog.gbif.org/post/issues-and-flags/

THE SPECIES MATCHING TOOL

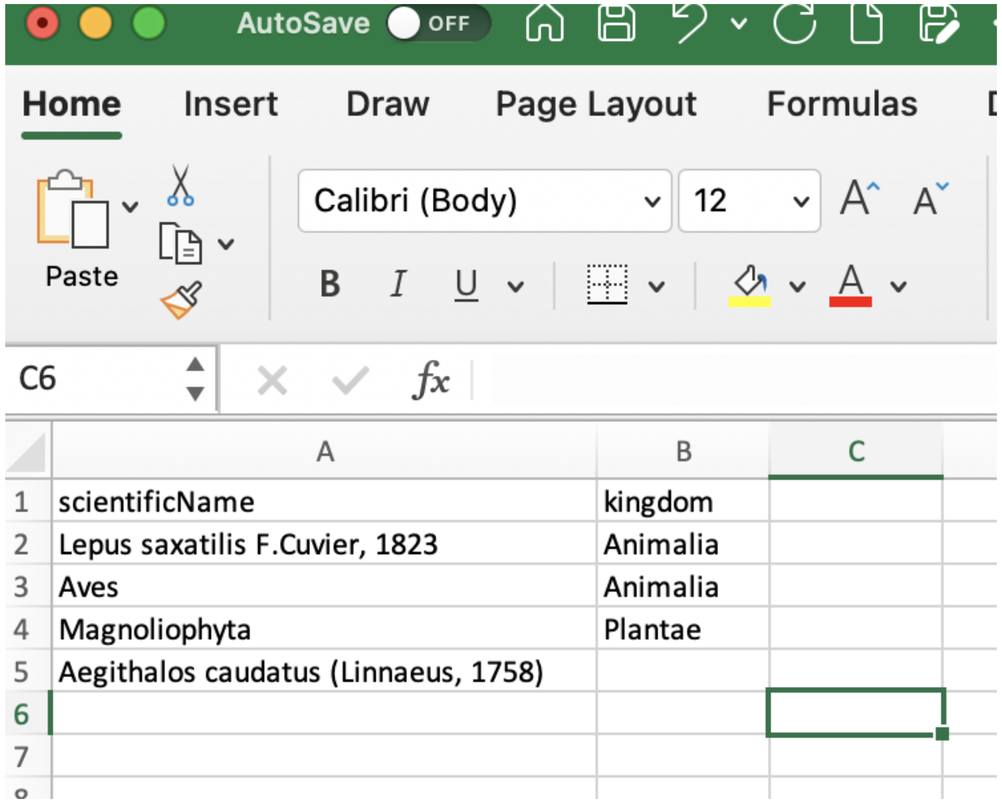
A wrapper around the Species Match API

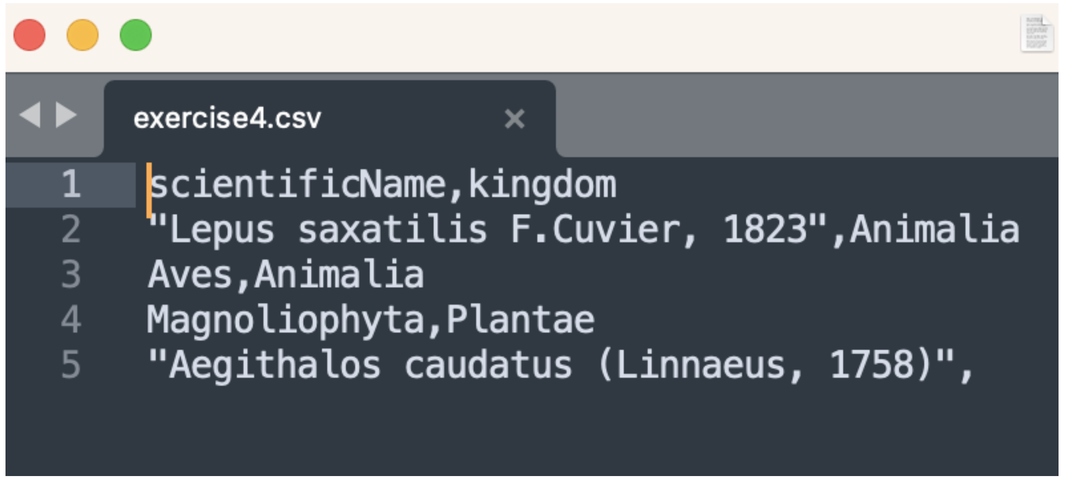




https://www.gbif.org/tools/species-lookup

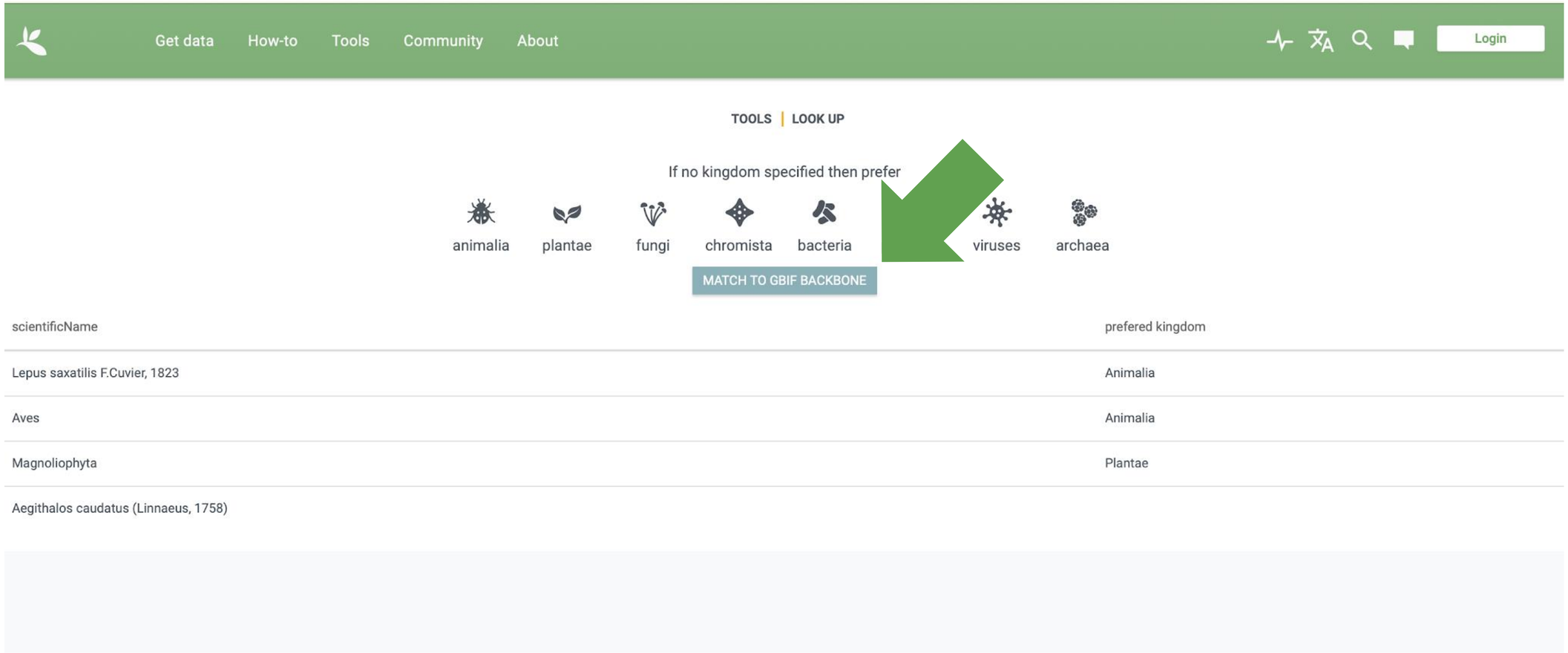
THE SPECIES MATCHING TOOL | formatting the input file





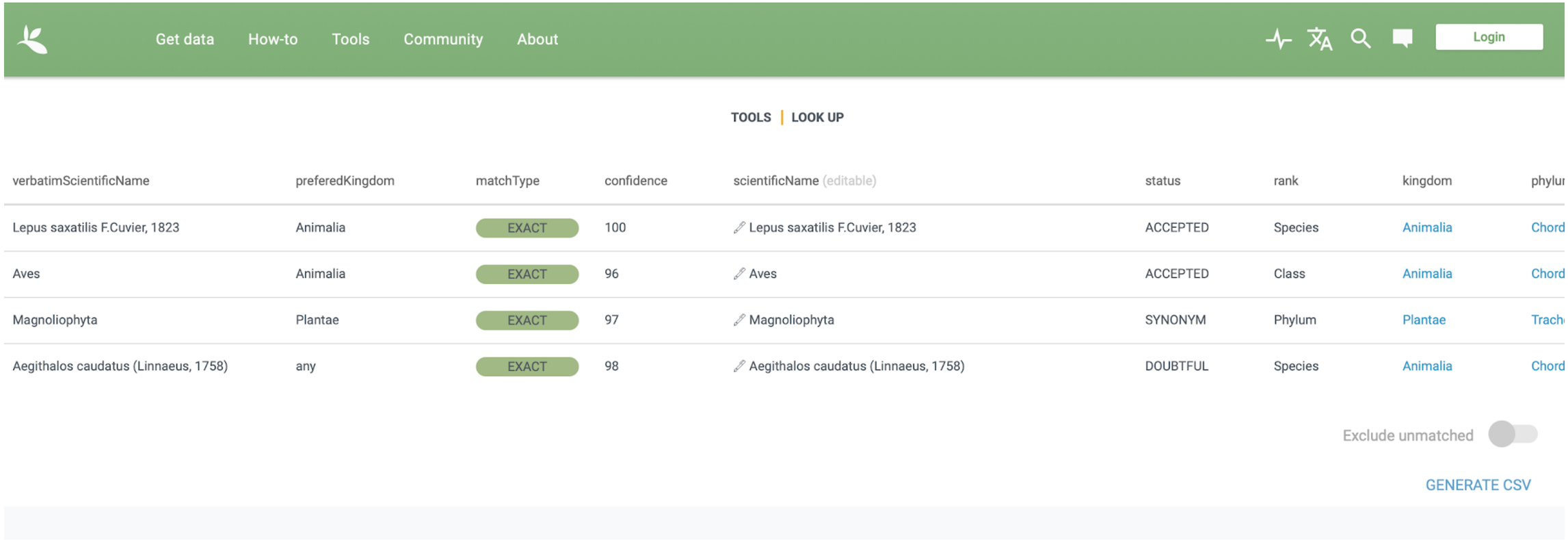
https://www.gbif.org/tools/species-lookup

THE SPECIES MATCHING TOOL | interface after upload



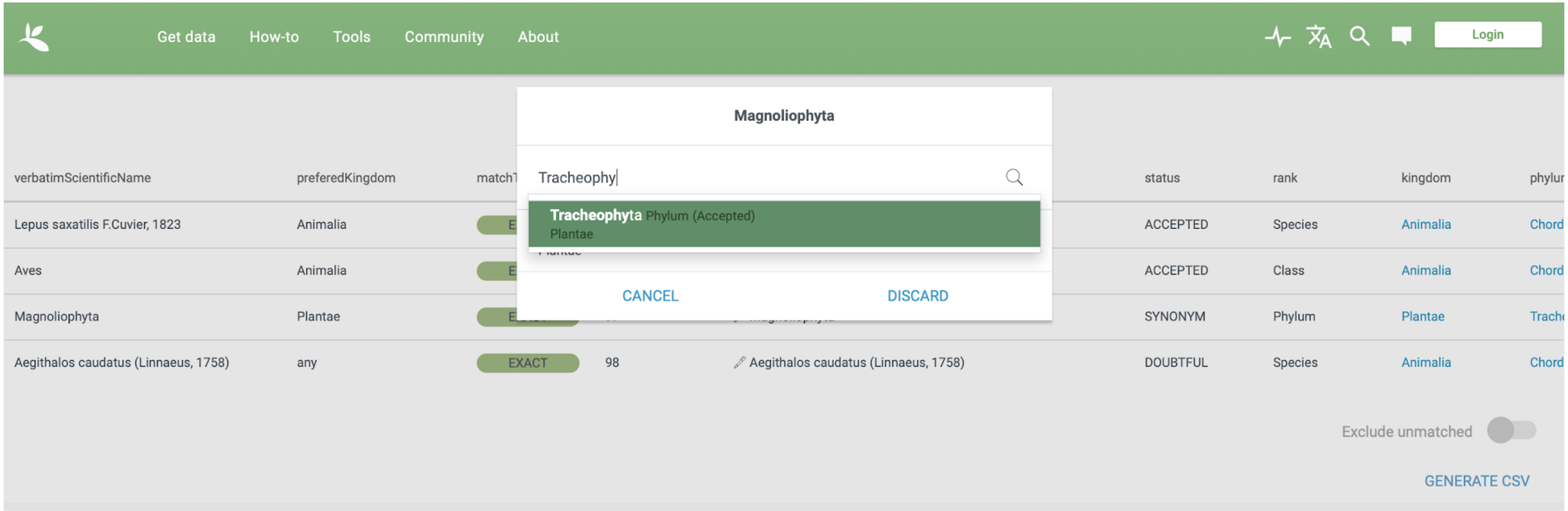
https://www.gbif.org/tools/species-lookup

THE SPECIES MATCHING TOOL | interface after matching



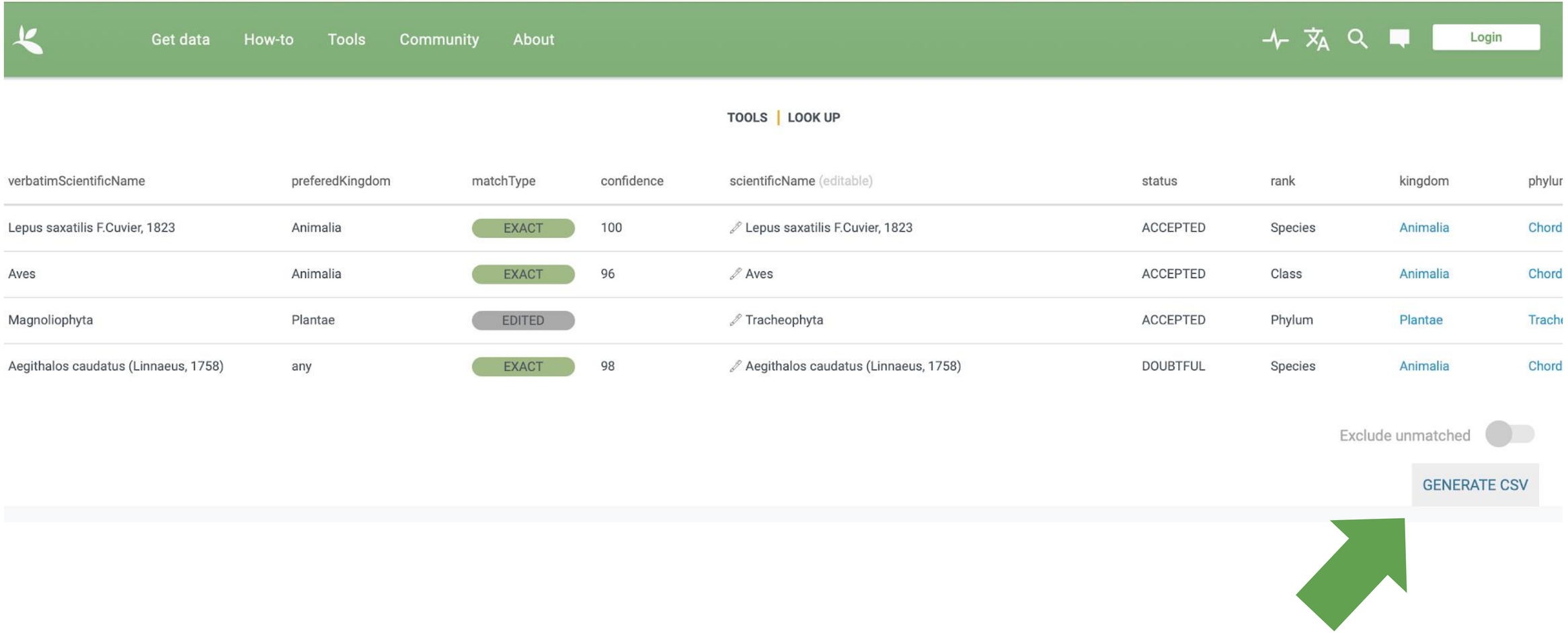
https://www.gbif.org/tools/species-lookup

THE SPECIES MATCHING TOOL | example editing



https://www.gbif.org/tools/species-lookup

THE SPECIES MATCHING TOOL | download result



https://www.gbif.org/tools/species-lookup

THE SPECIES MATCHING TOOL | results

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	occurrenceId	verbatimScientificName	scientificName	key	matchType	confidence	status	rank	kingdom	phylum	class	order	family	genus	species
2		Lepus saxatilis F.Cuvier, 1823	Lepus saxatilis F.Cuvier, 1823	2436775	EXACT	100	ACCEPTED	SPECIES	Animalia	Chordata	Mammalia	Lagomorpha	Leporidae	Lepus	Lepus saxa
3		Aves	Aves	212	EXACT	96	ACCEPTED	CLASS	Animalia	Chordata	Aves				
4		Magnoliophyta	Tracheophyta	7707728	EDITED		ACCEPTED	PHYLUM	Plantae	Tracheophyta					
5		Aegithalos caudatus (Linnaeus, 1758)	Aegithalos caudatus (Linnaeus, 1758)	2495000	EXACT	98	DOUBTFUL	SPECIES	Animalia	Chordata	Aves	Passeriformes	Aegithalidae	Aegithalos	Aegithalos
6															
7															

https://www.gbif.org/tools/species-lookup