Accessing Taxonomic Data

Paul Oldham

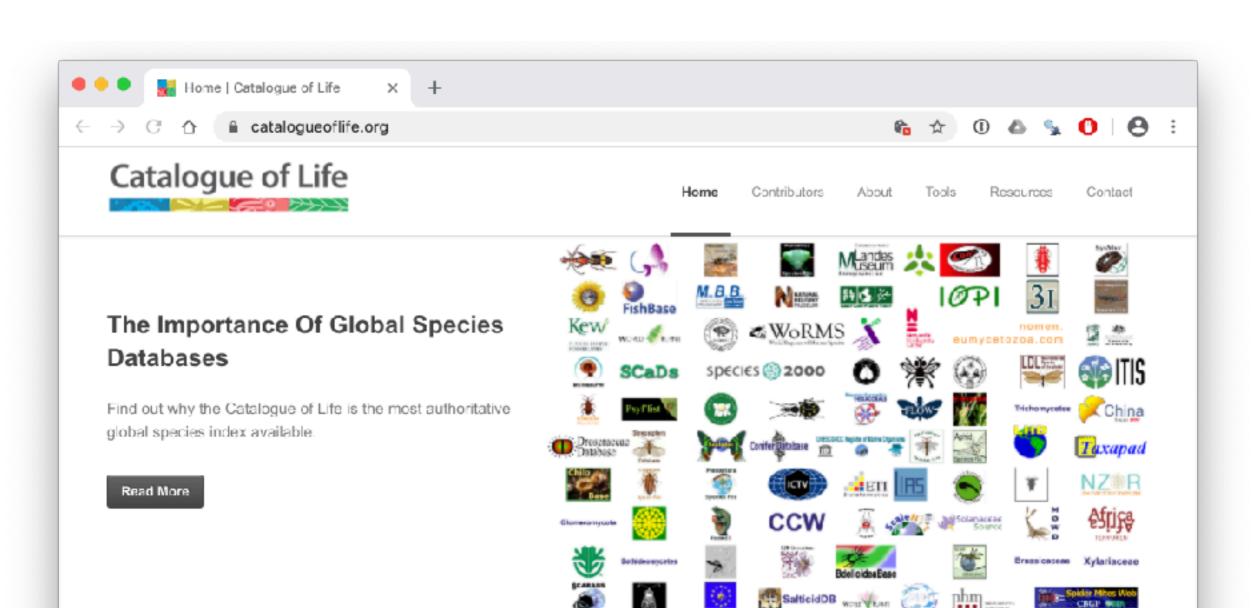# You Cant Monitor Something you Don't Know about

- The availability of taxonomic information about a country is one of the single most important data sources for ABS monitoring.

- If a country lacks information on species within a country it is not realistic to imagine a country will be able to monitor access and benefit-sharing with much success.

- Using Taxonomic Data is about more than monitoring compliance with access and benefit sharing rules. It provides a window into the role of biodiversity in science & innovation.

Taxonomic Data

- Taxonomic names are in reality quite tricky to work with because:

  - They change over time (as taxonomists reallocate species)

  - Spelling and punctuation may vary (a lot)

  - The rise of molecular taxonomy is leading to significant revisions and advances using short segments of DNA as signatures, known as DNA barcoding (Barcode of Life)

  - Environmental samples (metagenomics) from soil and water are leading to a growing number of cases where the species is not actually known, except in the broadest terms known but useful properties may be identified.

Sources of Taxonomic Information

- One challenge with taxonomic data is that it may be stored in multiple locations in different forms (in spreadsheets, pdf or word documents and so on). This was part of the challenge we faced here in India and it is the same everywhere else.

- I want to highlight three important developments

  - The Catalogue of Life as the main authority for valid taxonomic names

  - The Global Names Initiative as the main sources for extremely messy names as used by humans and tools for identifying and cleaning them up;

  - The Global Biodiversity Information Facility (GBIF)

- In this session we will get to grips with some of these resources focusing on GBIF.

catalogueoflife.org

Catalogue of Life

The Importance Of Global Species Databases

Find out why the Catalogue of Life is the most authoritative global species index available.

Read More

For Catalogue of Life a new infrastructure is currently being developed in the CoL+ project that will enable us to serve you with improved e-services. These will gradually replace the current ones during the second half of 2020. Stay tuned!

CoL assembly is migrating to new infrastructure, next monthly edition expected at the end of 2019

Welcome to the Catalogue of Life website. The gateway to our online database of the world's known species of animals, plants, fungi and micro-organisms.

Catalogue of Life: 2019 Annual Checklist

A referenceable snapshot once per year

Next annual publication date: May 2020

Access

gna

Global Names Architecture

Scientific Names Services

The Global Names Architecture (GNA) is a system of web-services which helps people to register, find, index, check and organize biological scientific names and interconnect on-line information about species.

Resolve

Check if the names you have are real, spelled right, and currently used.

Resolver →

Find

Discover scientific names in texts, PDFs, and even images you took in a Natural History Museum.

Name Finder →

Register

If you are a zoologist -- you can officially register species electronically.

Zoobank →

Index   Repositories   Name Parser   Log In   Sign up   Help API

Global Names Index BETA
Scientific Names Exchange (about)

Index of Scientific Names

Index of scientific names provided by all Name Repositories (17,275,622 name strings total)

[Search box   ] Search   Help

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Results 1 – 17 of total 17 for *'Azadirachta Indica'*

Azadirachta indica
Azadirachta indica A. Juss.
Azadirachta indica A. Juss. var. siamensis Valeton
Azadirachta indica A.H.L. Jussieu
Azadirachta indica A.Juss.
Azadirachta indica A.Juss. subsp. vartakii Kothari, Londhe & N.P.Singh
Azadirachta indica Adr. Juss.
Azadirachta indica Juss.
Azadirachta indica Juss. var. siamensis Val.
Azadirachta indica minor
Azadirachta indica minor Link
Azadirachta indica siamensis
Azadirachta indica siamensis Lindl., 1875
Azadirachta indica siamensis Maiden & Blakely
Azadirachta indica subsp. vartakii
Azadirachta indica subsp. vartakii Kothari, Londhe & N.P.Singh
Azadirachta indica var. indica

Azadirachta indica

Parsed information (show)

Lexical groups

Azadirachta indica A. Juss.
Azadirachta indica A. Juss. var. siamensis Valeton
Azadirachta indica
Azadirachta indica A.H.L. Jussieu
Azadirachta indica A.Juss.
Azadirachta indica Adr. Juss.
Azadirachta indica Juss.
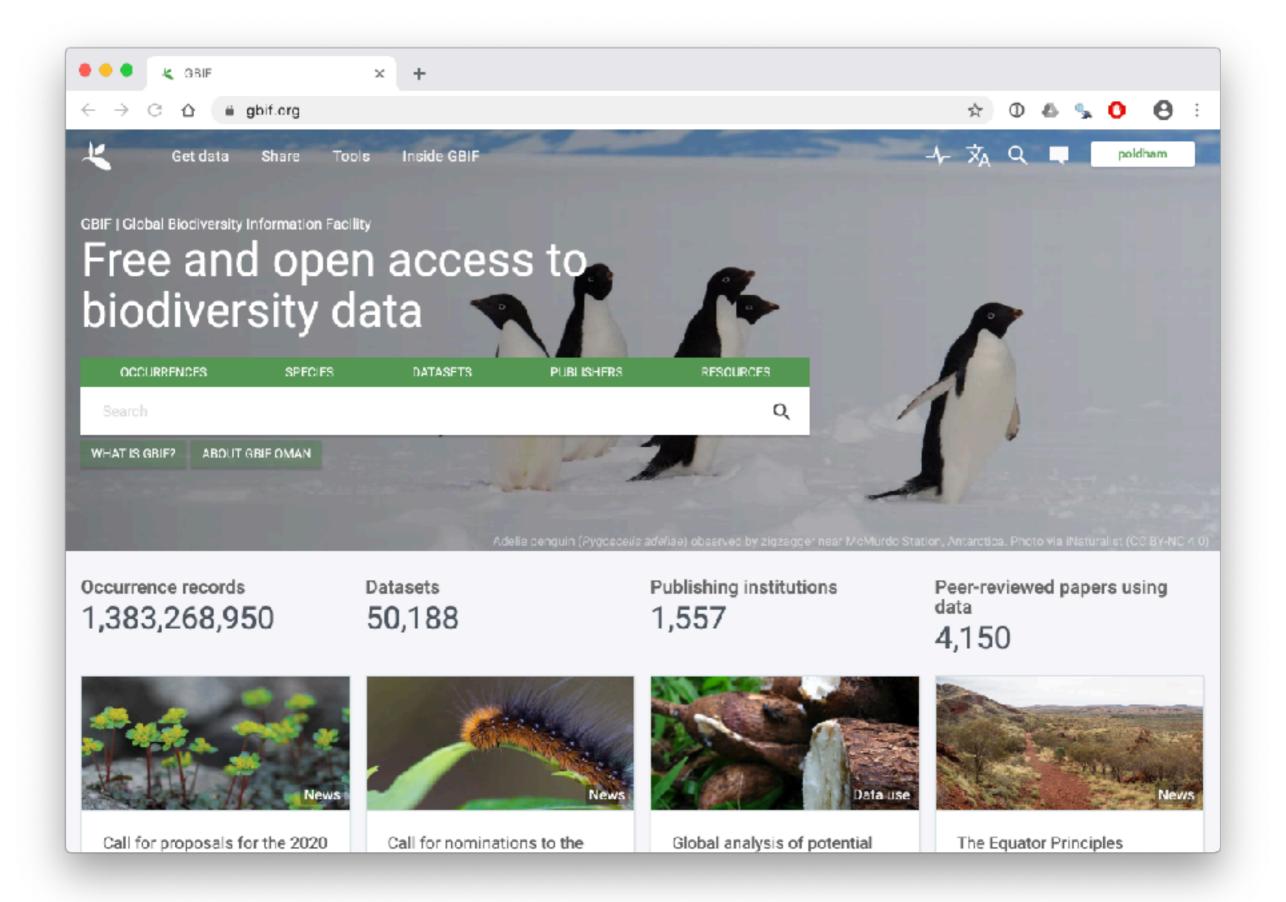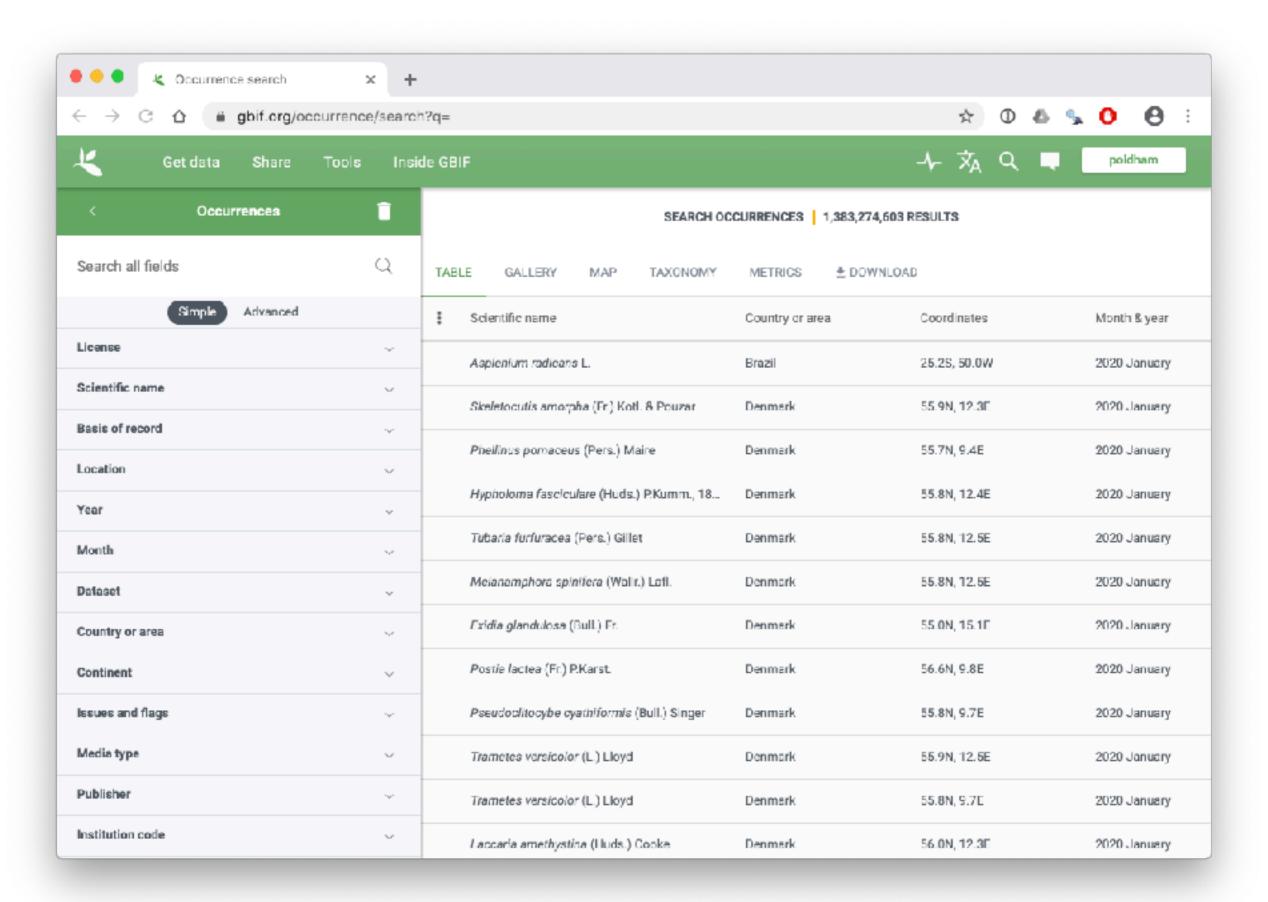
Logo	Data Source	Records #
	GBIF	14 records
	uBio NameBank	1 record
	CU*STAR	1 record
	Wikipedia in EOL	1 record
	Catalogue Of Life	1 record

Get data   Share   Tools   Inside GBIF   poldham

GBIF | Global Biodiversity Information Facility

Free and open access to biodiversity data

OCCURRENCES	SPECIES	DATASETS	PUBLISHERS	RESOURCES

Search 🔍

WHAT IS GBIF?   ABOUT GBIF OMAN

Adelie penguin (Pygoscelis adeliae) observed by zigzagger near McMurdo Station, Antarctica. Photo via iNaturalist (CC BY-NC 4.0)

Occurrence records	Datasets	Publishing institutions	Peer-reviewed papers using data
1,383,268,950	50,188	1,557	4,150

News   News   Data use   News

Call for proposals for the 2020   Call for nominations to the   Global analysis of potential   The Equator Principles

Get data   Share   Tools   Inside GBIF

poldham

Occurrences

Search all fields

Simple   Advanced

License ⌄

Scientific name ⌄

Basis of record ⌄

Location ⌄

Year ⌄

Month ⌄

Dataset ⌄

Country or area ⌄

Continent ⌄

Issues and flags ⌄

Media type ⌄

Publisher ⌄

Institution code ⌄

SEARCH OCCURRENCES | 1,383,274,603 RESULTS

TABLE   GALLERY   MAP   TAXONOMY   METRICS   ⬇ DOWNLOAD

Scientific name	Country or area	Coordinates	Month & year
Asplenium radicans L.	Brazil	25.2S, 50.0W	2020 January
Skeletocutis amorpha (Fr.) Kotl. & Pouzar	Denmark	55.9N, 12.3E	2020 January
Phellinus pomaceus (Pers.) Maire	Denmark	55.7N, 9.4E	2020 January
Hypholoma fasciculare (Huds.) P.Kumm., 18...	Denmark	55.8N, 12.4E	2020 January
Tubaria furfuracea (Pers.) Gillet	Denmark	55.8N, 12.5E	2020 January
Melanomphora spinifera (Wahr.) Lötl.	Denmark	55.8N, 12.5E	2020 January
Exidia glandulosa (Bull.) Fr.	Denmark	55.0N, 15.1E	2020 January
Postia lactea (Fr.) P.Karst.	Denmark	56.6N, 9.8E	2020 January
Pseudoclitocybe cyathiformis (Bull.) Singer	Denmark	55.8N, 9.7E	2020 January
Trametes versicolor (L.) Lloyd	Denmark	55.9N, 12.5E	2020 January
Trametes versicolor (L.) Lloyd	Denmark	55.8N, 9.7E	2020 January
Laccaria amethystina (Huds.) Cooke	Denmark	56.0N, 12.3E	2020 January

gbif.org/occurrence/search?country=IN

Get data   Share   Tools   Inside GBIF   poldham

Occurrences 🗑 1

Basis of record ⌄

Location ⌄

Year ⌄

Month ⌄

Dataset ⌄

Country or area ⌃

☑ India   13,354,264

Search

☐ United States of America   462,391,845
☐ Australia   90,897,402
☐ Sweden   85,221,828
☐ France   79,847,624
☐ United Kingdom   73,166,297
☐ Canada   70,935,164
☐ Netherlands   49,241,408
☐ Spain   38,103,177
☐ Belgium   35,810,131
☐ Germany   33,390,231

CLEAR

SEARCH OCCURRENCES | 13,354,264 RESULTS

TABLE   GALLERY   MAP   TAXONOMY   METRICS   ⬇ DOWNLOAD

⋮	Scientific name	Country or area	Coordinates	Month & year
	Macoidenia palumba	India	10.3N, 77.2E	2020 January
	Pseudomicronia advocataria Walker	India	10.3N, 77.2E	2020 January
	Artocarpus heterophyllus Lam.	India	19.2N, 72.9E	2020 January
	Nerium oleander L.	India	8.7N, 77.1E	2020 January
	Turdoides malcolmi (Sykes, 1832)	India	13.6N, 79.4E	2020 January
	Riptortus pedestris (Fabricius, 1775)	India	18.6N, 73.7E	2020 January
	Simplicia bimarginata (Walker, 1860)	India	10.3N, 77.2E	2020 January
	Funambulus palmarum (Linnaeus, 1766)	India	13.6N, 79.4E	2020 January
	Hypolimnas misippus (Linnaeus, 1764)	India	17.3N, 78.7E	2020 January
	Mimosa pudica L.	India	9.4N, 76.4E	2020 January
	Macaca radiata (É.Geoffroy Saint-Hilaire, 18...	India	13.6N, 79.3E	2020 January
	Actias selene Hübner, 1806	India	8.7N, 77.1E	2020 January

South Africa

Get data   Share   Tools   Inside GBIF   poldham

< **Occurrences** 🗑 1

Search all fields 🔍

Simple Advanced

License ⌄

Scientific name ⌄

Basis of record ⌄

Location ⌄

Year ⌄

Month ⌄

Dataset ⌄

Country or area ⌄

☑ Kenya

Continent ⌄

Issues and flags ⌄

Media type ⌄

Publisher ⌄

SEARCH OCCURRENCES | 1,742,992 RESULTS

TABLE   GALLERY   MAP   TAXONOMY   METRICS   ⬇ DOWNLOAD

DOWNLOAD OPTIONS

	Raw data	Interpreted data	Multimedia	Coordinates	Format	Estimated data size
⬇ SIMPLE	✗	✔	✗	✔ (if available)	Tab-delimited CSV ⑦	794 MB (117 MB zipped for download)
⬇ DARWIN CORE ARCHIVE	✔	✔	✔ (links)	✔ (if available)	Tab-delimited CSV ⑦	2 GB (206 MB zipped for download)
⬇ SPECIES LIST	✗	✔	✗	✗	Tab-delimited CSV ⑦	

DOWNLOAD REPORT

Total: 1,742,992

License: CC BY-NC 4.0

Year range: 1700–2020
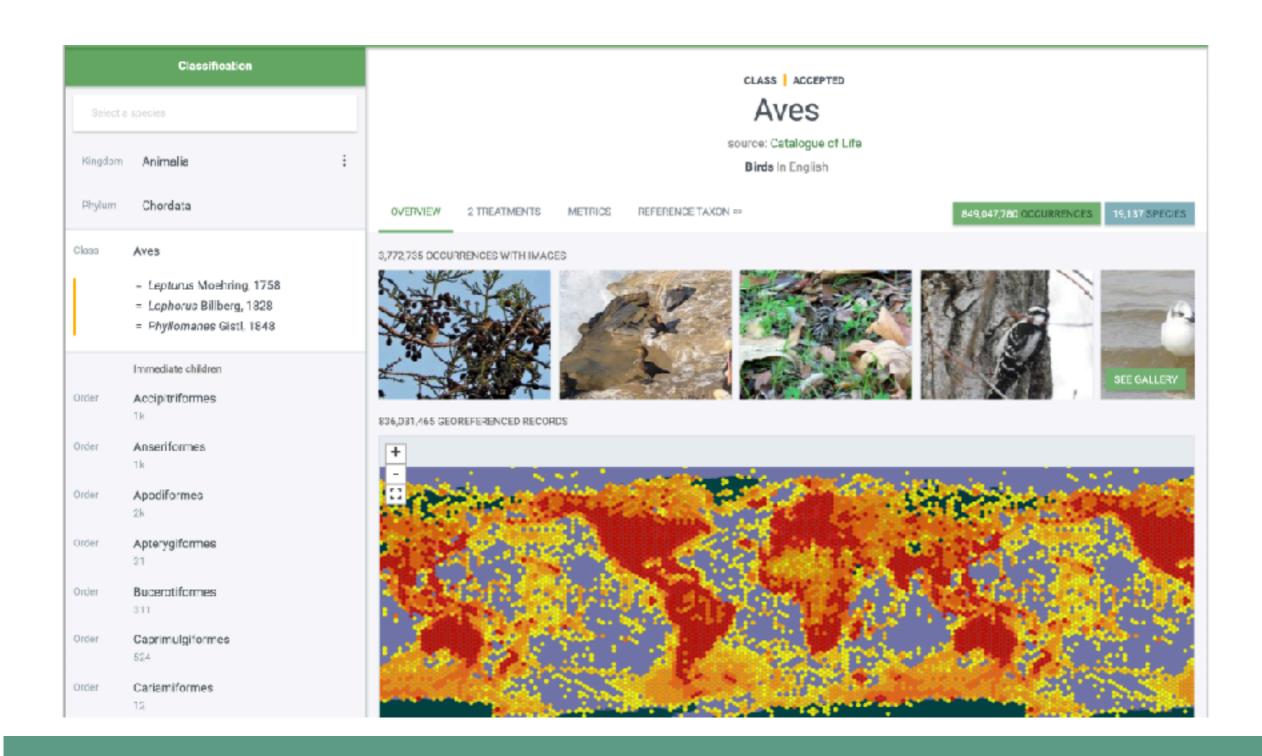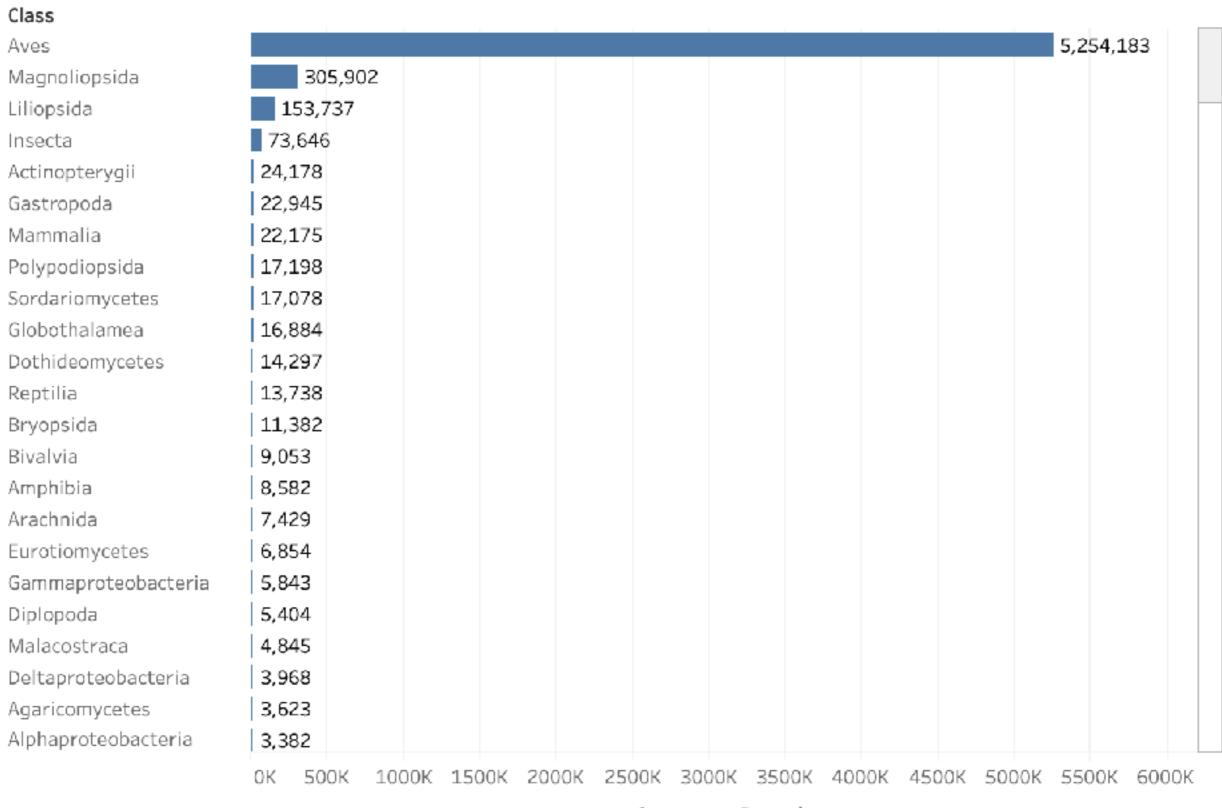
GBIF Occurrence records are dominated by birds (class Aves)

Bird Occurrence Records Overwhelm the Country Data

Class

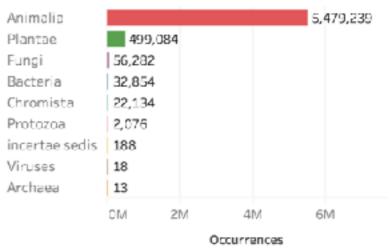| Class	Occurrence Records
Aves	5,254,183
Magnoliopsida	305,902
Liliopsida	153,737
Insecta	73,646
Actinopterygii	24,178
Gastropoda	22,945
Mammalia	22,175
Polypodiopsida	17,198
Sordariomycetes	17,078
Globothalamea	16,884
Dothideomycetes	14,297
Reptilia	13,738
Bryopsida	11,382
Bivalvia	9,053
Amphibia	8,582
Arachnida	7,429
Eurotiomycetes	6,854
Gammaproteobacteria	5,843
Diplopoda	5,404
Malacostraca	4,845
Deltaproteobacteria	3,968
Agaricomycetes	3,623
Alphaproteobacteria	3,382

Occurrence Records

Bird Occurrence Records (India 2018 data)

Map

Kingdom

Kingdom	Occurrences
Animalia	5,479,239
Plantae	499,084
Fungi	56,282
Bacteria	32,854
Chromista	22,134
Protozoa	2,076
incertae sedis	188
Viruses	18
Archaea	13

Species

Species	Occurrences
Corvus splendens	110,349
Acridotheres tristis	108,218
Halcyon smyrnensis	86,301
Corvus macrorhynchos	82,411
Pycnonotus cafer	80,693
Dicrurus macrocercus	79,955
Ardeola grayii	78,672
Columba livia	72,838
Psittacula krameri	71,391
Milvus migrans	68,173
Streptopelia chinensis	65,195

Map

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...a krameri	71,391
...igrans	69,173
Streptopelia chinensis	65,195
Orthotomus sutorius	64,219
Copsychus saularis	64,062
Bubulcus ibis	63,818
Pycnonotus jocosus	63,439
Eudynamys scolopaceus	62,797

✓ Keep Only   ✕ Exclude   🔗 ▾   ⊘ ▾   ⦙⦙⦙

Kingdom:	Plantae
Species:	Boehmeria ternifolia
Decimallatitude:	23.0
Decimallongitude:	80.5

DSI Lookup
Google Lookup
Patent Lookup
Scholarship Lookup
Taxonomy Lookup

Google

Anaphalis royleana India

About 2,840 results (0.32 seconds)

✳ www.flowersofindia.net › catalog › slides ▾

Anaphalis royleana var. cana - Flowers of India

Aug 15, 2006 - Linear-Leaf Pearly Everlasting is a perennial herb, up to 35 cm high, much branched from the base, stem slender, woody at base, woolly to ...

G sites.google.com › site › species › asteraceae › asteroideae › gnaphalieae

Anaphalis royleana - efloraofindia - Google Sites

DV :: 02 AUG 12 - 0837 :: **Anaphalis** ¿ **royleana** ? at Valley of Flowers: 2 AUG 12 ... named for John Forbes Royle, British botanist and physician in **India** .

G sites.google.com › site › efloraofindia › species › asteraceae › anaphalis

Anaphalis (Asteroideae- Gnaphalieae) - efloraofindia

Anaphalis royleana ... **Anaphalis** species- Eravikulam WLS, Munnar, Kerala ... document (Karthikeyan et al., 2009) following species of **Anaphalis** occur in **India**:.

🌐 indiabiodiversity.org › species › show ▾

Anaphalis royleana DC. | Species | India Biodiversity Portal

Welcome to the **India** Biodiversity Portal - A repository of information designed to ... Magnoliopsida. Asterales. Asteraceae. **Anaphalis**. **Anaphalis royleana** DC.

Your Turn!