

# Package ‘specieshindex’

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**Type** Package

**Title** How (scientifically) popular is a given species?

**Version** 0.4.1

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**Description** Finds the h-index of a species.

**Depends** R ( $\geq$  3.5.0)

**LazyData** true

**Imports** rscopus,

wosr,  
rbace,  
taxize,  
dplyr,  
tidyr,  
data.table,  
httr,  
XML,  
ggplot2,  
ggpubr

**Suggests** devtools,

httpptest,  
knitr,  
RefManageR,  
rmarkdown,  
roxygen2,  
testthat ( $\geq$  3.0.0)

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**URL** <https://github.com/jessicatytam/specieshindex>

**RoxygenNote** 7.1.2

**VignetteBuilder** knitr

Encoding UTF-8  
Config/testthat/edition 3

R topics documented:

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Allindices	<i>Index summary</i>
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Description

This function returns a dataframe of the summary of all of the indices.

Usage

```
Allindices(data, genus, species, sourcetype = 0)
```

Arguments

- data           The dataframe generated from [Fetch](#).
- genus          Genus classification from the binomial name.
- species        Species classification from the binomial name.
- sourcetype     Source type; default is 0, enter 1 to add SourceType variables.

Value

A datarame of all of the indices in the package.

Examples

```
data(Woylie)
Allindices(Woylie,
           genus = "genus_name", species = "species_name",
           sourcetype = 0)
```

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Count	<i>Search count of literature</i>
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Description

This function counts the total number of search results from Scopus, Web of Science, or BASE. A check will be conducted via [gnr\\_resolve](#) to validate the genus and species names.

Usage

```
Count(db, search, level, genus, species, synonyms, additionalkeywords)
```

Arguments

db	Literature database. Scopus ("scopus"), Web of Science ("wos"), or Base ("base").
search	Search fields. Title only ("t") or title, abstract, and keywords ("tak").
level	Taxonomic level. Genus ("genus") or species ("species").
genus	Genus classification from the binomial name.
species	Species classification from the binomial name.
synonyms	Alternate species names.
additionalkeywords	Optional search terms.

Value

Search count of the genus or species with the given **genus** and/or **species**.

## Examples

```
## Not run:
Count(db = "scopus",
      search = "t",
      level = "species",
      genus = "Osphranter", species = "rufus")

## End(Not run)
## Not run:
Count(db = "scopus",
      search = "t",
      level = "species",
      genus = "Osphranter", species = "rufus",
      synonyms = "Macropus rufus",
      additionalkeywords = "conserv*")

## End(Not run)
```

---

Fetch

*Fetch citation records*

---

## Description

This function fetches citation information from Scopus, Web of Science, or BASE. Duplicates are to be removed by the user after fetching the data.

## Usage

```
Fetch(
  db,
  search,
  level,
  genus,
  species,
  synonyms,
  additionalkeywords,
  language = 0
)
```

## Arguments

<b>db</b>	Literature database. Scopus ("scopus"), Web of Science ("wos"), or Base ("base").
<b>search</b>	Search fields. Title only ("t") or title, abstract, and keywords ("tak").
<b>level</b>	Taxonomic level. Genus ("genus") or species ("species").
<b>genus</b>	Genus classification from the binomial name.
<b>species</b>	Species classification from the binomial name.

synonyms	Alternate species names.
additionalkeywords	Optional search terms.
language	Language of the paper; default is 0, enter 1 to retrieve the variable. Scopus only.

### Value

A dataframe of the genus' or species' citation records with the given **genus** and/or **species**.

### Examples

```
## Not run:
Fetch(db = "scopus",
      search = "t",
      level = "species",
      genus = "Osphranter", species = "rufus")

## End(Not run)
## Not run:
Fetch(db = "scopus",
      search = "t",
      level = "species",
      genus = "Osphranter", species = "rufus",
      synonyms = "Macropus rufus",
      additionalkeywords = "conserv*")

## End(Not run)
```

---

getYear	<i>Extract year</i>
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---

### Description

Extracts the year of each publication of the output from any of the Fetch functions and counts the number of publications each year.

### Usage

```
getYear(data, genus, species)
```

### Arguments

data	Output from any of the fetch function.
genus	Genus classification from the binomial name.
species	Species classification from the binomial name.

**Value**

A dataframe with the year and frequency of the publications

**Examples**

```
getYear(data = Woylie,
        genus = "Bettongia", species = "penicillata")
```

---

Koala	<i>Koala dataset</i>
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**Description**

Citation records of koala (*Phascolarctos cinereus*) from Scopus. Data was retrieved on 10 July 2020.

**Usage**

Koala

**Format**

A data frame with 773 rows and 20 variables

**Source**

<http://api.elsevier.com/content/search/scopus>

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languages	<i>Languages</i>
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**Description**

List of languages of documents found on Scopus. Data was retrieved on 9 March 2021.

**Usage**

languages

**Format**

A csv file with the complete list of languages of documents found on Scopus.

**Source**

<https://www.elsevier.com/solutions/scopus/how-scopus-works/content>

---

Platypus	<i>Platypus dataset</i>
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---

**Description**

Citation records of platypus (*Ornithorhynchus anatinus*) from Scopus. Data was retrieved on 10 July 2020.

**Usage**

Platypus

**Format**

A data frame with 321 rows and 20 variables

**Source**

<http://api.elsevier.com/content/search/scopus>

---

plotAllindices	<i>Index plot</i>
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---

**Description**

Plots the indices of a single species or combined.

**Usage**

```
plotAllindices(data)
```

**Arguments**

`data` The dataframe generated from [Allindices](#).

**Value**

ggplot

## Examples

```
W <- Allindices(Woylie,
                genus = "Bettongia", species = "penicillata")
Q <- Allindices(Quokka,
                genus = "Setonix", species = "brachyurus")
P <- Allindices(Platypus,
                genus = "Ornithorhynchus", species = "anatinus")
K <- Allindices(Koala,
                genus = "Phascolarctos", species = "cinereus")
CombineSp <- dplyr::bind_rows(W, Q, P, K)
plotAllindices(CombineSp)
```

---

plotPub

*Publication plot*

---

## Description

Plots the publication by year of a single species or combined.

## Usage

```
plotPub(data)
```

## Arguments

**data**                      The dataframe generated from [getYear](#).

## Value

ggplot

## Examples

```
extract_year_W <- getYear(data = Woylie,
                          genus = "Bettongia", species = "penicillata")
extract_year_Q <- getYear(data = Quokka,
                          genus = "Setonix", species = "brachyurus")
extract_year_P <- getYear(data = Platypus,
                          genus = "Ornithorhynchus", species = "anatinus")
extract_year_K <- getYear(data = Koala,
                          genus = "Phascolarctos", species = "cinereus")
Combine_pub <- rbind(extract_year_W, extract_year_Q, extract_year_P, extract_year_K)
plotPub(Combine_pub)
```



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Quokka	<i>Quokka dataset</i>
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**Description**

Citation records of quokka (*Setonix brachyurus*) from Scopus. Data was retrieved on 10 July 2020.

**Usage**

Quokka

**Format**

A data frame with 242 rows and 20 variables

**Source**

<http://api.elsevier.com/content/search/scopus>

---

SourceType	<i>Source type</i>
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---

**Description**

This function calculates the total number of items for each document type.

**Usage**

SourceType(data)

**Arguments**

data            The dataframe generated from [Fetch](#).

**Value**

A dataframe with each document and their counts.

**Examples**

```
data(Woylie)
SourceType(Woylie)
```

---

**SpH5***Species h5 index*

---

**Description**

This function calculates the h-index of a species in the past 5 years.

**Usage**

```
SpH5(data)
```

**Arguments**

**data**                      The dataframe generated from [Fetch](#).

**Value**

H5 index.

**References**

Suzuki, H. (2012). *Google Scholar Metrics for Publications*. Retrieved from <https://scholar.googleblog.com/2012/04/google-scholar-metrics-for-publications.html>.

**Examples**

```
data(Woylie)
SpH5(Woylie)
```

---

**SpHAfterdate***Species h-index with a given time frame*

---

**Description**

This function calculates the h-index using a given date up till the newest record.

**Usage**

```
SpHAfterdate(data, date)
```

**Arguments**

**data**                      The dataframe generated from [Fetch](#).  
**date**                      The lower limit of the timeframe.

**Value**

H-index of the given time period.

**Examples**

```
data(Woylie)
SpHAfterdate(Woylie, "2000-01-01")
```

---

SpHindex	<i>Species h-index</i>
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---

**Description**

This function calculates the h-index of a species.

**Usage**

```
SpHindex(data)
```

**Arguments**

**data**                      The dataframe generated from [Fetch](#).

**Value**

H-index.

**References**

Bertoli-Barsotti, L. & Lando, T. (2015). On a formula for the h-index. *Journal of Informetrics*, 9(4), 762-776.  
Hirsch, J. (2005). An index to quantify an individual's scientific research output. *Proceedings of the National Academy of Sciences of the United States of America*, 102(46), 16569-16572.

**Examples**

```
data(Woylie)
SpHindex(Woylie)
```

Spi10

*Species i10 index*

---

**Description**

This function calculates the i10 index of a species. i10 index counts all of the publications with 10 or more citations.

**Usage**

```
Spi10(data)
```

**Arguments**

data                      The dataframe generated from [Fetch](#).

**Value**

i10 index.

**References**

Cornell University (2019). *i10-index*. Retrieved from <https://guides.library.cornell.edu/c.php?g=32272&p=203393>.

**Examples**

```
data(Woylie)
Spi10(Woylie)
```

---

SpMindex*Species m-index*

---

**Description**

This function calculates the m-index of species. M-index uses the h-index and divides it by the number of years of activity.

**Usage**

```
SpMindex(data)
```

**Arguments**

data                      The dataframe generated from [Fetch](#).

**Value**

M-index.

**References**

University of Pittsburgh (2019). *Research Impact and Metrics: Author metrics*. Retrieved from <https://pitt.libguides.com/bibliometricIndicators/AuthorMetrics>.

**Examples**

```
data(Woylie)
SpMindex(Woylie)
```

---

TotalCite	<i>Total citations</i>
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---

**Description**

This function calculates the total number of citations.

**Usage**

```
TotalCite(data)
```

**Arguments**

**data**                      The dataframe generated from [Fetch](#).

**Value**

A numerical value of the total number of citations.

**Examples**

```
data(Woylie)
TotalCite(Woylie)
```

---

TotalJournals	<i>Total journals</i>
---------------	-----------------------

---

**Description**

This function calculates the total number of journals.

**Usage**

```
TotalJournals(data)
```

**Arguments**

data                      The dataframe generated from [Fetch](#).

**Value**

An integer of the total number of journals.

**Examples**

```
data(Woylie)
TotalJournals(Woylie)
```

---

TotalPub	<i>Total publications</i>
----------	---------------------------

---

**Description**

This function calculates the total number of publications.

**Usage**

```
TotalPub(data)
```

**Arguments**

data                      The dataframe generated from [Fetch](#).

**Value**

An integer of the total number of publications.

**Examples**

```
data(Woylie)
TotalPub(Woylie)
```

---

Woylie

*Woylie dataset*

---

**Description**

Citation records of woylie (*Bettongia penicillata*) from Scopus. Data was retrieved on 10 July 2020.

**Usage**

Woylie

**Format**

A data frame with 113 rows and 20 variables

**Source**

<http://api.elsevier.com/content/search/scopus>

---

YearsPublishing

*Years since first publication*

---

**Description**

The number of years since the first publication in relation to the species.

**Usage**

YearsPublishing(data)

**Arguments**

data            The dataframe generated from [Fetch](#).

**Value**

Number of years.

**Examples**

```
data(Woylie)
YearsPublishing(Woylie)
```

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