

# Package ‘specieshindex’

August 12, 2020

**Type** Package  
**Title** How (scientifically) popular is a given species?  
**Version** 0.0.1  
**Date** 2020-07-10  
**Author** Jessica Tam  
**Maintainer** Jessica Tam <tamtinying@gmail.com>  
**Description** Finds the h-index of a species.  
**Depends** R (>= 3.1.0)  
**LazyData** true  
**Imports** rscopus,  
taxize,  
dplyr,  
httr,  
XML,  
rlang  
**Suggests** testthat,  
knitr,  
roxygen2,  
devtools,  
rmarkdown,  
ggplot2  
**License** MIT + file LICENSE  
**URL** <https://github.com/jessicatytam/Honours>  
**RoxygenNote** 7.1.1  
**VignetteBuilder** knitr

## R topics documented:

Allindices . . . . .	2
ARRatio . . . . .	3
CountSpT . . . . .	3
CountSpTAK . . . . .	4
FetchSpT . . . . .	5
FetchSpTAK . . . . .	5
Koala . . . . .	6

Platypus . . . . .	6
Quokka . . . . .	7
SpH5 . . . . .	7
SpHAfterdate . . . . .	8
SpHindex . . . . .	8
Spi10 . . . . .	9
SpMindex . . . . .	9
TotalArt . . . . .	10
TotalCite . . . . .	11
TotalJournals . . . . .	11
TotalPub . . . . .	12
TotalRev . . . . .	12
Woylie . . . . .	13
YearsPublishing . . . . .	13
<b>Index</b>	<b>14</b>

---

Allindices	<i>Index summary</i>
------------	----------------------

---

**Description**

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

**Usage**

```
Allindices(data, genus, species)
```

**Arguments**

- data           The dataframe generated from [FetchSpT](#) or [FetchSpTAK](#).
- genus          Genus classification from the binomial name.
- species        Species classification from the binomial name.

**Value**

A datarame of all of the indices in the package.

**Examples**

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

---

ARRatio	<i>Article:Review ratio</i>
---------	-----------------------------

---

**Description**

This function calculates the percentage ratio of article:review.

**Usage**

```
ARRatio(data)
```

**Arguments**

data                      The dataframe generated from [FetchSpT](#) or [FetchSpTAK](#).

**Value**

A character value of the percentage ratio of the number of articles and reviews.

**Examples**

```
data(Woylie)
ARRatio(Woylie)
```

---

CountSpT	<i>Search count - title only</i>
----------	----------------------------------

---

**Description**

This function counts the total number of search results. It counts only the publications with the binomial name in their title. A check will be conducted via `taxize` to validate the genus and species names.

**Usage**

```
CountSpT(genus, species, APIkey, datatype = "application/xml")
```

**Arguments**

genus                      Genus classification from the binomial name.  
species                    Species classification from the binomial name.  
APIkey                    Scopus API key needed to access and download data from their database.  
datatype                  Formats the URL to be sent to the API. The default is "application/xml".

**Value**

Search count of the species with the given genus and species.

## References

Chamberlain, S. & Szocs, E. (2013). taxize - taxonomic search and retrieval in R. F1000Research, 2, 191.

---

CountSpTAK	<i>Search count - title, abstract and keywords</i>
------------	--

---

## Description

This function counts the total number of search results. It counts the publications with the binomial name in the title, abstract and keywords. A check will be conducted via taxize to validate the genus and species names.

## Usage

```
CountSpTAK(genus, species, APIkey, datatype = "application/xml")
```

## Arguments

genus	Genus classification from the binomial name.
species	Species classification from the binomial name.
APIkey	Scopus API key needed to access and download data from their database.
datatype	Formats the URL to be sent to the API. The default is "application/xml".

## Value

Search count of the species with the given genus and species.

## References

Chamberlain, S. & Szocs, E. (2013). taxize - taxonomic search and retrieval in R. F1000Research, 2, 191.

## Examples

```
## Not run:
CountSpTAK("Bettongia", "penicillata", "myAPI")

#lower case letter in genus is also accepted and will return identical results

CountSpTAK("bettongia", "penicillata", "myAPI")

## End(Not run)
```

---

FetchSpT	<i>Fetch data - title only</i>
----------	--------------------------------

---

**Description**

This function fetches citation information from Scopus using genus and species name found in the title of the publications. Duplicates are removed after fetching the data.

**Usage**

```
FetchSpT(genus, species, APIkey)
```

**Arguments**

genus	Genus classification from the binomial name.
species	Species classification from the binomial name.
APIkey	Scopus API key needed to access and download data from their database.

**Value**

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

**Examples**

```
## Not run:
FetchSpT("Bettongia", "penicillata", "myAPI")

#lower case letter in genus is also accepted and will return identical results

FetchSpT("bettongia", "penicillata", "myAPI")

## End(Not run)
```

---

FetchSpTAK	<i>Fetch data - title, abstract and keywords</i>
------------	--

---

**Description**

This function fetches citation information from Scopus using genus and species name found in the title, abstract and keywords of the publications. Duplicates are removed after fetching the data.

**Usage**

```
FetchSpTAK(genus, species, APIkey)
```

**Arguments**

genus	Genus classification from the binomial name.
species	Species classification from the binomial name.
APIkey	Scopus API key needed to access and download data from their database.

**Value**

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

**Examples**

```
## Not run:
FetchSpT("Bettongia", "penicillata", "myAPI")

#lower case letter in genus is also accepted and will return identical results

FetchSpT("bettongia", "penicillata", "myAPI")

## End(Not run)
```

---

Koala	<i>Koala dataset</i>
-------	----------------------

---

**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>

---

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

---

**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>

---

Quokka	<i>Quokka dataset</i>
--------	-----------------------

---

**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>

---

SpH5	<i>Species h5 index</i>
------	-------------------------

---

**Description**

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

**Usage**

SpH5(data)

**Arguments**

data                      The dataframe generated from [FetchSpT](#) or [FetchSpTAK](#).

**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	<i>Species h-index with a given time frame</i>
--------------	--

---

**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 <a href="#">FetchSpT</a> or <a href="#">FetchSpTAK</a> .
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>
----------	------------------------

---

**Description**

This function calculates the h-index of a species.

**Usage**

```
SpHindex(data)
```

**Arguments**

data	The dataframe generated from <a href="#">FetchSpT</a> or <a href="#">FetchSpTAK</a> .
------	---

**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	<i>Species i10 index</i>
-------	--------------------------

---

**Description**

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

**Usage**

```
Sp10(data)
```

**Arguments**

data                      The dataframe generated from [FetchSpT](#) or [FetchSpTAK](#).

**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)
Sp10(Woylie)
```

---

SpMindex	<i>Species m-index</i>
----------	------------------------

---

**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 [FetchSpT](#) or [FetchSpTAK](#).

**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)
```

---

TotalArt	<i>Total Article</i>
----------	----------------------

---

**Description**

This function calculates the total number of articles.

**Usage**

```
TotalArt(data)
```

**Arguments**

data                      The dataframe generated from [FetchSpT](#) or [FetchSpTAK](#).

**Value**

An integer of the total number of articles.

**Examples**

```
data(Woylie)
TotalArt(Woylie)
```

---

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

---

**Description**

This function calculates the total number of citations.

**Usage**

```
TotalCite(data)
```

**Arguments**

data                      The dataframe generated from [FetchSpT](#) or [FetchSpTAK](#).

**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 [FetchSpT](#) or [FetchSpTAK](#).

**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 [FetchSpT](#) or [FetchSpTAK](#).

**Value**

An integer of the total number of publications.

**Examples**

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

---

TotalRev	<i>Total reviews</i>
----------	----------------------

---

**Description**

This function calculates the total number of reviews.

**Usage**

```
TotalRev(data)
```

**Arguments**

data                      The dataframe generated from [FetchSpT](#) or [FetchSpTAK](#).

**Value**

An integer of the total number of reviews.

**Examples**

```
data(Woylie)
TotalRev(Woylie)
```

---

Woylie	<i>Woylie dataset</i>
--------	-----------------------

---

**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	<i>Years since first publication</i>
-----------------	--------------------------------------

---

**Description**

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

**Usage**

YearsPublishing(data)

**Arguments**

data                      The dataframe generated from [FetchSpT](#) or [FetchSpTAK](#).

**Value**

Number of years.

**Examples**

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

# Index

## \*Topic **datasets**

- Koala, [6](#)
- Platypus, [6](#)
- Quokka, [7](#)
- Woylie, [13](#)

Allindices, [2](#)  
ARRatio, [3](#)

CountSpT, [3](#)  
CountSpTAK, [4](#)

FetchSpT, [2](#), [3](#), [5](#), [7–13](#)  
FetchSpTAK, [2](#), [3](#), [5](#), [7–13](#)

Koala, [6](#)

Platypus, [6](#)

Quokka, [7](#)

SpH5, [7](#)  
SpHAfterdate, [8](#)  
SpHindex, [8](#)  
Spi10, [9](#)  
SpMindex, [9](#)

TotalArt, [10](#)  
TotalCite, [11](#)  
TotalJournals, [11](#)  
TotalPub, [12](#)  
TotalRev, [12](#)

Woylie, [13](#)

YearsPublishing, [13](#)