

Package ‘redbookperu’

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Title Access and Analyze the Data from the Red Book of Endemic Plants of Peru

Version 0.0.2

Description Access and analysis of data from ‘The Red Book of Endemic Plants of Peru’ León, B., Roque, J., Ulloa, C., Jorgensen, P.M., Pitman, N., Cano, A. (2006)<[doi:10.15381/rpb.v13i2.1782](https://doi.org/10.15381/rpb.v13i2.1782)> providing taxonomic, geographic, and conservation information about Peru's endemic plant species. The package offers functions to check species inclusion, obtain updated taxonomic details, and explore the dataset.

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Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

LazyData true

LazyDataCompression xz

Encoding UTF-8

RoxygenNote 7.2.3

URL <https://github.com/PaulESantos/redbookperu>,
<https://paulesantos.github.io/redbookperu/>

BugReports <https://github.com/PaulESantos/redbookperu/issues>

Depends R (>= 2.10)

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NeedsCompilation no

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check_redbook	<i>Check Species Names in the Red Book of Endemic Plants of Peru</i>
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Description

This function checks a list of species names against the Red Book of Endemic Plants of Peru database and provides information about whether a species was recorded as endemic, its current taxonomic status, and checks for misspelling typos (fuzzy match).

Usage

```
check_redbook(splist, tax_status = FALSE, max_distance = 0.1)
```

Arguments

splist	A character vector containing the species names to be checked.
tax_status	Logical value indicating whether to provide taxonomic status information. If TRUE, it will provide taxonomic status information. If FALSE, it will provide endemism information.
max_distance	Maximum allowed distance for fuzzy matching of species names.

Details

This function checks each species name in the provided list against the Red Book of Endemic Plants of Peru database. It performs fuzzy matching based on the specified maximum distance. The output could inform about taxonomic status: a) "Accepted name" if the input names recorded are valid, b) "Updated name", when the input name is currently a synonym, c) "No opinion", if the current taxonomic status of the input name is undefined, and d) "No info. available" for species names recorded in the Red Book that couldn't be found in the WCVF database for name status validation. The output name for this group of species is the name recorded in the original publication.

The output also returns information about possible misspelling, adding "fuzzy match" to the output when a typo is found.

Value

A character vector with information about the taxonomic status or endemism of the provided species names.

References

Red Book of Endemic Plants of Peru The World Checklist of Vascular Plants, a continuously updated resource for exploring global plant diversity. Taxonomic Name Resolution Service - TNRS Plants of the World Online - Facilitated by the Royal Botanic Gardens - Kew.

Examples

```
# Example usage of the function
splist <- c("Aphelandra cuscoenses", "Sanchezia capitata",
           "Sanchezia ovata", "Piper stevensi",
           "Verbesina andinaa", "Verbesina andina")

result_tax <- check_redbook(splist, tax_status = TRUE)
print(result_tax)

result_endemism <- check_redbook(splist, tax_status = FALSE)
print(result_endemism)
```

get_redbook_data *Get Red Book Data for Given Species List*

Description

This function retrieves information from the Red Book of Endemic Plants of Peru database for a provided list of species. It associates the provided species names with their corresponding updated taxonomic information and descriptions recorded in the original publication.

Usage

```
get_redbook_data(splist, max_distance = 0.1)
```

Arguments

splist A character vector containing the species names to be queried.
max_distance Maximum allowed distance for fuzzy matching of species names.

Details

This function checks each species name in the provided list against the Red Book of Endemic Plants of Peru database. It performs fuzzy matching based on the specified maximum distance. The output includes information such as the updated taxonomic details (accepted name, accepted family, and accepted name author) complemented with the information recorded in the original publication (IUCN conservation category, bibliographic reference, collector, herbariums, common name, departmental registrations, ecological regions, protected natural areas (SINANPE), Peruvian herbaria, and additional remarks).

Value

A data frame containing comprehensive information about the provided species, including updated taxonomic details and descriptions.

References

[Red Book of Endemic Plants of Peru](#) [The World Checklist of Vascular Plants](#), a continuously updated resource for exploring global plant diversity. [Taxonomic Name Resolution Service - TNRS](#) [Plants of the World Online - Facilitated by the Royal Botanic Gardens - Kew](#).

See Also

[check_redbook](#) function for a more detailed check of individual species.

Examples

```
# Example illustrating how to use the get_redbook function
species_list <- c("Aphelandra cuscoensis", "Sanchezia ovata", "Piper stevensii")
redbook_data <- get_redbook_data(species_list)
head(redbook_data)
```

redbook_tab

Database of the Red Book of Endemic Plants of Peru

Description

This database contains comprehensive information regarding the endemic plant species listed in the Red Book of Endemic Plants of Peru. Each endemic taxon is accompanied by corresponding variables that detail its taxonomic status, IUCN conservation category, bibliographic references, type collection details, common names, departmental registrations, ecological regions, protected natural areas (SINANPE), and Peruvian herbaria where the specimens are deposited, as recorded in the original book.

Usage

```
redbook_tab
```

Format

A data frame with the following variables:

redbook_id Unique identifier for each species in the Red Book of Endemic Plants of Peru.

redbook_name Scientific name of the endemic species.

iucn Conservation category assigned according to IUCN.

publication Bibliographic reference where the taxon was originally proposed.

collector Name(s) of the collector(s) of the type specimen.
herbariums Acronyms of the institutions where the type specimens of the taxon are deposited.
common_name Common names of the species as mentioned in the literature.
dep_registry Abbreviations of the departments where the taxon has been recorded.
ecological_regions Abbreviations of the ecological regions proposed by Zamora (1996).
sinampe Abbreviation of the Protected Natural Area where the taxon was recorded.
peruvian_herbariums Acronyms of the Peruvian institutions where both type and non-type specimens are deposited.
remarks Observations and additional information about the endemic taxon.

Details

The database encompasses essential information for research and conservation efforts related to Peru's endemic flora, providing access to the data presented in the corresponding book.

References

[Red Book of Endemic Plants of Peru](#)

Examples

```
# Example illustrating how to load and explore the database
data(redbook_tab)
head(redbook_tab)
```

redbook_taxonomy	<i>Redbook Taxonomy Database</i>
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Description

This database contains taxonomic information of endemic plant species from Peru.

Usage

```
data(redbook_taxonomy)
```

Format

A tibble:

redbook_id Unique identifier for each species in the Red Book of Endemic Plants of Peru.
redbook_name The species name registered in the original dataset.
accepted_name The updated accepted scientific name of each species.
accepted_family The accepted family of the species.
accepted_name_author The author of the accepted scientific name.
taxonomic_status The taxonomic status of the species (Accepted, Synonym, No opinion).

Details

This database serves as the primary reference for conducting partial and exact searches of species listed in the Red Book of Endemic Plants of Peru. The information in this database has been standardized using the Taxonomic Name Resolution Service (TNRS) and the World Checklist of Vascular Plants (WCVP) to ensure consistency and accuracy.

Examples

```
data(redbook_taxonomy)  
head(redbook_taxonomy)
```

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