

R interface to the Biodiversity Heritage Library

About the package

rbhl is an R interface to the Biodiversity Heritage Library.

Install rbhl

First, install and load `rbhl` into the R session.

```
install.packages("rbhl")
```

```
library(rbhl)
```

Advanced users can also download and install the latest development copy from [GitHub](#) by doing

```
install_github("rbhl", "ropensci")
```

Output formats

You can output various formats using the `format` parameter, setting to 'json' or 'xml'. Use in combination with `output` to get a `list`, `raw` data (json or xml, set via `format`), or `parsed` data. The `parsed` option will eventually attempt to coerce data to a `data.frame` to ease consumption of data, but most functions currently return a `list` when `output=parsed`.

Raw output, in xml format

```
bhl_authorsearch(name = "dimmock", format = "xml", output = "raw")
```

```
## [1] "<?xml version='1.0' encoding='utf-8'><Response xmlns:xsd='http://www.w3.org/2001/XMLSchema'"
```

json format

```
bhl_authorsearch(name = "dimmock", format = "json", output = "raw")
```

```
## [1] '{"Status": "ok", "ErrorMessage": null, "Result": [{"CreatorID": 1970, "Name": "Dimmock, Geo"']
```

Or get a `list`. The default output is a `list`, and if you set `format='xml'` and `output='list'`, then `format` is forced to equal 'json' as parsing to a `list` is more straightforward using json.

```
bhl_authorsearch(name = "dimmock", format = "xml", output = "list")
```

```
## $Status
## [1] "ok"
##
## $ErrorMessage
## NULL
```

```

##
## $Result
## $Result[[1]]
## $Result[[1]]$CreatorID
## [1] 1970
##
## $Result[[1]]$Name
## [1] "Dimmock, George,"
##
## $Result[[1]]$Role
## NULL
##
## $Result[[1]]$Numeration
## [1] ""
##
## $Result[[1]]$Unit
## [1] ""
##
## $Result[[1]]$Title
## [1] ""
##
## $Result[[1]]$Location
## [1] ""
##
## $Result[[1]]$FullerForm
## [1] ""
##
## $Result[[1]]$Dates
## [1] "1852-"
##
## $Result[[1]]$CreatorUrl
## [1] "http://www.biodiversitylibrary.org/creator/1970"
##
##
## $Result[[2]]
## $Result[[2]]$CreatorID
## [1] 8126
##
## $Result[[2]]$Name
## [1] "Dimmock, George,"
##
## $Result[[2]]$Role
## NULL
##
## $Result[[2]]$Numeration
## [1] ""
##
## $Result[[2]]$Unit
## [1] ""
##
## $Result[[2]]$Title
## [1] ""
##
## $Result[[2]]$Location

```

```
## [1] ""
##
## $Result[[2]]$FullerForm
## [1] ""
##
## $Result[[2]]$Dates
## [1] "1852-1930"
##
## $Result[[2]]$CreatorUrl
## [1] "http://www.biodiversitylibrary.org/creator/8126"
```

Is the same output as all default options

```
bhl_authorsearch(name = "dimmock")
```

```
## $Status
## [1] "ok"
##
## $ErrorMessage
## NULL
##
## $Result
## $Result[[1]]
## $Result[[1]]$CreatorID
## [1] 1970
##
## $Result[[1]]$Name
## [1] "Dimmock, George,"
##
## $Result[[1]]$Role
## NULL
##
## $Result[[1]]$Numeration
## [1] ""
##
## $Result[[1]]$Unit
## [1] ""
##
## $Result[[1]]$Title
## [1] ""
##
## $Result[[1]]$Location
## [1] ""
##
## $Result[[1]]$FullerForm
## [1] ""
##
## $Result[[1]]$Dates
## [1] "1852-"
##
## $Result[[1]]$CreatorUrl
## [1] "http://www.biodiversitylibrary.org/creator/1970"
##
```

```
##
## $Result[[2]]
## $Result[[2]]$CreatorID
## [1] 8126
##
## $Result[[2]]$Name
## [1] "Dimmock, George,"
##
## $Result[[2]]$Role
## NULL
##
## $Result[[2]]$Numeration
## [1] ""
##
## $Result[[2]]$Unit
## [1] ""
##
## $Result[[2]]$Title
## [1] ""
##
## $Result[[2]]$Location
## [1] ""
##
## $Result[[2]]$FullerForm
## [1] ""
##
## $Result[[2]]$Dates
## [1] "1852-1930"
##
## $Result[[2]]$CreatorUrl
## [1] "http://www.biodiversitylibrary.org/creator/8126"
```

Some examples of function calls

```
bhl_gettitlemetadata(1726, TRUE)
```

Get title metadata

```
## $Status
## [1] "ok"
##
## $ErrorMessage
## NULL
##
## $Result
## $Result$titleID
## [1] 1726
##
## $Result$bibliographicLevel
## [1] "Monograph/Item"
##
```

```

## $Result$FullTitle
## [1] "The anatomy of the mouth-parts and of the sucking apparatus of some Diptera. "
##
## $Result$ShortTitle
## [1] "The anatomy of the mouth-parts and of the sucking apparatus of some Diptera."
##
## $Result$SortTitle
## [1] "anatomy of the mouth-parts and of the sucking apparatus of"
##
## $Result$PartNumber
## NULL
##
## $Result$PartName
## NULL
##
## $Result$CallNumber
## [1] "QL538 .D58"
##
## $Result$Edition
## NULL
##
## $Result$PublisherPlace
## [1] "Boston,"
##
## $Result$PublisherName
## [1] "A. Williams & co.,"
##
## $Result$PublicationDate
## [1] "1881."
##
## $Result$PublicationFrequency
## NULL
##
## $Result$Doi
## [1] "10.5962/bhl.title.1726"
##
## $Result$TitleUrl
## [1] "http://www.biodiversitylibrary.org/bibliography/1726"
##
## $Result$Authors
## $Result$Authors[[1]]
## $Result$Authors[[1]]$CreatorID
## [1] 1970
##
## $Result$Authors[[1]]$Name
## [1] "Dimmock, George,"
##
## $Result$Authors[[1]]$Role
## [1] "Main Entry -- Personal Name (MARC 100)"
##
## $Result$Authors[[1]]$Numeration
## [1] ""
##
## $Result$Authors[[1]]$Unit

```

```

## [1] ""
##
## $Result$Authors[[1]]$Title
## [1] ""
##
## $Result$Authors[[1]]$Location
## [1] ""
##
## $Result$Authors[[1]]$FullerForm
## [1] ""
##
## $Result$Authors[[1]]$Dates
## [1] "1852-"
##
## $Result$Authors[[1]]$CreatorUrl
## NULL
##
##
##
## $Result$Subjects
## $Result$Subjects[[1]]
## SubjectText
## "Diptera"
##
##
## $Result$Identifiers
## $Result$Identifiers[[1]]
## IdentifierName IdentifierValue
## "DLC" "08023002"
##
## $Result$Identifiers[[2]]
## IdentifierName IdentifierValue
## "MARC001" "1223"
##
## $Result$Identifiers[[3]]
## IdentifierName IdentifierValue
## "OCLC" "2992225"
##
##
## $Result$Collections
## NULL
##
## $Result$Variants
## list()
##
## $Result$Items
## $Result$Items[[1]]
## $Result$Items[[1]]$ItemID
## [1] 16800
##
## $Result$Items[[1]]$PrimaryTitleID
## [1] 1726
##
## $Result$Items[[1]]$ThumbnailPageID

```

```

## [1] 1328691
##
## $Result$Items[[1]]$Source
## [1] "Internet Archive"
##
## $Result$Items[[1]]$SourceIdentifier
## [1] "anatomyofmouthpa00dimm"
##
## $Result$Items[[1]]$Volume
## [1] ""
##
## $Result$Items[[1]]$Year
## NULL
##
## $Result$Items[[1]]$Contributor
## [1] "MBLWHOI Library, Woods Hole"
##
## $Result$Items[[1]]$Sponsor
## [1] "MBLWHOI Library"
##
## $Result$Items[[1]]$Language
## [1] "English"
##
## $Result$Items[[1]]$LicenseUrl
## [1] ""
##
## $Result$Items[[1]]$Rights
## [1] ""
##
## $Result$Items[[1]]$DueDiligence
## [1] ""
##
## $Result$Items[[1]]$CopyrightStatus
## [1] ""
##
## $Result$Items[[1]]$CopyrightRegion
## [1] ""
##
## $Result$Items[[1]]$ItemUrl
## [1] "http://www.biodiversitylibrary.org/item/16800"
##
## $Result$Items[[1]]$TitleUrl
## [1] "http://www.biodiversitylibrary.org/bibliography/1726"
##
## $Result$Items[[1]]$ItemThumbUrl
## [1] "http://www.biodiversitylibrary.org/pagethumb/1328691"
##
## $Result$Items[[1]]$Pages
## NULL
##
## $Result$Items[[1]]$Parts
## NULL
##
## $Result$Items[[1]]$Collections

```

```
## NULL
```

```
bhl_booksearch(title = "Selborne", lname = "White", volume = 2, edition = "new",  
  year = 1825, collectionid = 4, language = "eng")
```

Book search

```
## $Status  
## [1] "ok"  
##  
## $ErrorMessage  
## NULL  
##  
## $Result  
## $Result[[1]]  
## $Result[[1]]$TitleID  
## [1] 32868  
##  
## $Result[[1]]$BibliographicLevel  
## [1] ""  
##  
## $Result[[1]]$FullTitle  
## [1] "The natural history of Selborne : to which are added the naturalist's calendar, miscellaneous observa  
##  
## $Result[[1]]$ShortTitle  
## NULL  
##  
## $Result[[1]]$SortTitle  
## NULL  
##  
## $Result[[1]]$PartNumber  
## [1] ""  
##  
## $Result[[1]]$PartName  
## [1] ""  
##  
## $Result[[1]]$CallNumber  
## NULL  
##  
## $Result[[1]]$Edition  
## [1] "A new ed., with engravings."  
##  
## $Result[[1]]$PublisherPlace  
## [1] "London"  
##  
## $Result[[1]]$PublisherName  
## [1] "Printed for C. and J. Rivington [etc.]"  
##  
## $Result[[1]]$PublicationDate  
## [1] "1825"  
##
```



```

## $Result[[1]]$PublicationFrequency
## NULL
##
## $Result[[1]]$Doi
## NULL
##
## $Result[[1]]$TitleUrl
## [1] "http://www.biodiversitylibrary.org/bibliography/32868"
##
## $Result[[1]]$Authors
## $Result[[1]]$Authors[[1]]
## $Result[[1]]$Authors[[1]]$CreatorID
## [1] 9572
##
## $Result[[1]]$Authors[[1]]$Name
## [1] "White, Gilbert,"
##
## $Result[[1]]$Authors[[1]]$Role
## [1] "Main Entry -- Personal Name (MARC 100)"
##
## $Result[[1]]$Authors[[1]]$Numeration
## [1] ""
##
## $Result[[1]]$Authors[[1]]$Unit
## [1] ""
##
## $Result[[1]]$Authors[[1]]$Title
## [1] ""
##
## $Result[[1]]$Authors[[1]]$Location
## [1] ""
##
## $Result[[1]]$Authors[[1]]$FullerForm
## [1] ""
##
## $Result[[1]]$Authors[[1]]$Dates
## [1] "1720-1793"
##
## $Result[[1]]$Authors[[1]]$CreatorUrl
## NULL
##
##
##
## $Result[[1]]$Subjects
## NULL
##
## $Result[[1]]$Identifiers
## NULL
##
## $Result[[1]]$Collections
## NULL
##
## $Result[[1]]$Variants
## NULL

```

```

##
## $Result[[1]]$Items
## $Result[[1]]$Items[[1]]
## $Result[[1]]$Items[[1]]$ItemID
## [1] 77247
##
## $Result[[1]]$Items[[1]]$PrimaryTitleID
## NULL
##
## $Result[[1]]$Items[[1]]$ThumbnailPageID
## NULL
##
## $Result[[1]]$Items[[1]]$Source
## NULL
##
## $Result[[1]]$Items[[1]]$SourceIdentifier
## NULL
##
## $Result[[1]]$Items[[1]]$Volume
## [1] "1"
##
## $Result[[1]]$Items[[1]]$Year
## NULL
##
## $Result[[1]]$Items[[1]]$Contributor
## [1] "Gerstein - University of Toronto (archive.org)"
##
## $Result[[1]]$Items[[1]]$Sponsor
## NULL
##
## $Result[[1]]$Items[[1]]$Language
## NULL
##
## $Result[[1]]$Items[[1]]$LicenseUrl
## NULL
##
## $Result[[1]]$Items[[1]]$Rights
## NULL
##
## $Result[[1]]$Items[[1]]$DueDiligence
## NULL
##
## $Result[[1]]$Items[[1]]$CopyrightStatus
## NULL
##
## $Result[[1]]$Items[[1]]$CopyrightRegion
## NULL
##
## $Result[[1]]$Items[[1]]$ItemUrl
## [1] "http://www.biodiversitylibrary.org/item/77247"
##
## $Result[[1]]$Items[[1]]$TitleUrl
## NULL
##

```

```

## $Result[[1]]$Items[[1]]$ItemThumbUrl
## NULL
##
## $Result[[1]]$Items[[1]]$Pages
## NULL
##
## $Result[[1]]$Items[[1]]$Parts
## NULL
##
## $Result[[1]]$Items[[1]]$Collections
## $Result[[1]]$Items[[1]]$Collections[[1]]
## $Result[[1]]$Items[[1]]$Collections[[1]]$CollectionID
## [1] 4
##
## $Result[[1]]$Items[[1]]$Collections[[1]]$CollectionName
## [1] "Charles Darwin's Library"
##
## $Result[[1]]$Items[[1]]$Collections[[1]]$CollectionDescription
## NULL
##
## $Result[[1]]$Items[[1]]$Collections[[1]]$CanContainTitles
## NULL
##
## $Result[[1]]$Items[[1]]$Collections[[1]]$CanContainItems
## NULL
##
##
##
##
## $Result[[1]]$Items[[2]]
## $Result[[1]]$Items[[2]]$ItemID
## [1] 71924
##
## $Result[[1]]$Items[[2]]$PrimaryTitleID
## NULL
##
## $Result[[1]]$Items[[2]]$ThumbnailPageID
## NULL
##
## $Result[[1]]$Items[[2]]$Source
## NULL
##
## $Result[[1]]$Items[[2]]$SourceIdentifier
## NULL
##
## $Result[[1]]$Items[[2]]$Volume
## [1] "2"
##
## $Result[[1]]$Items[[2]]$Year
## NULL
##
## $Result[[1]]$Items[[2]]$Contributor
## [1] "Gerstein - University of Toronto (archive.org)"
##

```

```

## $Result[[1]]$Items[[2]]$Sponsor
## NULL
##
## $Result[[1]]$Items[[2]]$Language
## NULL
##
## $Result[[1]]$Items[[2]]$LicenseUrl
## NULL
##
## $Result[[1]]$Items[[2]]$Rights
## NULL
##
## $Result[[1]]$Items[[2]]$DueDiligence
## NULL
##
## $Result[[1]]$Items[[2]]$CopyrightStatus
## NULL
##
## $Result[[1]]$Items[[2]]$CopyrightRegion
## NULL
##
## $Result[[1]]$Items[[2]]$ItemUrl
## [1] "http://www.biodiversitylibrary.org/item/71924"
##
## $Result[[1]]$Items[[2]]$TitleUrl
## NULL
##
## $Result[[1]]$Items[[2]]$ItemThumbUrl
## NULL
##
## $Result[[1]]$Items[[2]]$Pages
## NULL
##
## $Result[[1]]$Items[[2]]$Parts
## NULL
##
## $Result[[1]]$Items[[2]]$Collections
## $Result[[1]]$Items[[2]]$Collections[[1]]
## $Result[[1]]$Items[[2]]$Collections[[1]]$CollectionID
## [1] 4
##
## $Result[[1]]$Items[[2]]$Collections[[1]]$CollectionName
## [1] "Charles Darwin's Library"
##
## $Result[[1]]$Items[[2]]$Collections[[1]]$CollectionDescription
## NULL
##
## $Result[[1]]$Items[[2]]$Collections[[1]]$CanContainTitles
## NULL
##
## $Result[[1]]$Items[[2]]$Collections[[1]]$CanContainItems
## NULL

```

```
bhl_titlesearchsimple("husbandry")$Result[[1]]
```

Search titles

```
## $TitleID
## [1] 25997
##
## $BibliographicLevel
## [1] "Monograph/Item"
##
## $FullTitle
## [1] "An account of the systems of husbandry adopted in the more improved districts of Scotland ... "
##
## $ShortTitle
## [1] "An account of the systems of husbandry adopted in the more improved districts of Scotland ..."
##
## $SortTitle
## [1] "account of the systems of husbandry adopted in the more imp"
##
## $PartNumber
## NULL
##
## $PartName
## NULL
##
## $CallNumber
## NULL
##
## $Edition
## [1] "2d ed. "
##
## $PublisherPlace
## [1] "Edinburgh :"
##
## $PublisherName
## [1] "A. Constable,"
##
## $PublicationDate
## [1] "1813."
##
## $PublicationFrequency
## NULL
##
## $Doi
## NULL
##
## $TitleUrl
## NULL
##
## $Authors
## NULL
##
```

```
## $Subjects
## NULL
##
## $Identifiers
## NULL
##
## $Collections
## NULL
##
## $Variants
## NULL
##
## $Items
## NULL
```

Get languages This function gets a list of languages in which materials in BHL have been written. This is also an example of a function that actually gives a `data.frame` when `output='parsed'`.

```
out <- bhl_getlanguages(output = "parsed")
head(out)
```

```
##   LanguageCode LanguageName
## 1          AFR    Afrikaans
## 2          ARA      Arabic
## 3          ARC    Aramaic
## 4          BUL   Bulgarian
## 5          BUR    Burmese
## 6          CAR      Carib
```