Using the *gbif4crest* database

There are two ways to access and use the *gbif4crest* calibration dataset, which are illustrated here with a simple PSE file.

```
PSE
#>   Level     Family     Genus Species ProxyName
#> 1     1  Ericaceae      <NA>    <NA> Ericaceae
#> 2     2 Asteraceae Artemisia    <NA> Artemisia
#> 3     2   Oleaceae      Olea    <NA>      Olea
```

The cloud-based option (online)

The first option consists in using the default option: connecting to the online *gbif4crest*. This is the simplest option and users only have to provide the name of the database to the field `dbname = "gbif4crest_02"`.

```
reconstr <- crest.get_modern_data(  pse = PSE,
                                taxaType = 1,
                                 climate = c("bio1", "bio12"),
                                 # The name of the online database to extract the data from
                                  dbname = "gbif4crest_02",
                                 verbose = FALSE
)

tapply(reconstr$modelling$taxonID2proxy[,1], reconstr$modelling$taxonID2proxy[,2], length)
#> Artemisia Ericaceae      Olea
#>       347      4300        35
```

The SQLite3 option (offline) [only in crest v > 1.1.0]

This option is usually much faster but it requires downloading the full database in a zipped from [here]. Once unzipped, the file, which is about ~23Gb, should be saved in a location of interest.

```
reconstr <- crest.get_modern_data(  pse = PSE,
                                taxaType = 1,
                                 climate = c("bio1", "bio12"),
                                 # The full path to the local gbif4crest database
                                  dbname = "/Users/mchevali1/Research/GBIF/gbif4crest_02.sqlite3",
                                 verbose = FALSE
)

tapply(reconstr$modelling$taxonID2proxy[,1], reconstr$modelling$taxonID2proxy[,2], length)
#> Artemisia Ericaceae      Olea
#>       347      4300        35
```

The inclusion of the file extension '.sqlite3' is key for the package to be routed to the right option.