



# Biodiversity Informatics 101

## A Wiki World

Mathias Dillen | Meise Botanic Garden



**Meise  
Botanic Garden**

## The many sides of Wiki



## The many sides of Wiki



WIKIPEDIA  
The Free Encyclopedia



Wiktionary  
*The free dictionary*



WIKIBOOKS



WIKISOURCE



WIKINEWS



WIKIVERSITY



WIKISPECIES  
*free species directory*



MediaWiki



WIKIDATA



WIKIMEDIA  
COMMONS



WIKIMEDIA  
META-WIKI



WIKIMEDIA  
INCUBATOR



WIKIMEDIA  
CLOUD SERVICES



WIKIMEDIA  
FOUNDATION



## Why wikipedia?

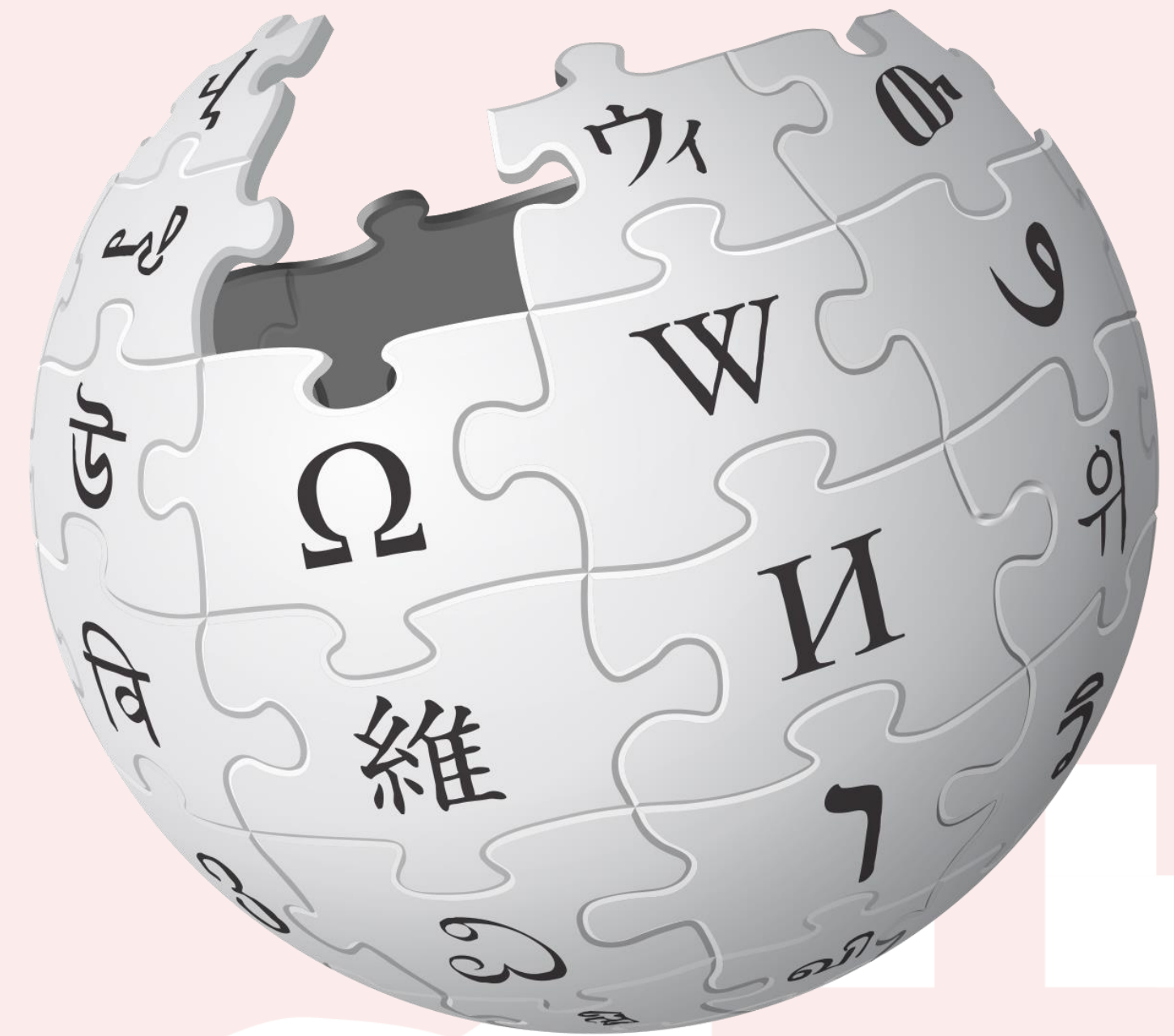
*“Where does the world go to find information about biodiversity?”*

**=> “the most open and international citizen science project”**

*“134.000 active contributors just on the English language Wikipedia”*

*“16 billion page views per month across 264 languages”*

**=> “a huge underutilized opportunity not just to communicate research, but also to pursue novel research and curate and link data globally”**



**SI10 How does Wikimedia Solve the Problems of Biodiversity Informatics? TUE, 15:30 - 17:00**

**<https://biodiversitynext.org/list-of-symposia-and-workshops/?session=SI10>**

## But what about the quality?

[https://en.wikipedia.org/wiki/Wikipedia:Wikipedia\\_is\\_not\\_a\\_reliable\\_source](https://en.wikipedia.org/wiki/Wikipedia:Wikipedia_is_not_a_reliable_source)

=> “[Wikipedia] has authority because it links to authoritative sources”

“the threshold for inclusion in Wikipedia is verifiability, not truth”

=> “a network of scholarly publications that allows researchers to click from article to article in a never-ending trail of knowledge”

Nicole Kearney: <https://doi.org/10.3897/biss.3.37356>



## Wiki as a connector hub

*“English Wikipedia, Wikimedia Commons and Wikidata used to interlink multiple databases providing information on New Zealand endemic species”*

*“information collated in Wikipedia and Wikimedia Commons is ingested and reused by the citizen science observation platform iNaturalist”*

**=> “reuse assists creation of more accurate citizen science-generated biodiversity observation data, in turn increasing depth of information known about particular species.”**

Siobhan Leachman: <https://doi.org/10.3897/biss.3.34722>





## Illustration: Invasive species

*“One of the most important issues for controlling the spread of invasive species is public awareness”*

**=> “a global issue and hence needs to be tackled at an international [multilingual] level”**

*“information on how to identify invasive species, as well as their regulatory status, distribution and transmission”*

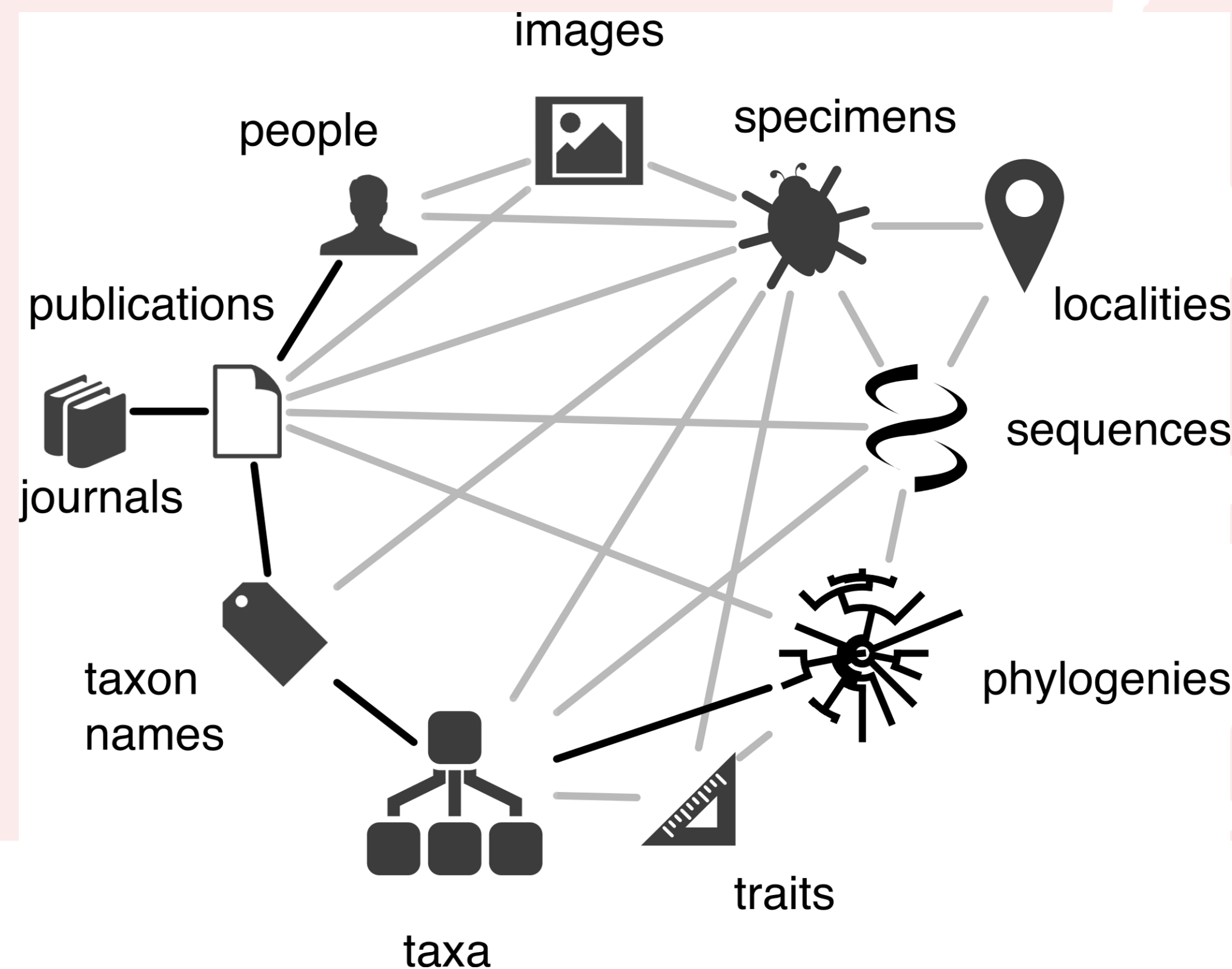
**=> “Invasive species such as the [zebra mussel](#) and [water hyacinth](#) receive over 500 daily page views, just on the English edition alone”**

Quentin Groom et al. <https://doi.org/10.3897/biss.3.37386>



# Wikidata

“a global knowledge graph with a user friendly interface for data entry and a powerful implementation of the SPARQL query language”



Roderic Page

<https://doi.org/10.3897/biss.3.34742>

Page (2013)

<https://doi.org/10.7717/peerj.190>



# Applications

***Gene Wiki initiative:*** “structured knowledge from public scientific resources on gene, proteins, diseases and compounds”

Andra Waagmeester et al. : <https://doi.org/10.3897/biss.3.35206>

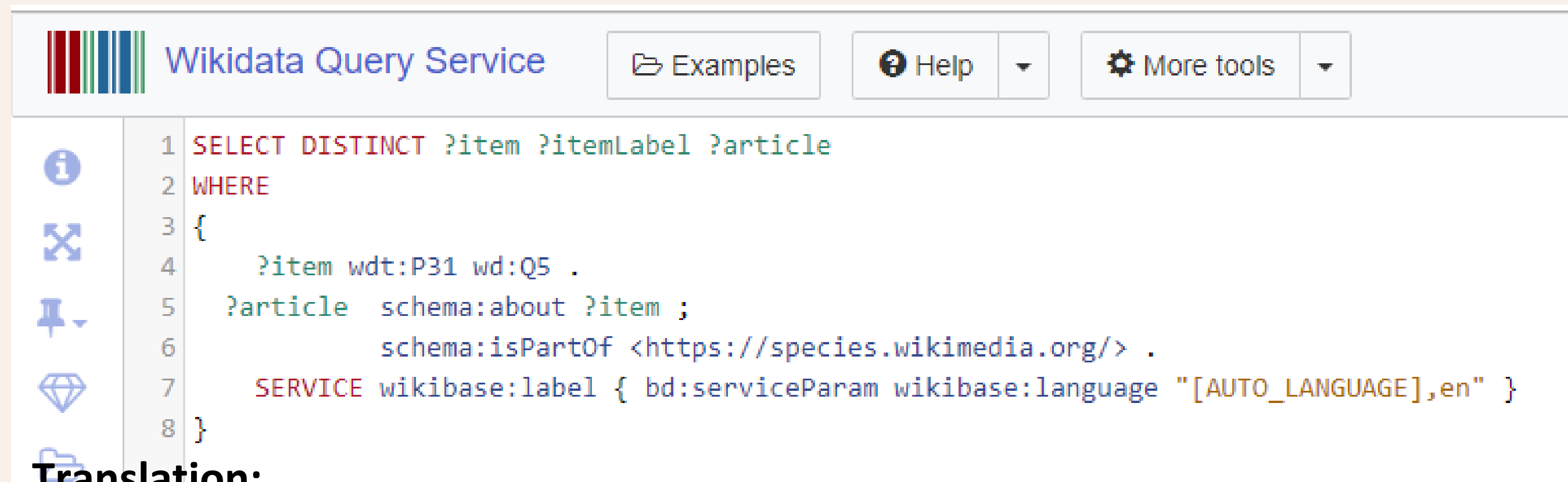
***Uniquely Identifying Collectors of Specimens:*** “Wikidata can be edited by anyone and has a low threshold for notability. Wikidata has the additional advantage of forming a bridge between many identifier systems.”

Quentin Groom et al. : <https://doi.org/10.3897/biss.3.37013>



# SPARQL

Looks scary, but...



The screenshot shows the Wikidata Query Service interface. At the top, there's a header with the Wikidata logo (a series of vertical bars in green, blue, and red) and the text "Wikidata Query Service". Below the header, there are buttons for "Examples", "Help", and "More tools". The main area displays a SPARQL query:

```
1 SELECT DISTINCT ?item ?itemLabel ?article
2 WHERE
3 {
4     ?item wdt:P31 wd:Q5 .
5     ?article schema:about ?item ;
6             schema:isPartOf <https://species.wikimedia.org/> .
7     SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO_LANGUAGE],en" }
8 }
```

## Translation:

- Give me all identifiers, labels and Wikispecies articles of the items WHICH
- Are instances of humans AND
- Have an article on Wikispecies AND
- Give me the labels in English



Try it: <https://w.wiki/AGT>