INTEGRATING WIKIDATA WITH DATA SLEUTHING TECHNIQUES FOR ENHANCED KNOWLEDGE DISCOVERY OF HIDDEN FIGURES

SETTING THE SCENE

Please watch the following video and read the following papers before reading the introduction to Wikidata background information.

Llyfrgell Genedlaethol - National Library of Wales (2020, March 16) An Introduction to Wikidata
[Video] YouTube. https://www.youtube.com/watch?v=m_9_23jXPoE
Shafee T, Mietchen D, Lubiana T, Jemielniak D, Waagmeester A (2023) Ten quick tips for editing
Wikidata. PLoS Comput Biol 19(7): e1011235. https://doi.org/10.1371/journal.pcbi.1011235
Learn Wikidata: a course for information professionals (2021) Vanderbilt University. CC BY 4.0
https://www.learnwikidata.net/

BACKGROUND INFORMATION

One strategy to reveal the contributions of marginalized participants in natural history collections (NHC) involves developing and establishing a robust online presence on their behalf. An effective avenue for achieving this is through Wikidata. By strategically incorporating information about underrepresented people and their important work into the Wikidata platform, we can contribute to improving their visibility and recognition. Wikidata's structured data framework provides a comprehensive and accessible resource, fostering inclusivity and promoting the dissemination of the invaluable contributions made by participants from underrepresented backgrounds to biodiversity knowledge.

What is Wikidata?

Wikidata is a linked open data repository that anyone (both people and machines) can edit. It empowers the creation of structured data, that is, data that is linked to other data. The data is openly licensed under a Creative Commons CC0 license, it is multilingual and can be queried using the <u>Wikidata Query Service</u>. Wikidata also links to third-party databases, ensuring that it acts as a hub for institutional identifiers including the <u>Virtual International Authority File (VIAF)</u>, the <u>Global Biodiversity Information Facility (GBIF)</u>, <u>ORCID</u>, and many more databases.

Wikimedia, Wikipedia, and Wikidata, oh my!

Wikimedia is a global movement whose mission is to bring free educational content to the world. The online encyclopedia Wikipedia, likely to be familiar to you, operates as a subsidiary of the Wikimedia Foundation, a non-profit that supports Wikipedia and other wiki projects. Wikipedia is characterized by its open licensing and encompasses articles on a diverse range of subjects. There are over 300 different language Wikipedias in existence with English Wikipedia being the largest, having more than six million articles. The next largest Wikipedia editions include the Spanish, German, and French editions.

Wikidata, yet another subsidiary of the Wikimedia Foundation, is a linked open multilingual knowledge graph made up of data in the form of interlinked statements. Unlike Wikipedia, which provides

information in prose form (like spoken or written language), Wikidata is a collection of interlinked statements that put data into context and empowers data integration, sharing, visualization, and analytics. Wikidata can also act as a database hub as statements can be added to a Wikidata item linking that item to the information contained in other databases about that concept.

Who can contribute to Wikidata? And why?

Anyone can contribute to Wikidata, although it is recommended that people who wish to edit Wikidata create an account and a user page to show good faith to the wider editing community.

In this module, we aim to show how to create a Wikidata item for a natural history collector or determiner of specimens. Once an item is created and if it contains the necessary information, that item may then be reused in several ways, for example to help create a Bionomia profile for that collector/determiner or to be added as an identifier for the collector in museum collection management systems. Leveraging Wikidata can elevate the visibility of individuals from marginalized groups. This fosters broader recognition of the crucial contributions made by underrepresented communities to our understanding of the natural world. By highlighting these contributors, Wikidata empowers a more inclusive scientific landscape.

Introduction to Wikidata

Wikidata is made up of items with attached data statements. These data statements have a **Property** and then a **Value** where the value is often another Wikidata item. Think of a Wikidata property as a category of data, for example "country" for the data value "Canada".

An **Item** is the value of that property, in our example above, "Canada". Every Wikidata property and item is uniquely identified by an entity ID, which is a number with a prefix. Property entity IDs start with the prefix P, for example, <u>P106</u> for the "occupation" property. Item entity IDs start with the prefix Q, for example <u>Q2374149</u> for the profession "botanist".

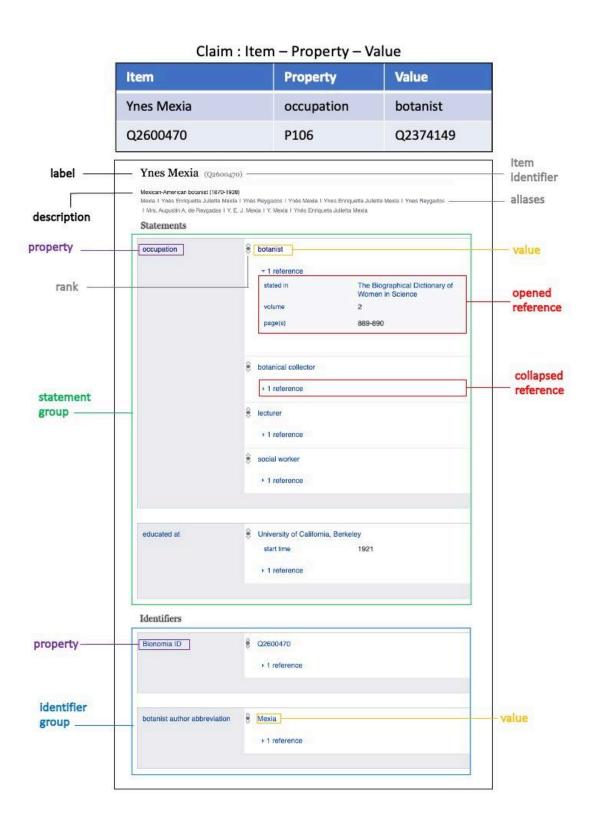


Figure 1. Figure showing the different elements of a Wikidata item <u>CC BY SA 4.0</u> by Makenzie Mabry

Wikidata as a hub

Identifiers are a type of statement that links to external databases like ORCID or Bionomia. These strings of numbers or text represent the identifiers used by systems external to Wikidata. These systems external to Wikidata can be such things as other databases, authority control files, online encyclopedias, genealogical databases etc. Wikidata acts as a database hub or a "crosswalk" platform, by collating multiple identifiers external to Wikidata, with the Wikidata item becoming a place to access information from multiple databases and systems.

Becoming an internet sleuth

To create or enrich a collector's Wikidata item the researcher has to discover reliable sources of biographical information on that collector. To do this the researcher becomes an internet sleuth, researching and collating data such as birth, death and marriage dates, places of residence and employment, co-collectors and co-authors, personal interests, and travels. This research is similar to that undertaken by family genealogists.

There are multiple information sources and databases that hold bibliography information. A simple search via an internet search engine such as Google is often a good starting point. Whether the collector is alive or deceased as well as the area of expertise of the collector or the location of their collections, can help guide which types of resources and databases may be the most useful.

For deceased collectors an ideal source of information is a published obituary. However, for marginalized collectors, obituaries have often not been created. Examples of other sources of biographical information include international, national or local library catalogs and websites such as the <u>VIAF</u> catalog, the <u>Internet Archive</u>, and the <u>Biodiversity Heritage Library</u>. Alternatively archives of natural history museums, natural history societies, local universities or colleges, for example, the <u>Smithsonian Archives</u> and the <u>Natural History Museum, London archives</u>, can all be helpful sources of biographical information. Genealogical databases ranging from large global databases to local or family-based databases including <u>Ancestry.com</u>, <u>Familysearch.com</u>, and <u>FindAGrave</u>, as well as digitized newspaper repositories, national and international museum or natural history data aggregators such as <u>Europeana</u> and <u>DigitalNZ</u> may also be able to provide biographical information.

For living collectors, many of the above sources of biographical information would also be relevant. If the living collector is also a researcher, other databases such as ORCID.org, ResearchGate, Scopus, Web of Science, and other such citation databases can be of use. The collector may also have various social media accounts. However extra care must be taken when researching, disambiguating, and linking living collectors. Legal protections on the use of personal data as well as codes of ethics exist when dealing with living people and their data.

Importantly, the aim is to collect as much data as possible, within the appropriate legal and ethical limits, in order to produce as comprehensive a biography as possible. This biographical information can then be added to Wikidata and used to help tell the story of the collector's contribution to science.

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Part 1 - Creating a new Wikidata account and logging in

To create and edit Wikidata items, it is recommended to have a Wikimedia account. This account is connected to all Wikimedia projects, including Wikipedia and Wikidata. If you already have an account, skip to step 4 below.

- 1. To create a new account, start at the Wikidata homepage.
- 2. Click *Create Account* at the top right of the Wikidata main page. See Figure 2. Fill out the form and click the blue *Create account* button. Record your username and password so that you can log in again at a later date.

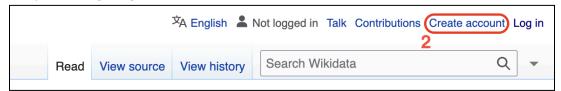


Figure 2. Screenshot from Wikidata (<u>https://www.wikidata.org</u>, retrieved 2024-04-24) indicating where to create an account and/or log in.

- 3. When creating a new account, it is helpful to other users to include some information about yourself on your personal user page. This lets the community know who you are and what you are interested in working on in Wikidata. For example, see the Wikidata <u>user page for Wikidata superuser Siobhan Leachman</u>. Siobhan's page includes information about herself and the projects she has worked on, including notes that serve as useful memory aids for her and others.
- 4. When first creating your account you will see your red username in the top right-hand corner of the screen. See Figure 3. In order to create your personal user page click your user name in red text on the top right of the page.



Figure 3. Screenshot from Wikidata (https://www.wikidata.org, retrieved 2024-04-24) showing the red text needed to be clicked to create a userpage for User: MMabry 44.

- 5. This will create a draft page that you can edit giving your introduction to the wider community. You can then save that draft and make your user page live. You can edit and improve your user page whenever you like. When you are ready to save your edits click "create this page".
- 6. If you already have a Wikipedia account, use your username and password to log in on the main Wikidata page.
- 7. Once logged in, you can create new items and edit existing ones.

Part 2 - Create a new item for your Natural History collector

Before creating a new item, be sure you have searched Wikidata carefully to ensure that an item for that person does not already exist. This prevents duplicating an existing item. One way to search for an existing item is to search using the Wikidata search box.

1. Do a quick search for an existing item (e.g., a person) using the Wikidata search box at the upper right of your screen. See Figure 4.



Figure 4. Screenshot from Wikidata (<u>https://www.wikidata.org</u>, retrieved 2024-04-24) indicating where the quick search box is located.

2. Once you have determined that there is no Wikidata item for your collector, select *Create a new item* from the sidebar on the left side of any Wikidata page. See Figure 5.



Figure 5. Screenshot from Wikidata (<u>https://www.wikidata.org/wiki/Wikidata:Main_Page</u>, retrieved 2024-04-24) showing the sidebar on the left side of any Wikidata page.)

- 3. You will be directed to an editing interface (See Figure 6) to enter data for the following fields:
 - a. The *Language* field refers to the language you are using to edit this Wikidata item.
 - b. The *Label* field is the name by which the person is most well known, e.g., the name under which the person published. For example <u>Julia Anna Gardner</u>.
 - c. The *Description* field provides space for a tagline about who this person is and/or what they do. This description is displayed underneath the *Label* value and can be a useful way of quickly disambiguating different people in Wikidata search results Figure 8. The preferred format for a description includes country of citizenship and occupation(s) followed by birth and death years, e.g. "American paleontologist (1858–1942)". Refer to the country of citizenship following the same language norms that Wikidata uses elsewhere, e.g., <u>Americans</u> for people from the United States of America.
 - d. The *Aliases* (or *Also known as*) field is highly important for disambiguation. All variations of a person's name should be included in this field, using a pipe character ("|") to separate each variation, e.g., "Wilmatte Porter | W. P. Cockerell | W. P. C." Alternatively, aliases can also be added after creating the new item. Aliases help humans and computers (including Wikidata bots) link items to external identifiers, and they also help others find this item more easily when using the Wikidata search box. Aliases also help reduce the creation of duplicate items.

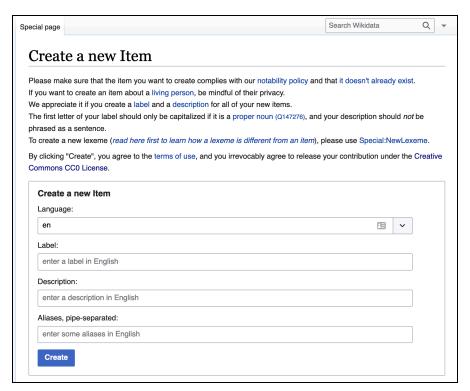


Figure 7. Screenshot from Wikidata (<u>https://www.wikidata.org/wiki/Special:NewItem</u>, retrieved 2022-05-05) showing the form to create a new item.

- 4. Press the blue *Create* button at the bottom left of the form to publish the new item to Wikidata. You will be redirected to a new page displaying the information you just entered (See Figure 8).
- 5. Don't stop here! To avoid having Wikidata's tidying bots remove your newly created item, you need to flesh it out by adding statements about this person. Proceed to Part 3 for further instructions on how to add statements.

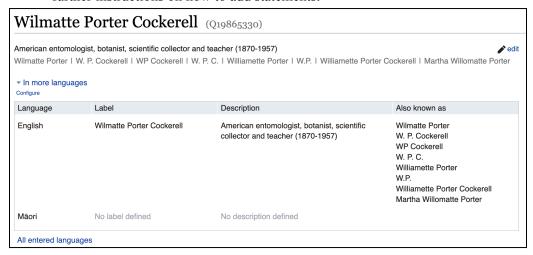


Figure 8. Screenshot of Wilmatte Porter Cockerell's Wikidata item (https://www.wikidata.org/wiki/O19865330, retrieved 2023-08-01) showing her description and aliases.

Part 3 - Adding statements to your new Wikidata profile

Wikidata statements capture data about the item. For an item representing a person, you may have statements for data such as their place and date of birth, education level, or employer. Statements start with a property which is then linked to a value, which can be circumscribed by a qualifier and should almost always be supported by a reference (See Figure 1.). Depending on the property, most values will also be a Wikidata item, but some will be unlinked text strings. For example, the property of country of citizenship (P27) could be linked to the value of United States of America (Q30) (where this value is another Wikidata item), and the property of pseudonym (P742) could be linked to the value of "Jane Doe" (where this value is a text string). Wikidata will prompt you to conform your value to the data type and format that each property expects.

There are thousands of properties that can be included as statements on a Wikidata item. To narrow this down, Appendix A lists recommended properties to add to the item of a person who is associated with scientific collections. The list of properties in Appendix A is a starting place and is not exhaustive.

Part 3A - Adding an instance of human statement

The first statement you need to make is one that will tell Wikidata your item represents a person.

- 1. Click the + *add statement* button at the bottom of the item, causing a new statement box to appear. See Figure 9.
- 2. In the left (*Property*) text box, enter the property instance of (P31).
- 3. In the right text box, enter the value <u>human (Q5)</u>.
- 4. Click the *publish* button in the top right of the statement box. See Figure 9. This will save your statement to the Wikidata item.



Figure 9. Screenshot from Wikidata (<u>https://www.wikidata.org</u>, retrieved 2024-04-24) illustrating where the + add statement button and publish buttons are located.

Part 3B - Adding occupation statement

The next statement to add is the <u>occupation (P106)</u> of the person. A person's occupation for the purposes of Wikidata is not tied to remuneration. So, for example, <u>Charles Darwin</u> has an occupation of naturalist even though he was not in paid employment for a lot of his work.

1. Click the + *add statement* button at the bottom of the item, causing a new statement box to appear (See Figure 10).

- 2. In the left (*Property*) text box, enter the property <u>occupation (P106)</u> or select the occupation property from the dropdown menu
- 3. In the right text box, enter the occupation or occupations of the person. In our example the occupation is botanical collector (Q2083925) but other options include zoological collector (Q109120509) or scientific collector (Q98544732) depending on what the person you are working on has collected.

Part 3C - Adding additional statements

Your Wikidata item now represents a human who has the occupation of botanical collector or similar. It is time for you to further enrich your item by adding more statements. A full list of properties that can be used to add statements to the person item that can be added can be seen in Appendix A. Use Appendix A to guide on the types of statements that may possibly be added to your item.

We encourage you to add data about the person you are working on. Assuming the data exists your item should have statements about the person's first name, family name, birth date, death date, and employer or the affiliation of the person. References should also be added to support any statements made.

Part 4 - Adding references

Statements made in Wikidata should be verifiable facts supported by references. <u>References</u>, also called sources, provide other Wikidata users with a way to check your information, and they are especially important when a single property has multiple, conflicting values. The only types of statements that regularly do *not* require a reference are ones that document common knowledge, e.g., <u>instance of (P31)</u> + human (O5).

It is important to add references to your item as without them your newly created Wikidata item runs the risk of being deleted. Without references, the item may not reach the threshold of <u>notability</u> needed for a Wikidata item to be created.

- 1. To add a new reference to a statement that you are editing by clicking the + *add reference* button in the statement editing box. See Figure 10.
- 2. Enter the reference property in the first box. Typically the property used for references is either <u>stated in (P248)</u> (for publications or datasets that already have a Wikidata item see Figure 10) or <u>reference URL (P854)</u> (for websites or online sources. See Figure 10). <u>DOI (P356)</u> can also be used.



Figure 10. Screenshot from Wikidata (https://www.wikidata.org/wiki/Q19865330, retrieved 2024-02-07) showing Wilmatte Porter Cockerell's employers as supported by a "reference URL" reference and a "stated in" reference.

- 3. After you have entered a reference property, a second box will appear for you to enter the reference value. Note that the <u>reference URL (P854)</u> expects a link to the URL and the <u>stated in (P248)</u> expects you to use another Wikidata item.
- 4. If you entered a value for <u>reference URL (P854)</u>, then you should also include a second property for <u>retrieved (P813)</u>, using the date you accessed the reference URL as your value. Add this by clicking the + *add* button in the blue reference statement editing box. See Figure 13.
- 5. Click the *publish* button in the top right of the statement box. This will save your new reference statement to the Wikidata item.
- 6. You may want to link to a published reference such as a scholarly article that does not yet have a Wikidata item. In this case, open a new browser tab and create a Wikidata item for the reference you want to link to.

Selecting high-quality references

References vary in quality. A detailed overview of references in Wikidata can be found in *Amaral G., et al. 2021. Assessing the quality of sources in Wikidata across languages: A hybrid approach. Journal of Data and Information Quality 13(4): 1-35.* https://doi.org/10.1145/3484828.

A <u>supplementary document</u> has been created giving a list of Tools and Resources to assist you in both learning how to edit Wikidata and to make editing Wikidata easier. A <u>youtube video</u> by Wikimedia Deutschland entitled *A few useful gadgets and scripts for Wikidata (Wikidata Leveling Up Days 2024)* also provides helpful information.

Analog references

In some cases you might need to cite a reference (e.g., a field trip guide or the newsletter of a local botanical club) that does not have a Wikidata item. You can create an item in Wikidata to represent the analog reference. See Figure 11. Many analog references already exist as Wikidata items, so just as when creating a new item for an individual in Wikidata, first search for the analog reference before creating a new item for it.

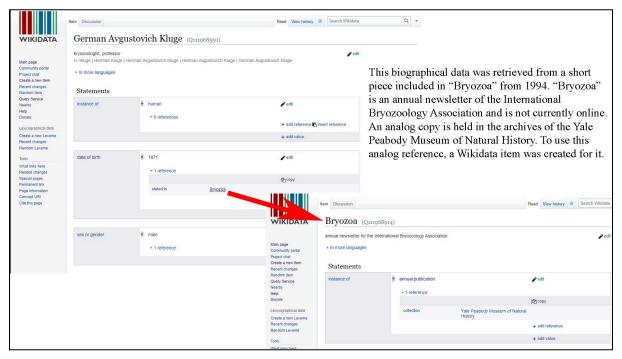


Figure 11. Screenshots from Wikidata (https://www.wikidata.org/wiki/Q111968550 and https://www.wikidata.org/wiki/Q111968914, retrieved 2022-05-11) illustrating an option for referencing an analog source (a printed newsletter named "Bryozoa") by creating a new Wikidata item for it.

Part 5 - Adding identifiers to your new item

External Wikidata identifiers link information compiled by a recognized authority about an individual to the individual's Wikidata item. Adding these identifiers is a very important part of creating Wikidata items that are integrated into the <u>Linked Open Data</u> world. External identifiers are a special type of statement, and adding them is essentially the same process as described above in Part 3. You can add an external identifier by following these steps:

- 1. Click the + add statement button on the item, causing a new statement box to appear.
- 2. In the left text box, search for the property that represents the external identifier, e.g., <u>VIAF</u> <u>ID (P214)</u>. The most important external identifiers to add are: <u>VIAF ID (P214)</u>, <u>ISNI (P213)</u>, <u>ORCID iD (P496)</u>, and <u>WorldCat Identities ID (P7859)</u>. See Appendix B below for a more complete list of external identifiers relevant to people, and where to look for them.
- 3. In the right text box, enter the value for the identifier.

- 4. You do not need to provide a reference for an external identifier. However, adding a reference statement that includes the <u>retrieved (P813)</u> property provides a data point should any changes happen to the external identifier in the future.
- 5. Click the *publish* button in the top right of the statement box. This will save your statement to the Wikidata item.
- 6. To double check the correct identifier has been added, click on the added and now linked identifier number. It should take you to the appropriate webpage in the external database.

Wikidata separates identifier statements into a section called *Identifiers*. You won't see this section on your item until you add an external identifier statement, and then refresh the item, at which point Wikidata will automatically create it. See Figure 12.



Figure 12. Screenshot from Wikidata (<u>https://www.wikidata.org/wiki/Q8025390</u>, retrieved 2025-02-07) showing the top of the Identifiers section on Winifred Goldring's item.

Part 6 - Optional Extras

Add qualifiers

As you add more referenced statements about that collector it is also possible to also add more information to those statements in the form of qualifiers. To do this, you will:

- 1. Click the + add statement button on the item, causing a new statement box to appear.
- 2. In the left text box, enter the property you wish to use, e.g., employer (P108).
- 3. In the right text box, enter the value to be linked with that property, e.g., <u>Natural History Museum of Los Angeles County (Q2502709)</u>. You may encounter instances where you want to link to an institution that does not yet have a Wikidata item. An error message of "No match was found" may be displayed. In this case, open a new browser tab and create a Wikidata item for the value that you want to link. Once created, return to the person's item and retype the value in the statement.
- 4. If appropriate, add one or more qualifiers to the value by clicking the + *add qualifier* button. Qualifiers are like statements within a statement, and as such consist of a property-value pair.

- For example, you could enter qualifiers to record the tenure of a person's employment at an institution, e.g., start time (P580) = "1940" and end time (P582) = "1972."
- 5. Add a reference by clicking the + *add reference* button. See the References section above, for more detailed information.
- 6. Click the *publish* button in the top right of the statement box. This will save your statement to the Wikidata item. If you included qualifiers in your statement and Wikidata shows a warning exclamation point in a circle, this means that the qualifier you used is not valid for this property. Go back and either remove the qualifier or alternatively edit the statement to replace the invalid qualifier with a valid one. It is helpful to find similar items with qualifiers that can guide your editing.
- 7. If appropriate, add another value to be linked with the same property. For example, a person may speak several languages and you will want to record that information. Each language can be linked via the <u>languages spoken property</u> for a more complete record. To add additional values to a property, click the + *add value* button (See Figure 13), include a reference and qualifier(s) if appropriate, and save by clicking the *publish* button.



Figure 13. Screenshot from Wikidata (<u>https://www.wikidata.org</u>, retrieved 2022-05-11) illustrating where the + add value button is located.

8. Click the *publish* button in the top right of the statement box. This will save your statement to the Wikidata item.

Note: A statement can only be linked to one property, but properties can have more than one linked value.

Images

If an image of the person exists in <u>Wikimedia Commons</u> add that image to the Wikidata item you are working on using the property <u>P18</u> and then adding the file name of the image. However if an image does NOT exist in Wikimedia Commons, for the purposes of this module, we recommend that you do not attempt to upload images to Wikimedia Commons for reuse in your Wikidata item. Images can only be uploaded to Wikicommons if they are in the public domain or are openly licensed. Explaining the copyright issues relating to reuse of images in Wikimedia Commons and Wikidata is beyond the scope of this module.

Wikidata items to use as exemplars

The following people have robust Wikidata items with many statements. You may find it helpful to browse their Wikidata items for ideas on what statements might fit your new item, and for illustrations of how to use different properties.

- Wilmatte Porter Cockerell
- <u>Carl Cotton</u>
- Winifred Goldring
- Sophie Lutterlough
- Ynes Mexia

Appendix A: Potential properties to use for a Wikidata item for scientific collectors

Property (P) number	Property label with QID suggestions	Example item QID	Where possible new items MUST include
<u>P31</u>	Instance of - human (Q5)	Q19865330	V
<u>P18</u>	Image	Q19865330	
<u>P21</u>	sex or gender - male (<u>Q6581097</u>), female (<u>Q6581072</u>), intersex (<u>Q1097630</u>), transgender female (<u>Q1052281</u>), transgender male (<u>Q2449503</u>)	Q28971409	
<u>P27</u>	country of citizenship	Q28971409	V
<u>P1559</u>	name in native language	Q2600470	
P1477	birth name	Q2567402	
P2562	married name	Q19865330	
P735	given name	Q2600470	V
<u>P734</u>	family name	Q19865330	V
P569	date of birth	Q2567402	V
<u>P19</u>	place of birth	Q8025390	
P570	date of death	Q2567402	V
<u>P20</u>	place of death	<u>Q2600470</u>	
<u>P119</u>	place of burial	Q3822242	
<u>P1317</u>	flourit (use if have dates of activity but no birth and death dates)	Q120292340	
P3342	significant person - Wikidata item for the significant person qualifier: P3831 object has role - co-collector (Q81546212) - coauthor (Q15735983) - correspondent (Q3589290) - friend (Q17297777) - colleague (P18029574)	<u>Q460241</u>	
P1412	languages spoken, written or signed	Q523424	
<u>P26</u>	spouse	Q2567402	
<u>P106</u>	occupation - botanical collector (<u>Q2083925</u>), zoological collector (<u>Q109120509</u>), scientific collector (<u>Q98544732</u>)	Q19865330	V
<u>P101</u>	field of work	Q3822242	
<u>P108</u>	employer	Q28971409	V
<u>P463</u>	member of - (add specific items for clubs, societies, collecting teams etc)	<u>Q2567402</u>	
<u>P69</u>	educated at	Q19060876	
<u>P512</u>	academic degree	Q114246773	
<u>P1066</u>	student of	Q19871872	

<u>P802</u>	student	<u>Q63764</u>	
<u>P551</u>	residence	Q108032865	
<u>P1416</u>	affiliation	Q28971409	
<u>P109</u>	signature	Q95160969	
<u>P800</u>	notable work	Q3 822242	
<u>P485</u>	archives at	Q28971409	
<u>P737</u>	influenced by	<u>Q460241</u>	
<u>P166</u>	award received	<u>Q276405</u>	
<u>P1343</u>	described by source - use if the source has a Wikidata item	Q19060876	
<u>P973</u>	described at url	Q19060876	
<u>P11146</u>	collection items at - institution holding items collected by the collector	<u>Q2600470</u>	
<u>P1889</u>	different from - to be used when there are two people with the same name or who have been confused with one another	<u>Q2567402</u>	

Appendix B: External Identifiers for People

This appendix outlines external identifier properties to add to a person's Wikidata item, as described in the Add external identifiers section. Rows with an asterisk (*) indicate that this external identifier is important to add.

External Authority	Wikidata Property Label (ID)	Definition	Example QID
International Standard Name Identifier (INSI)*	ISNI <u>(P213)</u>	ISO standard identifier for people and organisations in the ISNI database	Q28971409
Open Researcher and Contributor ID (ORCID)*	ORCID iD (P496)	identifier for a living person, typically one who is associated with the research community	<u>Q276405</u>
Virtual International Authority File (VIAF)*	VIAF ID <u>(P214)</u>	identifier for people, organisations and places in the VIAF database	Q28971409
Academic Tree	Academic Tree ID (P2381)	identifier for a person in the Academic Genealogy of Evolutionary Biology database	Q21394578
Biodiversity Heritage Library (BHL)	BHL creator ID (P4081)	identifier for an author in Biodiversity Heritage Library database	Q460241
<u>Bionomia</u>	Bionomia ID <u>(P6944)</u>	identifier for a collector and/or determiner of natural history specimens in the Bionomia database	<u>Q2600470</u>
FamilySearch	FamilySearch person ID (P2889)	identifier for a person in the Family Search database	Q19865330
Find a Grave	Find a Grave memorial ID (P535)	identifier for an individual's burial place (e.g., a grave) in the Find a Grave database	Q16066497
Google Scholar	Google Scholar author ID (P1960)	identifier for an author in the Google Scholar academic search index	<u>Q276405</u>

International Plant Names Index (IPNI)	IPNI author ID (P586)	identifier for a person in the International Plant Names Index database	Q276405
II ihrary of Congress	Library of Congress authority ID (<u>P244)</u>	identifiers for people, families, and corporate bodies in the Library of Congress database	<u>Q28971409</u>
II invedin	LinkedIn personal profile ID (P6634)	identifier for a person on the LinkedIn website	<u>Q276405</u>
IK ecearchi tate	(P2038)	identifier for a person associated with their ResearchGate profile	<u>Q276405</u>

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