

# BatLit.org - Mobilizing Bat Literature through Existing Collaborations, Platforms, and Open Source Tools

Jorrit Poelen <https://jhpoelen.nl>

2024-10-24

## Guiding Questions

- ▶ How do *you* access/reuse literature collection?
- ▶ How do *you* organize your literature collection?
- ▶ How do *you* share your literature collection?

# Is there a Worthy Bat Book Out There?



**Jorrit Poelen (GloBI)** Wednesday at 4:17 PM

@Cullen Geiselman @Aja Sherman @Nancy Simmons  
@Ariadna Morales @Kendra Phelps @DeeAnn M. Reeder  
@Hernani Fernandes Magalhães de Oliveira  
@Cecilia Montauban @Nancy Simmons et al. Any recommendations for the top-5 influential/inspirational bat papers published before 2000 ? (edited)

12 replies

---



**Jelle Zijlstra** Wednesday at 4:19 PM

Andersen, K.C. 1912. Catalogue of the Chiroptera in the collection of the British Museum. Volume I: Megachiroptera. British Museum (Natural History), British Museum Catalogue, 854 pp. <https://www.biodiversitylibrary.org/part/91323>.



Figure 1: Andersen 1912 Recommended by Jelle Zijlstra as influential Bat paper on 2024-10-16

Yes, There's a Bat Book Out There...

CATALOGUE  
OF THE  
CHIROPTERA  
IN THE  
COLLECTION  
OF THE  
BRITISH MUSEUM.  
SECOND EDITION  
BY  
KNUD ANDERSEN.

Volume I: MEGACHIROPTERA.



LONDON:  
PRINTED BY ORDER OF THE TRUSTEES.

SOLD BY

LONGMANS & CO., 20 PATERNOSTER ROW, E.C.;  
B. QUARITCH, 11 GRAFTON STREET, NEW BOND STREET, W.;  
DULAU & CO., LTD., 37 SOHO SQUARE, W.;

AND AT THE  
BRITISH MUSEUM (NATURAL HISTORY), CROMWELL ROAD, S.W.

1919

## So How'd You Cite This Book?

Andersen, K.C. 1912. *Catalogue of the Chiroptera in the collection of the British Museum.* Volume I: Megachiroptera. British Museum (Natural History), British Museum Catalogue, 854 pp. <https://www.biodiversitylibrary.org/part/91323>.

# How to Access This Paper?

The screenshot shows a web browser window with the URL <https://www.biodiversitylibrary.org/part/91323>. At the top, there is a banner from Internet Archive stating: "Internet Archive is currently down. As a result, page images are not displaying in BHL. For the latest updates, follow [@internetarchive](#)". Below this, the BHL header includes the logo, navigation links (About, Help, FAQ, Feedback), and social media icons. The main search interface is visible, featuring browse by filters (Title, Author, Date, Collection, Contributor) and search options (Full-text, Catalog, ADVANCED SEARCH). A specific book record for "Catalogue of the Chiroptera In the collection of the British Museum. Volume I: Megachiroptera" is displayed. On the right side, there are buttons for "Cite This Publication", "Book access" (with "View Book" link), "Copyright & Usage" (noting public domain status), and "Download" (PDF icon).

Figure 3: Internet Archive Down Banner on Biodiversity Heritage Library. Accessed at <https://www.biodiversitylibrary.org/part/91323> on 2024-10-16.

# How to Access This Paper?

The screenshot shows the Biodiversity Heritage Library (BHL) website. At the top, there is a navigation bar with back, forward, and search icons, followed by the URL <https://www.biodiversitylibrary.org/page/8409391#page/3/mode/1up>. To the right of the URL are a star icon and a 'Full-text' link.

The main header features the BHL logo (an open book with blue and green pages) and the text 'Biodiversity Heritage Library'. Below the logo are links for 'About', 'Help', 'FAQ', and 'Feedback'. To the right of these are social media icons for Facebook, Twitter, and Instagram.

A search bar with the placeholder 'Search the catalog and full-text' is located on the right side of the header.

A message at the top of the page reads: 'Please read BHL's Acknowledgment of Harmful Content'.

A large pink banner in the center states: 'Status Update: Internet Archive is working to restore services ASAP. BHL page images may be intermittently available or offline until IA services are fully restored. Thank you for your continued patience.' Below this, a link 'More information' is provided.

The main content area displays a document titled 'Catalogue of the Chiroptera in the collection of the ... Museum'. On the left, a sidebar shows a 'Pages' list with items like 'Cover', 'Text', 'Text', 'Text', 'Page 1 (Title Page)', 'Page 2 (Text)', etc., up to 'Page 10 (Text)'. A 'Table of Contents' button is also present. On the right, the document content is shown in a large window with various viewing controls (Fit to Height, zoom, print, etc.). A 'Search Inside' button is located in the top right corner of the document view.

At the bottom of the page, there is a 'Cite This Publication' button and a note: 'Contributed by Natural History Museum Library, London'.

Figure 4: Individual Page Images Unavailable via Biodiversity Heritage Library. Accessed at

# How to Access This Paper?

DOI: <https://biostor.org/reference/126601>

---

[Home](#)

## Catalogue of the Chiroptera In the collection of the British Museum. Volume I: Megachiroptera

Knud Andersen

in 1912, pages 1-854

Date published: 1912

DOI: [10.5962/bhl.title.8322](https://doi.org/10.5962/bhl.title.8322) BHL: [8409391](https://www.biodiversitylibrary.org/page/8409391) PDF: [View](#)

### Page images



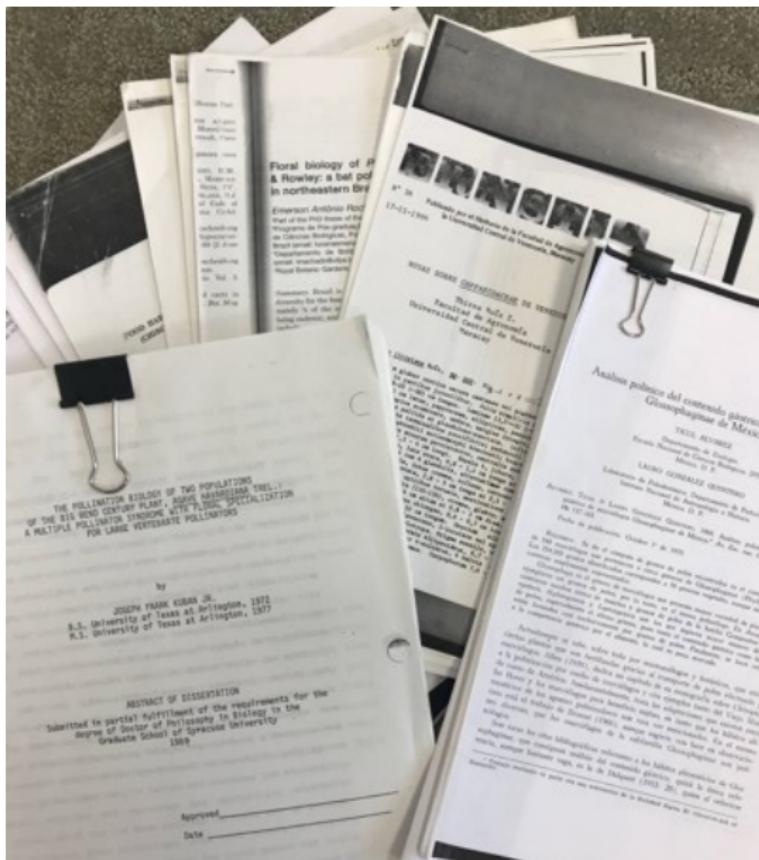
# How To Access This Paper?

Like this?



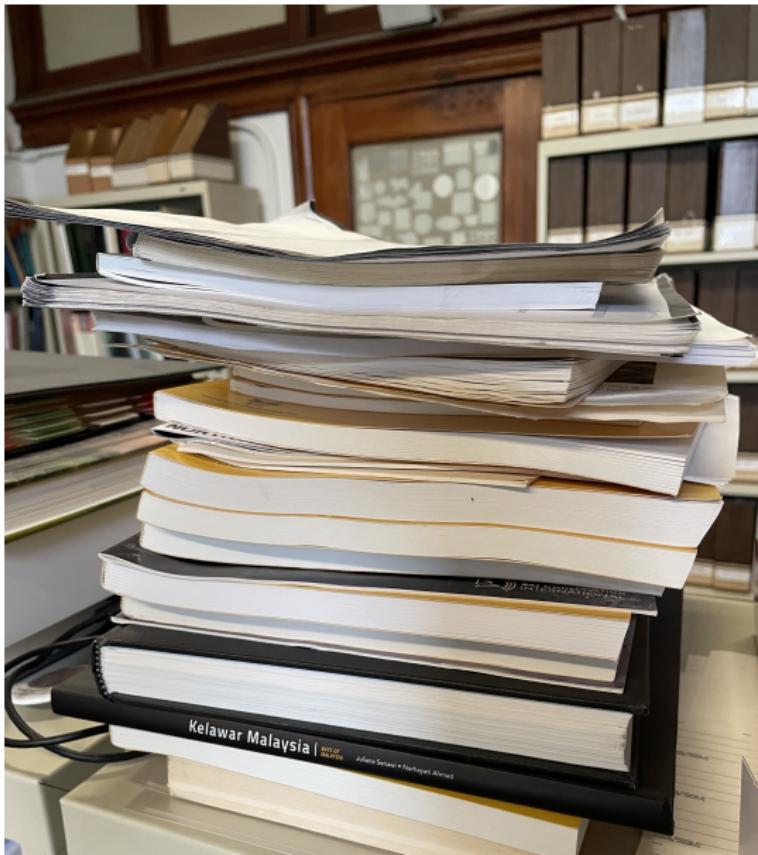
## How To Access This Paper?

Or, like this?



# How To Access This Paper?

Or perhaps like this?



# How To Access This Paper?

The screenshot shows a Zotero library interface. On the left is a sidebar with a tree view of libraries:

- My Library
- Group Libraries
- Bat Literature Project (selected)
- BLR
- Trash
- chiroptera-hesperomys-test
- Darwincore Github
- Plazi Coronavirus Virus-Hosts Li...
- preston
- Sudo Mesh

The main area displays a list of items with icons and titles:

| Creator          |  |
|------------------|--|
| Ghosh            | Catalogue of Chiroptera in the collection of the Zoologi...  |
| Talmale          | Catalogue of mammalia in the collection of the Zoologi...    |
| Chakraborty      | Catalogue of Mammalian exhibits of Zoological Galleri...     |
| Elliot           | Catalogue of mammals collected by E. Heller in South...      |
| Novaes et al.    | Catalogue of primary types of Neotropical Myotis (Chir...    |
| Andersen et al.  | Catalogue of the Chiroptera in the collection of the ... ... |
| Yalden et al.    | Catalogue of the mammals of Ethiopia and Eritrea. 7. ...     |
| Largen et al.    | CATALOGUE OF THE MAMMALS OF ETHIOPIA: 1. ...                 |
| Carter and Dolan | Catalogue of type specimens of neotropical bats in sel...    |

Below the list are tabs: Info (selected), Notes, Tags, Attachments, Related.

The detailed item info for the first entry is shown:

| Item Type | Book  |
|-----------|---|
| Title     | Catalogue of the Chiroptera in the collection of the ... Museum / By G.E. Dobson. |
| Author    | Andersen, Knud.   |
| Author    | British Museum (Natural History).   |
| Author    | Dobson, George Edward.  |
| Place     | London,   |
| Publisher | [s.n.]  |
| Date      | 1912  |

At the bottom left, there's a list of search terms:

- ??-Glucan \*229-E-like bat coronavirus
- \*adenovirus \*Africa \*Alphacoronavirus
- \*Angolan free-tailed bat
- \*Angolan free-tailed bats \*animal capture
- \*animal care \*Animal Distribution

# How to Access This Paper?

Open https://zenodo.org/records/13517334

The screenshot shows the Zenodo search interface. At the top, there's a search bar with the placeholder "Search records..." and a magnifying glass icon. To the right of the search bar are two links: "Communities" and "My dashboard". Below the search bar, the main content area features a thumbnail image of a bat in flight, followed by the title "Bat Literature Project".

Published 1912 | Version v1

[Book](#) [Open](#)

## Catalogue of the Chiroptera in the collection of the ... Museum / By G.E. Dobson.

Andersen, Knud.; Dobson, George Edward.

(Uploaded by Plazi for the Bat Literature Project) No abstract provided.

### Files

The screenshot shows a PDF viewer window. At the top, it displays the file name "Andersen et al. - 1912 - Catalogue of the Chiroptera in the collection of t.pdf". Below the file name is a toolbar with various icons for file operations like opening, saving, and zooming. In the center, the first page of the document is visible, showing a dark background with some text and possibly a watermark or illustration. At the bottom of the viewer window, there are navigation controls including a page number "1 of 964" and "Automatic Zoom".

# How to Access This Paper?

Open in browser https://zenodo.org/records/13517334



## Additional details

|                      |   |
|----------------------|---|
| Identifiers          | <b>URL</b><br><a href="https://md5/56384a6778e2c67bbd8ebe4d63f770cf">hash://md5/56384a6778e2c67bbd8ebe4d63f770cf</a>  |
|                      | <b>URN</b><br><a href="urn:lsid:zotero.org:groups:5435545:items:P825HKF3">urn:lsid:zotero.org:groups:5435545:items:P825HKF3</a>   |
| <b>Related works</b> | <b>Has version</b><br><a href="https://md5/56384a6778e2c67bbd8ebe4d63f770cf">hash://md5/56384a6778e2c67bbd8ebe4d63f770cf</a> (URL)<br><a href="https://sha256/a38352c608bafdb87cd6d77211dadffa460c0f7978ae5ed3fa38f9ba4d16836c">hash://sha256/a38352c608bafdb87cd6d77211dadffa460c0f7978ae5ed3fa38f9ba4d16836c</a> (URL)  |
|                      | <b>Is compiled by</b><br>Software: <a href="https://doi.org/10.5281/zenodo.1410543">10.5281/zenodo.1410543</a> (DOI)  |
|                      | <b>Is derived from</b><br><a href="https://zotero://select/groups/5435545/items/P825HKF3">zotero://select/groups/5435545/items/P825HKF3</a> (URL)<br><a href="https://zotero.org/groups/5435545/items/P825HKF3">https://zotero.org/groups/5435545/items/P825HKF3</a> (URL)<br><a href="https://linker.bio/cut:hash://md5/b5b42413228fe3497802a6b8600efe3!b39507-41976">https://linker.bio/cut:hash://md5/b5b42413228fe3497802a6b8600efe3!b39507-41976</a> (URL) |
|                      | <b>Is part of</b><br><a href="https://md5/26f7ce5dd404e33c6570edd4ba250d20">hash://md5/26f7ce5dd404e33c6570edd4ba250d20</a> (URL)   |

# How to Access This Paper?

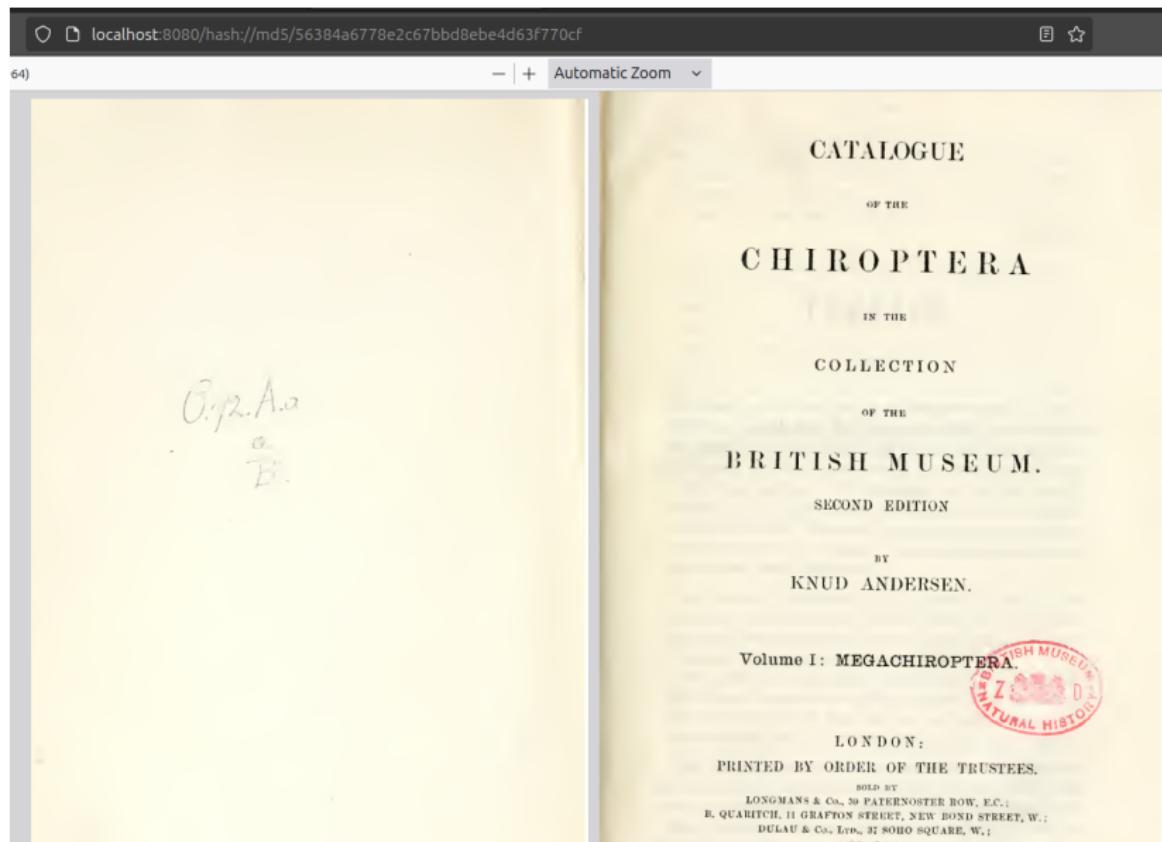
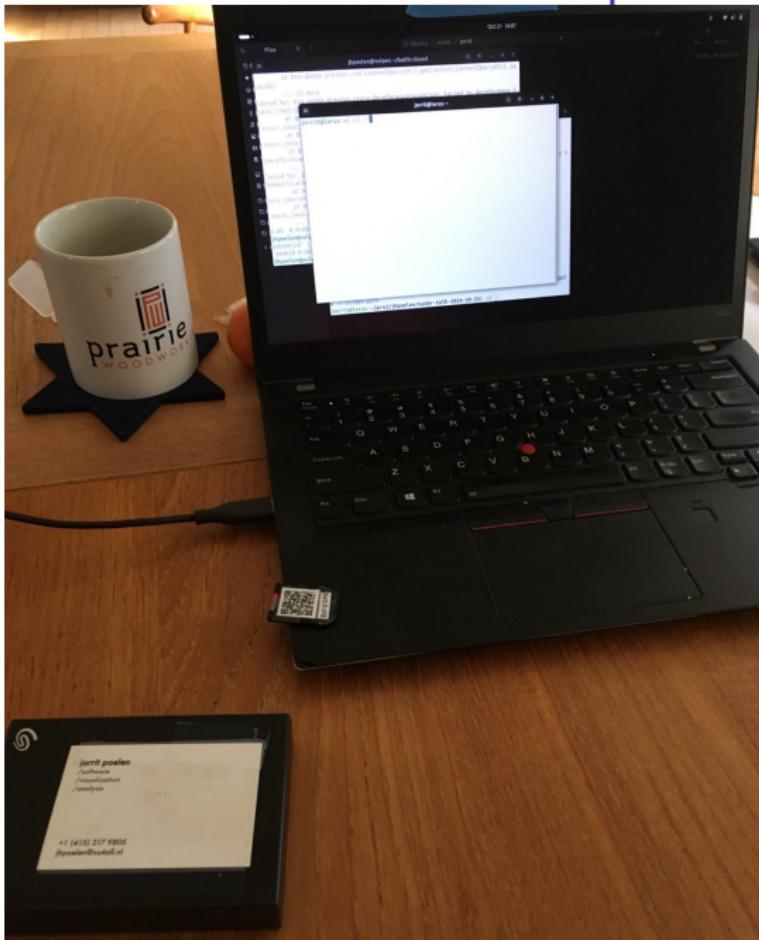


Figure 12: Jerrit accesses Andersen 1012 at 30,000 ft on UA6125 JAH to

# How Was Jorrit Able to Access This Paper at 30k ft?



# How Was Jorrit Able to Access This Paper at 30k ft?



# How Was Jorrit Able to Access This Paper at 30k ft?



Wishing you had 20k bat papers at your fingertips?



Figure 16: Cecilia Montauban catching bats in Ghana while writing a Bat

# BatLit 20k papers / <64 GB

## 20k Papers

### < 64GB

| version | date                  | size     | # pages | # references |
|---------|-----------------------|----------|---------|--------------|
| v0.1    | 2024-04-26            | 7.9 GiB  |         | 2929         |
| v0.2    | 2024-05-16/2024-05-17 | 11.6 GiB |         | 3310         |
| v0.3    | 2024-06-25/2024-06-26 | 13.6 GiB |         | 5501         |
| v0.4    | 2024-08-01/2024-08-02 | 50.9 GiB |         | 20146        |
| v0.5    | 2024-08-16/2024-08-17 | 50.9 GiB |         | 20145        |
| v0.6    | 2024-09-19/2024-09-20 | 44.7GiB  | 427105  | 19038        |

## How Was Jorrit Able to Access This Paper Now?

Work with GBatNet group for 3.5 years in which:

- ▶ goals were identified
  - ▶ (G1) make bat interaction data digitally accessible,
  - ▶ (G2) align bat taxonomic names to uncover their meaning, and
  - ▶ (G3) provide open-access to bat literature.
- ▶ Plazi provided a legal framework <sup>1</sup>
- ▶ BatBase provided curatorial support
- ▶ Jorrit reused work done in tracking, packaging and versioning biodiversity datasets
- ▶ Collectors/researchers shared their literature collections

---

<sup>1</sup>needs citation

# BatLit Workflow



Figure 17: BatLit Workflow

## Introducing BatLit

1. Curator Adds Digital Copy to BatLit Project on Zotero <sup>2</sup>
2. Periodically, Archivist takes a snapshot of all Zotero records in BatLit, including bibliographic metadata and the “physical” digital copy (pdf).
3. Archivist puts the snapshots in a signed digital archive (box) and signs the provenance logs
4. Signed Digital Archive (or a batlit corpus version) is mobilized by translating and upload them to Zenodo, GitHub Pages, and various other network attached storage media
5. Signed Digital Archives is stored on offline enabled media (sd card, external hard disk)
6. Corpus is transmitted and discovered by students researchers
7. Corpus is reused by students and researchers, enabling both manual (e.g., reading, annotation) and automated (e.g., raw material for language model training) workflows
8. Reuse promotes improvement and further awareness

---

<sup>2</sup>[https://www.zotero.org/groups/5435545/bat\\_literature\\_project](https://www.zotero.org/groups/5435545/bat_literature_project)

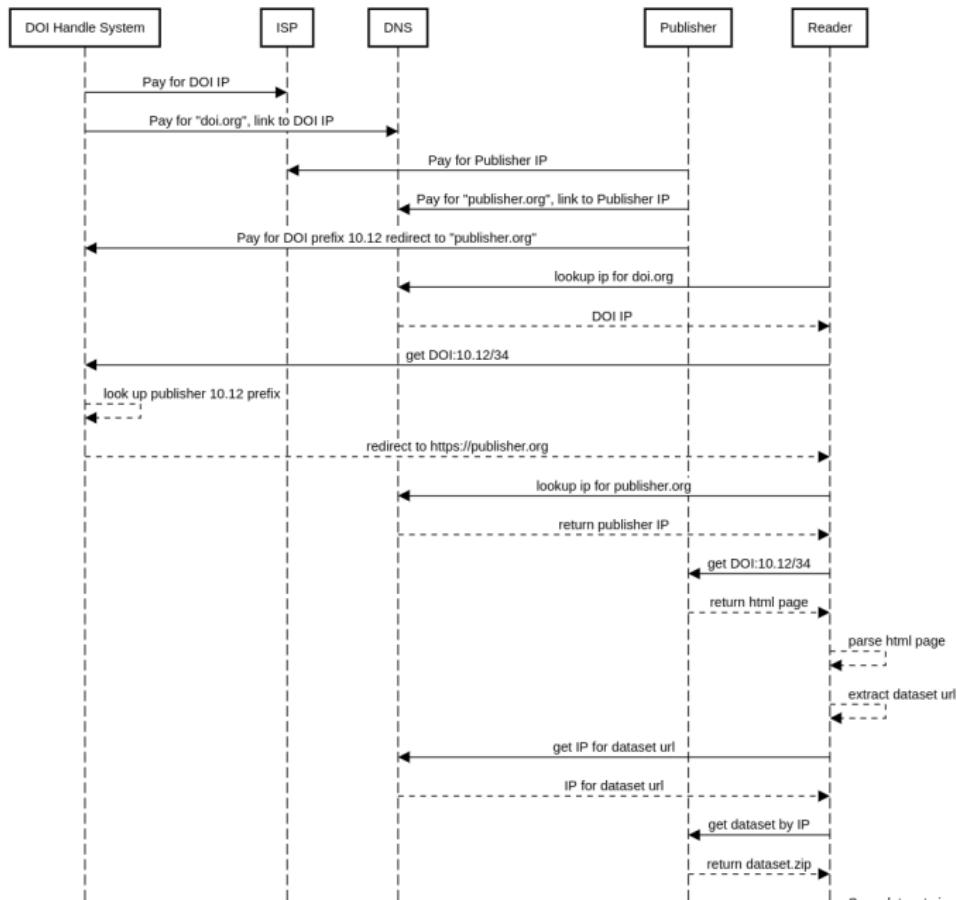
# How To Access This Paper Now?

Take 2.

- ▶ turn on the internet (still there?)
- ▶ open a web browser
- ▶ load <https://doi.org/10.5281/zenodo.13342373>
  - ▶ and rely on a delicate and complex socio-technical network
- ▶ inspect page
- ▶ use mouse to click on a link that looks like a bug picture
- ▶ download image and **trust** its authenticity

# DOI Economics and Redirection

steps to use DOI to download dataset



## How To Retrieve This Bug Picture 40 Years From Now?

Andersen, K.C. 1912. Catalogue of the Chiroptera in the collection of the British Museum. Volume I: Megachiroptera. British Museum (Natural History), British Museum Catalogue, 854 pp. <https://www.biodiversitylibrary.org/part/91323>  
<https://doi.org/10.5962/bhl.title.8322>

Likely will not work due to intricate network of dependencies.

# How To Access This Paper 40 Years From Now?

## Proposal: Sign the citation <sup>3</sup>

... by adding some digital fingerprints of the “physical” digital copy and the corpus (manifest) they are a part of.

Andersen, K.C. 1912. Catalogue of the Chiroptera in the collection of the British Museum. Volume I: Megachiroptera. British Museum (Natural History), British Museum Catalogue, 854

pp. <https://www.biodiversitylibrary.org/part/91323>

<https://doi.org/10.5962/bhl.title.8322>

`<hash://md5/db73e659e8cf16ef50e82bb5e72ae97b>`

`<http://www.w3.org/ns/prov:hadMember>`

`<hash://md5/56384a6778e2c67bbd8ebe4d63f770cf> .`

---

<sup>3</sup>Elliott M.J., Poelen, J.H. & Fortes, J.A.B. (2023) Signing data citations enables data verification and citation persistence. *Sci Data*.

<https://doi.org/10.1038/s41597-023-02230-y>

`hash://sha256/f849c870565f608899f183ca261365dce9c9f1c5441b1c779e0db49df9c2a19d`

## How To Access This Paper 40 Years From Now?

... by searching the world (in, and beyond, the internet) for the content with the unique fingerprint

hash://md5/f052cbac398bf340a620c421bfefa16d .



<https://linker.bio/hash://md5/f052cbac398bf340a620c421bfefa16d>



[https://zenodo.org/records/13342373/files/BMT121\\_BMT0009388](https://zenodo.org/records/13342373/files/BMT121_BMT0009388)



preston cat --remote <https://zenodo.org>  
hash://md5/f052cbac398bf340a620c421bfefa16d



preston cat --remote <https://softwareheritage.org>  
hash://sha256/69df9b5bc5df5619448ade01c92d0a5e20bcec2ab



preston cat --remote  
<https://linker.bio>,<https://zenodo.org>  
hash://md5/f052cbac398bf340a620c421bfefa16d

# Let Us Carry Our Papers Into The Future...

```
preston cat\  
--remote "https://zenodo.org"\  
hash://md5/f052cbac398bf340a620c421bfefa16d\  
> bug.tiff
```

Bug

Figure 19: Bug

## Guiding Questions

- ▶ How do *you* access literature?
- ▶ How do *you* organize your literature?
- ▶ How do *you* share your literature?

Extra

# Internet Is Designed For *Exchanging* Information

*The internet is a powerful tool for exchanging digital information. But the Internet's contents changes constantly: websites are launched and taken down, webpages change, and content gets archived or lost.<sup>4</sup>*

---

<sup>4</sup>Jorrit Poelen. 2024. Unleashing Digital Knowledge Into The Future. Accessed on 2024-02-06 at <https://linker.bio>  
line:hash://sha256/8ac18eb75ff20d40d1d60bb6ad5a745eb528093d1ffbe373e3847c131460

## Internet Is *Location-based*

*By design, a web address, or Uniform Resource Locator (URL), points to a specific internet location from which a resource, like a webpage, can be retrieved. However, a URL does not provide a way to verify that a retrieved webpage was the one we asked for.*<sup>5</sup>

---

<sup>5</sup>Jorrit Poelen. 2024. Unleashing Digital Knowledge Into The Future.  
Accessed on 2024-02-06 at <https://linker.bio>  
line:hash://sha256/8ac18eb75ff20d40d1d60bb6ad5a745eb528093d1ffbe373e3847c131460

## Finding Content By Their Location Is . . . Tricky

*Imagine using a URL-like reference to find a book at a library: instead of locating a book by what it is (e.g., title, author), you refer to a book by its location (e.g., third shelf on the second row next to the window). With this, a book becomes unfindable if moved to another shelf. And, if you do manage to find a book at the referenced location, how would you know you've found the book you are looking for?*<sup>6</sup>

---

<sup>6</sup>Jorrit Poelen. 2024. Unleashing Digital Knowledge Into The Future. Accessed on 2024-02-06 at <https://linker.bio>  
line:hash://sha256/8ac18eb75ff20d40d1d60bb6ad5a745eb528093d1ffbe373e3847c131460

# Finding Content By Their (Summarized) Content Is . . . What Librarians Do

*Instead of pointing to where books are located, librarians point to them using a bibliographic reference. For practical reasons, only a few identifying clues are included in such a reference (e.g., author, year of publication, title, and publisher). So, librarians refer to content by what it is, and knowing where it may be located is secondary.* <sup>7</sup>

A bibliographic citation:

Darwin, C. 1859. On the Origin of Species. John Murray.

---

<sup>7</sup>Jorrit Poelen. 2024. Unleashing Digital Knowledge Into The Future.  
Accessed on 2024-02-06 at <https://linker.bio>  
line:hash://sha256/8ac18eb75ff20d40d1d60bb6ad5a745eb528093d1ffbe373e3847c131460

