

Digital repositories for FAIR data management

Examples from Zenodo/InvenioRDM

Lars Holm Nielsen / CERN - IT Department
CS3 Conference 2024

Make it

Open

FAIR

How?

Open

FAIR

DMPs & Repositories

The screenshot shows the Zenodo website interface. At the top, there is a search bar and navigation links for 'Communities' and 'My dashboard'. The user profile 'lars.holm...' is visible in the top right. Below the navigation, there is a section for 'Featured communities' featuring the 'Biodiversity Literature Repository' with a 'Browse' button. A blue callout box displays the DOI: 10.5281/zenodo.10641396. The 'Recent uploads' section lists three datasets, each with a 'March 13, 2024 (v1)' label, 'Dataset' type, and 'Open' status. The first dataset is 'Occurrence data on PCNs provided to EFSA' by Gergelova, Petra. The second is 'Annex B - Dietary surveys and occurrence data in feed and food submitted to EFSA' by Gergelova, Petra. The third is 'Annex C - Human dietary exposure assessment' by Gergelova, Petra. On the right side, there is a 'Why use Zenodo?' section with a list of benefits and a 'Newsletter' sign-up form.

zenodo Search records... Communities My dashboard lars.holm...

Featured communities

Biodiversity Literature Repository Browse

DOI 10.5281/zenodo.10641396

Recent uploads

March 13, 2024 (v1) Dataset Open

Occurrence data on PCNs provided to EFSA
Gergelova, Petra

The file contains the raw occurrence dataset on PCNs in food and feed as extracted from EFSA DWH on 25th October 2022 and presented in the EFSA scientific opinion on the risks for animal and human health related to the presence of polychlorinated naphthalenes (PCNs) in feed and food. This dataset is compliant with EFSA SSD2 data model and...

Uploaded on March 12, 2024
Part of Knowledge Junction

March 13, 2024 (v1) Dataset Open

Annex B - Dietary surveys and occurrence data in feed and food submitted to EFSA
Gergelova, Petra

Occurrence data on PCNs in food and feed and dietary surveys per country and age group available in the EFSA Comprehensive Database, considered in the exposure assessment

Uploaded on March 12, 2024
Part of Knowledge Junction

March 13, 2024 (v1) Dataset Open

Annex C - Human dietary exposure assessment
Gergelova, Petra

Why use Zenodo?

- **Safe** — your research is stored safely for the future in CERN's Data Centre for as long as CERN exists.
- **Trusted** — built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
- **Citeable** — every upload is assigned a Digital Object Identifier (DOI), to make them citable and trackable.
- **No waiting time** — Uploads are made available online as soon as you hit publish, and your DOI is registered within seconds.
- **Open or closed** — Share e.g. anonymized clinical trial data with only medical professionals via our restricted access mode.
- **Versioning** — Easily update your dataset with our versioning feature.
- **GitHub integration** — Easily preserve your GitHub repository in Zenodo.
- **Usage statistics** — All uploads display standards compliant usage statistics

Newsletter

Receive updates on our latest developments, projects and upcoming webinars sent quarterly.

E-mail *
your-email@example.com

Name
Your name

The screenshot shows the 'Export' menu in Zenodo. The menu is open, displaying a list of export formats: JSON, JSON-LD, CSL, DataCite JSON, DataCite XML, Dublin Core XML, MARCXML, BibTeX, GeoJSON, DCAT, Codemeta, and Citation File Format. An 'Export' button is visible to the right of the menu.

Export

JSON

JSON

JSON-LD

CSL

DataCite JSON

DataCite XML

Dublin Core XML

MARCXML

BibTeX

GeoJSON

DCAT

Codemeta

Citation File Format

Export

Taxonomic treatments

Describe the discovery of new biological species

Example:

Journal article describing 22 new millipedes, published in European Journal of Taxonomy



European Journal of Taxonomy 445: 1–90
<https://doi.org/10.5852/ejt.2018.445>

ISSN 2118-9773
www.europeanjournaloftaxonomy.eu
2018 · Enghoff H.

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Monograph

[urn:lsid:zoobank.org/pub:852A3F68-B728-413A-B12E-56F306D56C35](https://zoobank.org/pub:852A3F68-B728-413A-B12E-56F306D56C35)

A mountain of millipedes VII: The genus *Eviulisoma* Silvestri, 1910, in the Udzungwa Mountains, Tanzania, and related species from other Eastern Arc Mountains. With notes on *Eoseviulisoma* Brolemann, 1920, and *Suohelisoma* Hoffman, 1963 (Diplopoda, Polydesmida, Paradoxosomatidae)

Henrik ENGHOFF

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Email: henghoff@snm.ku.dk

[urn:lsid:zoobank.org/author:FB09A817-000D-43C3-BCC4-2BC1E5373635](https://zoobank.org/author:FB09A817-000D-43C3-BCC4-2BC1E5373635)

Abstract. Twenty-two new species of the genus *Eviulisoma* Silvestri, 1910, from the Eastern Arc Mountains, Tanzania, are described: *E. acaciae* sp. nov., *E. aequilobatum* sp. nov., *E. akkariae* sp. nov., *E. angulatum* sp. nov., *E. articulatum* sp. nov., *E. biquintum* sp. nov., *E. breviscutum* sp. nov., *E. cetafi* sp. nov., *E. chitense* sp. nov., *E. commelina* sp. nov., *E. coxale* sp. nov., *E. ejti* sp. nov., *E. grumslingslak* sp. nov., *E. kalimbasiense* sp. nov., *E. navuncus* sp. nov., *E. nessiteras* sp. nov., *E. ottokrausi* sp. nov., *E. paradisiacum* sp. nov., *E. sternale* sp. nov. and *E. zebra* sp. nov. from the Udzungwa Mts, *E. culter* sp. nov. from the Rubeho Mts and *E. kangense* sp. nov. from the Kanga Mts. *Eviulisoma kwabuniense* Kraus, 1958, and *E. dabagaense* Kraus, 1958, both from the Udzungwa Mts, are redescribed based on new material. Notes are provided on *E. iuloideum* (Verhoeff, 1941) based on type material. *Eoseviulisoma* Brolemann, 1920, is synonymized under *Eviulisoma*, based on newly collected material of *E. julinum* (Attems, 1909), type species of *Eoseviulisoma*. New material of *Suohelisoma ulugurensis* Hoffman, 1964, type species of *Suohelisoma* Hoffman, 1964, has revealed that the gonopod structure is more similar to that of *Eviulisoma* than originally thought, but *Suohelisoma* is retained as a valid genus. Four species groups are recognized among *Eviulisoma* species from the Udzungwa Mts, but the need for a revision of the entire genus is emphasized. Two types of epizootic fungi are recorded from *Eviulisoma* spp., and an enigmatic amorphous mass, which may be a kind of plugging substance, is recorded from the gonopod tips and excavated sixth sternum of several species.

Keywords. Taxonomy, new species, epizootic fungi, copulatory plug.

Enghoff H. 2018. A mountain of millipedes VII: The genus *Eviulisoma* Silvestri, 1910, in the Udzungwa Mountains, Tanzania, and related species from other Eastern Arc Mountains. With notes on *Eoseviulisoma* Brolemann, 1920, and *Suohelisoma* Hoffman, 1963 (Diplopoda, Polydesmida, Paradoxosomatidae). *European Journal of Taxonomy* 445: 1–90. <https://doi.org/10.5852/ejt.2018.445>

Treatments: Data in disguise

Geographic coordinates

Date of collection

Collector

Material (total: 3 ♂♂)

Holotype

TANZANIA: ♂, Mwanihana Forest, above Sanje, 1650 m a.s.l., pitfall trap, 18 Aug. 1982, M. Stoltze and N. Scharff leg. (ZMUC).

Paratypes

TANZANIA: 1 ♂, Morogoro Region, Kilombero District, Udzungwa Mts National Park, forest below Mwanihana Peak, 7°49' S, 36°50' E, 1800 m a.s.l., sifted from leaf litter, 20 Aug. 2017, T. Pape leg. (ZMUC); 1 ♂, Morogoro Region, Udzungwa Mts National Park, Mito Mitatu, above Mang'ula, 07°49'3" S, 36°52'58" E, 1487 m a.s.l., 16 Dec. 2016,

Host collection



EUROPEAN JOURNAL OF TAXONOMY
MATERIAL CITATIONS FORMATTING GUIDE

In accordance with the European Journal of Taxonomy's [FAIR & Open Science policy](#), the formatting guide for entomology, zoology and palaeozoology material citations is provided below (guidelines for botany available soon). Authors are encouraged to prepare their manuscripts according to this model prior to submission, but they will also be given the opportunity to comply upon acceptance of the article.

While EJT strongly recommends that authors adhere to the guidelines given below, the fine-grain formatting of the material citations is not compulsory: if an author decides not to comply or the material is not appropriate,

Locked up data

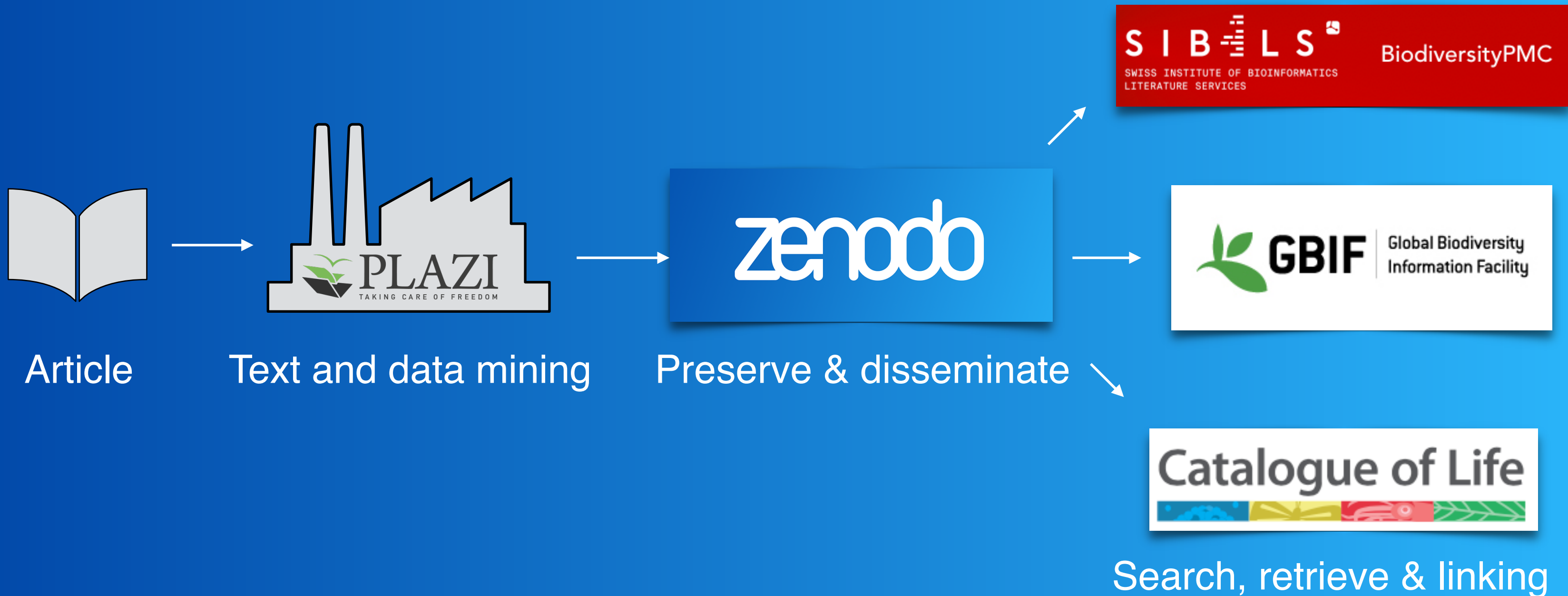
Unanswerable questions:

- How many species have been described by my collection?
- Give me a list of all new species?
- Retrieve all images for a given taxon?
- What's known about a geographic region?

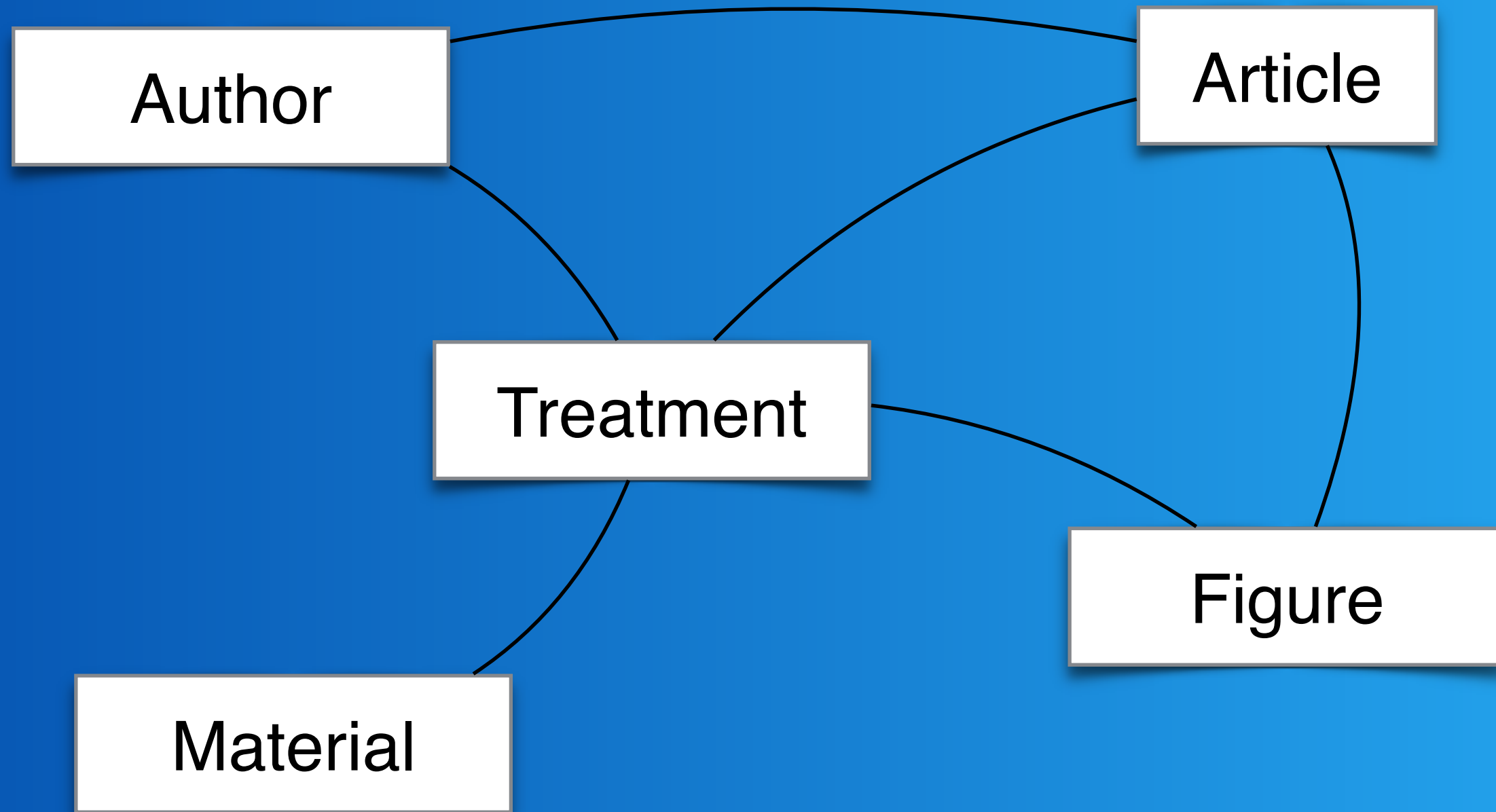
• Treatments:

- Past 260 years: **~10+ millions** published
- Every year: **~17k** new / **~130k** augmented

It takes an ecosystem



It takes an ecosystem



FAIR Data

zenodo Search records... Communities My dashboard Log in Sign up

Biodiversity Literature Repository

Published June 19, 2018 | Version v1 Figure Open

36 VIEWS 145 DOWNLOADS [Show more details](#)

Fig. 1 in A mountain of millipedes VII: The genus *Eviulisoma* Silvestri, 1910, in the Udzungwa Mountains, Tanzania, and related species from other Eastern Arc Mountains. With notes on *Eoseviulisoma* Brolemann, 1920, and *Suohelisoma* Hoffman, 1963 (Diplopoda, Polydesmida, Paradoxosomatidae)

Enghoff, Henrik

Fig. 1. *Eviulisoma zebra* sp. nov., one of the strikingly marked species from the Udzungwa Mts. Photograph by Martin Nielsen.

Notes

Published as part of Enghoff, Henrik, 2018, *A mountain of millipedes VII: The genus Eviulisoma Silvestri, 1910, in the Udzungwa Mountains, Tanzania, and related species from other Eastern Arc Mountains. With notes on Eoseviulisoma Brolemann, 1920, and Suohelisoma Hoffman, 1963 (Diplopoda, Polydesmida, Paradoxosomatidae), pp. 1-90 in European Journal of Taxonomy 445 on page 3, DOI: 10.5852/ejt.2018.445, http://zenodo.org/record/1489598*

Files

figure.png



External resources

Indexed in

OpenAIRE

Communities

Biodiversity Literature Repository

Keywords and subjects

Biodiversity Taxonomy Animalia Arthropoda Diplopoda Polydesmida Paradoxosomatidae Eviulisoma

Details

DOI 10.5281/zenodo.1489600

Get data How-to Tools Community About Login

TREATMENT ARTICLE | REGISTERED NOVEMBER 16, 2018

A mountain of millipedes VII: The genus *Eviulisoma* Silvestri, 1910, in the Udzungwa Mountains, Tanzania, and related species from other Eastern Arc Mountains. With notes on *Eoseviulisoma* Brolemann, 1920, and *Suohelisoma* Hoffman, 1963 (Diplopoda, Polydesmida, Paradoxosomatidae)

Mediated by [Plazi.org taxonomic treatments database](#)

Enghoff H • plazi

DATASET TAXONOMY METRICS ACTIVITY DOWNLOAD HOME PAGE

82 MATERIALS EXAMINED 32 RECORDS 31 CITATIONS

This dataset contains the digitized treatments in Plazi based on the original journal article Enghoff, Henrik (2018): A mountain of millipedes VII: The genus *Eviulisoma* Silvestri, 1910, in the Udzungwa Mountains, Tanzania, and related species from other Eastern Arc Mountains. With notes on *Eoseviulisoma* Brolemann, 1920, and *Suohelisoma* Hoffman, 1963 (Diplopoda, Polydesmida, Paradoxosomatidae). *European Journal of Taxonomy* 445: 1-90, DOI: 10.5852/ejt.2018.445

Publication date: June 19, 2018
 Metadata last modified: October 29, 2023
 Hosted by: [Plazi.org taxonomic treatments database](#)
 Licence: CC0 1.0
 How to cite DOI 10.5852/ejt.2018.445

82 Occurrences	100% With taxon match	49% With coordinates	83% With year
32 Accepted names	0 Synonyms	100% Overlap with GBIF Backbone	100% Overlap with Catalogue of Life

40 GEOREFERENCED RECORDS



Domain-specific metadata

Searchable metadata

The screenshot shows a web interface for adding domain-specific fields. A modal window titled "Biodiversity" is open, listing various taxonomic fields with external links:

- Family** [Paradoxosomatidae](#)
- Genus** [Eviulisoma](#)
- Kingdom** [Animalia](#)
- Order** [Polydesmida](#)
- Phylum** [Arthropoda](#)
- Scientific name authorship** [Silvestri](#)
- Taxon rank** [genus](#)
- Taxonomic concept label** [Eviulisoma Silvestri, 1910 sec. Enghoff, 2018](#)

The background interface includes a search bar for field names and a list of fields such as "Basis of record", "Catalog number", "Class", "Collection code", "Country", and "Date identified", each with a "Biodiversity: dwc" tag and a "Multiple value field" option.

Vocabularies

The screenshot shows a "Keywords and subjects" interface. A search for "phys" is active, and a dropdown menu displays suggestions from EuroSciVoc:

- Add phys
- (EuroSciVoc) Solar physics
- (EuroSciVoc) Physical cosmology
- (EuroSciVoc) Particle physics
- (EuroSciVoc) Solid-state physics

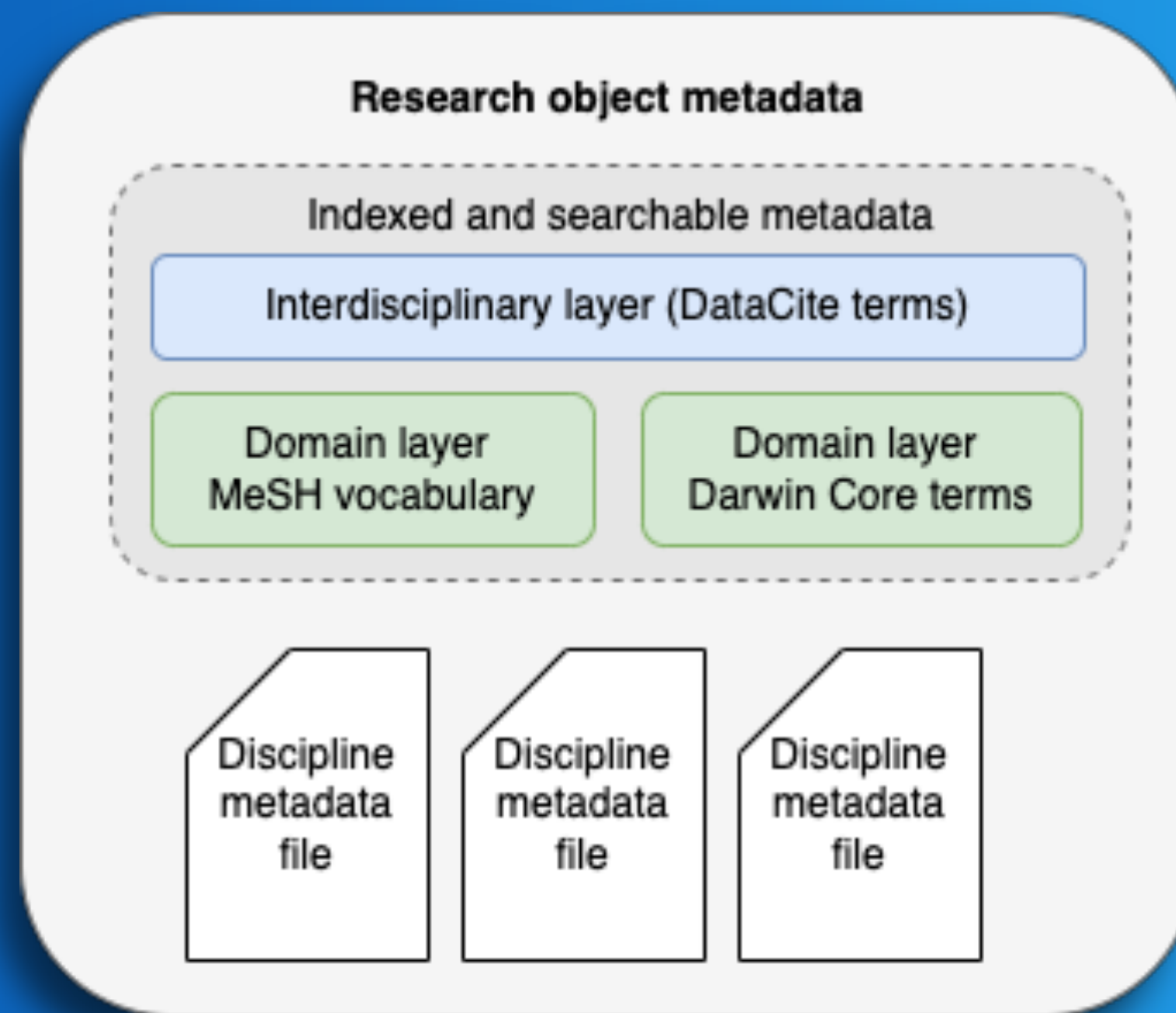
The interface also includes sections for "Languages" and "Dates" with a date input field.

Metadata files

The screenshot shows a "System files" interface with a table of files:

Name	Size	Download all
application/vnd.plazi.v1+xml md5:b0dd7dd2e94c0a018634bbc5054e1369	27.1 kB	Download

Domain-specific metadata



Annotations

☰ One new genus and nineteen new species of ground spiders (Araneae: Gnaphosidae) from Iran, with other taxonomic consider... ☐

☰ Annotations ☐

👁

Diagnosis The new species is most similar to *B. venatrix* (O. Pickard-Cambridge, 1874) and *B. koponeni*...

subSubSection part 3

Berlandina Dalmas, 1922

taxonomicName

order: Araneae

family: Gnaphosidae

genus: Berlandina

Berlandina artaxerxes

taxonomicName

order: Araneae

family: Gnaphosidae

genus: Berlandina

species: artaxerxes

B. venatrix (O. Pickard-Cambridge, 1874)

[European Journal of Taxonomy 751: 68–114 \(2021\)](#)

Type material

Holotype
IRAN • ♂; Ilam Province, Abdanan: 32°53' N, 47°30' E; Jul. 2015; A. Zamani leg.; MHNG

Paratypes
IRAN • 1 ♀; same collection data as for holotype; MHNG • 8 ♂♂; Kermanshah Province, Zarrin Joob Vil.; Apr. 2017; M. Amiri leg.; MHNG • 1 ♀; Kurdistan Province, Marivan; May 2017; A. Zamani leg.; MHNG • 1 ♂; Fars Province, 5 km N of Persepolis; 1970; K. Bilek leg.; NHMW.

Description

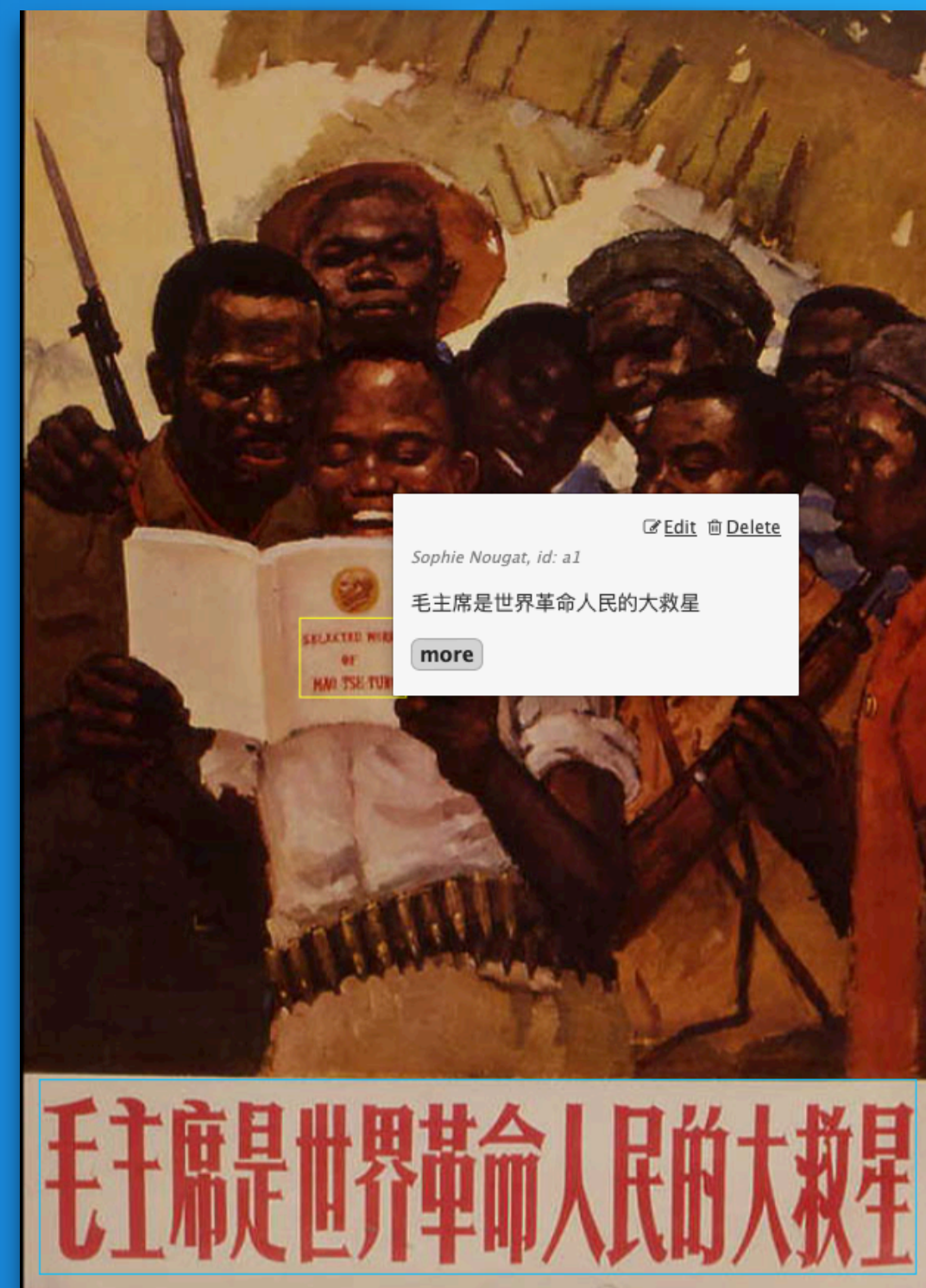
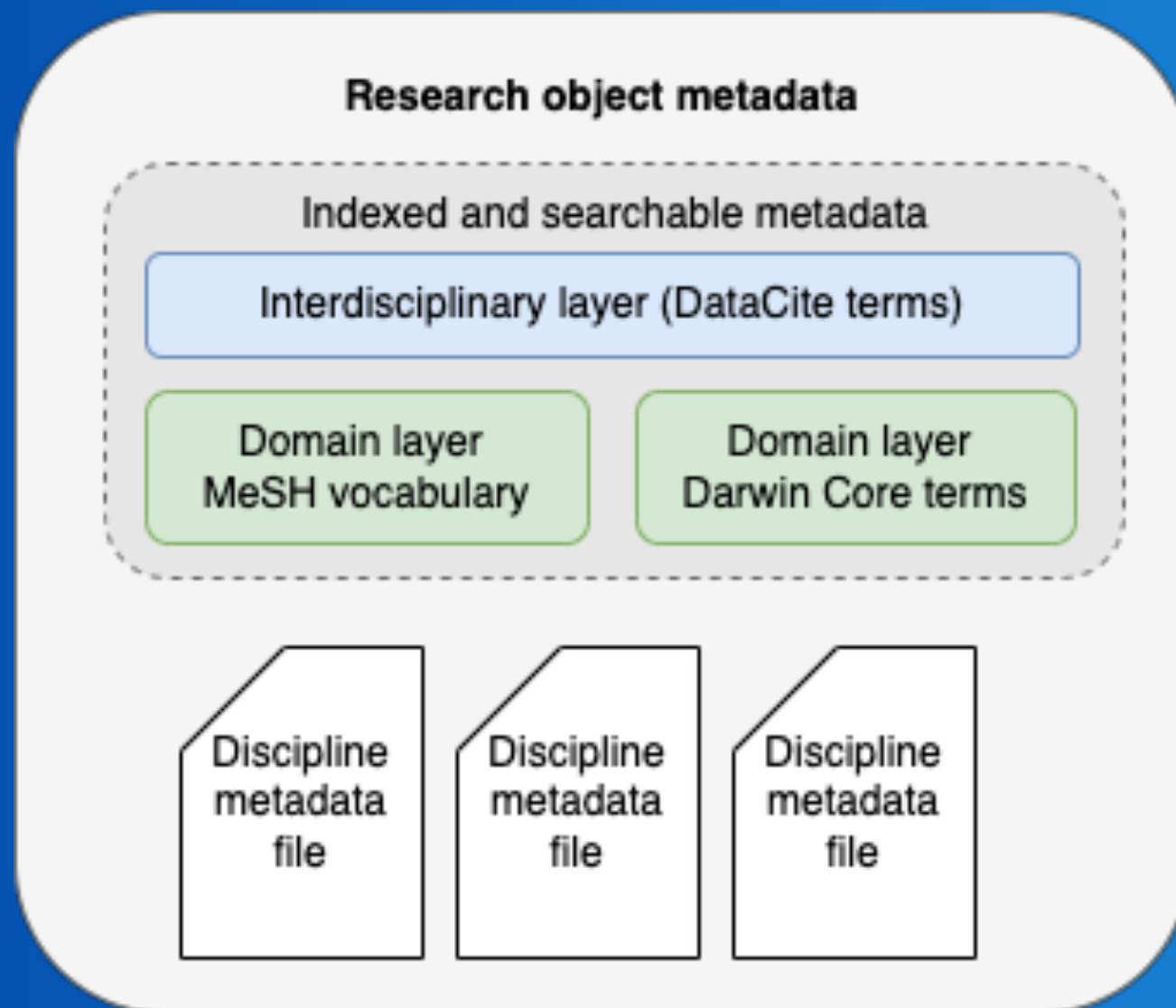
Male (holotype)
Habitus as in Fig. 2A. Total length 4.50. Carapace 1.92 long, 1.50 wide. Eye sizes and interdistance of PME: AME = 0.09, ALE = 0.12, PME = 0.12, PLE = 0.12, PME–PME = 0.03. Carapace, chelicerae, sternum, maxillae and labium light reddish brown. Chelicera with 2 pro- and 5 retromarginal teeth. Legs slightly lighter than carapace, without annulations, and with numerous spines (III and IV). Abdomen light brown, without any markings and with a small scutum anteriorly. Spinnerets light gray. Measurements of legs: I: 7.29 (1.77, 1.33, 1.66, 1.50, 1.03), II: 5.35 (1.41, 0.87, 1.13, 1.08, 0.86), III: 4.41 (1.19, 0.68, 0.82, 1.01, 0.71), IV: 7.07 (1.81, 1.06, 1.67, 1.71, 0.82).

Palp as in Fig. 2B–G. Femur unmodified; patella slightly longer than tibia (not including apophysis); tibial apophysis as long as tibia, with swollen base and flat anterior part, margins parallel; cymbium 2 times as long as wide, its width as long as tibia; spermophor coiled; median apophysis (= conductor sensu Panayiotou *et al.* 2010) large, sharply pointed; filamentous embolus originates almost from the center of the bulb, makes 360° loop.

Female (paratype from Ilam Province)
Carapace 3.05 long, 2.28 wide (abdomen missing). Eye sizes and interdistance of PMEs: AME = 0.13, ALE = 0.15, PME = 0.13, PLE = 0.12, PME–PME = 0.05. Coloration and habitus features as in male. Measurements of legs: I: 8.79 (2.30, 1.73, 1.86, 1.41, 1.20), II: 6.99 (1.92, 1.26, 1.55, 1.34, 0.92), III: 4.41 (1.19, 0.68, 0.82, 1.01, 0.71), IV: 6.04 (1.65, 1.00, 1.12, 1.39, 0.88).

7 of 47 • page0006.png

Beyond biodiversity



InvenioRDM

Services

CERN Document Server

Zenodo

...

Software

InvenioRDM

InvenioRDM

Northwestern Medicine
Feinberg School of Medicine

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TU GRAZ
REPOSITORY
LIBRARY & ARCHIVES

SCIENCE
PASSION
TECHNOLOGY TU
Graz

Home Communities My dashboard

Recent uploads

Universidade de Lisboa's digital infrastructures for learning and teaching at a glance (Unite! Cm.2 D2.1) 2024-01 (1.0) Image Open

da Silva, Fernando M.; Matias, Jorges; Cruz, Luis; Pereira, Ana Bela

Developed for Unite! Community 2 Digital Campus project report "Aligning IT infrastructures for digital learning amongst the European university alliance Unite! The Unite! digital campus framework and requirements" and the related Unite! deliverable 2.1 (January 2024).

Unite! Cm.2 Learning Management System Digital Campus

Uploaded on January 15, 2024

Grenoble UGA and Grenoble INP-UGA's digital infrastructures for learning and teaching at a glance (Unite! Cm.2 D2.1) 2024-01 (1.0) Figure Open

Laurent, Romain; Langevin, Etienne

Developed for Unite! Community 2 Digital Campus project report "Aligning IT infrastructures for digital learning amongst the European university alliance Unite! The Unite! digital campus framework and requirements" and the related Unite! deliverable 2.1 (January 2024).

unite! Cm.2 Learning Management System digital campus

Uploaded on January 15, 2024

Ultrasonic - a GNU Octave/MatLAB script collection to analyse ultrasonic pulse reflection measurements 2024-01-11 (1.0) Software Open

Harden, Jakob

"Ultrasonic" was implemented to support the analysis of ultrasound measurement data for students and is used in the exercise "Application of NDT and monitoring methods [206.554]". It supports two essential aspects of the analysis of ultrasonic reflection measurements: (1) the determination of...

Uploaded on January 11, 2024

You can upload different types of records:

Visibility of uploaded content is maximized through synchronization with data hubs (DataCite). [Upload Research Output](#)

Open Educational Resources (OER) will be visible on various discovery tools like the OERhub. [Upload OER](#)

Need help?

[Contact us](#)

Repository prioritizes all Recent uploads.

We can help with:

- Uploading your research data, software, preprints, etc.
- One-on-one with Repository supporters.
- Quota increases beyond our default policy.
- Scripts for automated uploading of larger datasets.

Why use Repository?

- **Safe** — your research is stored safely for the future in TU Graz library for as long as TU Graz library exists.
- **Trusted** — built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
- **Citeable** — every upload is assigned a Digital Object Identifier (DOI), to make them citable and trackable.
- **No waiting time** — Uploads are made available online as soon as you hit publish, and your DOI is registered within seconds.

Future directions: UX

Curation checks

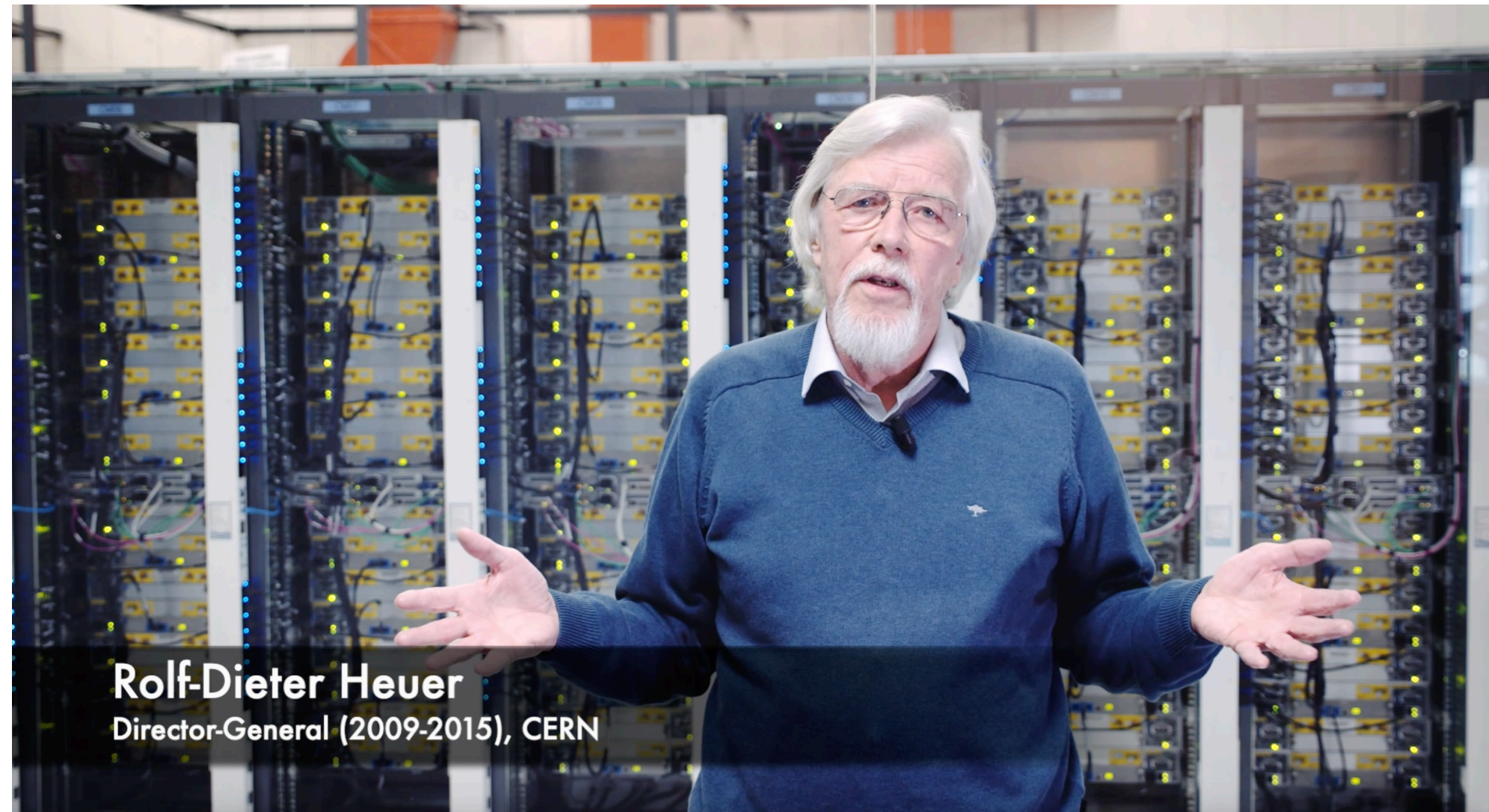
Domain apps

Measure

The screenshot displays the Zenodo upload page. At the top, there is a search bar and navigation links for 'Communities' and 'My dashboard'. Below this, a prompt asks the user to 'Select the community where you want to submit your record.' The main area is divided into sections: 'Files' (with a dropdown menu), 'Metadata-only record' (checkbox), and 'Storage available' (0 out of 100 files, 0 bytes out of 50.00 GB). A large dashed box contains the instruction 'Drag and drop files' and an 'Upload files' button. Below this is the 'Basic information' section, which includes a 'Digital Object Identifier' field with radio buttons for 'Yes' and 'No', and a text input for 'Copy/paste your existing DOI here...'. The 'Visibility' section shows 'Full record' and 'Files only' both set to 'Public'. A green box indicates 'Public' visibility with the text 'The record and files are publicly accessible.' The 'Options' section at the bottom includes a checkbox for 'Apply an embargo'.

Next week





Rolf-Dieter Heuer
Director-General (2009-2015), CERN

“Why do I like Zenodo? Because Zenodo is FAIR. Fair in sense of lowercase, and FAIR in the sense of uppercase meaning, [...]” - Rolf-Dieter Heuer, Director-General (2009-2015)