Enhancing Diptera systematics: from single researcher to global specimen data network

Torsten Dikow

ORCID 0000-0003-4816-2909

@TDikow #asiloidflies #USNMDiptera

Smithsonian

NATIONAL
MUSEUM of
NATURAL
HISTORY

Towards a biodiversity knowledge graph – Roderic Page

open-access
unique identifiers

- ◇ Make your . . . online
 - › data ready for re-use and re-purposing by others
 - › data easily recoverable through openly accessible data repositories
 - › data easily recoverable through use of persistent + unique identifiers

- ◇ doesn't mean to share data before publication
 - › [biorxiv.org](https://www.biorxiv.org)

- ◇ Digital Object Identifier – DOI
 - › CrossRef, DataCite, and many more can mint DOIs
 - › resolvable through dx.doi.org
- ◇ Archival Resource Key – ARK
 - › resolvable through ezid.cdlib.org

- ◇ Universally Unique Identifier – UUID and Globally Unique Identifier – GUID
 - › for human-readable display, common format using hexadecimal text with inserted hyphens
 - › e.g., E26A52B5-1CB0-44D5-98EE-3C50D2E374AF
- ◇ Life Science Identifier – LSID
 - › e.g., ZooBank records

ZooBank

[about](#) [contact](#) [api](#) [login](#) [help](#)

Namibimydas psamminos Dikow, 2012

LSID urn:lsid:zoobank.org:act:E26A52B5-1CB0-44D5-98EE-3C50D2E374AF

No BHL Results

Rank: Species

Parent: [Namibimydas Hesse, 1972](#)

Specific Name: psamminos

Authorship: Dikow

Publication: [Dikow, Torsten. 2012 Review of Namibimydas Hesse, 1972 and Nothomydas Hesse, 1969 \(Diptera: Mydidae: Syllegomydinae: Halterorchini\)](#) with the description of new species. *African Invertebrates* 53(1): 79-111.

Page: 89

Figure(s): 4-6, 17, 18

Type Specimen(s): 1 male holotype NMNW, 1 male and 1 female paratype NMNW, 1 male paratype BMNH, 2 males and 1 female paratypes USNM

Type Locality: Namibia: Hardap: Elim Dune (Namib-Skeleton Coast National Park near Sesriem) (24°27'28"S 015°46'37"E)

Fossil: No

- ◇ specimen identifiers
- ◇ Darwin-Core Triplet – USNMENT01087716
 - › institutionCode = USNM
 - › collectionCode = ENT (for Entomology)
 - › catalogNumber = 01087716

- ◇ Apiceridae: *Apiocera braunsi* holotype
 - › USNM collection web-site <http://n2t.net/ark:/65665/30f1b900b-6ca7-4e03-9629-5d6a3a6e3173>
 - › GBIF <http://www.gbif.org/occurrence/1060462205>

- ◇ researcher identifier
- ◇ ORCID – 0000-0003-4816-2909
- ◇ ZooBank identifier
 - › links all taxa and publications of an author
 - › F8869067-4618-4CCE-960C-E8A107F162FB

The screenshot shows the ORCID website homepage. At the top left is the ORCID logo with the tagline "Connecting Research and Researchers". To the right is a navigation bar with links: "FOR RESEARCHERS", "FOR ORGANIZATIONS", "ABOUT", "HELP", and "SIGN IN". The main content area features the heading "DISTINGUISH YOURSELF IN THREE EASY STEPS" in bold, with "THREE EASY STEPS" in green. Below this is a paragraph explaining that ORCID provides a persistent digital identifier that distinguishes researchers and integrates with research workflows. A link "Find out more." is provided. On the right side of the main content area is a large, light blue graphic of a person's head and shoulders with a green arrow pointing down to a stylized "iD" logo.

ORCID
Connecting Research
and Researchers

FOR RESEARCHERS FOR ORGANIZATIONS ABOUT HELP SIGN IN

**DISTINGUISH YOURSELF IN
THREE EASY STEPS**

ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized. [Find out more.](#)

specimens

names

data sets, raw data, alignments

morphological matrices

raw sequences

images, micrographs

phylogenetic analyses + trees

3D data

Acnephalomyia unidentified : Asilidae : Diptera : Insecta : Arthropoda

Catalog Number: USNMMENT 1136008
Barcode: USNMMENT01136008
Catalog: Specimen Inventory
Order: Diptera
Family: Asilidae
Scientific Name: *Acnephalomyia* unidentified
Sex: Female
Stage: Adult
Preparation: Vial
Country: South Africa
Province/State: Eastern Cape
Precise Locality: N10 N of Olifantskop Pass
Elevation (m): 415
Centroid Latitude: -33.2356
Centroid Longitude: 25.8956
Collector(s): Dikow, Torsten, (ENT), Smithsonian Institution - Natural History (UNITED STATES)
Collecting Date: 3 Dec 2015
Record Status: Status: Reviewed Date: 3 Dec 2015 Remarks: Submitted by T.Dikow, SI
Record Last Modified: 21 Jan 2016 11:03:00
EZID: <http://n2t.net/ark:/65665/3cc47e658-53cb-4c02-bf72-35273f3adf6c>

Sample Tree: *Acnephalomyia* unidentified, USNMMENT 1115145
USNMMENT 1136008, Whole individual organism
 USNMMENT 1146585, Leg
 USNMMENT 1146585.1, Whole genomic DNA
 USNMMENT 1136014, Whole individual organism
 USNMMENT 1146584, Leg
 USNMMENT 1146584.1, Whole genomic DNA
 USNMMENT 1136020, Whole individual organism
 USNMMENT 1146583, Leg
 USNMMENT 1146583.1, Whole genomic DNA
 USNMMENT 1136026, Whole individual organism
 USNMMENT 1146582, Leg
 USNMMENT 1146582.1, Whole genomic DNA
 USNMMENT 1146581, Leg
 USNMMENT 1146581.1, Whole genomic DNA

Sample Type: Whole Organism, Whole individual organism
Preservation Method: frozen
Embargo? No
Biorepository Number: AA8IP83
GGBN

Beameromyia disfacia Martin, 1957 : Asilidae : Diptera : Insecta : Arthropoda

Catalog Number: USNMMENT 914205
Barcode: USNMMENT00914205
Catalog: Specimen Inventory
Order: Diptera
Family: Asilidae
Scientific Name: *Beameromyia disfacia* Martin, 1957
Sex: Female; Male
Stage: Adult; Adult
Preparation: Ethanol drained
Country: United States
Province/State: Rhode Island
District/County: Washington
Precise Locality: Town of Exeter, Arcadia Management area, Pratt farm
Elevation (m): 57
Centroid Latitude: 41.5581
Centroid Longitude: -71.7078
Collector(s): Dikow, Torsten, (ENT), Smithsonian Institution - National Museum of Natural History (UNITED STATES); Thomas, M; Brown, G; Brown, C; Bayless, K
Collecting Date: 16 Jul 2006 (16.July.2006)
Record Status: Status: Data submitted by specialist Date: 2014 Remarks: Submitted by T.Dikow, SI
Record Last Modified: 30 Aug 2016 13:07:00
EZID: <http://n2t.net/ark:/65665/36f20defc-3a66-4a52-bdef-4fa58142ff43>
Sample Tree: **USNMMENT 914205, Whole individual organism**
 USNMMENT 1146753, Leg
 USNMMENT 1146753.1, Whole genomic DNA
Sample Type: Whole Organism, Whole individual organism
GenBank Numbers: [KT733269](https://www.ncbi.nlm.nih.gov/genbank/KT733269)
Preservation Method: Frozen
Embargo? No
Biorepository Number: AA6GE77
GGBN

The 1KITE project: evolution of insects

Accession: PRJNA183205 ID: 183205

Insects are one of the most species-rich groups of metazoan organisms. They play a pivotal role in most non-marine ecosystems and many insect species are of enormous economical and medical importance. Unraveling the evolution of insects is essential for understanding how life in terrestrial and limnic environments evolved. The 1KITE (1K Insect Transcriptome Evolution) project aims to study the transcriptomes (that is the entirety of expressed genes) of 1,000 insect species encompassing all recognized insect orders. For each species, so-called ESTs (Expressed Sequence Tags) will be produced using next generation sequencing techniques (NGS). The expected data will allow inferring for the first time a robust phylogenetic backbone tree of insects. [More...](#)

Accession	PRJNA183205
Type	Genome sequencing, Transcriptome or Gene expression, Umbrella genomics)
Grants	"1KITE" (Grant ID SZY11020, Beijing Genomics Institute)
Submission	Registration date: 7-Dec-2012 The 1KITE consortium - Zoologisches Forschungsmuseum Alexander Koenig (ZFMK) - BGI
Related Resources	<ul style="list-style-type: none"> • 1kite website
Relevance	Evolution

Misof *et al.* 2014 data
doi:10.1126/science.1257570

doi:10.5061/dryad.3c0f1
Twitter Facebook RSS

[About](#)
[For researchers](#)
[For organizations](#)
[Contact us](#)
[Log in](#)
[Sign up](#)

Data from: Phylogenomics resolves the timing and pattern of insect evolution

[Submit data now](#)
[How and why?](#)

Search for data
 [Go](#)
[Advanced search](#)

Be part of Dryad
 We encourage organizations to:
[Become a member](#)
[Sponsor data publishing fees](#)
[Integrate your journal\(s\)](#), or
 All of the above

Files in this package
 Content in the Dryad Digital Repository is offered "as is." By downloading files, you agree to the [Dryad Terms of Service](#). To the extent possible under law, the authors have waived all copyright and related or neighboring rights to this data. [OPEN DATA](#)

Title	Phylogenomics Resolves The Timing And Pattern Of Insect Evolution: Supplementary File Archives.
Downloaded	1973 times
Description	Phylogenomics Resolves The Timing And Pattern Of Insect Evolution: Supplementary File Archives. This file includes 14 supplementary archives which are in detail described in the README.
Download	README.pdf (112.6 Kb)
Download	Misof et al Supplementary Archives.tar.gz (793.9 Mb)
Details	View File Details

◇ data sharing

- › data can be retrieved easily by peers and scientific community at large
- › data can be easily re-used, re-evaluated, and scientifically tested
- › observations can be replicated (*e.g.*, high-resolution images, 3D data, raw sequence reads)

◇ benefits

- › researcher, taxonomic community, scientific community at large, and the public
- › institutions
- › funding sources demand open-access of data

open-access
unique identifiers

re3data.org
REGISTRY OF RESEARCH DATA REPOSITORIES

◇ Rod Page, Deb Paul, Donat Agosti, and Lyubo Penev