



Martin R. Kalfatovic
Twitter @BHLProgDirector
Program Director
Biodiversity Heritage Library
Smithsonian Libraries

Overview of the Biodiversity Heritage Library

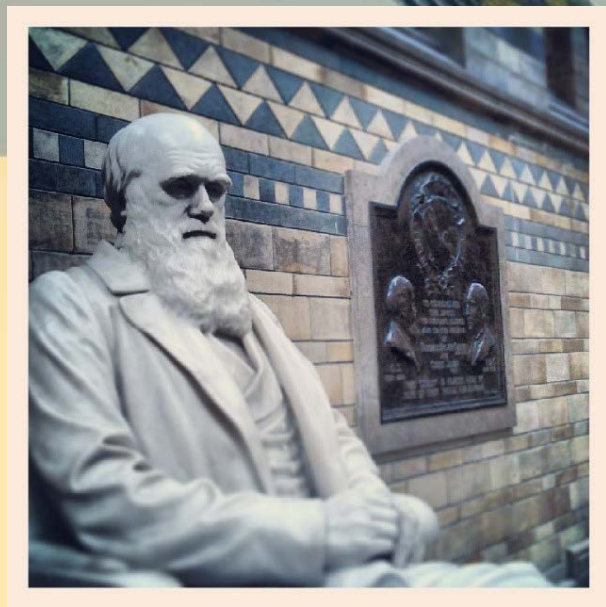
Recent Activities

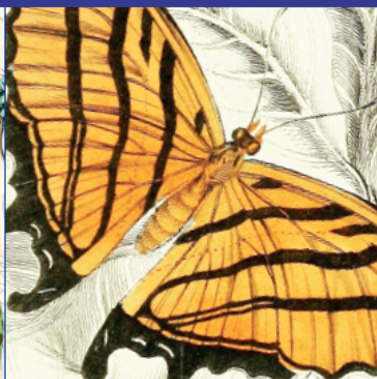
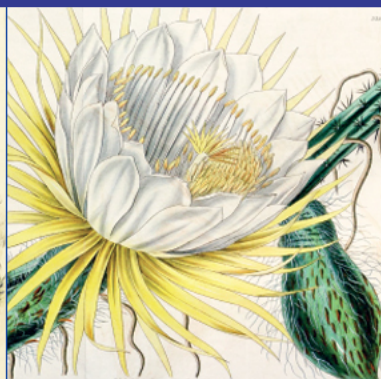
Digital Data in Biodiversity Research Conference
5-6 June 2017 | Ann Arbor | University of Michigan



“The cultivation of natural history cannot be efficiently carried out without reference to an extensive library.” *Birds 27-34*

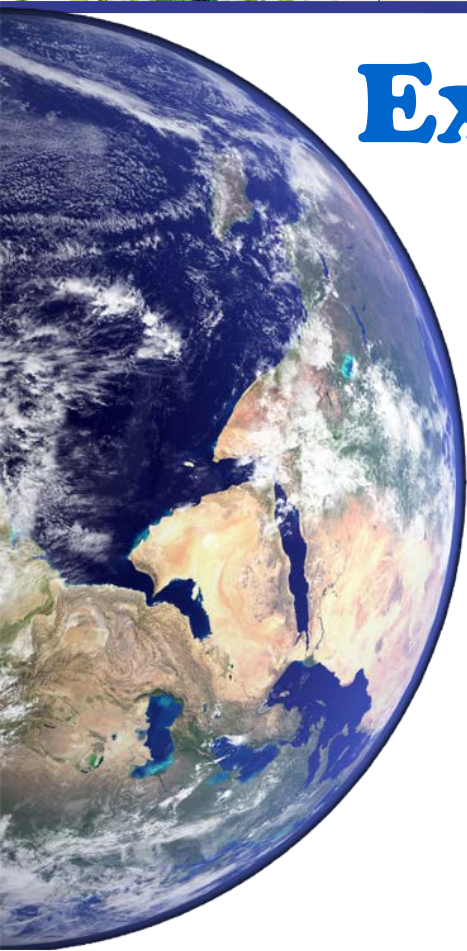
Charles Darwin, et al (1847)





Extensive. Open. Global

BHL





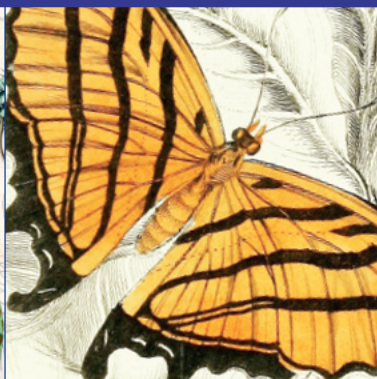
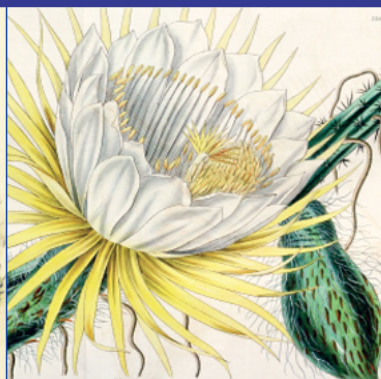
Inspiring Discovery through Free Access
to Biodiversity Knowledge

Over 10 years of inspiring discovery
through free & open access
to biodiversity literature & archives

from the 15th-21st centuries

Mission

The Biodiversity Heritage Library improves research methodology by collaboratively making biodiversity literature openly available to the world as part of a global biodiversity community.



- Agricultural ecology
- Animal behavior
- Animal culture
- Animal husbandry
- Aquaculture
- Bioacoustics
- Biochemistry
- Bioclimatology
- Biogeomorphology
- Bioluminescence
- Biomechanics
- Collection & preservation
- Conservation biology
- Continental drift
- Coral islands, reefs, & atolls
- Ecology
- Economic botany
- Ecophysiology
- Ecosystems
- Embryology
- Evolutionary genetics
- Forestry
- Genetics
- Geomicrobiology
- Horticulture
- Geobiology
- Algae
- Amphibia
- Anatomy
- Angiosperms
- Arachnida
- Arthropoda
- Atlases & gazetteers
- Biodiversity conservation
- Biological diversity
- Botany
- Bryology
- Classification & nomenclature
- Cyanobacteria
- Endangered species
- Entomology
- Evolution
- Extinction
- Ferns & allies
- Fungi
- Gymnosperms
- Geographical distribution
- History of natural sciences
- Ichthyology
- Invertebrates
- Linnaean works
- Mammalia
- Marine biology
- Medical botany
- Mollusca
- Morphology
- Natural history biographies
- Natural history dictionaries & encyclopedias
- Ornithology
- Paleobotany
- Paleozoology
- Phylogenetic relationships
- Plant anatomy
- Porifera
- Pre-Linnaean works
- Primatology
- Protozoa
- Reproduction
- Reptilia
- Scientific illustration
- Specimen catalogs
- Systematics
- Taxonomy
- Scientific expeditions
- Zoology
- Microbial ecology
- Natural history bibliographies
- Natural history directories
- Natural history terminology
- Oceanography
- Phenology
- Physical anthropology
- Plant conservation
- Plant culture
- Plant ecology
- Plant lore
- Plant physiology
- Plate tectonics
- Radioecology
- Restoration ecology
- Soil ecology
- Stratigraphy
- Taxidermy
- Virology
- Vivariums, terrariums, & aquariums
- Wild animal trade
- Wildlife conservation
- Zoos

BHL can't have everything, but we try to include as much as possible!





52+ MILLION
PAGES

120,000+ | 203,000+
TITLES | VOLUMES

176+ MILLION
INSTANCES OF TAXONOMIC NAMES

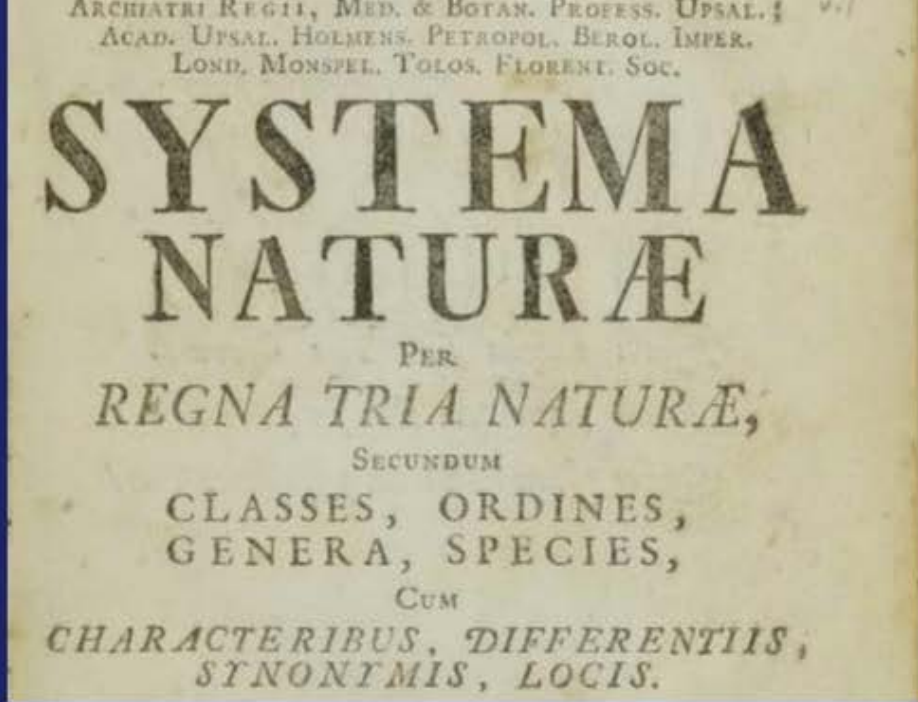


615+

IN-COPYRIGHT TITLES LICENSED FOR BHL

AGREEMENTS
WITH

260+
LICENSORS



Systema naturae per regna tria naturae.

Ed. 10, 1758.

Carl von Linné.

biodiversitylibrary.org/bibliography/542

Bonn zoological bulletin, 2012, no. 1 (2012)
Scotopteryx kuznetzovi (Wardlaw, 1957) (Lepidoptera, Geometridae, Larentiinae), a new species for the fauna of Iran and Turkey

Pages Table of Contents

Volume 61, page 129

Scotopteryx kuznetzovi (Wardlaw, 1957)
(Lepidoptera, Geometridae, Larentiinae), a new species for the fauna of Iran and Turkey

URL for Current Page
<http://biodiversitylibrary.org/page/44921615>

The earliest work in BHL is

Theophrasti De Historia plantarum liber primus
(1483)

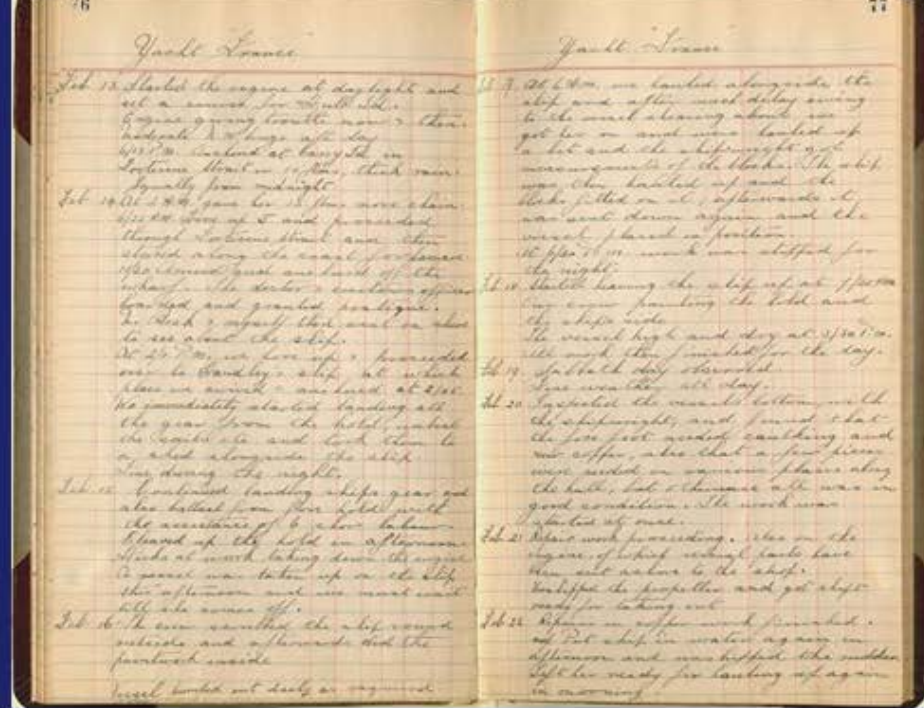
biodiversitylibrary.org/page/40913187

Considered the starting point of zoological nomenclature.

Listed about 10,000 species of organisms, of which about 6,000 are plants and 4,236 are animals.

Logbook of the yacht "France" Whitney South Sea Expedition of the American Museum of Natural History Volume: v.2 (1926-1928)

biodiversitylibrary.org/page/44821245



Bonn zoological bulletin, 44:1-2 (2012)

BHL includes over 100,000 pages of Field Notes and related archival material.

Ongoing transcription projects will make these fully searchable.

Scientific Names on this Page
Page 125 (1/1)

- Geometridae
- Hamulidae
- Larentiidae
- Lepidoptera
- Scotopteryx
- Scotopteryx kumestoni
- Scotopteryx vicinaria
- Stenopoda

442 RECAPITULATION. [Book III.]

these consist of such qualities and attributes only as are intimately related to the natural wants and propensities of the species.

4thly. The entire variation from the original type, which any given kind of change can produce, may usually be effected in a brief period of time, after which no farther deviation can be obtained by continuing to alter the circumstances, though ever so gradually; indefinite divergence, either in the way of improvement or deterioration, being prevented, and the least possible excess beyond the defined limits being fatal to the existence of the individual.

5thly. The intermixture of distinct species is guarded against by the aversion of the individuals composing them to sexual union, or by the sterility of the mule offspring. It does not appear that true hybrid races

Bonn Zoological Bulletin 61 (1): 135-39 (July 2012)

biodiversitylibrary.org/page/4482124

With the assistance of BioStor, BHL now indexes over 202,000 articles, chapters or other “segments” of BHL content.

These are all searchable through the bibliographic interface to BHL.

Scotopteryx kuznetzovi
(Wardikian, 1957)
(Lepidoptera, Geometridae,
Larentiinae),
a new species for the fauna of
Iran and Turkey
**Hossein Rajaei Sh.* & Dieter
Stuning**

The screenshot shows the Biodiversity Library interface. At the top, the article title and authors are visible. A blue arrow points to the article title. The left sidebar contains a 'Table of Contents' with the article highlighted. Below the sidebar, there is a 'Scientific Names on this Page' section listing various species. The main content area displays the article's title, authors, and abstract.

Bonn zoological bulletin, v.61: no.1 (2012)

Scotopteryx kuznetzovi (Wardikian, 1957) (Lepidoptera, Geometridae, Larentiinae), a new species for the fauna of Iran and Turkey

Pages Table of Contents

Volume 61, Page 49

The articulating apparatus in the larva of the Lappet Moth, *Streblote panda* Hübner, 1820 (Lepidoptera: Lasiocampidae) Volume 61, Page 129

Scotopteryx kuznetzovi (Wardikian, 1957) (Lepidoptera, Geometridae, Larentiinae), a new species for the fauna of Iran and Turkey

Show More

URL for Current Page

<http://biodiversitylibrary.org/page/4482124>

Scientific Names on this Page

Page 135 (Text)

Comiopteryx kuznetzovi

Geometridae

Herustellinae

Larentiinae

Lepidoptera

Scotopteryx

Scotopteryx kuznetzovi Herbulot 2006

Scotopteryx vicinaria Lederer 1870

Staudingeria aspidistella (Ragonot, 1887)

Xanthocheini

Scotopteryx kuznetzovi (Wardikian, 1957)
(Lepidoptera, Geometridae, Larentiinae),
a new species for the fauna of Iran and Turkey

Hossein Rajaei Sh., & Dieter Stuning

Zoologische Forschungsarbeiten Herbold-Kunze, Abhandlungen 100 (Bonn, Germany)
(Corresponding author: rajaei@post.ia.ac.ir)

Abstract. *Scotopteryx kuznetzovi* (Wardikian, 1957), a new and hitherto unknown Larentiinae species described from Iran, is recorded for the first time from Iran and Turkey. Males from both countries are illustrated. The female genitalia are described. A subspecies is given and diagnostic characters are presented. External features and genitalia are described, compared with those of *S. vicinaria* from Turkey (Stuning, 1987), described from northern Iran, and other taxa of the subgenus *Scotopteryx* which all have genitalia characters similar to *S. kuznetzovi*. The distribution pattern of the species is briefly discussed.

Key words. *Scotopteryx kuznetzovi*, subspecies, new records, Iran, Turkey.

INTRODUCTION

Scotopteryx Hübner, 1820, a Larentiinae genus belonging to the tribe Xanthocheini Fabricius, 1842, comprises more than 70 species which are distributed in the Palearctic region from Europe to Far East Asia, to South Africa and South America (Petersen et al., 1996). Neither in the latter publication nor in the updated list of the Geometridae of the World (Chebli & Hågmoen, 2007) *Scotopteryx kuznetzovi* (Wardikian, 1957) was mentioned. Until now, on the far east records of this species, which was described as a single male from Iran, have been published. Here we record the data of the additional males found in the collections of the Zoologisches Forschungsmuseum Alexander Koenig, Bonn (ZFMK), collection Peter Kubacki and Mark Mittermeier (former IFMWB) of the Institute Friedrich-Ludwig-Jahnke-Preparatorien, Gießen, recently. In addition, we provide a redescription of this species and compare it with the probably related one of the *S. vicinaria* group.

Material examined. 2 ♂: Barmulde (NW Iran, SE of Tabriz), 11.10.2007; Big 1 (Damascus, gov. prop. Iraq), 8.06.2008 (H. Rajaei, from coll. HUBER, 2 ♂: The Yaman, Yan, 2700 m, Ghadabani Pass, 26.9.1981, leg. P. Kubacki, gov. prop. NW, H. Rajaei, 1 ♂: Garkay, Prov. Babek, Van-Gilvi, 19 km E of Akda, 1.700 m, 27.10.07, H. Rajaei, 1 ♂: 18.09.05, leg. G. Jahnke, H. Rajaei, to Lankarud S. South, coll. ZFMK.

Morphology of adult males of spp. 1. 2♂. Wingspan 29–30 mm. Anterior hypocostals from base to tip, except 2, distinct segments; 1st one moderately long, stout, broadly curved, arising ventrally from the proximal end of the fore-gillulae segment; the latter scaled along dorsally. Head, thorax and abdomen covered with mixed greyish white and greyish-brown scales. From broad, ventrally protruding, lower part ventrally covered with very small, greyish-brown scales; upper margin a broad band of large, white scales, vertex with large white and brown scales.

Charles Darwin's Library

biodiversitylibrary.org/browse/collection/darwinlibrary

A digital edition and virtual reconstruction of the surviving books owned by Charles Darwin.

It also provides full transcriptions of his annotations and marks. These works provide important insight into the development of Darwin's ideas on evolution and natural selection.

"If this were true, adios theory"
Charles Darwin wrote these words in response to reading *Principles of Geology*, v. 2 (1837) by Charles Lyell, who was arguing that changes in species have limitations. Darwin, on the other hand, argued that changes in species are infinite and continuous, an integral concept crucial to his theory of evolution.



442

RECAPITULATION.

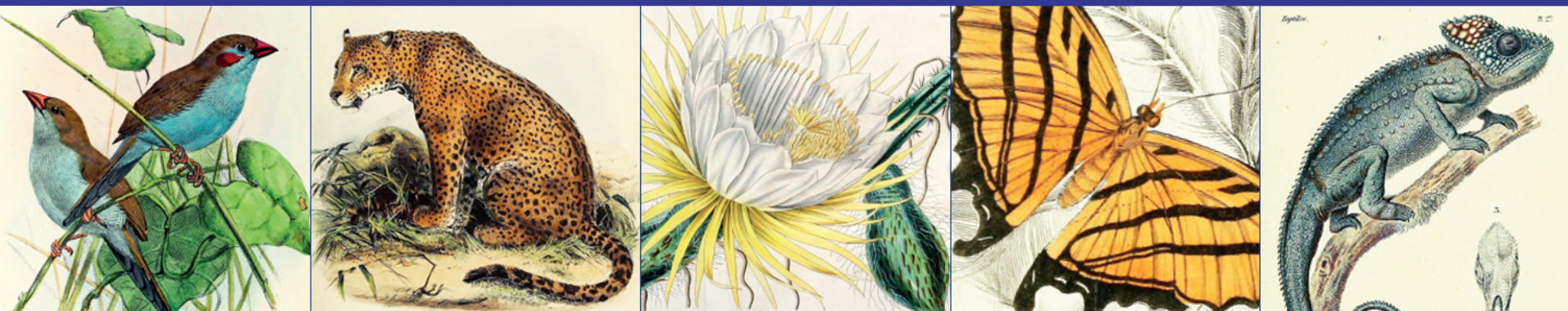
[Book III.]

these consist of such qualities and attributes only as are intimately related to the natural wants and propensities of the species.

4thly. The entire variation from the original type, which any given kind of change can produce, may usually be effected in a brief period of time, after which no farther deviation can be obtained by continuing to alter the circumstances, though ever so gradually; indefinite divergence, either in the way of improvement or deterioration, being prevented, and the least possible excess beyond the defined limits being fatal to the existence of the individual.

5thly. The intermixture of distinct species is guarded against by the aversion of the individuals composing them to sexual union, or by the sterility of the mule offspring. It does not appear that true hybrid races

If this were true, adios theory



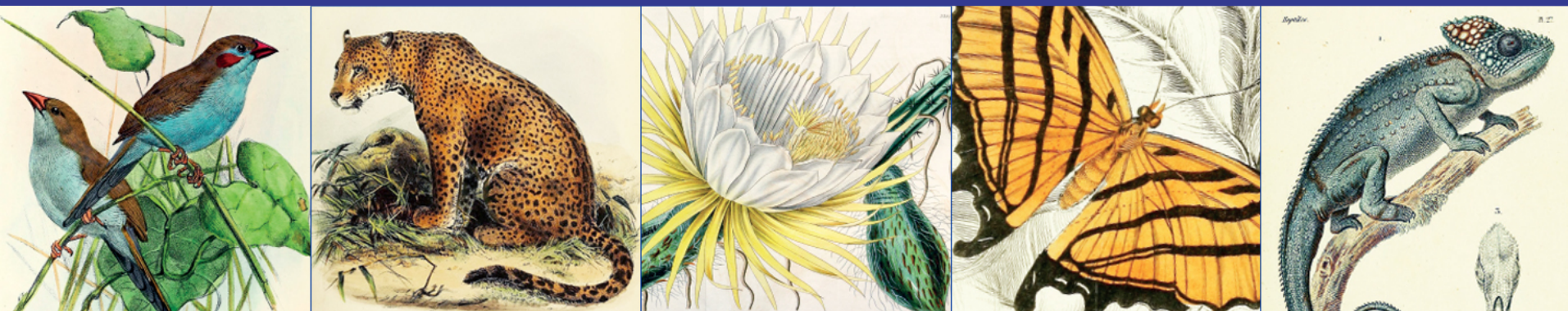
Not just “heritage” collections

> 23% of BHL's collection of 188,970 items is post-1922

> 72.3% of BHL's collection is free of copyright restriction in the United States

As of August 2016

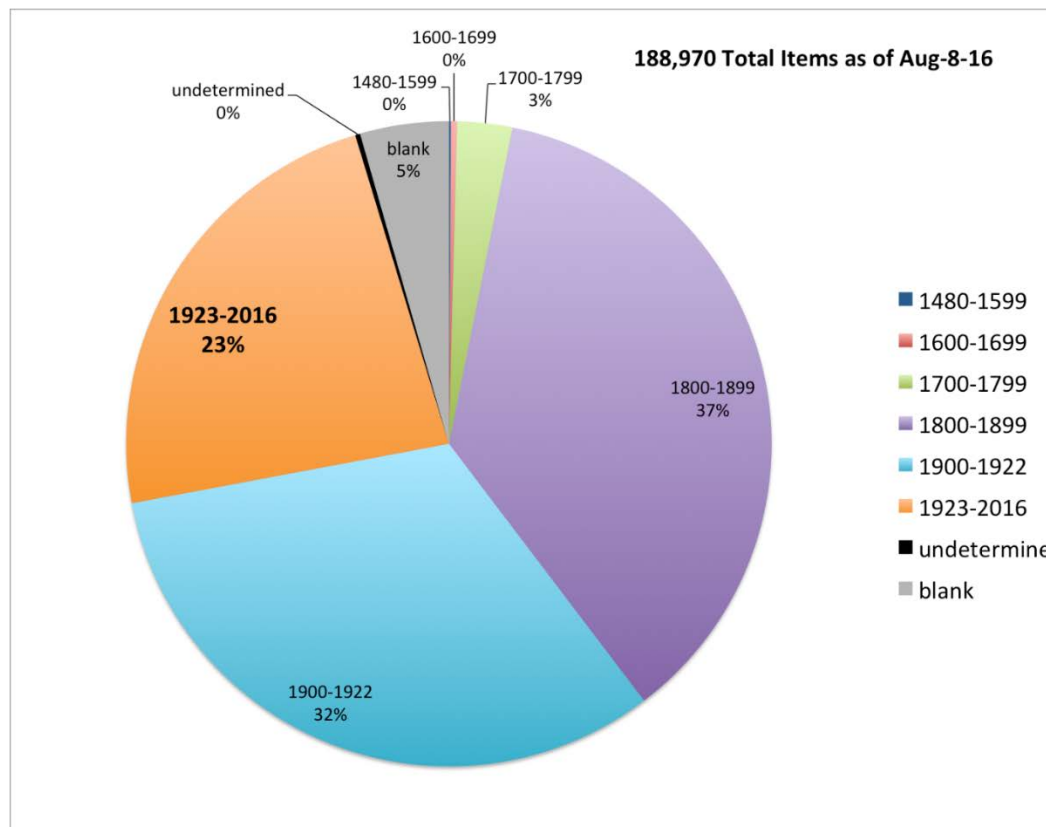




Permissions for In Copyright Material

Thanks to the work of the Expanding Access to Biodiversity Literature team (Mariah Lewis and Patrick Randall) and Bianca Crowley, BHL had a successful year with 164 newly licensed titles and 83 licensors since our last meeting.

- **Licensed titles in CY 2016: 164**
- **Licensors in CY 2016: 83**



A Commitment to Open Access...

BHL is a charter signatory of the **Bouchout Declaration** for Open Biodiversity Knowledge Management.

Fundamental principles of the Declaration:

Free & Open Use

Policies to Foster Free & Open Access

Registers for Content & Services

Linked Data

Sustainable Knowledge Management

Infrastructure, Standards & Protocols to Improve Access

Persistent Identifiers

Tracking Identifiers to Ensure Attribution



BHL offers a range of free services



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DATA
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NAME
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TOOLS



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517,000+
TO DATE



ARTICLE
INDEXING

202,000+
TO DATE



DOI
ASSIGNMENT

104,000+
TO DATE

*Stats as of November 2016

BHL Annual Meeting

Singapore | March 2017



MEMBERS

- American Museum of Natural History Library
- BHL Australia
- BHL México
- Cornell University Library
- Field Museum of Natural History Library
- Harvard University Botany Libraries
- Harvard University, Museum of Comparative Zoology, Ernst Mayr Library
- Library of Congress
- The LuEsther T. Mertz Library, The New York Botanical Garden
- Missouri Botanical Garden, Peter H. Raven Library
- **> Muséum national d'Histoire naturelle**
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- Natural History Museum Library, London
- Royal Botanic Gardens, Kew, Library, Art & Archives
- Smithsonian Libraries
- United States Geological Survey Libraries Program
- University Library, University of Illinois Urbana-Champaign
- University of Toronto Libraries





AFFILIATES

- Academy of Natural Sciences of Drexel University, Library and Archives
- BHL Africa
- Bibliothèque cantonale et universitaire - Lausanne
- California Academy of Sciences Library
- Canadian Museum of Nature
- Chicago Botanic Garden, Lenhardt Library
- Internet Archive
- Los Angeles County Arboretum & Botanic Garden
- Marine Biological Laboratory/Woods Hole Oceanographic Institution Library (MBLWHOI Library)
- Mendel Museum
- Narodni Museum (National Museum, Prague)
- Natural History Museum Los Angeles County
- Naturalis Biodiversity Center
- Smithsonian Institution Archives
- U.S. Department of Agriculture, National Agricultural Library
- **Converted to Affiliate at the 2017 Meeting**
- **> BHL China**
- **> BHL Egypt**
- **> BHL SciELO**

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Carolyn Sheffield



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Outreach &
Communication
Manager
Grace Costantino

BHL GOVERNANCE

Secretariat

22



Martin R. Kalfatovic
BHL Program Director



Carolyn Sheffield
BHL Program Manager

*Ces deux petits poissons naeent toujours a la tete des Baleines et des
Vaches-marines... montrer le chemin et
eviter les... quels ces Loup...
blesser.*

BHL GOVERNANCE

Technical Advisory Group

19

Mike Lichtenberg
BHL Developer



Joel Richard
Smithsonian Libraries



Susan Lynch
The New York
Botanical Garden



BHL
Biodiversity Heritage Library

*Tang-Brasem. Breme de Baguewall très-bonne rôtie, sa queue se ferme comme une tenaille.
Elle est fort de d'habiter contre les Roches, et la pierre en est brisée.*

*Touring-reuov de la Rique, ca Poupon, très-co
et diversité. On l'écriche et après l'avoir fallé et*

FUNDING SOURCES

- **Federal Funding**
 - *Federal allocation to Smithsonian Libraries*
- **Member and Affiliate Dues**
- **Institutional Endowments**
- **Grants**
 - *Alfred P. Sloan Foundation*
 - *Arcadia Fund*
 - *Council on Library & Information Resources*
 - *Gordon & Betty Moore Foundation*
 - *Institute of Museum & Library Services*
 - *JRS Foundation*
 - *European Commission*
 - *Atlas of Living Australia*
 - *MacArthur Foundation*
 - *Mellon Foundation*
 - *National Endowment for the Humanities*
 - *National Science Foundation (NSF)*
 - *Richard Lounsbery Foundation*
- **Donations**
- **Product Development**
- **Institutional Subventions**
- **In-Kind Contributions**





CASH & IN-KIND CONTRIBUTIONS

VALUE OF MEMBER & AFFILIATE CONTRIBUTIONS 2016

\$1,424,792.54 DIRECT STAFF | \$392,751.28 OTHER

27.26

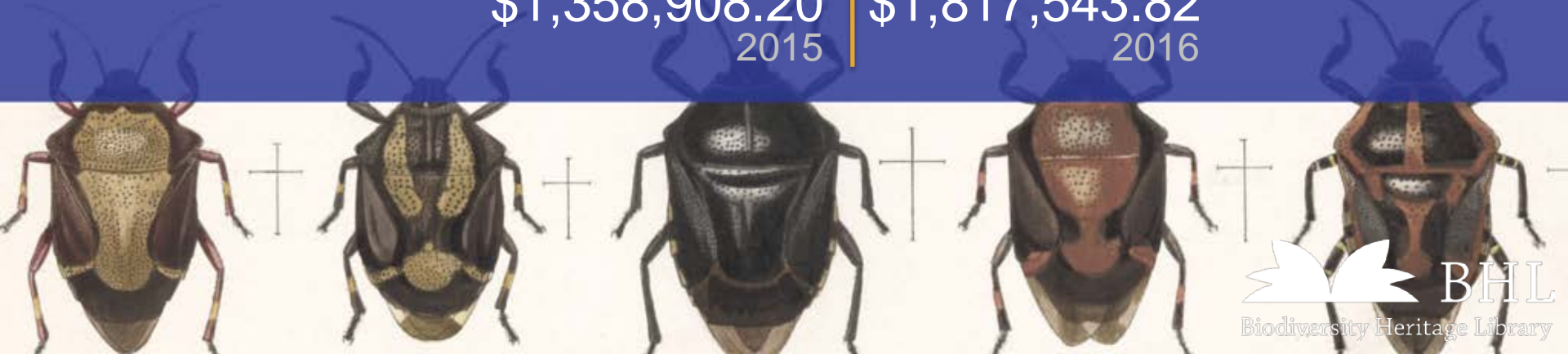
TOTAL MEMBER & AFFILIATE FTEs WORKING ON BHL IN 2016



2015 VS 2016

TOTAL IN-KIND CONTRIBUTIONS

\$1,358,908.20 2015 | \$1,817,543.82 2016

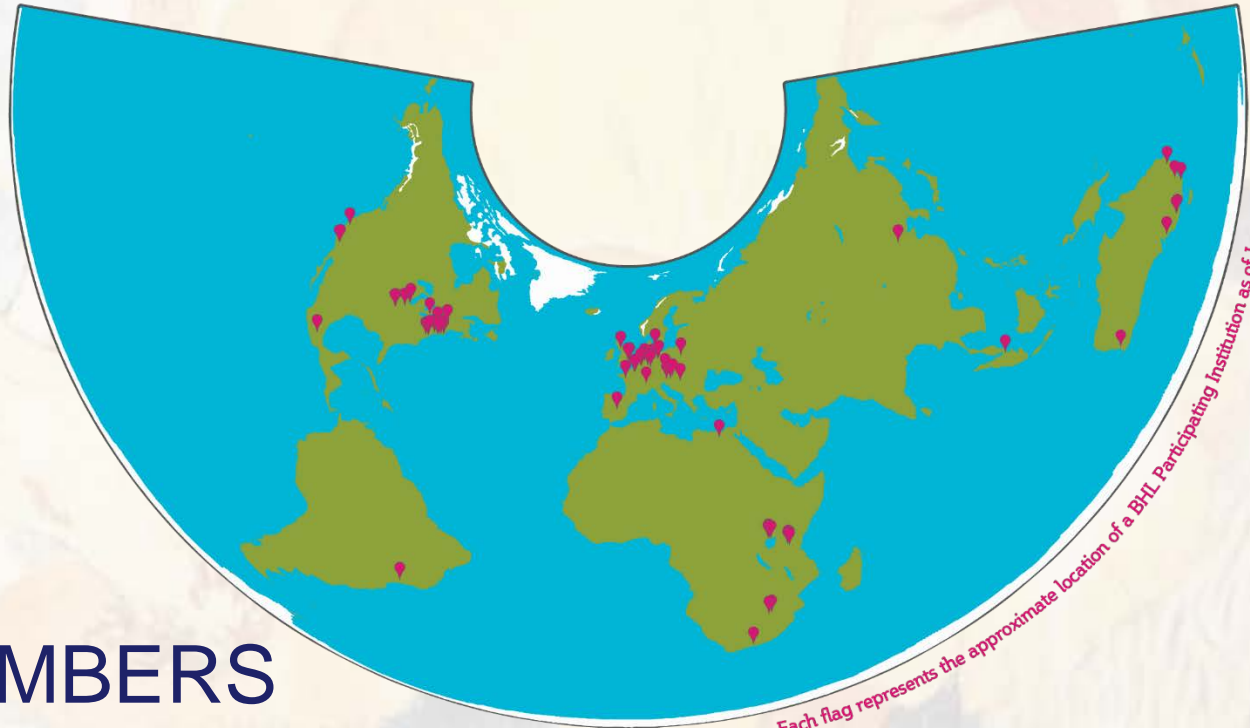


GLOBAL

“Congratulations on a superior on-line library service that is of great help to anybody that has no direct access to old literature (like many scientists in developing countries). I used to be located in the Natural History Museum in Leiden, Netherlands with an excellent library, but after my retirement I moved to Brazil and lost direct contact with the Leiden library. In many cases BHL now provides what I am looking for.”

Dr. Marinus Hoogmoed
Curator of Reptiles and Amphibians, 1963-2003
Naturalis Biodiversity Center

BHL is a Global Consortium

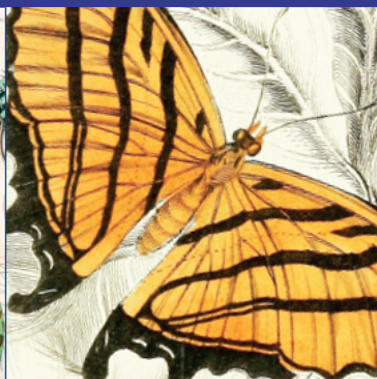
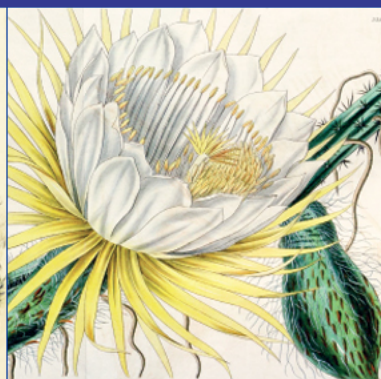


18 MEMBERS

18 AFFILIATES

AS OF JUNE 2017

60+ WORLDWIDE PARTNERS



International Focus



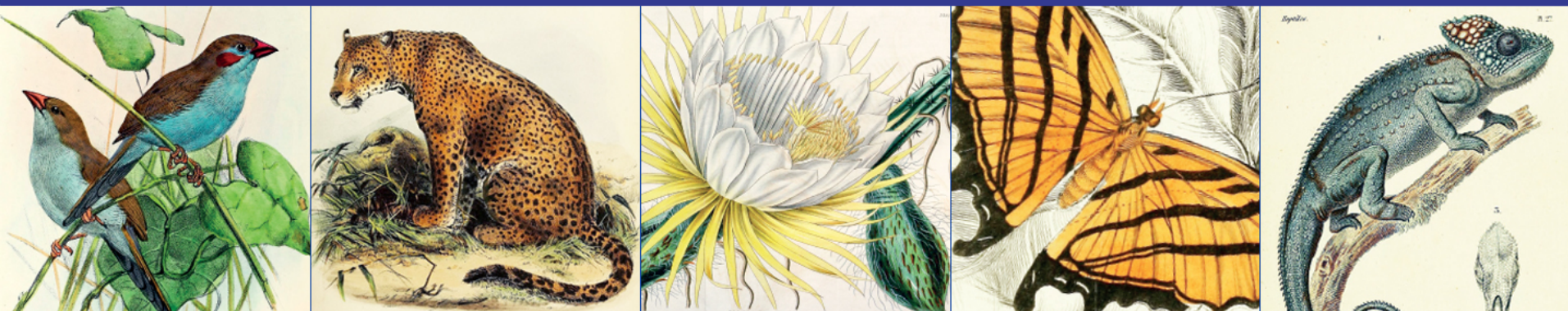
BHL



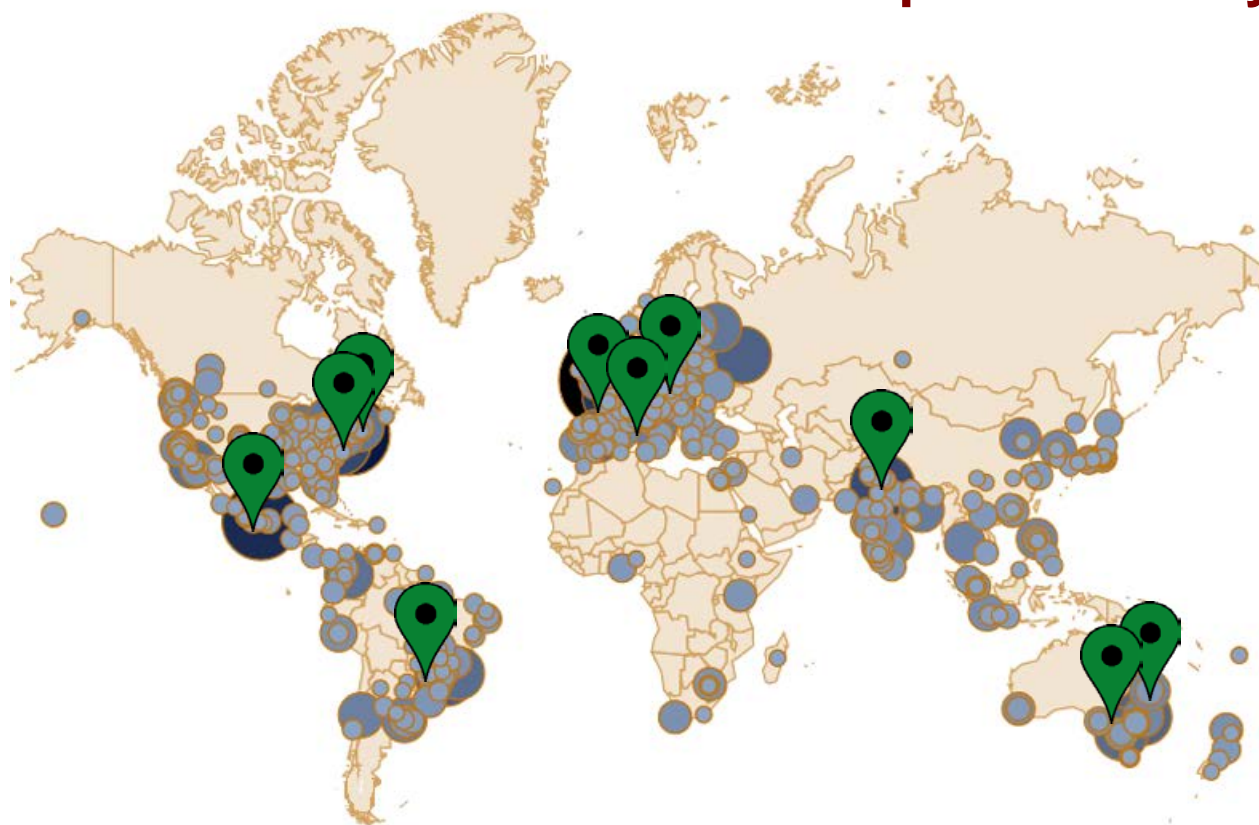
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Biodiversity Heritage Library
生物多样性图书馆中国节点





Top 10 Cities by Sessions, CY 2016



1. London
2. New York
3. Mexico City
4. Paris
5. Sydney
6. Berlin
7. Washington
8. Melbourne
9. New Delhi
10. Sao Paulo

6.3+ MILLION

TOTAL USERS TO DATE

107,000+

AVERAGE MONTHLY
USERS

12+ MILLION

TOTAL WEBSITE VISITS TO DATE

197,000+

AVERAGE MONTHLY
VISITS

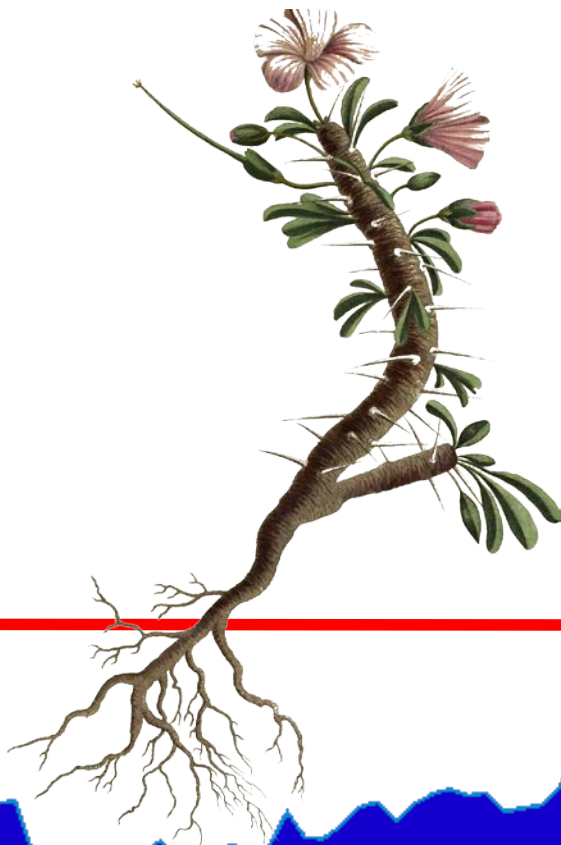
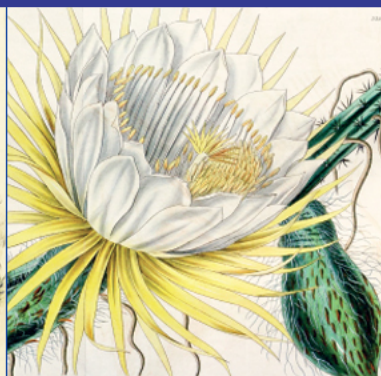


VISITS FROM

243

COUNTRIES &
TERRITORIES

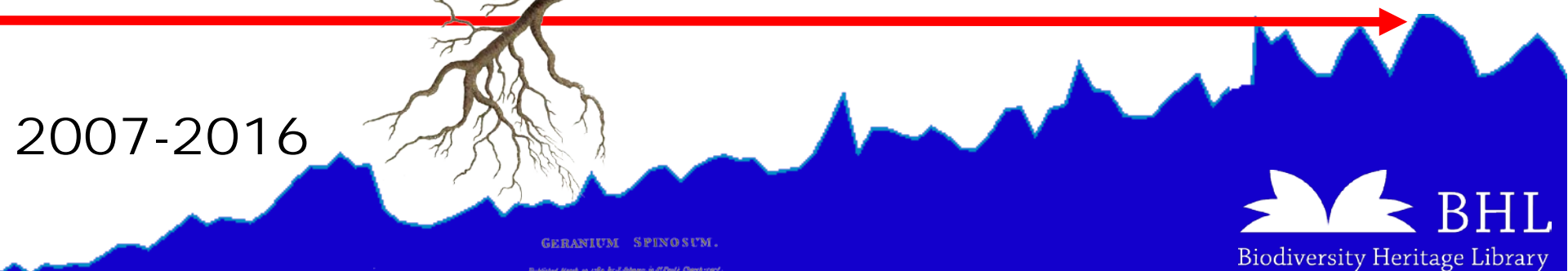




CY 2016
 2.123m sessions
 1.162m users
 96,862 users/month

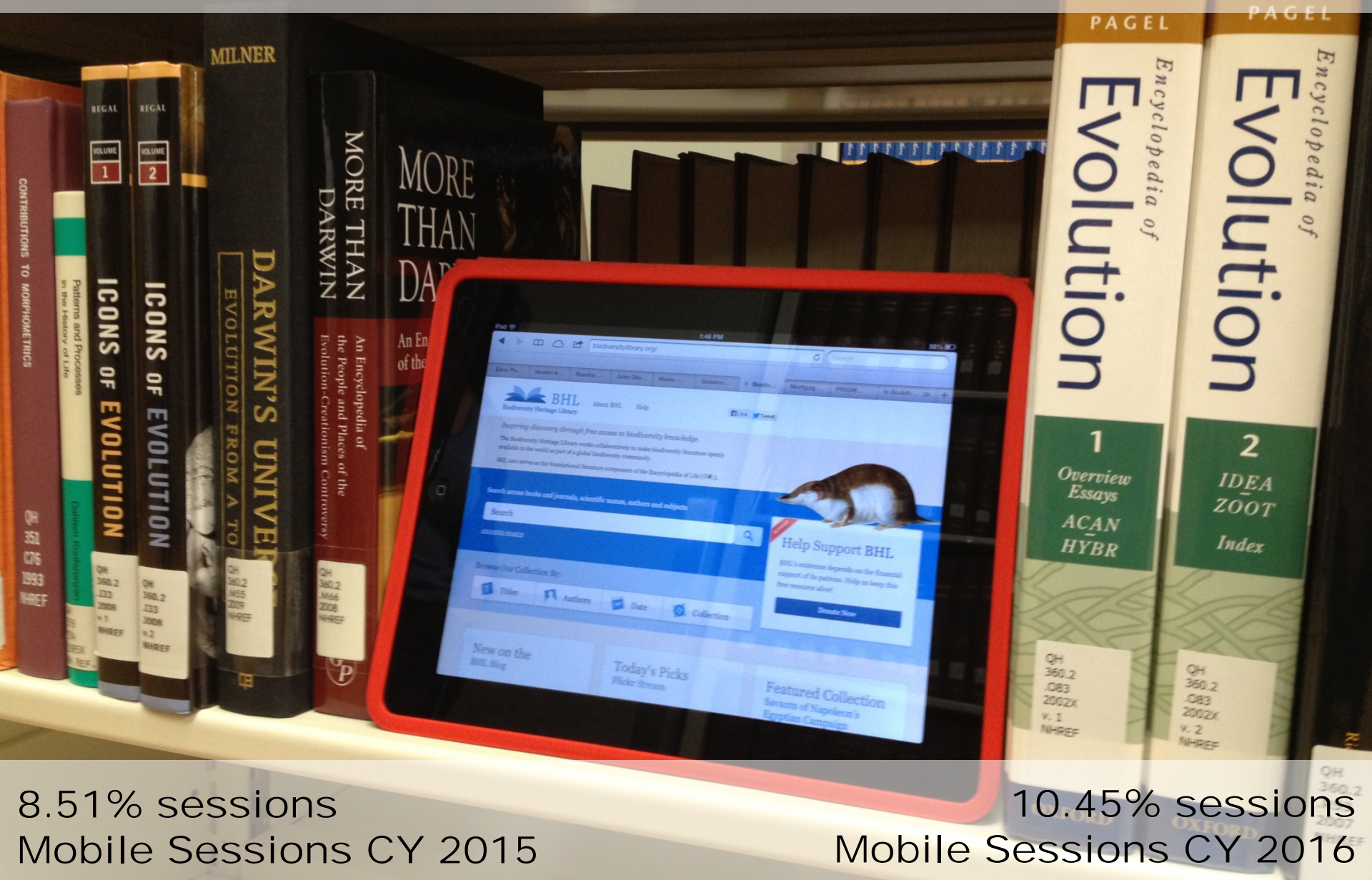
124,295 users
 February 2016

2007-2016



GERANIUM SPINOSUM.

Mobile sessions increase by 34.43% over the past year



8.51% sessions
Mobile Sessions CY 2015

10.45% sessions
Mobile Sessions CY 2016

GLOBAL & COLLABORATIVE

“BHL is radically changing the status quo and democratizing access to knowledge about biodiversity. Now anyone in the world has instant access to the original species description in a couple of clicks.”

Dr. John Sullivan
Evolutionary Biologist
Academy of Natural Sciences, Philadelphia
Cornell University



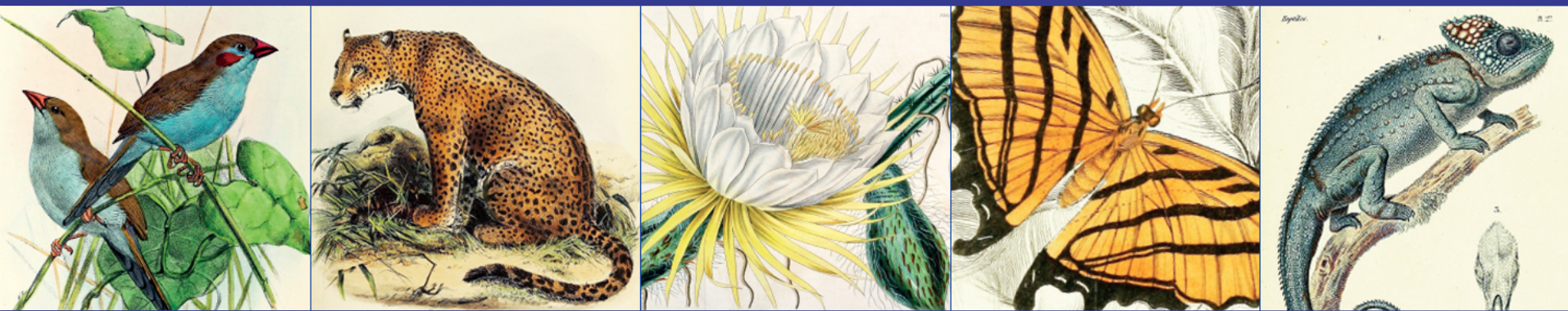
BHL collaborates with and contributes content to a variety of partners...





Two more recent collaboration opportunities
content to a variety of partners...

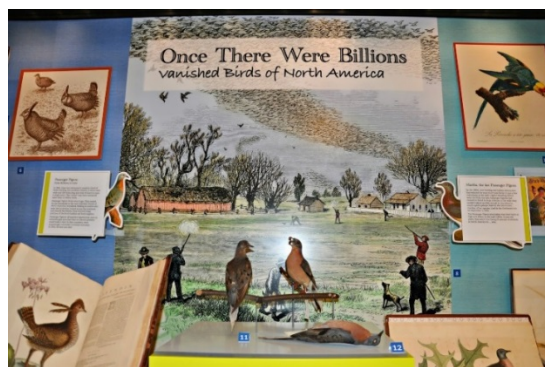




Martha, The Last Passenger Pigeon



Catalog number USNM 223979
Department of Vertebrate Zoology, Division of Birds
Smithsonian Institution
Photograph by Donald E. Hurlbert



BHL is used in exhibitions in our partner institutions, such as “Once There Were Billions” at the National Museum of Natural History.

Engagement



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249+ MILLION

TOTAL VIEWS ON IMAGES

33,200+

TOTAL IMAGES
TAGGED

30%

OF TOTAL FLICKR
COLLECTION TAGGED

18,000+

TAGGED IMAGES IN
EOL

WIRED

BHL FLICKR NAMED 1 OF WIRED'S
27 MUST-FOLLOW FEEDS IN
THE WORLD OF SCIENCE



Fauna n. Florid.

*Stats as of June 2017.

75,000+

TOTAL FOLLOWERS ON
SOCIAL MEDIA
FOLLOW @BIODIVLIBRARY



13,500+
TOTAL FOLLOWERS



5,300+
TOTAL FOLLOWERS



36,600+
TOTAL FOLLOWERS



2,200+
AVERAGE MONTHLY
READERS (CY17)



12,300+
TOTAL FOLLOWERS



6,600+
TOTAL FOLLOWERS



850+
TOTAL FOLLOWERS

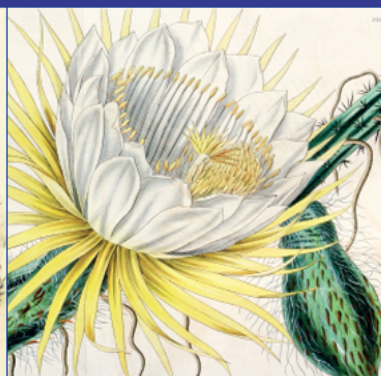
*Stats as of June 2017

Expanding Directions

"BHL provides an excellent service for studies of marine and other biodiversity. I've said it before, you folks do a great job. Keep up the good work; you've got lots of admirers out there."

Dr. Thomas Carefoot
Marine Biologist
University of British Columbia, Canada

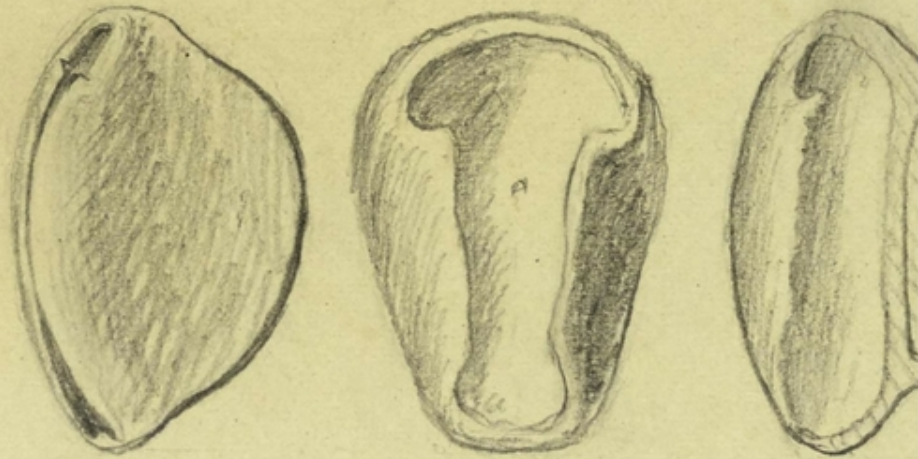




Areas of expansion include Central America, South America, West and Central Africa, Russia, India, Japan & Korea, Southeast Asia, and New Zealand.

Biodiversity Heritage Library Field Notes Project

- Funded by a Digitizing Hidden Special Collections and Archives grant from the Council on Library and Information Resources (CLIR)
- Two-year award for 491,713 USD.
- Collaborative effort to digitize field notes, assign metadata, and publish online through BHL & Internet Archive
- **Lead Institutions:** Smithsonian Libraries and Smithsonian Institution Archives.
- **Participating Institutions:**
 - American Museum of Natural History;
 - The Field Museum of Natural History Library; Harvard University Botany Libraries; Harvard University, Museum of Comparative Zoology, Ernst Mayr Library; LuEsther T. Mertz Library, The New York Botanical Garden; Missouri Botanical Garden, Peter H. Raven Library; Museum of Vertebrate Zoology at the University of California, Berkeley; Yale Peabody Museum Archives; and Internet Archive.



x 8



embryo

lateral

frontal

Smithsonian Field Book Project

- Currently funded by the Arcadia Foundation, UK. Initiated with funding from the Council on Library and Information Resources and previously supported by Smithsonian Women's Committee, and the National Park Service's Save America's Treasures.
- Arcadia's two-year award funded at 511,200 USD.
- Is coordinating work to catalog, conserve and digitize scientists' field notes from the collections of the Smithsonian.
- Content will be made available through the Smithsonian's Collection Search Center at collections.si.edu and the Biodiversity Heritage Library at biodiversitylibrary.org, as well as international aggregator sites such as the Internet Archive and the Digital Public Library of America.



38
iii Testudo chlorops radiata
Kentucky - Tennessee
Car. sup. long. 4 1/2 p. larg. 3 p.
diffe. unq. retruf. ant. obtuf. - des t. c.
post. et emarginés, en t. noirâtre
à bords jaunâtres. Sur 6 scutes
later. 3 dich. ant. - 13 gr. scutes
26 petites corn. sans Carène
Car. inf. long. de 4 1/2 p. larg.
2 1/2 p. tongue. ant. à 2 dents
recurvées en dessus, échancr. post.
jaune à 1 tache ind. noir. ar. ch.
plaque. Connatif et des taches des t.
Car. sup. jaun. à taches noires
Tête long. unq. noir. ante. brune
noir. noir. de jaun. comme les
membres, yeux ellipt. verds à ligne
noir. à travers les yeux & queue noire
L'écaille de la queue a 2 dents. Les post.
à 5 et 6 ongles dent. palmures
craquelées

Expanding Access to Biodiversity Literature

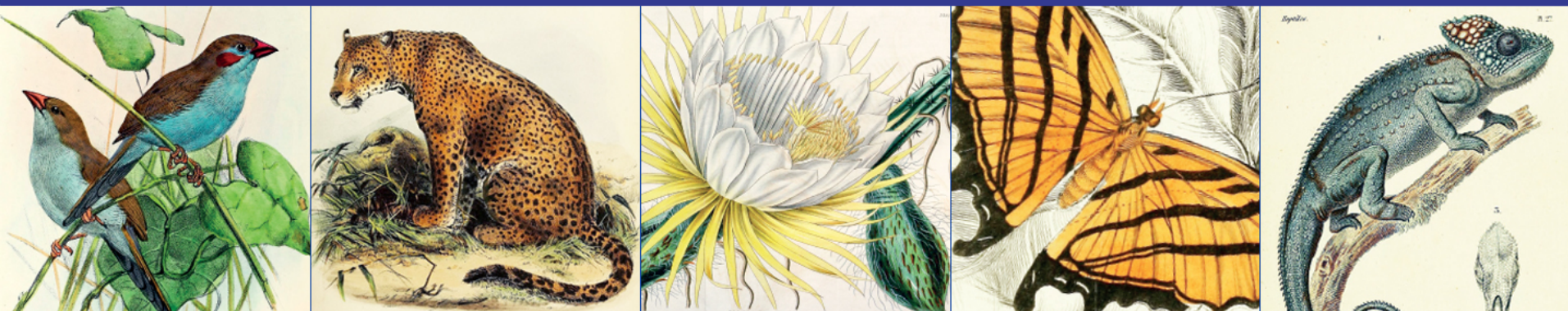
- Funded by the Institute of Museum and Library Services (IMLS) in 2015 as part of the National Leadership Grants for Libraries program.
- Two-year award for 846,457 USD.
- EABL is helping libraries, museums, and natural history societies make their content more widely available by providing the tools and support necessary to facilitate contribution to the Digital Public Library of America (DPLA) through BHL.
- **Lead Institution:** The New York Botanical Garden.
- **Participating Institutions:** Harvard Ernst Mayr Library of the Museum of Comparative Zoology (MCZ), Missouri Botanical Garden (MBG), and Smithsonian Libraries (SIL).
- **Progress to date:** 4,947 volumes (523 titles, containing over 541,000 pages); 150 in-copyright titles from 68 contributors.





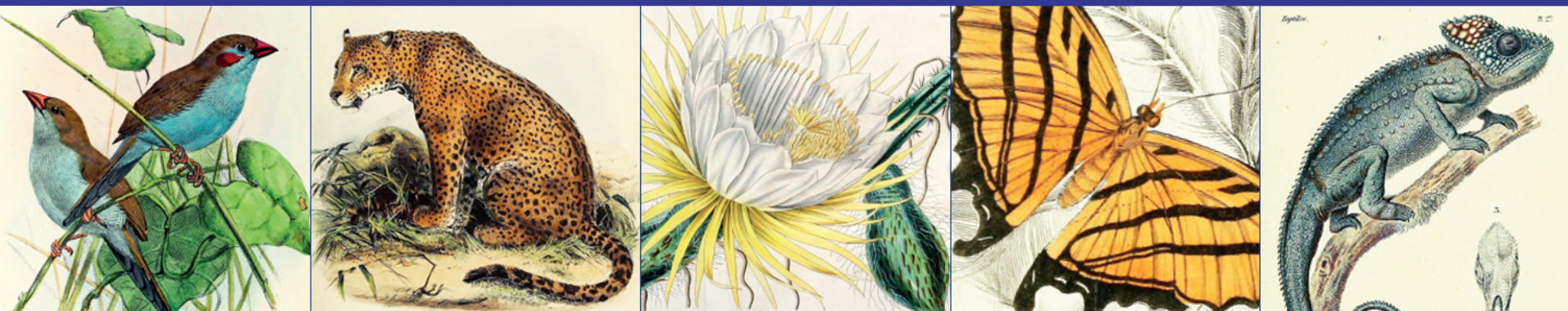
Foundations to Actions: Extending Innovations in Digital Libraries in Partnership with NDSR Learners

- Digital stewardship residencies funded by the Institute of Museum and Library Services (IMLS). Two-years/\$370,756.
- Plan and develop a next generation digital library using the Biodiversity Heritage Library (BHL) as a test-bed.
- 5 residents working with geographically-distributed BHL partners
- Outcomes: best practices document on:
 - *Transcriptions*
 - *Image search*
 - *Collection analysis*
 - *Use case/user priorities study*
 - *Improved connections to museums, archives & data providers*
- Lead Institution: Harvard/MCZ/Ernst Mayr Library & Museum Archives.
- Participating Institutions: Chicago Botanic Garden, Missouri Botanical Garden, Los Angeles County Museum of Natural History, and Smithsonian Libraries.



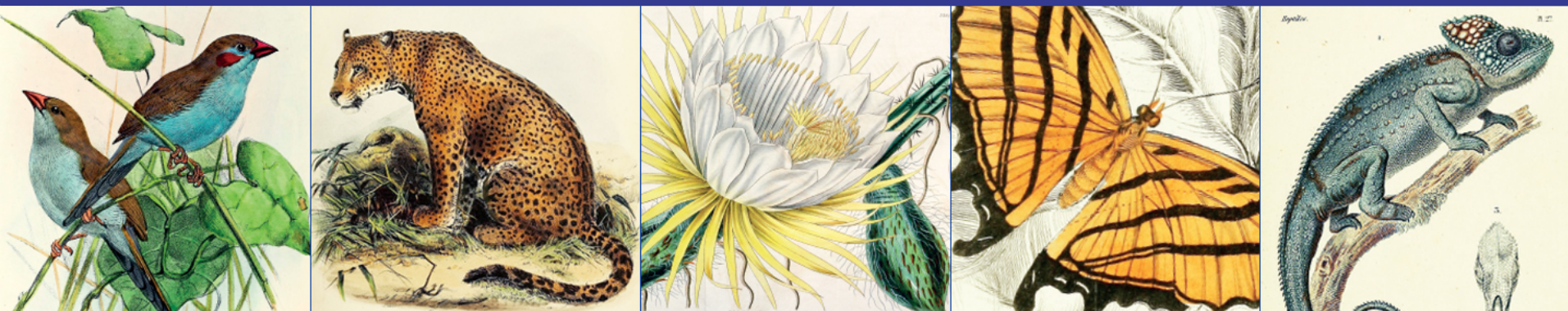
- Working with Dima Mozzherin to incorporate a newly updated GNRD server into BHL. (The GNRD server provides scientific name finding services to BHL.) It is a little too early to say for sure, but it looks like the updated service provides higher quality results. This work is nearly complete.
- Initial prototypes of both SOLR and ElasticSearch full-text search installations were created.

Technical Highlights



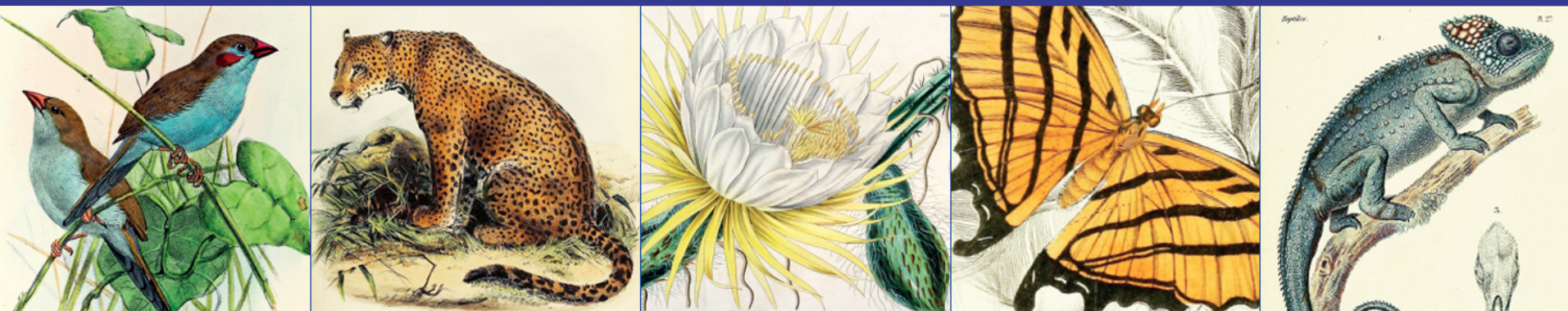
- Modified the IA harvesting process to ease the inclusion of new contributors, rights holders, and scanning institutions. This should cut down on the number of “UNKNOWN” values that appear in those fields.
- Added additional fields to the data harvested from BioStor, including Publisher Name, Publisher Place, OCLC ID, JSTOR ID, and Issue.

Technical Highlights



- Modified the BioStor harvest process to allow changes to Item and Page IDs made in BioStor to be picked up by BHL.
- Updated the BioStor harvesting process to read an additional contributor field from the BioStor APIs. This allows BHL to recognize two contributors for an article: 1) the contributor that facilitated the ingest of metadata into BHL (i.e. BioStor), and 2) the institution that actually compiled the metadata.

Technical Highlights



Full Text Server Specs

- Model: Dell PowerEdge Server
- OS/Software: ElasticSearch on RedHat Linux
- 10 core Intel Xeon CPU
- 128 Gigabytes of RAM
- About 8 TB disk space (1.6 TB on high speed SSD) for the Search Index and the OCR Text

Technical Highlights

SPECIES NAMED IN HONOR OF BHL

Vargapupa biheli



Vargapupa biheli Páll-Gergely 2015
H = 10.5 mm

Vargapupa biheli Páll-Gergely, n. sp.
Fig. 8D.

Etymology. The new species is named after the Biodiversity Heritage Library (www.biodiversitylibrary.org) to thank the multitude of rare literature made available to us. The name “biheli” is an acronym derived from the name **BI**odiversity **HE**ritage **L**ibrary.

DOI: <http://dx.doi.org/10.11646/zootaxa.3937.1.1>

“We may think it is natural to have old literature online, but if we didn't, we would have serious trouble finding the relevant publications. Therefore I thought BHL definitely deserves a new species named after it for the help it provided.”

Dr. Barna Páll-Gergely

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Revision of the genus *Pseudopomatias* and its relatives
(Gastropoda: Cyclophoroidea: Pupinidae)

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Thank You!

Questions?



Martin R. Kalfatovic
BHL Program Director

5 June 2017

University of Michigan

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