

BHL

Biodiversity Heritage Library
Quarterly Report
July - September 2013: Q4 FY13

Improving Research



BHL

Biodiversity Heritage Library

The Biodiversity Heritage Library (BHL) is a consortium of natural history and botanical libraries working together to change the nature of biodiversity research through digitization.

This past quarter, BHL has been actively engaged in several opportunities to improve the efficiency of biodiversity research. In September, we helped promote the call for proposals for the NESCent-EOL-BHL research sprint. This initiative seeks research projects to leverage the resources of the Encyclopedia of Life (EOL) and BHL to address novel questions about the ecology and evolution of biodiversity. More details on the goals of the research sprint are available on the facing page. Applications were accepted through November 15 and we're looking forward to seeing some exciting research grow out of this opportunity!



BHL Member Libraries received a grant to conduct research of their own. The Institute of Museum and Library Services (IMLS) awarded the Missouri Botanical Garden (MOBOT) \$449,641 from the National Leadership Grants for Libraries in the Category of Advancing Digital Resources. MOBOT, Harvard, Cornell and the New York Botanical Garden will test new means of crowdsourcing to support the enhancement of content in the BHL. Learn more: http://www.imls.gov/news/2013_ols_grant_announcement.aspx#MO Crowdsourcing and gaming.

As part of ongoing efforts to improve access and increase awareness of the resources available through the BHL portal, BHL maintains an active outreach strategy that spans conference participation, webinars, and social media. An Outreach and Communication Plan is now in place to guide these efforts and to evaluate impact and reach. In this report, we present progress on these efforts both for the fourth quarter of fiscal year 2013 as well as statistics on annual progress. Additionally, the Smithsonian Libraries has hosted several marketing and virtual reference interns to support pan-BHL outreach efforts.

MISSION: The Biodiversity Heritage Library works collaboratively to make biodiversity literature openly available to the world as part of a global biodiversity community.

NESCent-EOL-BHL Research Sprint

In September, BHL co-announced a research sprint with NESCent and EOL inviting applications to participate in an event to pioneer the mining of the Encyclopedia of Life (<http://eol.org>) and the Biodiversity Heritage Library (<http://www.biodiversitylibrary.org>). The call for proposals sought research projects on any aspect of biological science that will leverage EOL and BHL resources. Applicants were encouraged to submit proposals that would identify questions and data for which biologists may lack informatics skills and resources to address or analyze successfully; and symmetrically, to guide informaticians to pressing ecological and evolutionary questions. Successful applicants will be matched with an informatician, in 2 person teams, and receive support to travel to and work on-site at the National Evolutionary Synthesis Center for 4 days. The event will be designed to make actual discoveries through joint activities and to test the “computability” of major biodiversity databases.

Proposals were accepted through November 15, 2013 and are being evaluated in terms of the scientific value of the project and the qualifications of the applicant. To learn more, please visit: <http://blog.biodiversitylibrary.org/2013/09/nescent-eol-bhl-research-sprint.html>



EOL Collaboration

BHL has maintained an ongoing collaboration with the Encyclopedia of Life (EOL) since its inception. One of the exciting results of this collaboration has been the links that have been established between the content available in the two resources. The taxonomic names which BHL algorithms identify in the literature (see Names Added to BHL in Collections Stats) are used to link to EOL species pages, giving users the ability to click through for even more information. Species pages in EOL in turn link back to related literature in BHL, thus providing deeper background to users of each resource.

Cumulative

BHL pages linking to EOL species pages:

16,309,777

EOL pages linking to BHL articles:

1,203,241

Highlights

BHL Member Libraries receive IMLS Award

We are very pleased to announce that the Institute of Museum and Library Services (IMLS) awarded the Missouri Botanical Garden (MOBOT) a \$449,641 National Leadership Grant for Libraries in the Category of Advancing Digital Resources. MOBOT and partners at Harvard University, Cornell University and New York Botanical Garden will explore new means of crowdsourcing and digital games for improving digital content, notably focusing on outputs from optical character recognition and transcription. Anticipated results include richer and more accurate data and exposure of library content to communities who may not know about the collections otherwise. We look forward to the opportunity to improve access to BHL collections for all of our audiences!

BHL and EOL meet in Woods Hole

In September 2013, BHL staff, Martin Kalfatovic, William Ulate, Joel Richard (SIL), Joe DeVeer (HU/MCZ) and John Mignault (NYBG) met with Bob Corrigan, Director of Operations and members of the EOL technical team including Nathan Wilson, Director of Biodiversity Informatics, and Anthony Goddard, Technical Operations Lead, to discuss issues related to joint BHL/EOL technical architecture (including the BHL data cluster in Woods Hole and the taxonomic namefinding for BHL that is done on EOL platforms). The teams also spent time brainstorming areas of collaboration going forward.



BHL at conferences

BHL outreach efforts include maintaining an active presence at national and international conferences. This quarter, BHL staff reported participating in four conferences. Over the past fiscal year, staff participated in a total of 38 conferences, workshops and meetings. All told, they delivered 45 presentations and 5 posters. Recaps of many of these presentations are highlighted on the BHL blog (blog.biodiversitylibrary.org) with links to slides when available. Highlights from this quarter are included in this section of the report.

A Singapore Tour: IFLA, Botanical Gardens, and the National Library Board

Nancy Gwinn, Chair of the BHL Executive Committee and Secretary of the Global-BHL Executive Committee, attended the 79th IFLA World Library and Information Congress in Singapore, August 17-23. While there, she visited the Singapore Botanical Gardens and met with the Dr. Nigel Taylor, Director of the Gardens and shared information about BHL with him as well as with Elaine Ng, CEO of the National Library Board. Overall, those discussions were highly successful and Dr. Taylor has since been in touch with signed permission agreements to scan some of their titles for inclusion in BHL.

Highlights, continued...

BHL at American Library Association 2013

As the oldest and largest library association in the world, the American Library Association Annual Meeting is attended by approximately 20,000 librarians. This year, the conference was held in Chicago, IL, June 27-July 2. Martin Kalfatovic and Nancy Gwinn delivered a presentation to a group of nearly seventy librarians at the International Relations Round Table pre-conference: Innovative Library Services and Programs in Digital Era – An International Perspective. A BHL poster, entitled “The Power of Crowdsourcing: A Use Case from the Biodiversity Heritage Library,” was showcased by Martin Kalfatovic, Diana Duncan, and Suzanne Pilsk. Authored by Gilbert Borrego and Grace Costantino, the poster presented the work BHL has done to crowdsource species identification and tagging for the thousands of BHL Flickr images.

BHL projects presented at Digital HPS Meeting

Two BHL-related projects--the George Engelmann Correspondence Project and The Art of Life--were presented during the Digital History and Philosophy of Science (Digital HPS) meeting held at Indiana University, Bloomington, September 6-7. Trish Rose-Sandler presented on The Art of Life, a project to identify and describe the rich natural history illustrations hidden within the pages of BHL literature. Daron Dierkes spoke about the George Engelmann Correspondence Project, a project to digitize and make available in BHL letters sent to 19th century botanist, George Engelmann by his colleagues in the United States and Europe. Both projects are providing new content types to the BHL portal and help to contextualize BHL's published literature and expand its audiences.

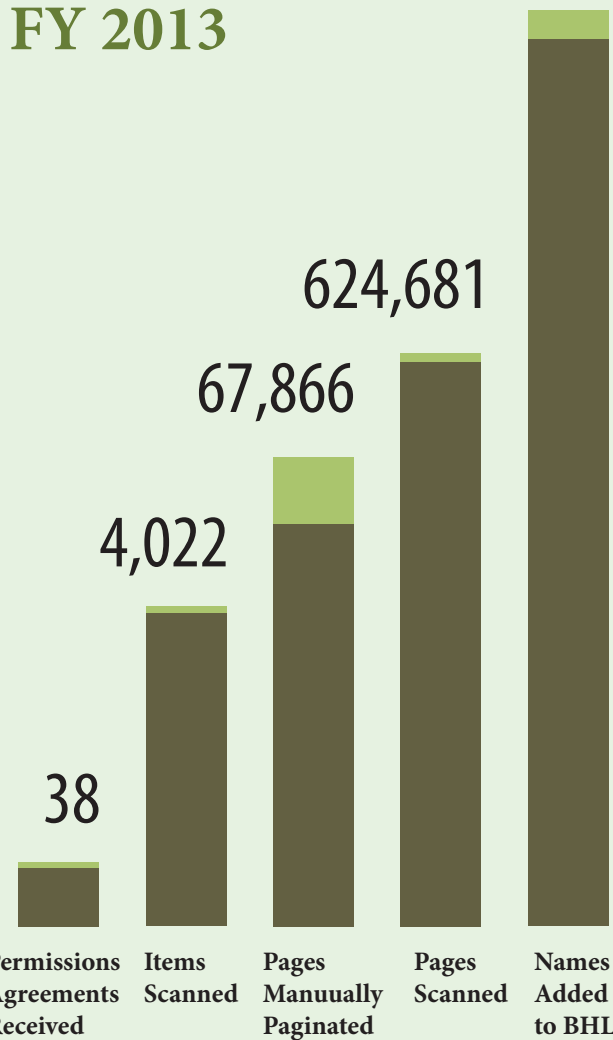


collections profile

growth & management

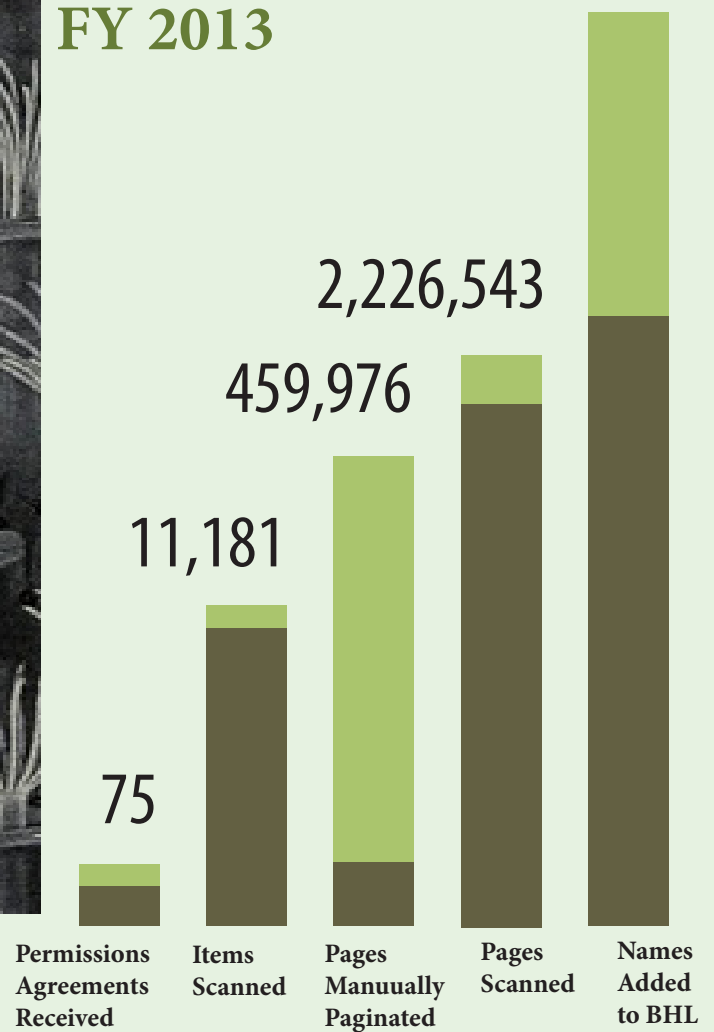
Quarter 4,
FY 2013

3,049,112



Annual,
FY 2013

56,240,063



Cumulative

Permissions Agreements Received: **249**

Pages Scanned: **41,616,414**

Items Scanned: **118,888**

Names Added to BHL: **155,003,315**

Pages Manually Paginated: **476,383**

collection stats continued

373,573

TOTAL PAGES
CONTRIBUTED
BY GLOBAL
BHL PARTNERS

187,987

TOTAL PDFS
GENERATED ON BHL

58,847

TOTAL DOIS
ASSIGNED IN BHL

96,996

TOTAL ARTICLES
ADDED TO BHL

BHL collects and collaborates to resolve feedback using Countersoft's issue-tracking Gemini product. User feedback includes notifications of errors with scanned content, suggestions for service improvements, and requests for content to be scanned. Some scanning requests are considered "Special Handling" as they involve rare, oversized or fragile material.

user feedback stats *cumulative:*

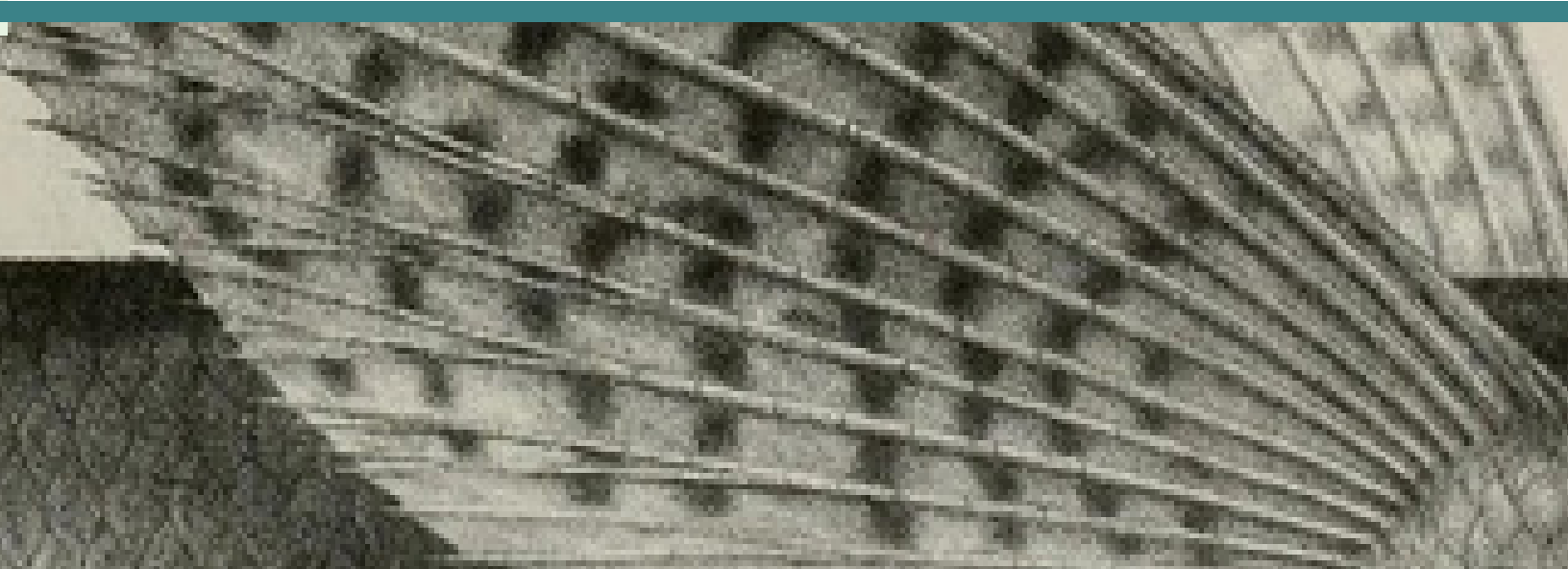
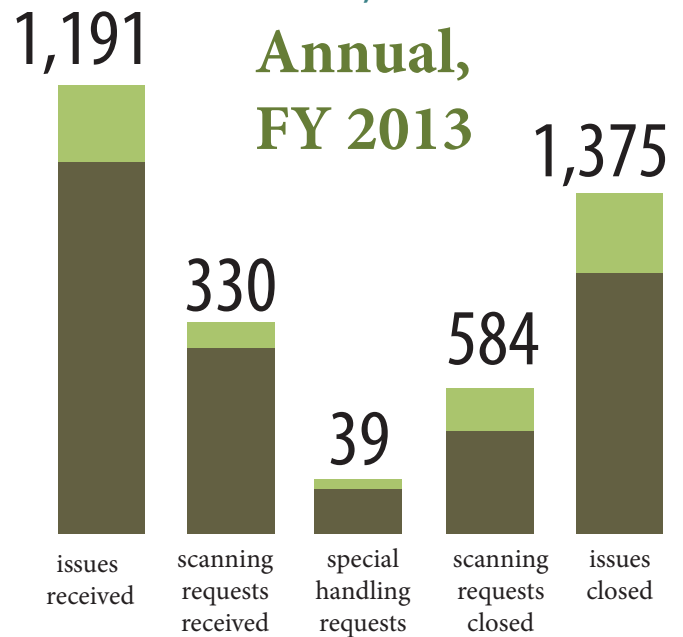
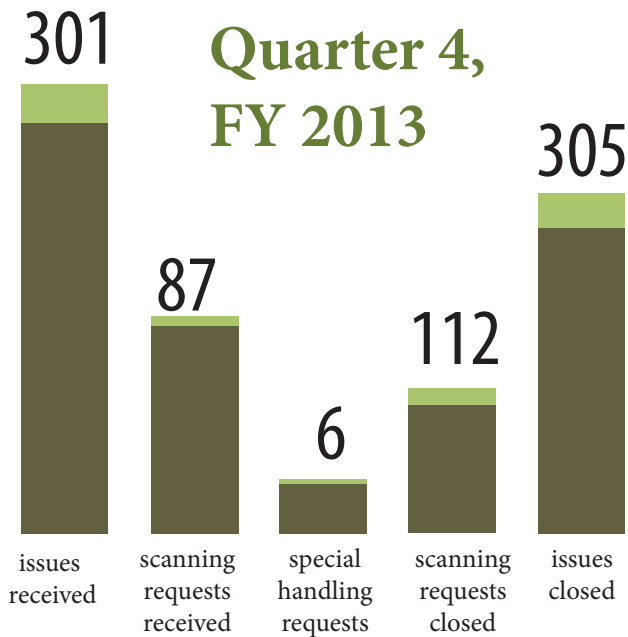
Issues Received: 5,798

Scanning Requests Received: 2,224

Special Handling Requests: 448

Scanning Requests Closed: 1,526

Issues Closed: 4,626



bhl content usage

measuring the use of bhl resources

Measuring the use of BHL resources involves more than simply tracking website visits. BHL content is dispersed amongst a variety of databases and websites, including the BHL blog and Flickr. Furthermore, thanks to the DOIs (digital object identifiers) associated with our collections, we can also track usage originating from users clicking on citations to BHL content in external sources. The statistics presented here attempt to capture a complete picture of BHL usage while also considering the original usage source.

WEBSITE & BLOG VISITS QUARTERLY AND ANNUAL STATISTICS

Q4 FY13	WEBSITE VISITS 324,765		BLOG VISITS 7,620		TOTAL VISITS 332,385
Quarterly Ave Over Past Year	WEBSITE VISITS 365,325		BLOG VISITS 9,052		TOTAL VISITS 374,377
Annual FY13	WEBSITE VISITS 1,461,301		BLOG VISITS 36,208		TOTAL VISITS 1,497,509

Q4 FY13 USAGE BY COUNTRY

TOP COUNTRIES:

UNITED STATES: 82,159 visits

GERMANY: 20,748 visits

UK: 20,216 visits

INDIA: 15,910 visits

FRANCE: 13,040 visits

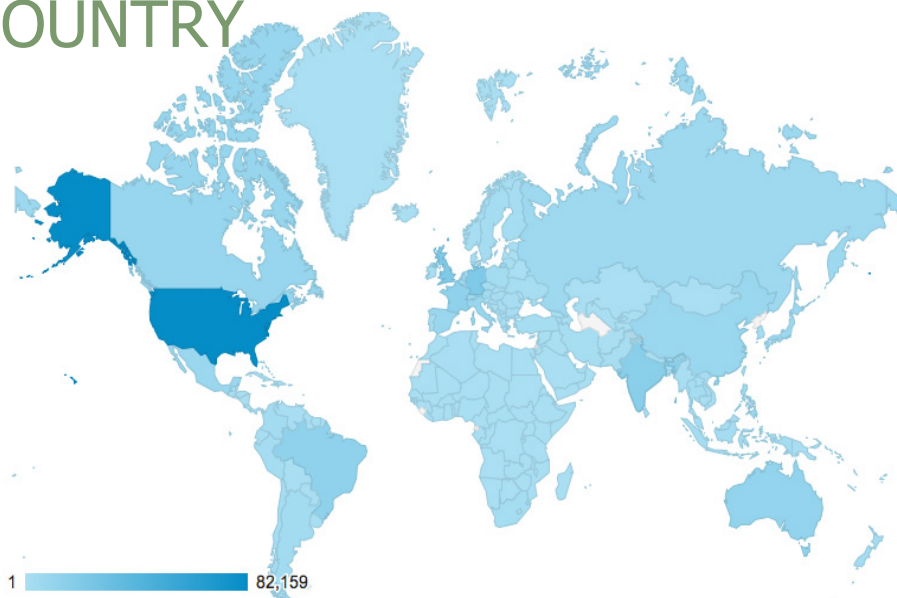
BRAZIL: 12,866 visits

AUSTRALIA: 11,469 visits

CANADA: 9,201 visits

CHINA: 8,175 visits

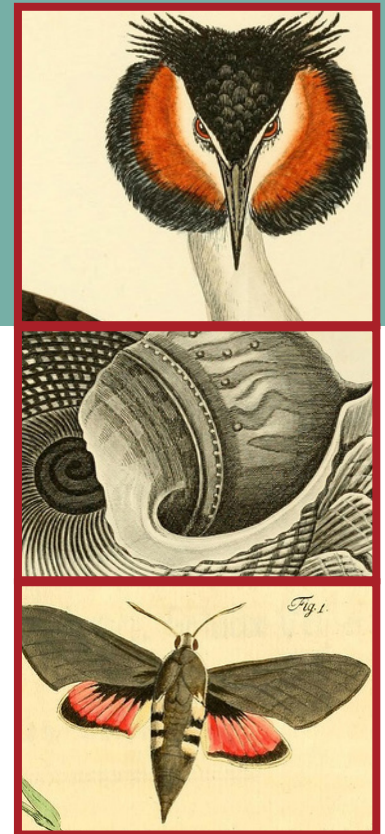
ITALY: 8,143 visits



DOIs

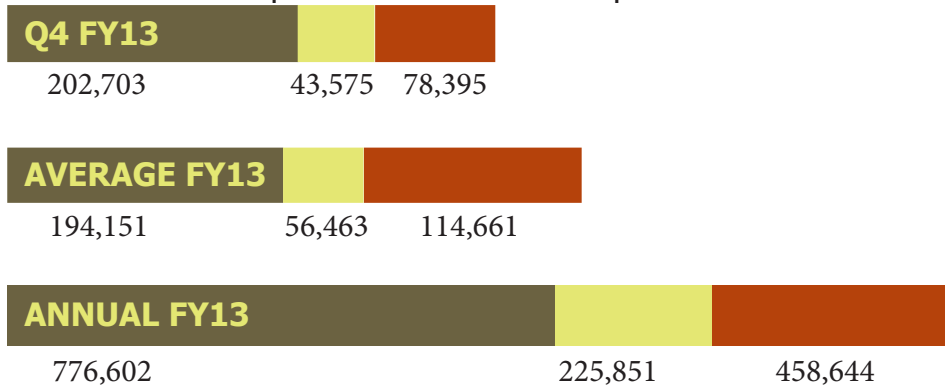
Q4 FY13 = 14,841 | Average FY13 = 19,072
 Total resolutions in FY13 = 76,289

Each DOI resolution translates to a visit to BHL. When users cite BHL resources, they can include the DOI (essentially a link) to that item in BHL. Thus, DOI resolutions represent a baseline for how much traffic comes to BHL because users cite our collections.



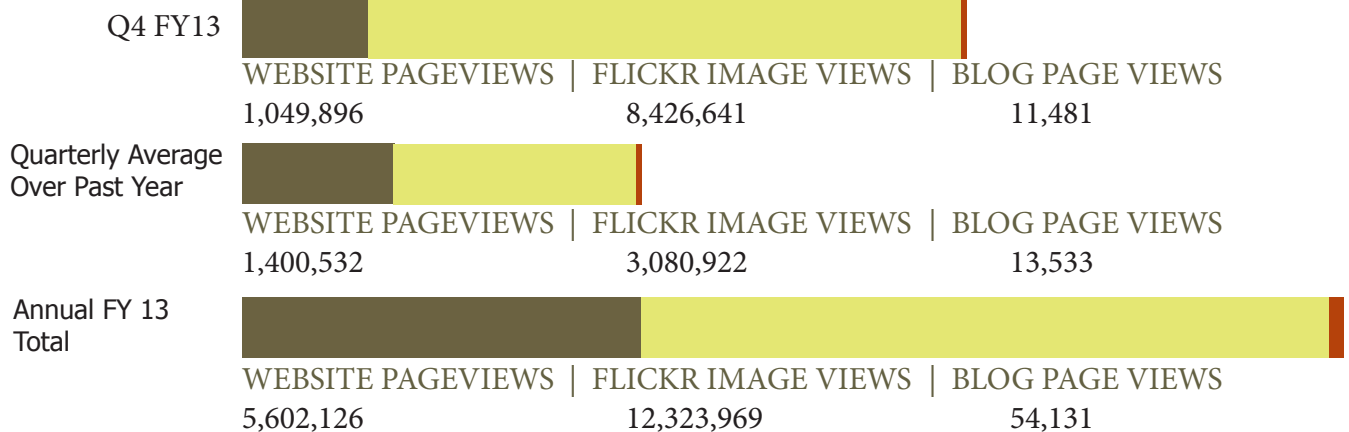
WEBSITE TRAFFIC SOURCES

SEARCH TRAFFIC | DIRECT TRAFFIC | REFERRAL



VIEWS

Q4 FY13 VIEWS COMPARED TO QUARTERLY AVERAGE AND ANNUAL TOTAL



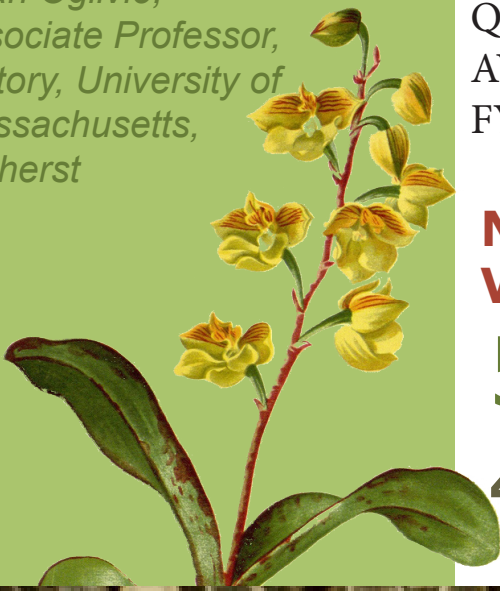
VISITS TO BHL FROM SOCIAL MEDIA PLATFORMS

OCTOBER - SEPTEMBER 2012 VS OCTOBER - SEPTEMBER 2013

Twitter	Flickr	TOTAL
3,184 3,823	10,699 14,662	
Facebook	Pinterest	20,961 32,693
6,733 10,722	345 3,486	

As a historian of natural history, I find the BHL to be an invaluable resource. You have high-quality digitized versions of books that I would otherwise have to travel hundreds or thousands of miles to use, and (...) your digitizers actually bothered to unfold engraved plates and photograph them carefully!

*Brian Ogilvie,
Associate Professor,
History, University of
Massachusetts,
Amherst*



bhl users

measuring the bhl audience

BHL audience is much greater than simply the number of visitors to the BHL website. It also encompasses those that use BHL resources on our other outreach platforms, including Flickr, our blog, Twitter, Facebook, and Pinterest. To reflect a complete picture of our audience, we must measure all of these users.

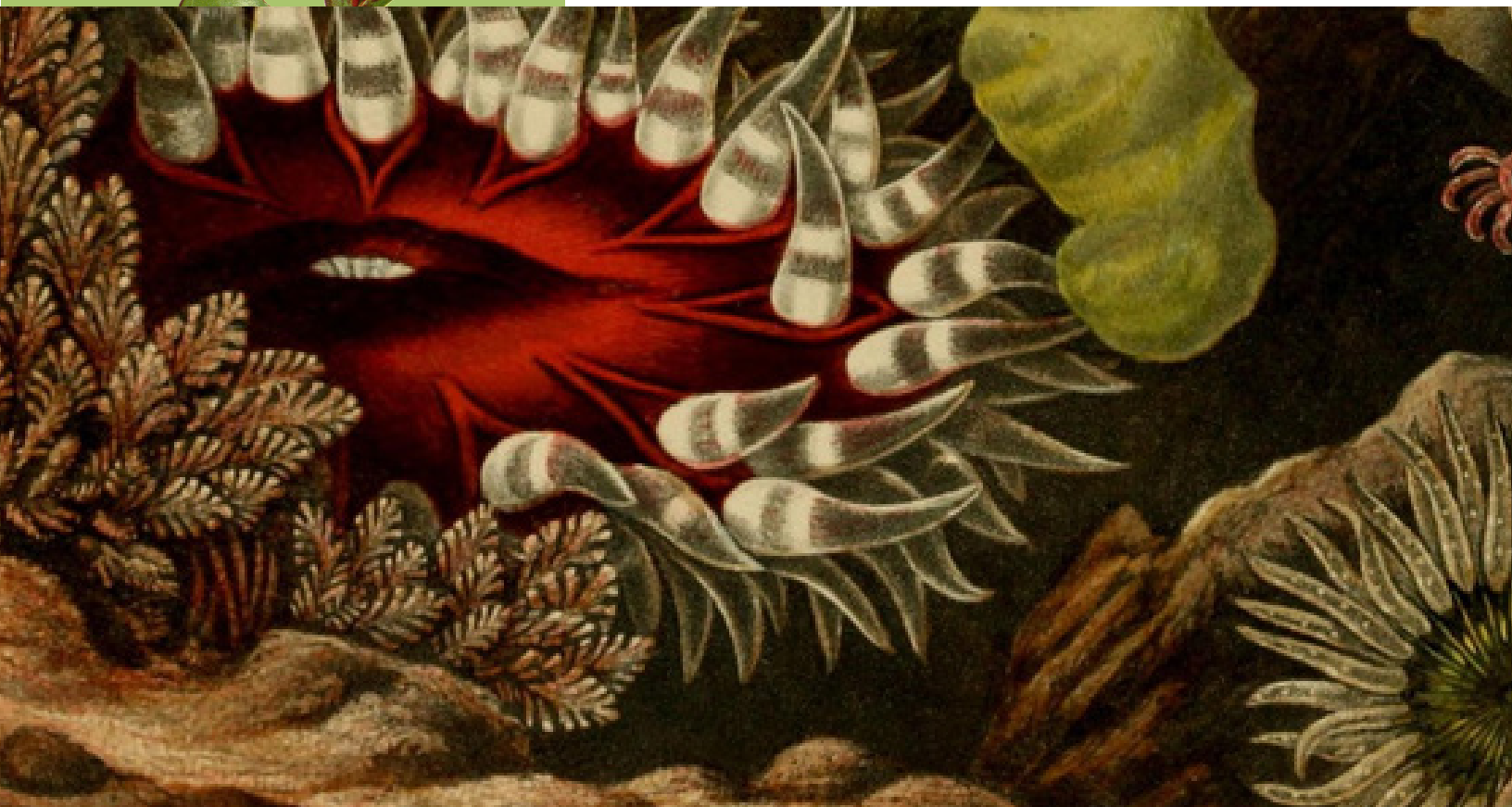
UNIQUE VISITORS

	WEBSITE	BLOG	TOTAL
Q4 FY13	198,424	6,126	204,550
AVERAGE	212,452	7,350	219,802
FY13 TOTAL	849,807	29,400	879,207

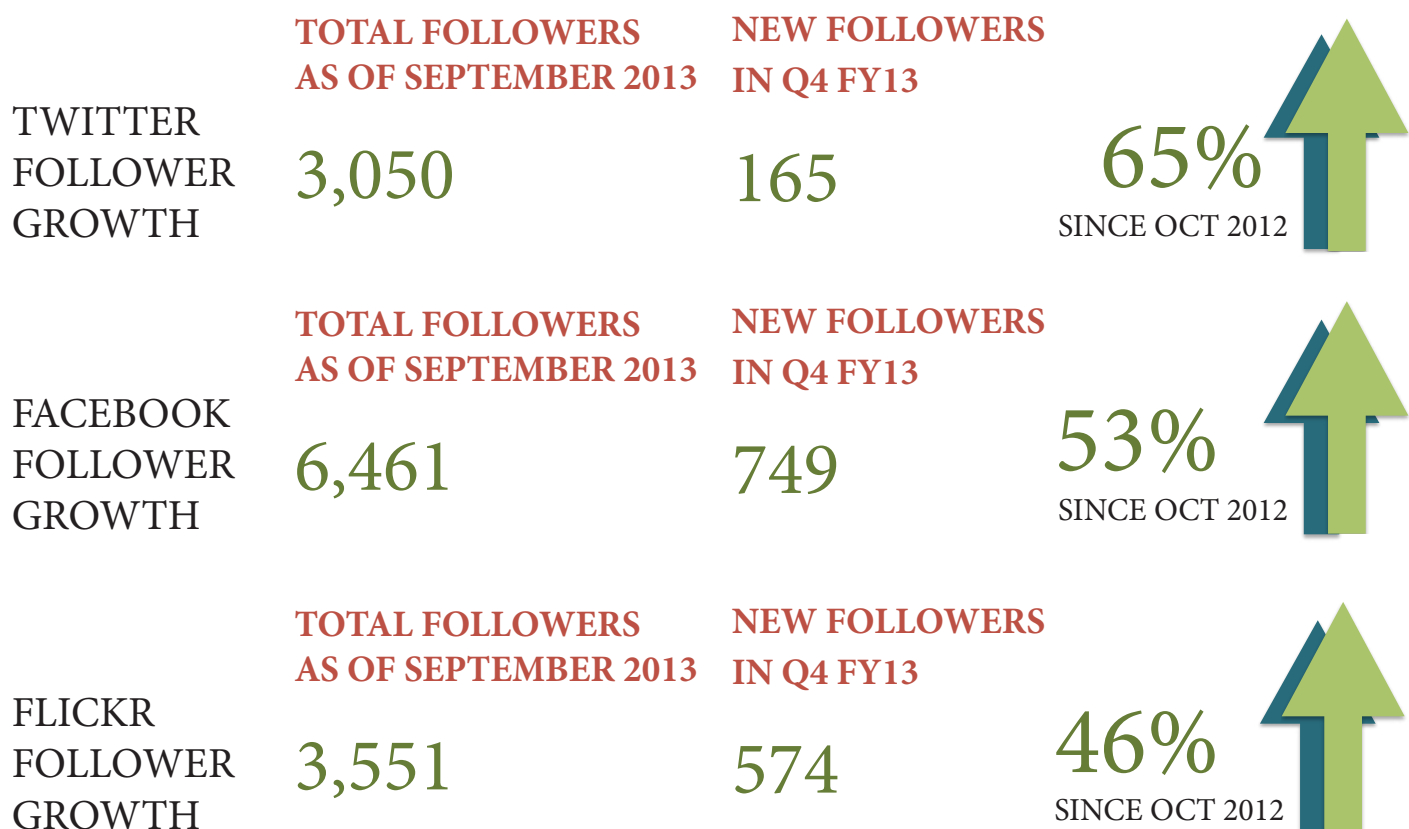
NEW VS RETURNING VISITORS

53% new visitors

47% returning visitors



*...measuring the bhl audience,
continued*



"I just want to say what an amazing resource, lovely, intuitive website and ... well the only suggestion is really to ask you to keep doing this essential work"

from Mark Blaxter, via the BHL feedback form

"I have made extensive use of your Library, which I think is excellent both in its extent and the quality of the pdfs, particularly with regard to their searchability."

from Dr. Philip R. Pugh (National Oceanography Centre, Southampton, U.K.), via the BHL feedback form

"Dear BHL, your service is unbeatable and my #1 in search of taxonomical literature."

from Martin Bemmman, via the BHL feedback form

BHL feedback form: <http://biodiversitylibrary.org/contact>



meaningful usage

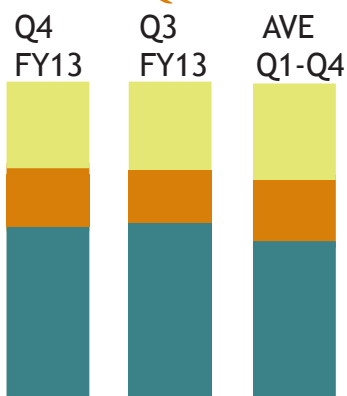
measuring user engagement



Measuring the success of BHL is about more than just tracking usage and audience. We also want to evaluate whether our users are having meaningful interactions with our content. How much time does a user actually spend on our site, how many pages do they view when they visit us, and how frequently are they returning to use our services? Within our other outreach platforms, are users simply passively monitoring what we're posting, or do they actually interact with it, have conversations with us about it, enhance it, and share our content with other people? The metrics presented in this spread attempt to reflect how engaged our users really are with us and our resources.

WEBSITE ENGAGEMENT

FREQUENCY



Maximum: Visits from users that come to BHL 9+ times per month

Moderate: Visits from users that come to BHL 2-8 times per month

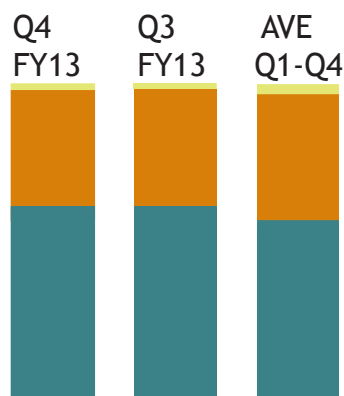
Minimum: Visits from users that come to BHL 1 time per month

29% AVERAGE MAXIMUM

21% AVERAGE MODERATE

50% AVERAGE MINIMUM

DEPTH



Maximum: Visits that involved viewing 20+ pages in BHL

Moderate: Visits that involved viewing 2-19 pages in BHL

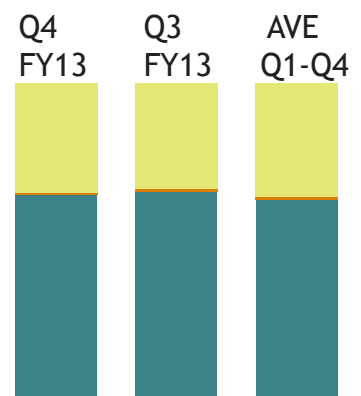
Minimum: Visits that involved viewing only 1 page in BHL

3% AVERAGE MAXIMUM

44% AVERAGE MODERATE

53% AVERAGE MINIMUM

LENGTH



Maximum: Visits that last more than 3 minutes

Moderate: Visits that last between 1-3 minutes

Minimum: Visits that last less than 1 minute

46% AVERAGE MAXIMUM

1% AVERAGE MODERATE

53% AVERAGE MINIMUM

measuring user engagement continued

FLICKR ENGAGEMENT AND EOL: TAGGED IMAGES

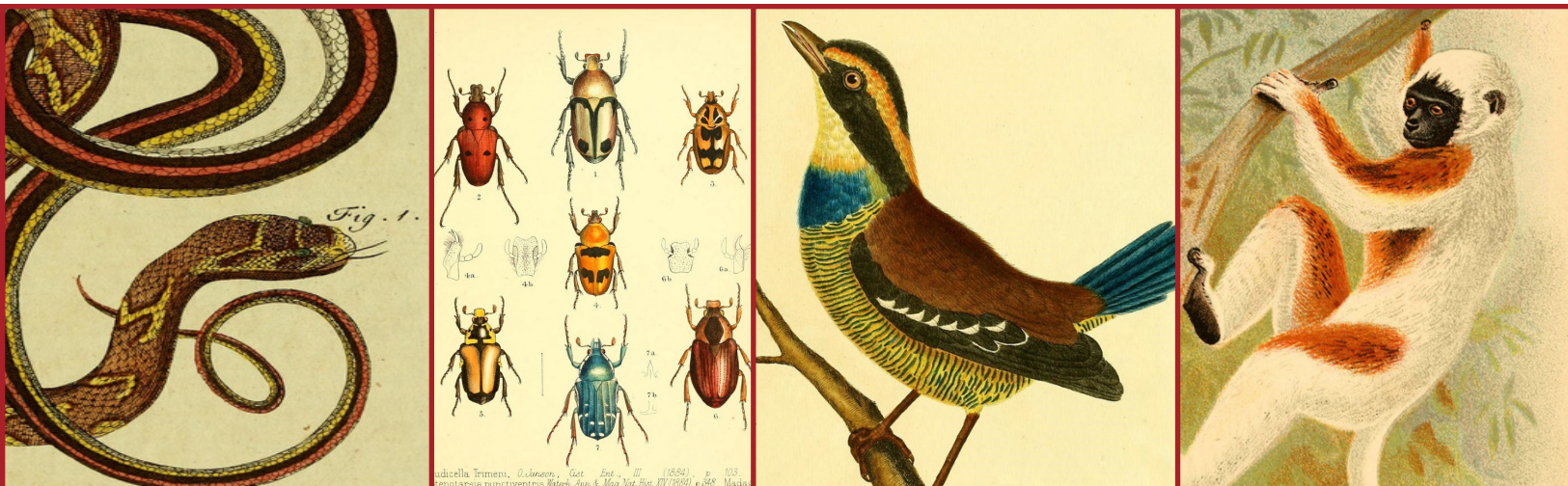
Users can add tags to BHL images in Flickr. If these are species name machine tags, e.g. , “taxonomy:binomial=Genus species” the images can be automatically ingested into EOL and associated with the corresponding species page.

83,543

IMAGES IN FLICKR

11,226

IMAGES TAGGED



Twitter Engagement

OCTOBER 2012 - SEPTEMBER 2013

Q4, FY 2013

RETWEETS/
MENTIONS **2,615**

351

CLICKS ON
LINKS **7,045**

734

Facebook Engagement

OCTOBER 2012 - SEPTEMBER 2013

Q4, FY 2013

ENGAGED
USERS **32,963**

5,932

INTERACTIONS **37,083**

7,907

scientist profiles

& the biodiversity heritage library



Who: Barna Páll-Gergely

Where: Doctoral student at Matsumoto, Shinshu University, Japan

Research Specialty: Land snails of South-east Asia

BHL Use: As part of his PhD studies, Barna consults BHL on an almost daily basis. When working on a new taxonomic group, he finds he can spend entire days searching the literature to build his “literature collection.” His favorite strategy is to download the full PDFs while also producing smaller files that he can later quickly reference for page numbers for citations.

BHL Impact: When we interviewed him as part of our BHL & Our Users series on the BHL blog, Barna sang the praises of BHL for enabling him to conduct his research in a fraction of the time that it would have taken to consult the physical volumes of taxonomic literature:

“When I started to deal with the land snail family Plectopylidae, I just typed “plectopylis” into the search field and I could read and download many old literature. Without this possibility (scientific or authors name as a search option) finding all relevant literature would have taken maybe two times longer, and more importantly, there would have been a risk of overlooking some sources. This was very helpful while I was working with my colleagues on the the description of new species and subspecies shown in the image below.”

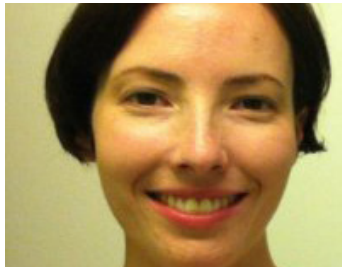


bhl interns



The BHL has hosted 5 interns via Smithsonian Libraries to work on project-wide initiatives since March 2013. Interns have participated in various outreach and social media activities as well as processing user feedback received to BHL's backend issue tracking system. BHL has been pleased to work with:

- Irina Zeylikovitch, University of Michigan, Marketing Intern March 2013
- Laurel Byrnes, Princeton University, Marketing Intern June 2013
- Adriana Marroquin, University of Maryland College Park, Virtual Reference Intern June-August 2013
- Kirsten Hostetler, University of Washington, Marketing Intern June-August 2013
- Kai Alexis Smith, Pratt Institute, Marketing Intern September-December 2013



Pan-BHL interns have contributed to social media planning documentation, over twenty blog posts, numerous FaceBook and Twitter posts, user tutorials, and the reconciliation of over 250 virtual reference inquiries within BHL's issue tracking system. All interns have worked under the supervision of BHL Collections Coordinator, Bianca Crowley. For information about future internship opportunities with the BHL, see <http://library.si.edu/about/internships-and-fellowships>.



To learn more about our interns' experiences, please search for their posts on the BHL blog <http://blog.biodiversitylibrary.org>.



Pictured from top to bottom: Adriana Marroquin; Irina Zeylikovitch; Laurel Byrnes; Kai Alexis Smith; Kirsten Hostetler.



about bhl

The Biodiversity Heritage Library (BHL) is a consortium of 15 natural history and botanical libraries that work collaboratively to make biodiversity literature openly available to the world as part of a global biodiversity community.

The BHL consortium works with the international taxonomic community, rights holders, and other interested parties to ensure that this biodiversity heritage is made available to a global audience through open access principles. Today, in partnership with the Internet Archive and through local digitization efforts, BHL has digitized over 41 million pages of taxonomic literature, representing over 63,000 titles and 118,000 volumes (October 2013).

The published literature on biological diversity has limited global distribution; much of it is available in only a few select libraries in the developed world. Biologists have long considered that access to the published literature is one of the chief impediments to the efficiency of research in the field. Among other results, free global access to digitized versions of the literature would repatriate information about the earth's species to all parts of the world.

Since 2009, the BHL has expanded globally. The European Commission's eContentPlus program has funded the BHL-Europe project, with 28 institutions, to assemble the European language literature. Additionally, the Chinese Academy of Sciences, the Atlas of Living Australia, Brazil (through SciELO and BIREME), and the Bibliotheca Alexandrina have created regional BHL nodes. The newest global node, BHL-Africa, officially launched in April, 2013. These projects will work together to share content, protocols, services, and digital preservation practices.

Awards Received by the Biodiversity Heritage Library

- Charles Robert Long Award of Extraordinary Merit. Council on Botanical and Horticultural Libraries. 2013.
- Laureate. IDG's Computerworld Honors Program. 2013.
- (BHL-Australia) Victorian Government Arts Leadership Recognition Award. 2012.
- Outstanding Collaboration Award. Association for Library Collections & Technical Services (ALCTS). 2010.
- John Thackray Medal. The Society for the History of Natural History. 2010.

Five Recent Publications that Highlight the Biodiversity Heritage Library

- Page, R (2013) BioNames: linking taxonomy, texts, and trees. PeerJ PrePrints 1:e54v1 <http://dx.doi.org/10.7287/peerj.preprints.54v1> <https://peerj.com/preprints/54/>
- Schmid, R (2013) A Guide to getting books and journal information cost free. *Taxon*, Volume 62, Number 4, 21 August 2013, pp. 862-864.
- Marhold K, Stuessy, T (2013) The Future of Botanical Monography: Report from an International Workshop, 12-15 March 2012, Smolenice, Slovak Republic. *Taxon*. 62 (1): 4-20.
- Seltmann KC, Péntzes Z, Yoder MJ, Bertone MA, Deans AR (2013) Utilizing Descriptive Statements from the Biodiversity Heritage Library to Expand the Hymenoptera Anatomy Ontology. *PLoS ONE* 8(2): e55674. doi:10.1371/journal.pone.0055674.
- Ang Y, Puniamoorthy J, Pont AC, Bartak M, Blanckenhorn WU, Eberhard WG, Puniamoorthy N, Silva VC, Munari L, Meier R (2013) A Plea for Digital Reference Collections and Other Science- based Digitization Initiatives in Taxonomy: Sepsidnet as Exemplar. *Systematic Entomology*. doi: 10.1111/syen.12015.



BHL Staff & Participating Institutions

Secretariat:

Program Director: Martin Kalfatovic
Program Manager: Carolyn Sheffield
Collections Coordinator: Bianca Crowley

Technical Team:

Technical Director: William Ulate
Lead Developer: Mike Lichtenberg
Data Analyst: Trish Rose-Sandler

BHL Executive Committee:

Chair: Nancy Gwinn (Smithsonian Libraries)
Vice-Chair: Connie Rinaldo (MCZ Harvard)
Secretary: Susan Fraser (The New York Botanical Garden)

BHL-Global Executive Committee:

Chair: Ely Wallis (BHL-Australia)
Vice-Chair: Jiří Frank (BHL-Europe)
Secretary: Nancy Gwinn (BHL)

BHL Member Libraries:

American Museum of Natural History
California Academy of Sciences
Cornell University
Harvard University Botany Libraries
Harvard University, Ernst Mayr Library, MCZ
Library of Congress
Royal Botanic Gardens, Kew
Marine Biological Laboratory / Woods Hole Oceanographic Institution Library
Missouri Botanical Garden
Natural History Museum, London
The New York Botanical Garden
Smithsonian Libraries
United States Geological Survey

BHL Affiliates:

Academy of Natural Sciences, Philadelphia
The Field Museum

BHL member libraries



CALIFORNIA
ACADEMY OF
SCIENCES



Kew

ROYAL BOTANIC GARDENS



MISSOURI BOTANICAL GARDEN



AMERICAN MUSEUM
OF NATURAL HISTORY



Smithsonian Libraries



LIBRARY OF
CONGRESS




THE NEW YORK BOTANICAL GARDEN

MBLWHOI
LIBRARY



**NATURAL
HISTORY
MUSEUM**

 **USGS**
science for a changing world



Cornell University
Library



HARVARD UNIVERSITY

Museum of Comparative Zoology



BHL

Biodiversity Heritage Library