



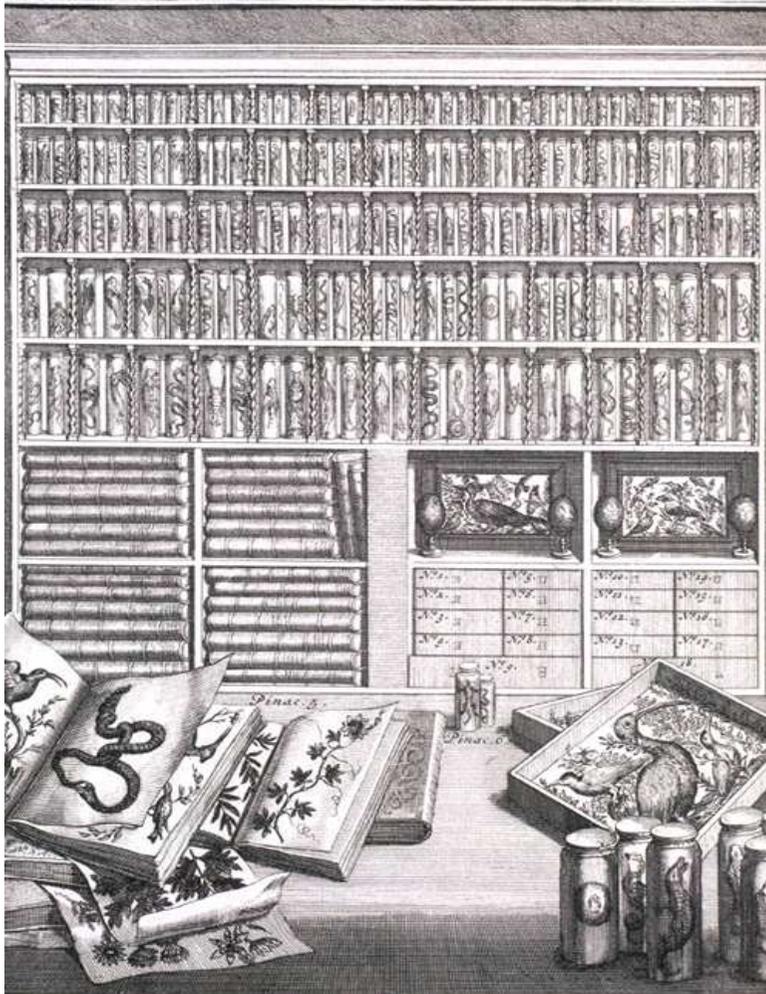
Biodiversity Heritage Library

GLOBAL VISION

Thomas Garnett

BHL Brazil Workshop February, 2010

BHL- Why?



The cited half-life of publications in taxonomy is longer than in any other scientific discipline

-Macro-economic case for open access, Tom Moritz

-Current taxonomic literature often relies on texts and specimens > 100 years old.

Levinus Vincent

Elenchus

BHL – Why?

The Taxonomic Impediment

The taxonomic impediment is a term that describes the gaps of knowledge in our taxonomic system”

- Darwin Declaration, 1998

Georges Louis Leclerc, comte de Buffon
Histoire naturelle : générale et particulière (Oiseaux), 1799-1808



BHL – Why?

The essential requirements for accessing and utilizing this global information are:

- that there is access to information held in national/regional/global collections
- that electronic data is efficiently captured and provided in useable form
- *that existing information held in literature and by current experts is made available electronically*
- that stability of scientific names of organisms, used to access this information, is promoted

- Darwin Declaration, 1998



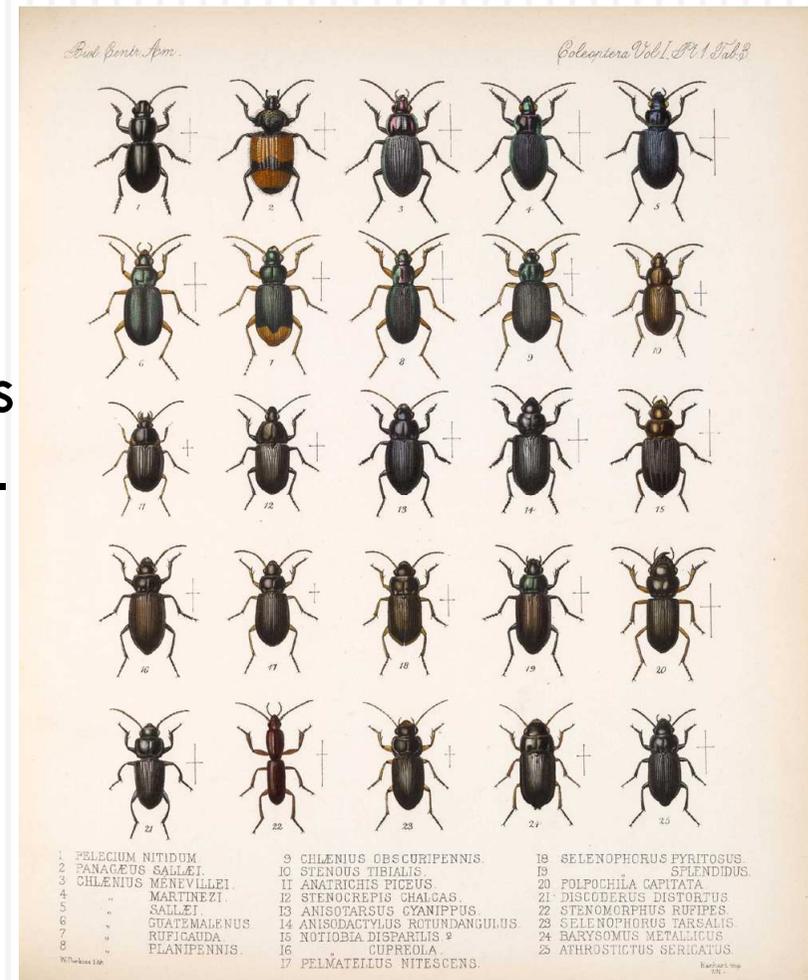
Thylacine from Philip Lutley Sclater,
Guide to the Gardens of the Zoological Society of London, 1891

BHL – Why?

Convention on Biological Diversity: Article 17

... exchange of information shall include exchange of results of technical, scientific and socio-economic research ... It shall also, where feasible, include *repatriation of information*.

Henry Bates
Insecta. Coleoptera, 1881-1884



Biodiversity Heritage Library

Embedding Content in the Knowledge Ecology

Species names, taxon concepts, and the classification of living organisms are the basis for linking multiple disciplines such as evolutionary biology, taxonomy, genomics, agriculture, conservation, etc.

Taxonomic intelligence algorithms are being developed to mine the BHL content to link species names with other biological resources.

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BHL Members

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BHL - <http://www.biodiversitylibrary.org>

BHL Members: US/UK

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- ❑ Academy of Natural Science (Philadelphia, PA)
- ❑ American Museum of Natural History (New York, NY)
- ❑ California Academy of Science (San Francisco, CA)
- ❑ The Field Museum (Chicago, IL)
- ❑ Harvard University Botany Libraries (Cambridge, MA)
- ❑ Harvard University, Ernst Mayr Library of the Museum of Comparative Zoology (Cambridge, MA)
- ❑ Marine Biological Laboratory / Woods Hole Oceanographic Institution (Woods Hole, MA)
- ❑ Missouri Botanical Garden (St. Louis, MO)
- ❑ Natural History Museum (London, UK)
- ❑ The New York Botanical Garden (New York, NY)
- ❑ Royal Botanic Gardens, Kew (Richmond, UK)
- ❑ Smithsonian Institution Libraries (Washington, DC)

BHL Members: BHL-Europe

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- Museum für Naturkunde - Leibniz-Institut für Evolutions- und Biodiversitätsforschung an der Humboldt-Universität zu Berlin
- Natural History Museum, UK
- Narodni muzeum NMP CZ
- Angewandte Informationstechnik Forschungsgesellschaft mbH
- Freie Universität Berlin FUBBGBM
- Georg-August-Universität Göttingen Stiftung Öffentlichen Rechts
- Naturhistorisches Museum Wien
- Hungarian Natural History Museum
- Museum and Institute of Zoology, Polish Academy of Sciences
- University of Copenhagen
- Stichting Nationaal Natuurhistorisch Museum, Naturalis
- National Botanic Garden of Belgium
- Royal Museum for Central Africa,
- Royal Belgian Institute of Natural Sciences
- Bibliothèque nationale de France
- Museum national d'histoire naturelle
- Consejo Superior de Investigaciones Cientificas
- Università degli Studi di Firenze
- Royal Botanic Garden, Edinburgh
- Species 2000
- John Wiley & Sons limited
- Helsingin yliopisto UH-Viikki

BHL Members: BHL-China

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- Chinese Academy of Science – Institute of Botany
- Chinese Academy of Science – Institute of Zoology
- Chinese Academy of Science – Institute of Microbiology
- Chinese Academy Science - Institute of Oceanography

BHL is a Focused Program

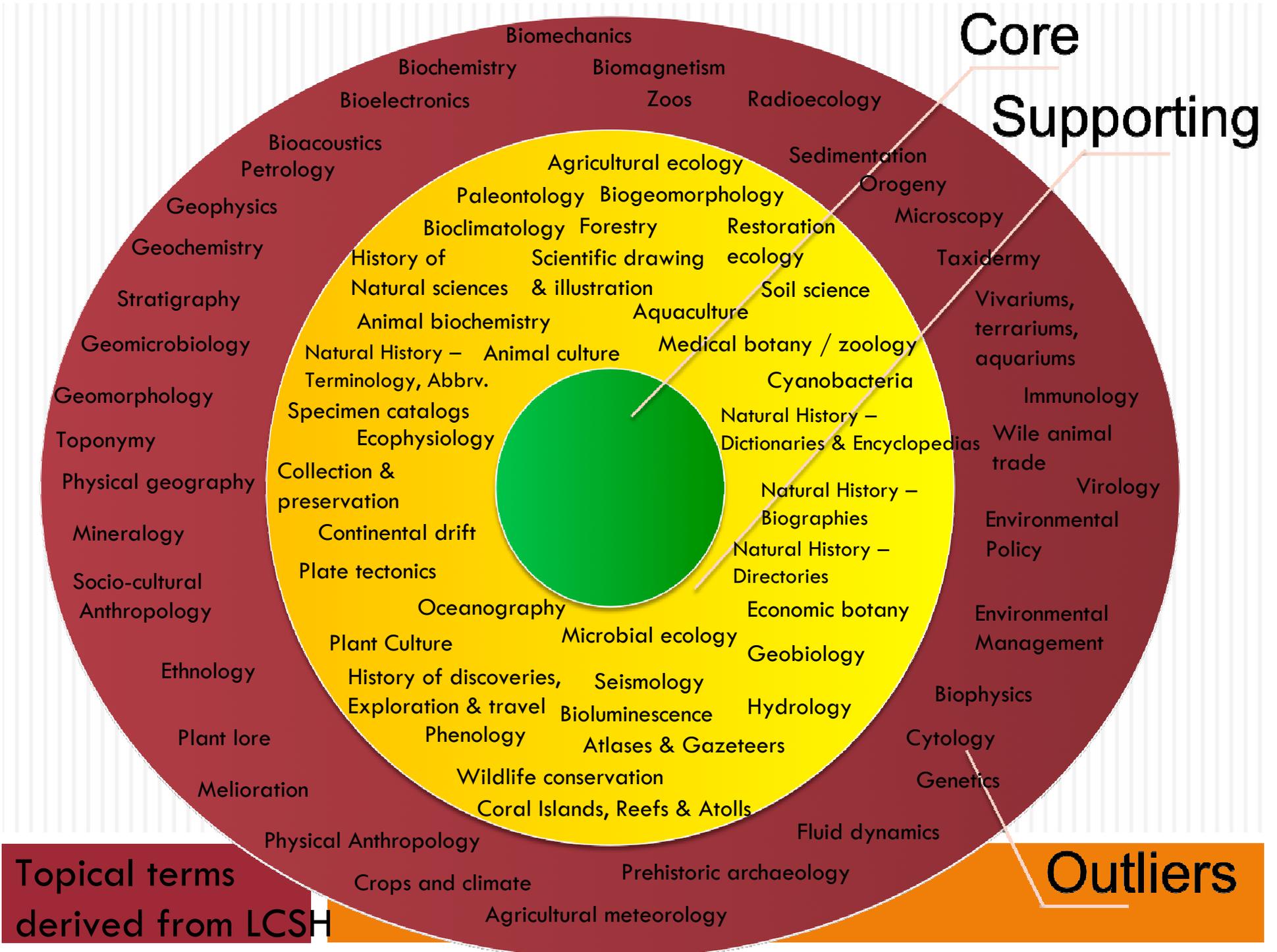
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- Though BHL has is composed of libraries it has been a domain-specific program, not just a digital library project. It arose from and is responsive to the biodiversity community composed of the disciplines of taxonomy, systematics, evolutionary biology, ecology, conservation, and wildlife management. These are the primary audience.

Biodiversity Literature

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- Identification and description of living organisms
- Zoology
- Botany
- Marine Biology
- Mycology
- Alpha-taxonomy
- Systematics



Core Literature



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Botany Plant conservation
Phytogeography Plant anatomy
Plant physiology Plant ecology
Spermatophyta, Phanerogams Cryptogams
Biological diversity Evolution Phylogenetic relationships
Evolutionary genetics Scientific voyages and expeditions
Pre-Linnaean works Linnaean works
Biodiversity conservation Conservation biology
Ecosystem management Endangered species & ecosystems
Extinction Classification, Nomenclature Biogeography
Zoology/Botany--Morphology Zoology/Botany--Anatomy
Zoology/Botany--Embryology Zoology/Botany--Reproduction
Zoology/Botany--Geographical distribution
Classification, systematics and taxonomy
Zoology Invertebrates Chordates Vertebrates
Animal Behavior

BHL Stakeholders

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- ❑ Botanists, zoologists, mycologists; marine biologists
- ❑ Biodiversity informatics
- ❑ Conservationist, forestry managers; fishery managers; agronomists
- ❑ Biodiversity Institutions and their libraries
- ❑ Open Access Publishers
- ❑ Teachers, educators
- ❑ Artists, collectors, hobbyists
- ❑ Anyone with an interest in the living world

Stats: Now Online

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- 70,630 volumes
- 26.4 million pages



Oldest book: Schöffer's [Herbarius](#), 1484.

What is the plan?

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Digitize the core literature of biodiversity. Full works, not bits & pieces.

Open Access: all content can be repurposed, reused, reformatted.

Congruent: must fit in to a dynamic knowledge ecology. Scan public domain biodiversity literature.

Negotiate rights to digitize copyrighted materials.

Ingest content digitized by others.

Provide interfaces & APIs for repository.

GUIs

Services for data mining & citation resolution

BHL Digital Preservation

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- Committed to long-term storage, curation, and preservation of digital text assets for the world-wide biodiversity community
- BHL is a steward for this literature.
- To keep this content available and open for the future requires careful organizational planning.
- Preservation is both a technical and political/social process.

Classes of Texts

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Each class presents a unique set of issues to resolve:

Public Domain – pre-1923

Post-1923 monographs

- some with copyright renewals

- some without copyright renewals

Non-profit learned society journals with permissions

Commercial journals

Gray literature

Archival



Biodiversity Heritage Library

BHL & JOURNAL PUBLISHERS

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BHL Brazil Workshop February, 2010

BHL Relationship with Non-Profit Journal Publishers



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Opt in Copyright Model: The BHL works with professional societies and associations to integrate their publications into the BHL in a way that serves the societies' missions and goals

BHL indexes the articles using Taxonomic Intelligence, thereby vastly increasing their usability.

Publishers' content is embedded in the emerging knowledge ecology that is sweeping biology in this century .

73 Permission Agreements to date. More under negotiation.

Integration with gray literature in later phases of project.

BHL Seeks Permission from Publishers

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Opt in Copyright Model: The BHL works with professional societies and associations to integrate their publications into the BHL in a way that serves the societies' missions and goals

BHL digitizes learned society backfiles and mount them through the BHL Portal at no cost.

BHL provides a set of files to the publishers for reuse as they see fit.

The BHL agreement is *non-exclusive*. This means publishers can make other uses of their content.

BHL indexes the articles using Taxonomic Intelligence, thereby vastly increasing their usability.

What Does BHL Offer to Biodiversity Publishers?



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Use of the articles will increase as evidenced by citation upsurge.

Long-term management of the digital assets is provided by the BHL at no cost so it's "SEP," - Someone Else's Problem.

Publishers' content is embedded in the emerging knowledge ecology that is sweeping biology in this century .

Structural markup of backfiles into conformance with NLM DTD (working on it).

74 Permission Agreements to date. More under negotiation.

Integration with gray literature in later phases of project.

BHL Strategy with Science Publishers

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- ❑ Make it too useful not to support.
- ❑ Embed it current and developing workflows for the identification, tracking, documenting, and researching the biota. BHL is building on many documented use cases.
- ❑ Network with many professional societies.
- ❑ Cheap Markup – how?