



***Bibliography
of the
SAIL Panama Canal
Zone Project 2008
A Selected Bibliography***



***By Liz DeHart
Marine Science Library
The University of Texas Marine Science Institute***

**Abstract - Terms - Brief Historical Note - Search Strategy - Special Collection
References - Bibliography - Links - Credits - Acknowledgments –
Submit Future Citations**

Abstract

During the 18th Annual 2008 SAIL meeting at the Smithsonian Tropical Research Institute in Panama, Vielka Chang-Yau, librarian, mentioned the need to digitize and make available through the Aquatic Commons some of the early documents related to the U.S. biological survey of Panama from 1910 to 1912. With the assistance of SAIL, a regional marine librarian's group, a digital project developed and this select bibliography represents the sources used for the project.

It will assist researchers and librarians in finding online open access documents written during the construction of the Panama Canal, specifically between 1910-1912. As the project progressed, other items covering the region and its biological diversity were discovered and included. The project team expects that the coverage will continue to expand over time.

Bibliographic format mainly follows APA guidelines.

Suggested citation

DeHart, L. (2009). *Bibliography of the SAIL Panama Canal Zone Project 2008: A selected bibliography*. The University of Texas Marine Science Institute. (Rev March 21, 2018)

Terms

SAIL – regional group of the **International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC)**; network of cooperating libraries from the Gulf Coast states in the southeastern United States, the Atlantic Coast of North America- including central and eastern Canada, Bermuda, Bahamas, Caribbean, eastern Mexico, and Panama providing information and professional support to each other, scientific investigators, and the general public.

IAMSLIC – International Association of Aquatic and Marine Science Libraries and Information Centers; association of members from all over the world interested in library and information science in all aspects of aquatic and marine sciences, providing a forum for exchange of ideas and issues of mutual concern.

Aquatic Commons – a thematic digital repository directed by IAMSLIC which covers all aspects of marine, estuarine/brackish and fresh water environments; provides access and usage for worldwide marine and freshwater organizations that do not have access to an institutional repository of their own.

Smithsonian Tropical Research Institute (STRI) – located in Panama; a bureau of the Smithsonian Institution based outside the United States; offers scientists, students and visitors a facility to do research and explore the vast biological diversity of the area.

Biological Survey of the Panama Canal Zone (1910-1912), or Panama Canal Zone Biological Survey Project – due to ecological changes during construction of the Panama Canal a survey was conducted to study the area; it was approved by President Taft and led by the Smithsonian Institution in Washington, D.C.

Brief Historical Note

From 1904-1910, President Taft learned of the significant changes in biological conditions due to the construction and digging of the Panama Canal. The American Society of Naturalists passed a resolution urging him to provide means for a survey and in 1910, Taft approved such a plan. "In the ensuing saga of the quest for knowledge that unfolded in this section of the Isthmus, the Smithsonian Institution, with its headquarters in Washington, D.C., would play a prominent role. Between 1910 and 1912, it carried out the first biological study ever made of Panama." (Heckadon-Moreno, 81). The cost of the study was \$11,000 and over half of the funds came from donations from citizens interested in promoting scientific research. Much of the vast unexplored areas also offered an opportunity for worldwide scientists to conduct their studies.

"The Field Museum of Natural History in Chicago had already surveyed the fishes of the zone with the Isthmian Commission, and in late December 1910, a scientific team from both Washington and Chicago was sent to the Panama Canal Zone." The first group in the scientific expedition included: P. Bartsch, H. A. Pittier and W. R. Maxon (botanists), S. E. Meek and S. F. Hildebrand (ichthyologists), E. A. Schwartz and A. Busck (entomologists), and E. A. Goldman (zoologist). Later scientists were Nelson, Malloch, and Marsh.

The biological survey studies were very significant during the construction of the canal and led to many new discoveries such as species of birds, ferns and mosses, moths, mammals,

and fishes. One thing to note, the original intention of the survey was to publish in several volumes as a summary of flora and fauna. However, this became untenable and most of the information was published as independently authored articles in scientific journals.

Search Strategy

These were the first set of references identified by the Smithsonian librarian in Panama that initiated the scanning/digital project and also referenced in the bibliography.

Goldman, Edward A. 1920. *Mammals of Panama* (with thirty-nine plates) Meek, Seth E. and Hildebrand, Samuel F. 1923. *The marine fishes of Panama*.

Pittier, Henri. 1914. *On the relationship of the genus Aulacocarpus, with description of a new Panamanian species*.

Pittier, Henri and Mell, C. D. 1931? *A century of trees of Panama*.

Berthold, Seemann. 1928. *Introduccion a la flora del istmo de Panama*. (traducido por Maria Luisa Melendez y H. Pittier)

The project team used the following main source to select specific references to scan and digitize.

Heckadon-Moreno, S. (2004). *Naturalists on the Isthmus of Panama: A hundred years of natural history on the biological bridge of the Americas* (H. Roeder, ed., A. L. Sanchez, B. King, & M. Sarlo, Trans., 1st Spanish ed.). Panama: Smithsonian Tropical Research Institute. (Original work published 1998)

[Google Docs](#) was set up to identify documents that needed scanning. It provided a means for project members to share, view, and edit data in real-time. Each line item included author, title, date, copyright clearance, scanner's name, pages and direct link to the full text provider (i.e., Aquatic Commons, Google Books, Biodiversity Heritage Library)

Special Collection References

Leonard Carpenter Panama Canal Collection, Special and Area Studies Collections, University of Florida Libraries, Gainesville, FL

Given by Leonard Carpenter in 1993, this collection primarily consists of photographs of Panama and the Panama Canal Zone during construction, beginning in 1914. It also includes several guide and **commemorative** booklets. Digitized items are available as part of the SAIL Panama Canal Zone Project 2008 project searchable in the Aquatic Commons repository and through **A Guide to the Leonard Carpenter Panama Canal Collection**. The digitization of this collection was supported by a grant from SAIL, a regional group of the International Association of Aquatic and Marine Science Libraries and Information Centers (IAMSLIC)

Image files from the Carpenter Collection

Berm cranes at Miraflores Locks (1914) **image**

The Corogal: one of the big dredges in Culebra Cut, Panama Canal (ca. 1914) **image**

80 C 147 U.S. Aeroplane carrier "Saratoga" and H.M.S. "Despatch" in lower chambers, Miraflores Locks - Panama Canal - 2/7/28 **image**

80 C 146 U.S. Aeroplane carrier "Saratoga" and French cruiser "Joan D'Arc" in Pedro Miguel Lock - Panama Canal - 2/7/28 **image**

80 C 143 U.S. Aeroplane carrier "Saratoga" in Guillard Cut- Panama Canal - Feb. 7, 1928 **image**

Emergency dam at Pedro Miguel, Panama Canal (ca. 1914) **image**

First U.S. battleships through Panama Canal: Missouri, Ohio, Wisconsin (postcard ca 1914) **image**

Lantern spillway and hydroelectric plant, Panama Canal (ca. 1914) **image**

Old Timers Reunion, 1928 **image**

Panama Beach (1914) **image**

The Panama Canal: general information [Pamphlet]. (1914) **image**

Panama Railroad Station, Balboa, Canal Zone - Old Timers arriving Jan. 18, 1928 **image**

Prado, Balboa, C.Z. - Old Timers Parade. Jan. 18, 1928 **image**

Stone bridge in Panama (1928) **image**

View of canal (1928) **image**

View of Paraiso Yard showing dredging equipment, Panama Canal (ca. 1914) **image**

U.S. Favorite, Pedro Miguel Lock - Old Timers Trip through the Canal, Jan. 20, 1928 **image**

U.S.S. Ohio, Panama Canal (ca. 1914) **image**

Tow boat fleet at Paraiso, Panama Canal (ca. 1914) **image**

Bibliography

Adams, C. F. (1911). *The Panama Canal Zone: An epochal event in sanitation*. Proceedings of the Massachusetts Historical Society for May, 1911. Boston.
Retrieved from <http://aquacomm.fcla.edu/1248/>

Bentham, G. (1844). *The botany of the voyage of H.M.S. Sulphur: under the command of Captain Sir Edward Belcher, R.N., C.B., F.R.G.S., etc., during the years 1836-42*. London: Smith, Elder. Retrieved from <http://www.biodiversitylibrary.org/item/15490>

- Berry, E. W. (1918). The fossil higher plants from the Canal Zone. *United States National Museum. Bulletin*, 103, pt. 2. Retrieved from <http://aquacomm.fcla.edu/1236/>
- Biological Society of Washington. (1915). Biological explorations in eastern Panama 1912 [report of Edward Goldman paper given at 540th meeting of Biological Society of Washington]. *Journal of the Washington Academy of Sciences*, 5(11), 409-410. Retrieved from <http://aquacomm.fcla.edu/2015/>
- Busck, A. (1912). Descriptions of new genera and species of microlepidoptera from Panama. *Smithsonian Miscellaneous Collections*, 59(4). Retrieved from <http://aquacomm.fcla.edu/2019/>
- Busck, A. (1914). New genera and species of microlepidoptera from Panama. *Proceedings of the U.S. National Museum*, 47. Retrieved from <https://www.biodiversitylibrary.org/page/7762327#page/19/mode/1up>
- Eisenmann, E. (1950). Some notes on Panama birds collected by J. H. Batty. *Auk*, 67, 364-367. Retrieved from <https://sora.unm.edu/node/19830>
- Goldman, E. A. (1911). A new kingfisher from Panama. *Smithsonian Miscellaneous Collections*, 56(27). Retrieved from <http://aquacomm.fcla.edu/1136>
- Goldman, E. A. (1912). Descriptions of twelve new species and subspecies of mammals from Panama. *Smithsonian Miscellaneous Collections*, 56(36). Retrieved from <http://aquacomm.fcla.edu/1143>
- Goldman, E. A. (1912). New mammals from eastern Panama. *Smithsonian Miscellaneous Collections*, 60(2). Retrieved from <http://aquacomm.fcla.edu/1141>
- Goldman, E. A. (1913). Descriptions of new mammals from Panama and Mexico. *Smithsonian Miscellaneous Collections*, 60(22). Retrieved from <http://aquacomm.fcla.edu/1142>
- Goldman, E. A. (1914). Descriptions of five new mammals from Panama. *Smithsonian Miscellaneous Collections*, 63(5). Retrieved from <http://aquacomm.fcla.edu/1125>
- Goldman, E. A. (1920). Mammals of Panama (with thirty-nine plates). *Smithsonian Miscellaneous Collections*, 69(5). Retrieved from <https://www.biodiversitylibrary.org/item/53040#page/9/mode/1up>
- Hardy, R. (1928). *Canal diggers in Panama, 1904 to 1928*. Balboa Heights, Canal Zone. The Panama Canal Retirement Association. Retrieved from <http://aquacomm.fcla.edu/1312/>
- Hardy, R. (1928). *Panama Canal twenty-fifth anniversary 1914 - Aug. 15 -1939*. Mount Hope, Canal Zone. Panama Canal Press. Retrieved from <http://aquacomm.fcla.edu/1299/>
- Heckadon-Moreno, S. (2004). *Naturalists on the Isthmus of Panama: A hundred years of natural history on the biological bridge of the Americas* (H. Roeder, ed., A. L.

Sanchez, B. King, & M. Sarlo, Trans., 1st Spanish ed.). Panama: Smithsonian Tropical Research Institute. (Original work published 1998)

Hildebrand, S. F. (1938). A new catalogue of the fresh-water fishes of Panama. *Fieldiana. Zoology*, 22(4); *Field Museum of Natural History. Publication*, 425.

Retrieved from <http://www.biodiversitylibrary.org/item/20936>

Isthmian Canal Commission (U.S.). (1905). Letter from the Secretary of War: Transmitting the first annual report of the Isthmian Canal Commission. December 1, 1904.

Retrieved from

<http://books.google.com/books?id=Ng0sAAAAYAAJ&pg=PA1&dq=report+of+the+secretary+and+the+financial+report+of+panama>

Kenoyer, L., & Standley, P. (1929). I. Supplement to the flora of Barro Colorado Island, Panama [by] Leslie A. Kenoyer and Paul C. Standley. II. Two new species of Chara from tropical America [by] M. A. Howe ... [Monograph]. *Botanical Series*, 4(6). *Field Museum of Natural History. Publication*, 258.

Retrieved from <http://www.biodiversitylibrary.org/bibliography/3837>

Marsh, C. D. (1913). Report on fresh-water copepoda from Panama, with descriptions of new species. *Smithsonian Miscellaneous Collections*, 61(3).

Retrieved from <http://aquacomm.fcla.edu/1145>

Maxon, W. R. (1911). A remarkable new fern from Panama. *Smithsonian Miscellaneous Collections*, 56(24). Retrieved from <http://aquacomm.fcla.edu/1139>

Maxon, W. R. (1912). Three new club mosses from Panama. *Smithsonian Miscellaneous Collections*, 56(29). Retrieved from <http://aquacomm.fcla.edu/1138>

Mayer, A. G. (1911). *Alexander Agassiz, 1835-1910*. Annual report of the Board of Regents of the Smithsonian Institution, 1910, pp. 446-472.

Retrieved from <http://aquacomm.fcla.edu/1996>

Meek, S. E., & Hildebrand, S. F. (1912). Descriptions of new fishes from Panama. *Fieldiana. Zoology*, 10(6), 67-68; *Field Museum of Natural History. Publication*, 158.

Retrieved from <http://aquacomm.fcla.edu/1131>

Meek, S. E., & Hildebrand, S. F. (1913). New species of fishes from Panama. *Fieldiana. Zoology*, 10(8) 77-91, *Field Museum of Natural History. Publication*, 166.

Retrieved from <http://aquacomm.fcla.edu/1151>

Meek, S. E., & Hildebrand, S. F. (1916). The fishes of the fresh waters of Panama. *Fieldiana. Zoology*, 10(15); *Field Museum of Natural History. Publication*, 191.

Retrieved from <http://www.biodiversitylibrary.org/bibliography/2576>

Meek, S. E., & Hildebrand, S. F. (1923). The marine fishes of Panama. *Fieldiana. Zoology*, 15, 1; *Field Museum of Natural History. Publication*, 215.

Retrieved from <https://www.biodiversitylibrary.org/item/20850#page/9/mode/1up>

- Meek, S. E., & Hildebrand, S. F. (1925). The marine fishes of Panama. *Fieldiana. Zoology*, 15, II; *Field Museum of Natural History. Publication*, 226.
Retrieved from <http://www.biodiversitylibrary.org/item/26383>
- Meek, S. E., & Hildebrand, S. F. (1928). The marine fishes of Panama. *Fieldiana. Zoology*, 15, III; *Field Museum of Natural History. Publication*, 249.
Retrieved from <http://www.biodiversitylibrary.org/item/20786>
- Missouri Botanical Garden. (n.d.). Research. Panama. In: *An illustrated history of the Missouri Botanical Garden* [Image. John Dwyer]. Retrieved from <http://www.mobot.org/mobot/archives/image.asp?filename=PHO2007-0244.tif&returnto=/mobot/archives/results.asp>
- Nelson, E. W. (1911). Description of a new genus and species of hummingbird from Panama. *Smithsonian Miscellaneous Collections*, 56(21).
Retrieved from <http://aquacomm.fcla.edu/1124>
- Nelson, E. W. (1911). Two new subspecies of birds from Panama. *Smithsonian Miscellaneous Collections*, 56(22).
Retrieved from <http://aquacomm.fcla.edu/1137>
- Nelson, E. W. (1912). Descriptions of new genera, species and subspecies of birds from Panama, Colombia, and Ecuador. *Smithsonian Miscellaneous Collections*, 60(3).
Retrieved from <http://aquacomm.fcla.edu/1140>
- Nelson, E. W. (1912). Descriptions of two new species of nun birds from Panama. *Smithsonian Miscellaneous Collections*, 56(37).
Retrieved from <http://aquacomm.fcla.edu/1135>
- Nelson, E. W. (1913). Two new subspecies of birds from the slopes of Mount Pirri, eastern Panama. *Smithsonian Miscellaneous Collections*, 60(21).
Retrieved from <http://aquacomm.fcla.edu/1148>
- Nowicke, J. W. (1970). Type-photographs of the Panamanian collections of B. C. Seemann. *Annals of the Missouri Botanical Garden*, 57, 352.
Retrieved from <https://www.biodiversitylibrary.org/item/65872#page/366/mode/1up>
- Panama Canal Company. (1928). *Panama Canal Review: Special edition Panama*. Mount Hope, Canal Zone. Panama Canal Press.
Retrieved from <http://aquacomm.fcla.edu/1308/>
- Pittier, H. (1912). Little known parts of Panama. *National Geographic*, 23(7), 627-662.
Retrieved from <http://aquacomm.fcla.edu/1979/>
- Rathbun, M. J. (1918). Contributions to the geology and paleontology of the Canal Zone, Panama, and geologically related areas in Central America and the West Indies. Decapod crustaceans from the Panama region. *Bulletin United States National Museum*, 103(7), 123-184. Retrieved from <http://aquacomm.fcla.edu/1377/>

- Ruhoff, F. A. (1973). Bibliography and zoological taxa of Paul Bartsch. *Smithsonian Contributions to Zoology*, 143. Retrieved from http://si-pddr.si.edu/dspace/bitstream/10088/5382/2/SCtZ-0143-Lo_res.pdf
- Seemann, B. (1852-57). *The botany of the voyage of H.M.S. Herald, under the Command of Captain Henry Kellett, R.N., C.B., during the years 1845-51*. London: Lovell Reeve. Retrieved from <http://www.biodiversitylibrary.org/item/9520>
- Seemann, B. (1853). *Narrative of the voyage of H.M.S. Herald during the years 1845-51, under the Command of Captain Henry Kellet, R.N., C.B., being a circumnavigation of the globe, and three cruizes to the Arctic regions in search of Sir John Franklin* (Vol. 2). London: Reeve and Co. Retrieved from <http://books.google.com/books?vid=HARVARD32044050495795&printsec=titlepage>
- Seemann, B. (1928). *Introduccion a la flora del Istmo de Panama* [Introduction to the flora of Panama] (M. L. Meléndez & H. Pittier, Trans.). Panama: Imprenta Nacional. Retrieved from <http://aquacomm.fcla.edu/1982>
- Smithsonian Institution. (1912). Annual report of the Board of Regents of the Smithsonian Institution, showing the operations, expenditures, and condition of the Institution for the year ending June 30, 1912. Retrieved from <http://www.biodiversitylibrary.org/item/33425>
- Thayer, J. E., & Bangs, O. (1905). The mammals and birds of the Pearl Islands, Bay of Panama. *Bulletin of the Museum of Comparative Zoology at Harvard College*, 46(8), 136-160. Retrieved from <http://aquacomm.fcla.edu/1430/>
- Trimen, H. (1872). Berthold Seeman. *Journal of Botany, British and Foreign. N.S.*, 1, 1-7. Retrieved from <http://aquacomm.fcla.edu/1126/>
- Vaughn, T. W. (1919). Contributions to the geology and paleontology of the Canal Zone, Panama, and geologically related areas in central America and the West Indies. Part 11: The biologic character and geologic correlations of the sedimentary formations of Panama in their relation to the geologic history of Central America and the West Indies. *Bulletin United States National Museum*, 103, 547-612. Retrieved from <http://aquacomm.fcla.edu/1990/>
- Walcott, C. D. (1911). *Biological survey of the Panama Canal Zone (1910)*. Annual report of the Board of Regents of the Smithsonian Institution, 1910, pp. 13-15. Retrieved from <http://aquacomm.fcla.edu/1992/>
- Walcott, C. D. (1912). *Biological Survey of the Panama Canal Zone (1911)*. Annual report of the Board of Regents of the Smithsonian Institution, 1911, pp. 4-6. Retrieved from <http://aquacomm.fcla.edu/1993>
- Walcott, C. D. (1913). *Biological Survey of the Panama Canal Zone (1912)*. Annual report of the Board of Regents of the Smithsonian Institution, 1912. 9, 10, 101,-102, 103. Retrieved from <http://aquacomm.fcla.edu/1994>

Walcott, C. D. (1914). *A geological survey of Panama (1913)*. Annual report of the Board of Regents of the Smithsonian Institution, 1913. 105-129.
Retrieved from <http://aquacomm.fcla.edu/1995>

Woodson, R. E. (1970). Flora of Panama. *Annals of the Missouri Botanical Garden*, 57(1).
Retrieved from <http://www.biodiversitylibrary.org/item/13989>

Links

Aquatic Commons <http://aquaticcommons.org/>

Biodiversity Heritage Library <http://www.biodiversitylibrary.org/>

Biological Survey of the Panama Canal Zone
https://siarchives.si.edu/collections/auth_exp_fbr_eace0114

A Guide to the Leonard Carpenter Panama Canal Collection
http://web.uflib.ufl.edu/spec/manuscript/guides/panama_lc.htm

IAMSLIC <http://www.iamslc.org/>

SAIL <http://www.iamslc.org/sail/>

Smithsonian Tropical Research Institute, Panama <https://stri.si.edu/>

SORA, Searchable Ornithological Research Archive <https://sora.unm.edu/>

Topical Finding Aids to Records in the Smithsonian Institution Archives, Guides to Records of Expeditions, 1878-1917 <http://siarchives.si.edu/research/faexpeditions.html>

Credits

Author

Liz DeHart is a departmental librarian at the Marine Science Library, The University of Texas Marine Science Institute, 750 Channel View Drive, Port Aransas, Texas 78373-5015
E-mail: l.dehart@austin.utexas.edu

Photo credits

Liz DeHart and Stephanie Haas

Acknowledgments

I would like to acknowledge the assistance of S. Haas and J.C. Gililand for taking devoted time from their hectic lives to edit numerous drafts and provide assistance with graphics design. My special gratitude to Meg Kemp for her expertise in web design and format. Your help is greatly appreciated, my dear friends.

Submit Future Citations

The author seeks your assistance for any new information or corrections in helping to maintain the on-line bibliography. Please submit your citation(s) to:

l.dehart@austin.utexas.edu.

Information will be integrated and acknowledged by source (name) and email, if requested.

(This bibliography is no longer maintained. Rev March 21, 2018)