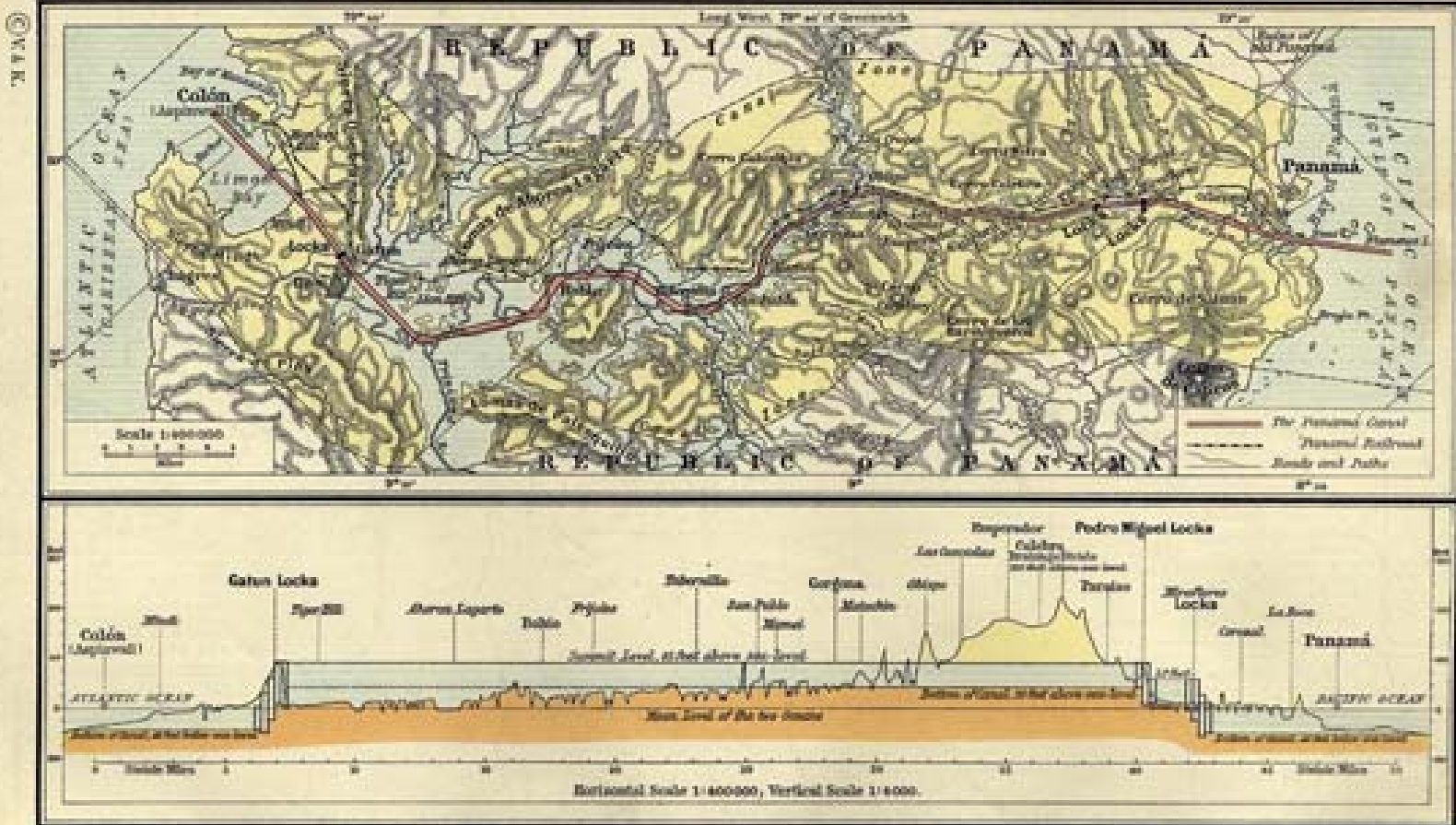


SAIL Panama Canal Zone Project 2008

Biological Survey of Panama (1910–1912)

Presenters: Stephanie Haas, Liz DeHart, Jennifer Walton, &
Kathy Heil





Note: In order to understand the reason for the apparently transposed location of the Pacific Ocean on the east and of the Atlantic Ocean on the west, examine the shape of the Isthmus of Panama as shown on the preceding map of South America.

Official Name of Expedition: Biological Survey of the Panama Canal Zone

Alias of the Expedition: Panama Canal Zone Biological Survey Project

Date of Expedition: December 1910 - January 1912

Where to: Panama Canal Zone

▶ **Prominent Scientists:**

- ▶ Paul Bartsch, United States National Museum
- ▶ August Busck, Bureau of Entomology, United States Department of Agriculture
- ▶ Edward Alphonso Goldman, Biological Survey
- ▶ Samuel Frederick Hildebrand, Bureau of Fisheries
- ▶ A. S. Hitchcock, Bureau of Plant Industry, United States Department of Agriculture (sent August 1911)
- ▶ William Ralph Maxon, United States National Museum
- ▶ Seth Eugene Meek, Field Museum of Natural History, Chicago
- ▶ Henri A. Pittier, Bureau of Plant Industry, United States Department of Agriculture
- ▶ E. A. Schwarz, Bureau of Entomology, United States Department of Agriculture

[From: <http://siarchives.si.edu/findingaids/faexplist.htm>]

“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 great biological study ever made of Panama.”

Research proposal prepared & approved by Taft

Cost of study was \$11,000 – over half the funds came from donations from citizens who were interested in promoting scientific research

Scientific expedition members (1st group)

2 botanists – Francois Pittier, William R. Maxon

2 ichthyologists – Seth E. Meek, Samuel F. Hildebrand

2 entomologists – E. A. Schwartz, August Busk

1 zoologist – Edward A. Goldman

later scientists – Edward W. Nelson, Dr. Malloch, Dwight Marsh

Results of biological survey

In 1912, the Smithsonian published 10 articles about discoveries in Panama

Edward Nelson – new bird species, including a hummingbird

William Maxon – studies of new species of ferns and mosses

August Busk – new species of microlepidopterans (tiny moth)

Edward Goldman – new findings on flora & fauna; 12 new mammal species; monumental work: Mammals of Panama

Meek & Hildebrand – articles on fishes; Marine Fishes of Panama

Henri Pittier – collected 3,600 plant species

Original intention of survey was to publish in several volumes as summary of flora and fauna, but became untenable. Most information published as independently authored articles in scientific journals.

98 years later SAIL meets in Panama





And Vielka Chang–Yau of the Smithsonian Tropical Research Institute mentions the need to have access to the Survey’s early documents.

And thus was born our first collaborative digital project:

SAIL Panama Canal Zone Project 2008

Project components:

1) \$200 in funding was sought from SAIL to digitize the Leonard Carpenter Panama Canal collection, a small set of materials housed in the Special Collections Department of the University of Florida. The collection is now available through the Aquatic Commons and the UFDC collections at the University of Florida <http://www.uflib.ufl.edu/ufdc/?s=lcpc>

2) References identified by Vielka that got the project going:

Goldman, Edward A. *Mammals of Panama (with thirty-nine plates)*. 1920.

Meek, Seth E. and Samuel F. Hildebrand. *The Marine fishes of Panama*. 1923.

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

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

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

- 3) 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 includes 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, SORA, etc.)

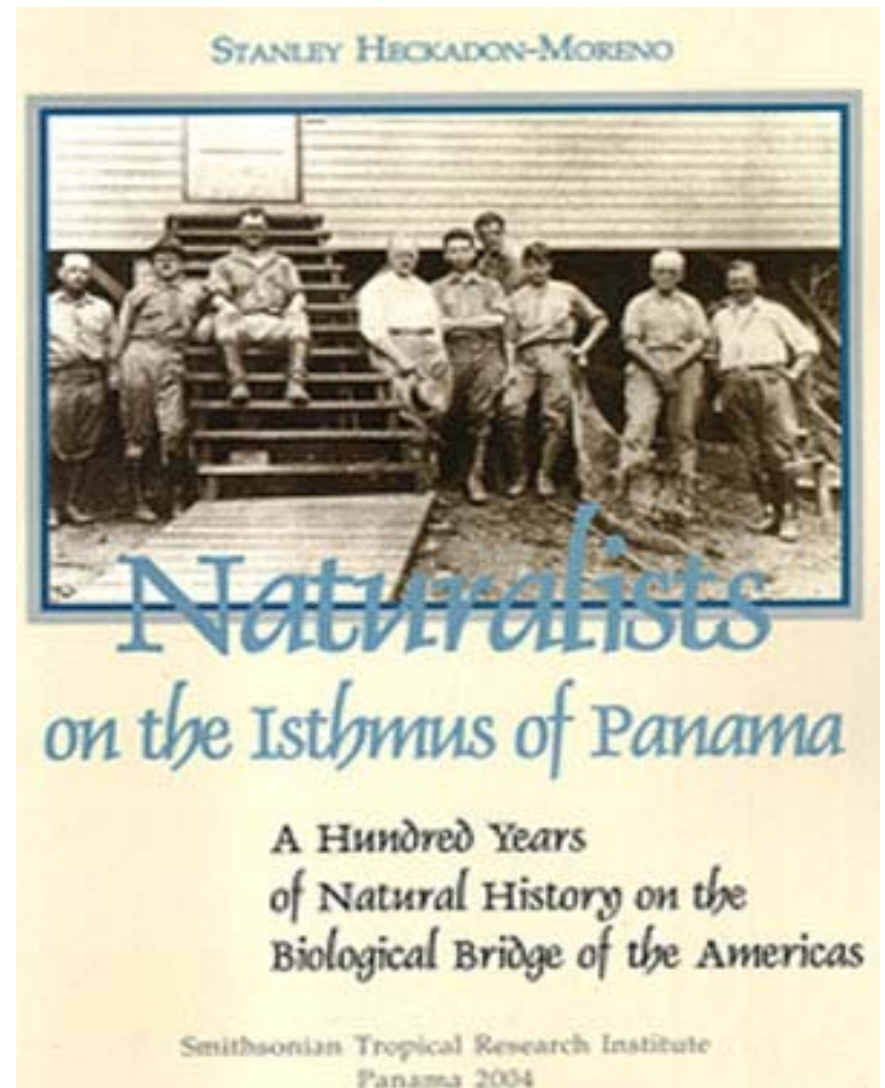
EXAMPLE listing:

Author	Date	Title	Copyright	Scanner	Pages	URL
Adams, Charles F.	1911	The Panama Canal Zone; an epochal event in sanitation	Clear	L. DeHart	38	http://aquacomm.fcla.edu/1248/
Bangs, Outram	1900	List of Birds Collected by W.W. Brown, Jr., at Loma del Leon, Panama in Proceedings of the New England Zoological Club, II:13-34. Boston, Massachusetts	Clear		21	
Bentham, George	1844	The Botany of the Voyage of H.M.S. Sulphur, under the Command of Captain Sir Edward Belcher; R.N. During the Years 1836-1842. Smith Elder and Co., London. (Second edition, Verlag Cramer Sons, New York, 1968)	Clear	BHL	155, 60 plates	http://www.biodiversitylibrary.org/item/15490
Berry, Edward W.	1918	The fossil higher plants from the Canal Zone	Clear	K. Heil	29, 7 plates	http://aquacomm.fcla.edu/1236/
Special Collections & Area Studies, George A. Smathers Libraries	1914	The Corogal: one of the big dredges in Culebra Cut, Panama Canal (ca. 1914)	Clear	S. Haas	IMAGE	http://aquacomm.fcla.edu/1220

4) Main source consulted:

Naturalists on the Isthmus of Panama : a hundred years of natural history on the biological bridge of the Americas / 1st English ed. / Panama : Smithsonian Tropical Research Institute, 2004

Chapter: The Smithsonian Institution and the Biological Survey of Panama (1910-1912), pp. 81-89



5) Finish bibliography and link to Aquatic Commons

<http://www.lib.utexas.edu/msl/sailbibv3.html>

BENTHAM, George. 1844. The botany of the Voyage of H.M.S. Sulphur, under the Command of Captain Sir Edward Belcher; R.N. during the years 1836-1842. Smith Elder and Co., London. (Second edition, Verlag Cramer Sons, New York, 1968)

BUSCK, August. 1912. Descriptions of new genus and species of microlepidoptera from Panama in *Smithsonian Miscellaneous Collections*, 59(4). Smithsonian Institution, Washington, D.C.

GOLDMAN, Edward A. 1914. Descriptions of five new mammals from Panama in *Smithsonian Miscellaneous Collections*, 63(5). Smithsonian Institution, Washington, D.C.






MEEK, Seth E. and S.F. Hildebrand. 1912. Descriptions of new fishes from Panama in *Zoological Series*, 10(8): 77-91. Field Museum of Natural History, Chicago, Ill.

Usage statistics from Aquatic Commons since project inception

(Sample of highest downloads of textual materials)

Title	Downloads
Panama Canal Company. (1928) Panama Canal Review: Special edition Panama. (multiple parts)	318
Hardy, Rufus. (1928) Canal diggers in Panama, 1904 to 1928.	27
Goldman, Edward A.. (1912) New mammals from eastern Panama.	25
Berry, Edward W.. (1918) The Fossil higher plants from the Canal Zone.	19
Nelson, Edward W.. (1912) Descriptions of new genera, species and subspecies of birds from Panama, Colombia, and Ecuador.	16
The Panamal Canal: general information. (1914) Washington, D.C.. U.S. Government	14
Marsh, Charles Dwight. (1913) Report on fresh-water copepoda from Panama, with descriptions of new species.	13
Goldman, Edward Alphonso. (1914) Descriptions of five new mammals from Panama.	12
Adams, Charles Francis. (1911) The Panama Canal Zone: an epochal event in sanitation.	11

Usage statistics from Aquatic Commons since project inception (Sample of highest downloads of images)

Title	Downloads	Images
Leonard Carpenter Collection, UF (1928) 80 C 143 U.S. Aeroplane carrier "Saratoga" in Guillard Cut- Panama Canal - Feb. 7, 1928.	68	
Leonard Carpenter Collection, UF (1928) Panama Railroad Station, Balboa, Canal Zone - Old Timers arriving Jan. 18, 1928.	28	
Leonard Carpenter Collection, UF(1914) Emergency dam at Pedro Miguel, Panama Canal (ca. 1914).	23	
Leonard Carpenter Collection, UF (1914) First U.S. battleships through Panama Canal: Missouri, Ohio, Wisconsin (postcard ca 1914).	17	
Leonard Carpenter Collection, UF (1928) U.S. Favorite, Pedro Miguel Lock - Old Timers Trip through the Canal, Jan. 20, 1928.	12	

Overlap with Biodiversity Heritage Library Project

- ▶ BHL Libraries include Institutions with connections to the surveys:
 - ●Smithsonian Institution
 - ●Missouri Botanical Garden
 - ●Harvard Botany and MCZ
 - ●Field Museum
 - ●American Museum of Natural History
 - ●New York Botanical Garden

Books have been scanned and are available for use

The screenshot displays the Biodiversity Heritage Library (BHL) website interface. At the top, there is a navigation bar with links for Feedback, About, Tools, BHL Members, Copyright, and Contact. Below this is a search bar with a 'Go' button and a dropdown for 'All Categories'. The main content area is divided into several sections:

- Now Online:** 10,614 titles, 29,358 volumes, 11,947,144 pages. Includes a 'Recent additions' link and an RSS icon. A 'Details' link is also present.
- BHL Updates:** A list of recent updates including 'BHL on Twitter', 'Now serving all page images via djatoka', 'Article download now available!', 'COinS integrated to support Zotero, other reference management software', '10,000,000 pages!', 'An evaluation of taxonomic name finding', 'Export of titles & scientific names in BHL now available for download', 'But where are the articles??', 'Revised BHL Data Model', 'Revised BHL Architecture', and 'Updated Harvesting Process'. It includes an RSS icon and a 'Details' link.
- Search Results:** A list of 8 books. Two items are highlighted with red arrows and a yellow box labeled 'from bibliography':
 - Item 3: [Descriptions of new fishes from Panama, by S. E. Meek and S. F. Hildebrand.](#) Publication info: Chicago, 1912. Contributed By: University of Illinois Urbana Champaign.
 - Item 5: [The fishes of the fresh waters of Panama, by Seth E. Meek and Samuel F. Hildebrand.](#) Publication info: Chicago, 1916. Contributed By: University of Illinois Urbana Champaign.

Navigation options include 'Browse By: Titles | Authors | Subjects | Names | Map | Year', 'Published In: (Any Language)', and 'For: (All Contributors)'. There is also an 'Advanced Search' link.



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Names on this page

- [Creagrutus notropoides](#)
- [Deuterodon atracaudata](#)
- [Eleotris latifasciatus](#)
- powered by [uBio](#)



Descriptions of new fishes from Panama, [Download/About this book](#)



Color olivaceous, silvery, a faint silvery band; a humeral spot; black caudal spot extending on outer rays of caudal fin; other fins plain.

Creagrutus notropoides sp. nov.

Type No. 7574, F. M. N. H.; length 143 mm.; Rio Indio, Panama. Head 4; depth 4; D. 9; A. 14; scales 35.

Body robust, little compressed, in general form and appearance much like *Notropus blennius*; snout blunt; mouth small, the lower jaw included; eye rather large, $2\frac{1}{2}$ in head; snout $3\frac{3}{4}$; dorsal fin over ventrals, its origin nearer tip of snout than base of caudal; pectorals $4\frac{2}{3}$ in body, their tips reaching base of ventrals; tips of ventrals reaching anal; lateral line not quite complete.

Color olivaceous, sides with a narrow silvery band; a black humeral spot; no caudal spot; fins all plain.

Taken in swift water in the upper Chagres and tributaries.

Eleotris latifasciatus sp. nov.

Type No. 7575, F. M. N. H.; length 160 mm.; Rio Cardenas, Panama.

Head $3\frac{2}{3}$; depth $3\frac{1}{4}$; D. V, 9; A. 10; scales 37.

Body robust, not much compressed; profile evenly convex; top of head flat; interorbital 3 in head; mouth small, maxillary scarcely reaching past anterior margin of orbit; teeth in bands, none canine-like; eye $1\frac{1}{2}$ in head; snout $1\frac{1}{2}$; cheeks and opercles scaly; dorsal spines flexible.





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Descriptions of new fishes from Panama (1912)

Author: [Meek, Seth Eugene, 1859-1914](#); [Hildebrand, Samuel F. \(Samuel Frederick\), 1883-1949](#)
Volume: Fieldiana Zoology v.10, no.6
Subject: [Fishes -- Panama](#)
Publisher: [Chicago](#)
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Smithsonian miscellaneous collections. v. 60 1913

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1913 "Description of New Mammals from Eastern Panama in Smithsonian Miscellaneous Collections. 60(22) Smithsonian Institute, Washington D.C.

Book contributed by [Smithsonian Institution Libraries](#)

Search list for items that need to be scanned.

Documents identified for scanning

Share Autosaved on 3/20/09

	A	B	C	D	E	F	G
46	Nelson, Edward William	1911	Two new subspecies of birds from Panama	Clear	L. DeHart	3	http://aquacomm.fcla.edu/113/
47	Nelson, Edward William	1913	Two new subspecies of birds from the slopes of Mount Pirri, eastern Panama	Clear	L. DeHart	4	http://aquacomm.fcla.edu/1148/
48	Nowicke, Joan W.	1970	Type-photographs of the Panamanian collections of B.C. Seemann, Annals of the Missouri Botanical Garden V.57 p. 352	Clear / Missouri Botanical Garden	BHL	7	http://www.biodiversitylibrary.org/item/1
49	Panama	1920?	Panama Canal Zone : number of inhabitants, composition and characteristics, occupations	Clear		12	liz rec'd 06/08 but publ. not good for sc:
50	Pittier, Henri	1914	Informe del Ingeniero encargado de la Estacion Experimental de Agricultura in Memoria de Fomento, pp. 51-69. Ibid	Clear			
51	Pittier, Henri	1912	Little known parts of Panama in National Geographic, 23(7):628-643. Washington, D.C.	Clear			
52	Pittier, Henri	1914	On the relationship of the genus Aulacocarpus, with description of a new Panamanian species. Series: Smith. misc. collections, 63, no.4	Clear	L. DeHart		rec'd via ILL 3/6/09; will scan
53	Pittier, Henri	1916	Our present knowledge of forest formations of the Isthmus of Panama in Journal of Forestry, XVI:76-84. 1918.	Clear		8	
	Pittier, Henri	1911-12	The unedited field reports of Henry Pittier in 1911 and 1912 to the Secretary of				

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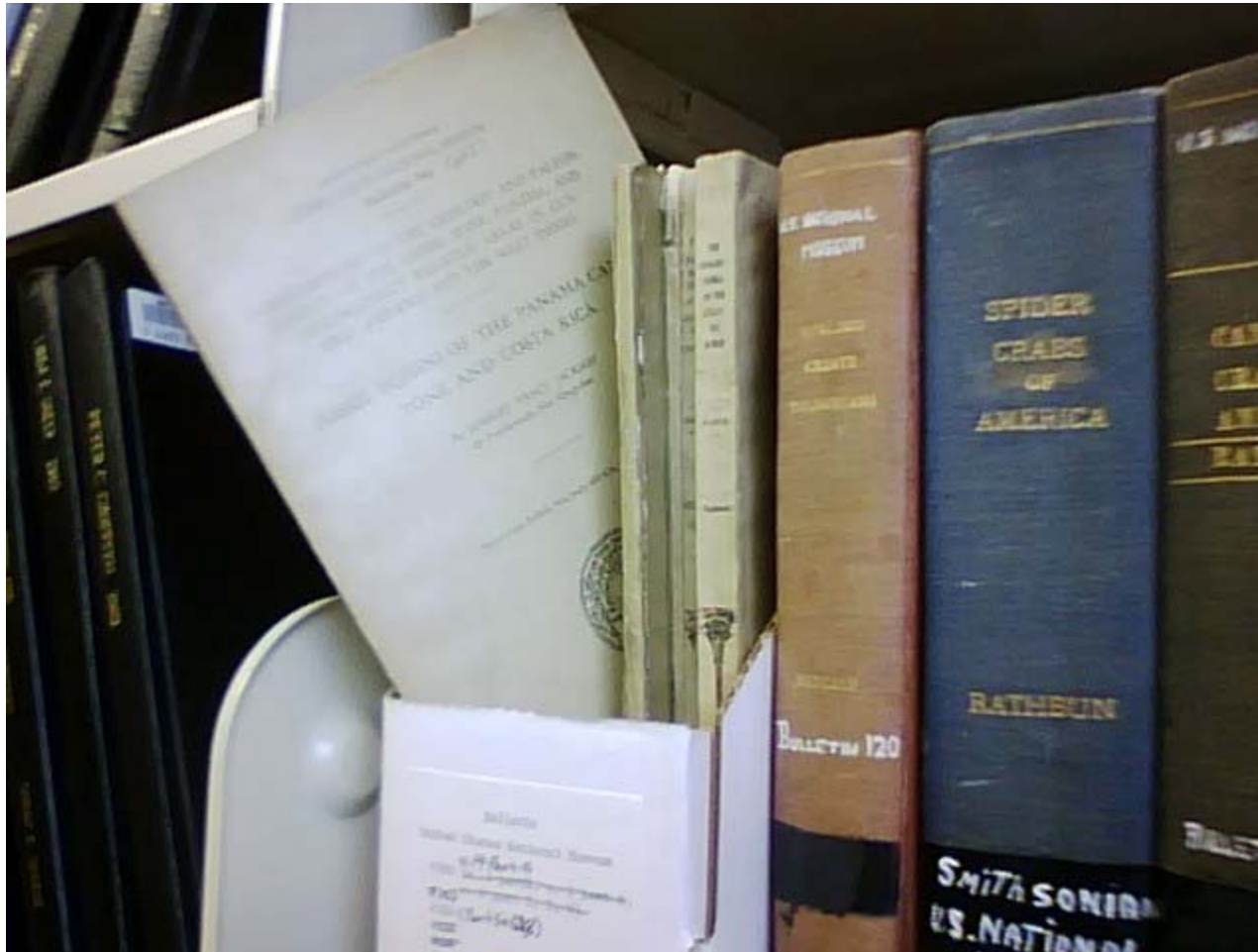
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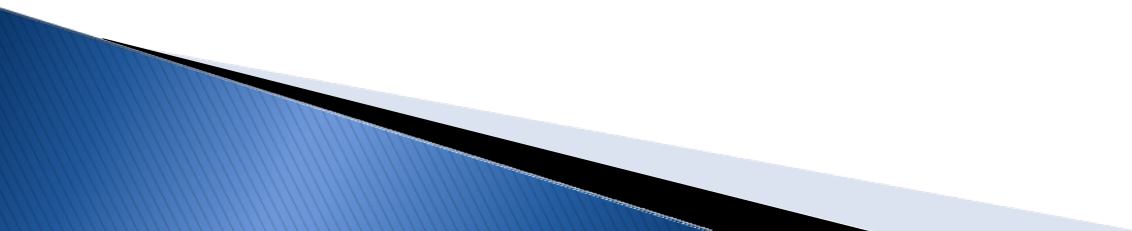


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Miscellaneous Reports in one of their three locations

As the Johnny come lately

- ▶ I checked the list of what was wanted/needed
 - ▶ I did a search in the USMAI catalog to see what I had and what other campuses might have
 - ▶ I pulled the older items from my collection
 - ▶ I placed hold/recalls on materials from other sites
 - ▶ I set about scanning as time permitted
- 

Scanning 101 – One idiots guide

- ▶ I had only used my scanner for ILL so really knew nothing about how to make the best use of it.
- ▶ My first item needed lots of editing by Stephanie & Liz
- ▶ I then learned a little more about adobe .
- ▶ Beside being able to change the size of the page to be scanned in the scanner.
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- ▶ There are multiple options under DOCUMENT
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- ▶ If I can figure it out and do it, anyone can.

Into the Future – More Scanning !

- ▶ Geological Survey of Panama
- ▶ **Official Name of the Expedition:** Geological Survey of Panama
- ▶ **Date of Expedition:** 1914- (the end-date of the Expedition was not found)
- ▶ **Where to:** Panama
- ▶ **Sponsor:** United States Geological Survey/Isthmian Canal Commission (see also the [Biological Survey of the Panama Canal Zone](#))
- ▶ **Scientific Team:**
 - ▶ The scientific team was not detailed.
- ▶ **Brief History:**
 - ▶ In February of 1912, Ricardo M. Arango, Chief Engineer of the Republic of Panama, wrote the Isthmian Canal Commission requesting information on the cost and feasibility of a general survey of the entire Republic of Panama. The Isthmian Canal Commission referred him to the Smithsonian Institution. Secretary Charles D. Walcott then directed all further correspondence regarding a general survey of Panama to the United States Geological Survey.