

Medicine in the Americas

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eBOOKSHELF

Kimberly Mitchell, Column Editor

Medicine in the Americas

Kristine A. Petre

ABSTRACT. *Medicine in the Americas* is a freely available, searchable collection of historical medical Americana. The collection is part of the Digital Collections repository at the National Library of Medicine's online digital archives. This review discusses the contents, searching functions, and additional features available in the collection.

KEYWORDS. National Library of Medicine, medicine, history of medicine, digital archive, product review, *Medicine in the Americas*, Medical Heritage Library, primary sources

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INTRODUCTION

In an ongoing project, the National Library of Medicine's (NLM) History of Medicine Division is digitizing historical medical materials and making them accessible online to the general public. In May 2011, NLM released *Medicine in the Americas, 1610-1920: A Digital Library*,¹ a freely available collection of medical Americana from the Library's collection. This article will review the collection's content, search functions, navigation, and special features.

OVERVIEW

Coverage and Content

As of this writing, *Medicine in the Americas* consists of over 300 full text primary materials originating from the United States, Latin America, the Caribbean, and Canada. Current coverage is 1610 through 1865, but NLM plans to continuously add more content, eventually expanding coverage to 1920.

The collection's focus is "the evolution of American medicine from colonial frontier outposts of the 17th century to research hospitals of the 20th century," and NLM anticipates it being of particular interest to "scholars, educators, writers, students, and others who wish to use primary historical materials to help expand their knowledge of medical and public health history."¹ Broad subject areas include: Women's Health & Women Physicians, Milestones in Medical Publications, Epidemiology & Public Health, Allopathic & Alternative Approaches, Ethnic & Racial Diversity, Diversity of

Specializations, Allied Health Professions, and Popular & Clinical Works. There are materials written in English, Spanish, Italian, Portuguese, German, Hawaiian, French, and Latin.

Medicine in the Americas allows the researcher to access primary materials from a time when such diseases as plague, small-pox, cholera, scarlet fever, and diphtheria were common. The collection provides a fascinating lens not only on the state of medicine, but also on the social history of the time. A small sampling of titles include: *Instructions for the treatment of gunshot wounds; according to the latest improvements in that interesting branch of surgery* (1814) by William Currie, *Advice to mothers, on the subject of their own health, and the means of promoting the health, strength, and beauty, of their offspring* (1804) by William Buchan and William Cadgun, and *A letter to a friend in the country, attempting a solution of the scruples and objections of conscientious or religious nature, commonly made against the new way of receiving the small-pox.*

Access, Display, and Navigation

Medicine in the Americas is housed within NLM's Digital Collections, a free online archive of historical biomedical resources. As such, there are no direct means of access *Medicine in the Americas*. The easiest method is to visit the Digital Collections home page <<http://collections.nlm.nih.gov>> and choose *Medicine in the Americas* from the featured collections (see Figure 1).



Legend: FIGURE 1. NLM's Digital Collections

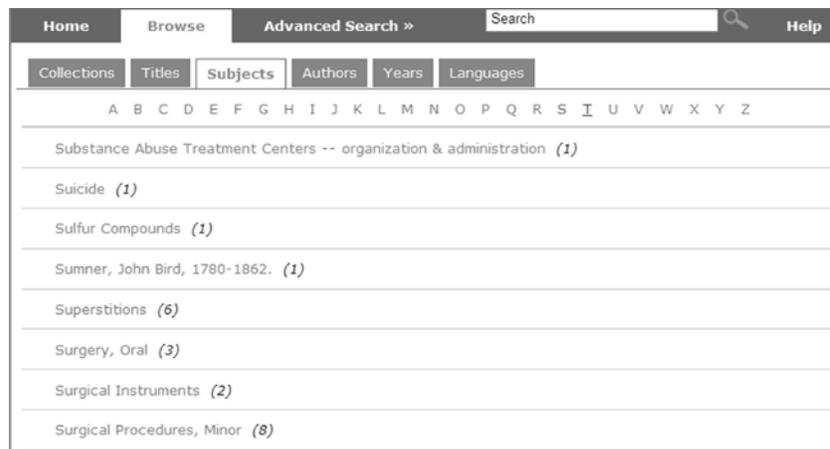
Alternately, visit the History of Medicine Division's home page <<http://www.nlm.nih.gov/hmd/index.html>>, navigate to "Digital Resources," and choose *Medicine in the Americas*. This brings the user to a page with links to three sections: Introduction, Contact Information, and Copyright Information. "Introduction" provides the user with a written overview of the collection. Within this text is a "Medicine in the Americas" link, which brings the user to a search interface for the *Medicine in the Americas* subset of Digital Collections.

The top ribbon of the Digital Collections interface presents three tabs that allow navigation to Home, Browse, and Advanced Search. To the right of these tabs is a search box and a "Help" link, which provides brief explanations and screen shots of the various functions within Digital Collections.

This interface may cause confusion if the user does not realize that *Medicine in the Americas* is a subset of Digital Collections: The Home tab brings the user back to the Digital Collections home page, for instance, and the screen header reads "Digital Collections." A small breadcrumb trail ("Collections Home > Print Materials > Medicine in the Americas") is the only indicator that the user is searching within the *Medicine in*

the Americas subset. Furthermore, in browse mode, clicking the Collections tab ushers the user out of the subset and into the broader collection. Returning to the subset requires the user first to choose Print Materials, then *Medicine in the Americas*.

The default display is Browse. Here, through a series of tabs, the user may choose to browse by title, subject (see Figure 2), authors, years, or languages. Once within subject, author, and language browsing, the number at the end of each line indicates how many records are in each category.



Legend: FIGURE 2. Browse collection by subject

Searching and Results Display

Searching the collection can be done either by basic or advanced search. The user may perform a basic search by entering a keyword or phrase in the search box to the right of the navigation tabs on the top of the screen. This will perform a search of all the metadata fields and the full text of each source. Search results will include related results, making it unnecessary for the user to know exact terms. For example, a search for the term “pregnant” will also return results including keywords “pregnancy” and “pregnancies.” To ensure a phrase search, quotations around the phrase are required.

The Advanced Search tab allows the user to specify a metadata field or combine searches in multiple fields using Boolean operators AND or OR (see Figure 3). Fields included in the advanced search are: title, author, description, format, language, subject, and publication date.

The screenshot shows a navigation bar with 'Home', 'Browse', 'Advanced Search >>', a search input field, and 'Help'. Below the navigation bar is a section titled 'Advanced Search' with a magnifying glass icon. The main content area is titled 'Please specify your search criteria:' and includes a dropdown menu for 'Choose operator to combine search criteria fields:' set to 'AND', and a 'Search' button. Below this is a table of search criteria fields:

Title	<input type="text"/>	
Author	<input type="text"/>	
Description	<input type="text"/>	
Format	<input type="text"/>	
Language	<input type="text" value="English"/>	
Subject	<input type="text" value="scarlet fever"/>	

Legend: FIGURE 3. Search features

Search results are returned by relevancy. In Figure 4, the search was the subject “scarlet fever” and “English” language only. On the left side of the screen there is the option to filter results by author, subjects, title, format, and language. Noted at the top of the screen are the number of results and search strategy used. Additionally, there is an option to display 10, 20, or 50 results per page.

The screenshot shows search results for the query "+dc.language:English +dc.subject:scarlet fever". At the top, it states "Found 15 results for "+dc.language:English +dc.subject:scarlet fever ". To the right, there is a link to "Show 10 20 50 results per page". On the left side, there are filters for Authors, Subjects, and Titles. The main results list includes:

- Authors:** Bulfinch, Thomas, 1728 (3); Sims, James, 1741-1820 (3); Hall & Hiller, publish (2); more »
- Subjects:** Scarlet Fever (12); Academic Dissertations (2); Disease Outbreaks (2); more »
- Titles:** Observations on the sc (3); Caution to the public: (1); Essay on scarlatina (1); more »

The first result is "An essay on scarlatina" by Cross, James Conquest, dated 1840-1845, with the subject "Scarlet Fever". A thumbnail image of the book cover is shown next to the title.

Legend: FIGURE 4. Search results

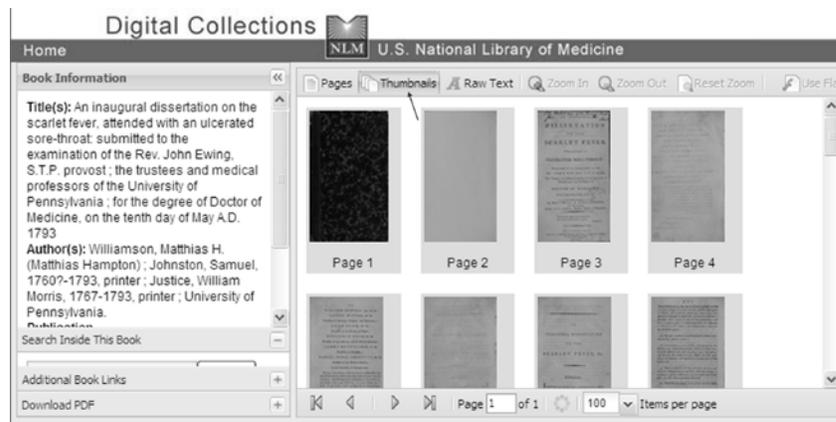
Working with sources

Clicking on a title from the results display opens that source's Digital Collections Resource Record. Here, the user may view the source's various metadata fields, which may include: author, title, subject, languages, format, publication information, publication date, subjects, rights, identifiers, and descriptions. Clicking on a hyperlinked term will launch a search for other resources with that same or similar term. Each record in the collection has its own NLM unique identifier (NLM UID) and permalink. For example, in the record titled; *An inaugural dissertation on the measles* the permalink is <<http://resource.nlm.nih.gov/2544087R>>.

Clicking "View book" under the book cover image opens the Book Viewer and its various controls and options for exploring the book. Adobe Flash Player is required to use this tool. The three views that display the resource are: Thumbnails (see Figure 5), Pages, and Raw Text.

The Thumbnail view presents a thumbnail image of each scanned page in sequential order. The user may also choose the number of items per page to display. The Pages view displays the actual scanned image of each page, with functions allowing for zooming the scanned image in and out. The "Use Flash" option allows the user finer control, with the option to select certain parts of the page for manipulation, to navigate around the scanned page, and to flip the image. Finally, Raw Text is the uncorrected OCR (Optical Character Recognition) scan of the document. When choosing to view the raw text of the document, make sure the selected page has material on it: some pages in the source books may be blank. With each of these options the user may navigate through

the pages either by using the forward and backward arrow buttons or by entering a specific page number at the bottom of the screen.

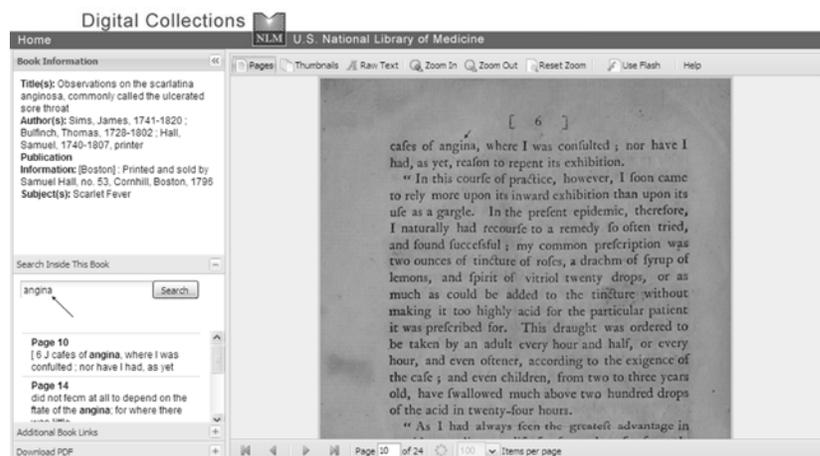


Legend: FIGURE 5. Inside view a book

Within each Resource Record, left-hand panels present the user with further options and information. To move from panel to panel, click the plus sign icon to expand that panel and the minus sign to close it. The entire set of panels can be collapsed by clicking the double arrow icon to the left to collapse or the right to expand.

The Book Information panel displays the title, author, subject, and publication information for the selected source. The Additional Book Links panel provides links to the bibliographic record in LocatorPlus, to the Digital Collections Resource Record, and to any other relevant links. The Download PDF panel provides a link a PDF of the full text.

The Search Inside This Book panel allows for searching within the contents of the scanned book, with results appearing on the left side of the screen (see Figure 6). The results will include a page number and a portion of the text where the search term was located.



Legend: FIGURE 6. Search inside this book

There are a few things to note when searching within the book. If the computer monitor screen resolution is set to 800 x 600 pixels, the window frame collapses, and the search box and search results are not visible. Changing the monitor resolution to another setting remedies this. Also, in Internet Explorer 9 if nothing appears on the screen when viewing the inside of the book, activate the compatibility view.

FILE FORMATS

The full text of sources included in *Medicine in the Americas* may be downloaded in a rich array of text and metadata formats. At the bottom of the Resource Record an “Additional files” section provides links to these files. Formats available include: PDF, OCR, JPG, METS, Dublin Core, MARCXML, and DMDINDEX (see Figure 7).

Files best for viewing the full text of the sources are PDF, OCR, and JPG. The PDF file provides access to the scanned full text, while the OCR is the raw text file discussed earlier. The JPG option presents a thumbnail view of a representative page of the book, usually the book cover or the title page.

The remaining file formats are intended for cataloging. The “MARCXML” is a XML framework from the Library of Congress that provides MARC data in XML format. The “METS” (Metadata Encoding and Transmission Standard) file format, also supported by the Library of Congress, is an XML schema for metadata about an object or content in a digital library or repository. METS is used to help different systems talk to each other and pass the metadata back and forth as needed. The Dublin Core file contains the XML formatted metadata established by the Dublin Core Initiative. The DMDINDEX (Data Model Design Index) is another XML formatted metadata model. Finally, there also is a RDF (Resource Description Framework) which is another file that contains metadata about the resource.

Publication Date: 1796
Publication Information: [Boston] : Printed and sold by Samuel Hall, no. 53, Cornhill, Boston, 1796
Language(s): English
Format: Text; 16 p.
Subject(s): Scarlet Fever
Identifier(s): See catalog record: 2571066R
<http://resource.nlm.nih.gov/2571066R>



[View Book](#)

Additional Files

File	Mime Type
MARCXML descriptive metadata for book 	text/xml
DMDINDEX descriptive metadata for book 	text/xml
METS file for entire book 	text/xml
Book OCR - full text of entire book 	text/plain
PDF of entire book 	application/pdf
JPG Preview image of selected page in book 	image/jpeg

Legend: FIGURE 7. File options

Alternatively, for cataloging purposes, in the Resource Record the user may link to the source’s bibliographic record in LocatorPlus and download the full MARC record.

RIGHTS AND PERMISSIONS

All the material that has been made available is considered to be in the public domain and does not require permission requests; however, if someone uses the materials, NLM requests that they be labeled “Courtesy of the National Library of Medicine.”

DIGITIZING PROCESS

Medicine in the Americas is made possible partly through NLM’s collaboration in the Medical Heritage Library (MHL), a group of U.S. medical and university libraries including, The College of Physicians of Philadelphia, The New York Academy of Medicine, and The Francis A. Countway Library of Medicine at Harvard University. Their goal is to make medical resources available freely on the Internet. As part of the project, the NLM and other institutions have been testing and looking at the optimal ways to standardize and preserve the media for preservation and reuse. When funding for this project ends in June 2012, the participation of the various institutions may change. NLM, however, plans to continue adding to the collection, and is looking at the possibility of a scan on demand service.

The books are scanned using Kirtas Technologies scanners. These machines scan each page and automatically turn them in a non-destructive manner. If the book is damaged, in poor condition, or rare, pages may be manually turned within the machine. Demonstrations of the process may be viewed on YouTube <<http://youtube.com>> by searching “Kirtas Technologies.”

CONCLUSION

The *Medicine of the Americas* collection is a subset of NLM's Digital Collections, NLM's online archive of historical materials. Navigation and searching may be sometimes confusing for the user due to the fact that *Medicine in the Americas* is a subset of this larger collection. Nevertheless, this collection is a wonderful look at the practice of medicine in our past, and students, history buffs, writers, researchers, and other scholars will benefit from the opportunity to view scans of these old and rare items otherwise not readily available. There are robust options for viewing and working within the sources, as well as for libraries to make these titles available through their own catalogs.

ACKNOWLEDGEMENTS

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REFERENCES

1. National Library of Medicine Releases "Medicine in the Americas," Featuring Digitized Versions of American Medical Books Dating Back to 1610. NLM Technical Bulletin. 2011 May-Jun;(380):e10.