

this series of books and of ArcGIS, the software used to create most of the maps included within their covers.

For someone familiar both with GIS and with available public-use spatial data sources, the books may still hold some interest, as they contain many maps examining issues of current political, health, or ecological concerns. A few examples from each book may serve to illustrate this point. As part of a chapter on Department of Defense map, page 53 of *Mapping the Nation: Supporting Decisions that Govern a People* features a US Army Corps of Engineers map comparing the extent of the historic 1927 flooding in the lower Mississippi River valley with the more recent spring 2011 flood. The striking differences reveal the effectiveness of an extensive network of levees along the riverbanks as well as numerous dams on tributaries upstream that created a series of what my introductory geology professor called “Democratic Lakes.” Both floods covered large swaths of the lower Mississippi River basin, but the 1927 flood caused vastly greater damage and loss of life.

In the same volume, readers familiar with mapping remotely sensed data may find interesting the maps from the National Agricultural Statistics Service of the US Department of Agriculture depicting the USDA NASS Cropland Data Layer (26–27). Some minor details, such as a legend, are omitted, both in the composite map and in two separate strata, but the interested reader who wishes to explore more is given the resources to do so.

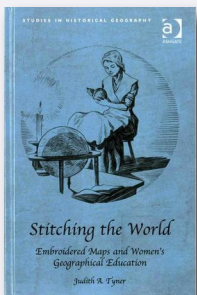
Another interesting example, found in *Mapping the Nation: Building a More Resilient Future*, is a map from the National Center for Education Statistics of the US Department of Education that displays the proportion

of school-age children living in households with incomes below the federal poverty rate (46). This map shows one year from a series of annual maps beginning in 2005; on the agency website the enterprising reader can see the full series. The maps, depicting poverty within state by school district, show both the complexities in the national geography of school districts, and some idiosyncrasies in the national school district shapefiles, especially in the Great Lakes region. These maps can also be compared to one provided by the US Census Bureau (19), depicting the poverty ratio for essentially the same age group of children as a smoothed surface rather than as choropleth maps.

For readers with smartphones, most of the maps in each volume are accompanied by QR codes that can be scanned to access websites with additional information about the maps and the underlying data sources. For the slightly less technology-savvy reader, most maps also include URLs that can be entered to access the same resources.

These books fulfill a purpose for Esri: opening the eyes of those unfamiliar with the potential power of GIS to generate interesting maps that produce both insights and new lines of inquiry. To some extent the contents may also inspire a few readers to examine the underlying spatial data more closely, or even to seek employment at one of the many federal agencies whose work is highlighted. However, these volumes are clearly prepared for marketing purposes. While Esri may make them available at professional conferences and to others who might share them with students, trainees and young professionals, this reviewer would not recommend that libraries or GIS professionals purchase these volumes, even at the relatively reasonable cover price.

## STITCHING THE WORLD: EMBROIDERED MAPS AND WOMEN’S GEOGRAPHICAL EDUCATION



By Judith A. Tyner.

Ashgate, 2015.

142 pages, numerous black and white illustrations, 46 color plates. \$104.95, hardcover.

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Through the centuries cartographers and others have created maps on and with a variety of different media, from sticks and stones, animal skins, paper of all kinds, through to the digital maps of our current world. Within this variety is a small but important subset of maps on fabric, stitched with threads of many colors. These maps, created by young girls and women in the eighteenth and nineteenth centuries, are an important but not widely known segment of cartographic history. In *Stitching the World: Embroidered Maps and Women’s Geographical Education*, Judith A. Tyner gives us a glimpse into the story of how

and why these maps came to be. This volume is the result of over 20 years of research in museum archives, textile collections, and historical societies across the United States and the British Isles. In many instances, seeking to find the elusive map sampler involved a bit of detective work in order to connect a specific artifact to the person who created it, and to determine where and why it was created. Through her superior research skills, Tyner has woven together a volume that combines information on cartography, geography education, and needlework in order to tell the important story of map samplers.

The book is organized into six chapters, and contains figures and tables, 46 color plates, four appendices, and a bibliography. The goal of the book is to shed light on the history of women's geographic education by examining the relationship between needlework, education, geography, and cartography. The numerous illustrations and plates provide examples from the eighteenth and nineteenth centuries that are used to support the author's viewpoint.

The audience for this book may include people not versed in cartographic terminology, or conversely, those not familiar with the needlework sampler examples. The two introductory chapters are critical in terms of bringing all

readers up to speed on the requisite terminology. In the eighteenth and nineteenth centuries young girls would work, or embroider, the alphabet and a phrase or maxim on a piece of woven cloth (typically) with silk thread (usually) in order to learn the rudiments of the alphabet and grammar, and to practice and improve their needlework skills. Within the universe of these samplers there is a unique subset of "working maps" or map samplers. Color Plate 1 provides an example of a map sampler made in the 1770s (Figure 1). The counties of England were worked in silk thread on fabric by 13-year-old Ann Rhodes for her school geography project. The sampler includes place names, marks for latitude and longitude, a compass rose, and a variety of ships. Thus, a project that typically would result in a paper product is instead rendered in a new medium, enhancing both the geographic and needlework accomplishments of the young woman.

Three other key parts of the early chapters include clarifying the definition for the word "map," providing background on the time period of the study, and providing a cartographic framework for the study. While the work of defining "map" is a rehashing for most cartographers, it is an important consideration for those not versed in cartography, whose definition of what constitutes a map is often quite narrow. Also, having a background in the events of the study period is critical for explaining why map samplers occur when and where they do. The eighteenth century "Enlightenment" viewpoint recognized the importance of geography and travel in order to develop an expansive worldview. Maps and globes were seen as special objects that were essential in developing this new worldview, and were looked on with great reverence. And then the Industrial Revolution came along at just the right time to provide new materials, tools, techniques, and methods for generating these necessary maps. Along with this technological growth was the growth of the middle class, who had an interest and the means to educate their children, both boys and girls. While boys were learning Latin and Greek, girls were making samplers and embroidered maps to improve their needlework skills and expand their geographic knowledge. Tyner uses David Woodward's framework for the study of historic maps and creates a similar framework for the study of historic map samplers. Woodward's framework considers production and product across the categories of information gathering and processing, and document distribution and use. Paper maps were made by draftsmen, engravers, and printers, and resulted in a map image that was marketed and published



Figure 1.



Figure 2.

for a specific audience. Tyner’s table draws important parallels to the study of map samplers. Map samplers were made by teachers and students and resulted in map images for study, decoration, and to exhibit the accomplishments of the maker. By providing the reader with a context for the inclusion of map samplers within cartographic history, the author sets the stage for the rest of the book.

The discussion of specific map samplers begins in Chapter Three with a look at examples from the British Isles. One of the goals of this volume is to establish the provenance for these cartographic treasures, and Tyner’s careful examination of map outlines, place names, projections, map elements, and decorative elements has resulted in the identification of several map sampler regions and schools. While there were many options for the education of young women in the British Isles—home schooling, dame schools, and boarding schools—most of the map sampler examples have been linked to specific boarding schools or female academies. Some of the more enduring schools were those founded by Quakers, and specific map samplers have been traced to these schools in Yorkshire, England, and Mount Rath, Ireland. While Quaker schools strived for simplicity and discouraged unnecessary ornamentation in their alphabet samplers, map samplers were allowed to be more ornate as their practical use as study aids gave them dispensation from the simplicity rule. Many of the Quaker map samplers can be linked to a specific location or school through the identification of their floral borders and elaborate cartouches. Identifying the source map or pattern used for these samplers can be problematic, as paper patterns are often destroyed in the transfer process. Through another bit of investigative work, Tyner has uncovered evidence that suggests that there were professional pattern

makers, and has found an example of a specific printed pattern, that was most likely used in three map samplers. These samplers from Miss Warren’s Ladies’ Boarding School in Truro have identical base maps of Cornwall, and differ only in their decorative map elements.

Several schools and teachers in the United States have also been identified as “hot beds” of map sampler activity. Susan Rowson is considered one of America’s first geographers, and her Academy in Boston was started around 1800. While Rowson’s Young Ladies Academy was not known for map samplers, there are two nearly identical large-scale embroidered maps of Boston Harbor attributed to the school. They were likely made using a map from *American Monthly Museum*, published in 1775, and are fine examples of large-scale maps worked in thread. One of the largest groups of map samplers are a set of 10 of Maryland; this set provides a good example of the types of map samplers made in America. While some of the young women mapmakers have been identified, the specific teachers and schools remain unknown. But since these examples are found all over the state, it is possible to identify a common source. The source map is believed to be Samuel Lewis’ map of Maryland from 1785 that was in Mathew Carey’s *Atlas to Accompany Guthrie’s Geography* (Figure 2). The spelling of place names, shape of islands in Chesapeake Bay, and longitude designations on the samplers all point to this as the source map that was either traced on cloth, or printed as a pattern. The deciding factor in confirming this map as the source is the omission of the western portion of the state, which was included as an inset on Lewis’ map. Every map sampler omits this inset; perhaps design and balance were more important than geography. S. Falconar’s *Map of Maryland* is a typical example,



Figure 3.

with the longitude from London at the bottom, and from Philadelphia at the top, as per the Lewis map (Figure 3).

The most unique cartographic needlework creations of all are the silk globes created at the Westtown Quaker Boarding School, about 30 miles west of Philadelphia, from 1804–1844. Since there are samplers from the Westtown School, but no map samplers, it is puzzling as to why and how the globes appear. Tyner posits that the globes may have been made to teach what was called “mathematical geography,” or latitude, longitude, and Earth-Sun movements. This idea is supported by a quote from a letter of Rachel Cope, written to her parents in 1816:

I expect to have a good deal of trouble in making [the globes], yet I hope they will recompense me for all my trouble, for they will certainly be a curiosity to you and of considerable use in instructing my brothers and sisters, and to strengthen my own memory, respecting the supposed shape of our earth, and the manner in which it moves... (89)

These globes, both terrestrial and celestial, were made on a silk foundation in gores or wedges, and have the continental outlines, parallels and meridians embroidered, and place names and other features inked. A canvas ball was stuffed with wool, and the gores sewn together and the cloth ball inserted before the final seam was sewn (Figure 4).

This volume is a work of scholarship that makes an important contribution to both cartographic and needlework history. The extensive bibliography and inclusion of numerous primary sources has great value for future researchers. The appendices with lists of museums and historical societies housing map samplers are also important,



Figure 4.

as is the list of map samplers and embroidered globes that form the database for this volume. And the publisher is to be commended for including the excellent color plates that make this book such a valuable resource. Of particular note are plates not previously mentioned in this review, which show several versions of a two-hemisphere (globular) world map having the same or similar map figure with different border treatments. Also of interest is a rare large-scale embroidered map of an individual farm in Essex, England.

This volume has much to recommend it. First, it legitimizes the place of map samplers as an important part of history of cartography. Second, it gives recognition to the contributions of young women to the history of cartography. Third, the book is structured to have a wide appeal, so as non-cartographers pick up this volume, a new audience will be introduced to the fascinating discipline of cartography. And finally, I think it will encourage others—myself included—to search for embroidered maps in their local communities, and will ultimately make it possible to find many more embroidered map masterpieces in museums and historical societies and attics.