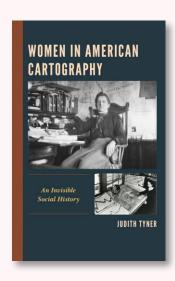
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WOMEN IN AMERICAN CARTOGRAPHY: AN INVISIBLE SOCIAL HISTORY

by Judith Tyner

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JUDITH TYNER IS A MASTER TEACHER, researcher, and author, and her new book-Women in American Cartography: An Invisible Social History— is an approachable and seamless read. In this, it is much like her other works, which includes titles such as The World of Maps (2015), Principles of Map Design (2010), and two chapters in The Routledge Handbook of Mapping and Cartography, "Designing Maps for Print" (2018a) and "Persuasive Map Design" (2018b). Women in American Cartography focuses on women mapmakers in the United States from the late eighteenth century to the end of the twentieth. Tyner's background and research, each broad and deep, gives her a platform of substantive content to distill and present to her readers.

Women in American Cartography is comprised of six somewhat chronological chapters that are proceeded by an introduction and followed by a conclusion. The front matter includes a list of abbreviations, and each chapter, as well as the introduction and conclusion, has its own set of endnotes. A list of colleges and universities that hosted Army Map Service military mapmaking classes, a bibliography of cartography dissertations and theses by women 1966-1982, and a consolidated bibliography are all found at the end of the volume.

The introduction contains an extensive and valuable literature review, one that places Tyner's work in the context of both other works on women cartographers and of

more general works on the history of cartography. Women in American Cartography highlights individual, named women cartographers within their work environments, organizations, or institutions, deftly balancing descriptions of the societal and organizational contexts in which women cartographers worked with often highly personal (or personable) descriptions of the women themselves. Tyner has not written a "bibliographic dictionary;" she instead tells "the story of how women fit into various cartographic cultures." (7) There has been a noticeable lack of coverage of women cartographers in histories of cartography, but, as Tyner writes, "To be fair, there has also been less done on male cartographers than their maps as histories of cartography have focused on maps not chaps" (2).

The question "Who is a cartographer?" played a critical role in shaping the scope of Women in American Cartography and in selecting which individuals to include. As the author explains:

In this work, I have cast my net wide and I include all women who were involved in the mapping field. Some women were not cartographers per se in the sense of conceiving and drawing maps, but contributed by researching, editing, engraving, and printing. They were all part of the "map trades" or what van den Hoonaard [in Map Worlds: A History of Women in Cartography (2013)] has designated the "map worlds." (6)

Tyner lists six questions that she kept in mind while writing (7):

- What were the roles of women in American cartography?
- What kinds of maps did they make?
- How did women fit into the overall history of American cartography?
- How did individual women learn to make maps or get involved in the field?
- How did women's roles differ from those of men?
- Did women's maps differ from those of men?

Readers will see evidence of these questions and their answers throughout the book.

The six chapters—"Pedagogues and Students;" "Activists, Persuaders, and Travelers;" "Pictorial and Illustrated Maps;" "Millie the Mapper and Maps of the Second World War;" "Women Professors and Researchers: Their Role in an Emerging Discipline;" and "Government Girls and Company Women"—vary in length and in the depth to which specific women are discussed.

The first chapter, "Pedagogues and Students," begins the story of American women cartographers in the late eighteenth and early nineteenth centuries with a brief description of the educational opportunities and resources available in the United States at the time. The chapter includes robust descriptions of female teachers, highlighting Emma Willard who was a pioneer in teaching geography through map drawing; textbook authors; schoolgirl maps (a particular interest of Tyner's); and globes as pedagogical instruments. Chapter two, "Activists, Persuaders, and Travelers," explores how nineteenth- and twentieth-century women and women's organizations in the United States created maps supporting their causes and movements. Additionally, three women travelers/explorers, who documented their travels with published works that included maps, are highlighted.

Women cartographers are viewed through the lens of "Pictorial and Illustrated Maps" in chapter three. The attributes and uses of these maps, as well as places that examples can be found, are a frame for descriptions of the work of nine cartographers who created maps between

the 1920s and the late twentieth century. Chapter four, "Millie the Mapper and Maps of the Second World War," is the most chronologically focused of the chapters. The bulk of the chapter describes women cartographers in three United States government agencies, with particular attention paid to mapmaking programs established by the Army Map Service at a number of colleges and universities. Tyner also discusses the attitude toward women in these workplaces and their postwar experiences.

Because cartography was not a recognized academic discipline prior to the Second World War, most of the women with PhDs in cartography whose professional paths are highlighted in chapter five, "Women Professors and Researchers: Their Role in an Emerging Discipline," were active in academia only post-war. This chapter also touches on the use of cartography as a research tool, through the pioneering work of Marie Tharp, and as illustration, Tyner uses her own experiences, both as a graduate student and as a faculty member in a geography department, as a case study to typify the experiences of women in academic programs.

The final chapter, "Government Girls and Company Women," surveys women's cartographic roles in the latter half of the twentieth century: independently creating custom maps to order or as employees of United States government agencies, non-governmental societies and organizations, and commercial firms. Tyner ties the entire volume together in her conclusion with a discussion of the "culture" of women's cartography.

Tyner is considered the leading expert in this field in the United States, and Women in American Cartography compiles and integrates decades of scholarship for delivery to future researchers and readers. Those who have the privilege of hearing Tyner speak will know that the content of Women in American Cartography has been a passion of hers and that she has presented much of this work in papers delivered at numerous professional meetings over the years. Tyner's straightforward prose, grounded in her deep research, makes Women in American Cartography an easy, informative, and enjoyable read. The black-and-white illustrations include photographs of women cartographers and samples of their work, and Tyner often states in the text where she has found these elusive documents, giving readers direction should they wish to explore any of the maps further.

There are two other fairly recent monographs on women and cartography, Women and Cartography in the Progressive Era by Christina E. Dando (2018) and Map Worlds: A History of Women in Cartography by Will C. van den Hoonaard (2013). Tyner's work covers a broader historical period than Dando's and is more tightly focused in time and place than van den Hoonaard's. While Tyner touches on the Progressive Era and associated movements and societal changes in the second chapter of Women in American Cartography, Dando exclusively examines women's use of, and related production of, maps during that very specific period in United States history. On the other hand, van den Hoonaard's essentially sociological work encompasses cartographic developments in the Western world from the thirteenth to the late twentieth century, as well as including biographical sketches of twenty-eight twentieth-century women geographers and cartographers (mostly western European or North American) with little regard to whether the women were making, using, or curating maps. Tyner, by contrast, is concerned with the whole history of women's place in the American cartographic creation experience.

At the close of her introduction, Tyner writes that her work is neither an analysis of the types of maps created by women cartographers nor a critique of women's cartography. When specific maps are discussed, it is to put the women who created them into the context of their work. With its focus on the creators—rather than the artifacts they produced-Women in American Cartography: An

Invisible Social History will be of interest to students and researchers in women's and gender studies, as well as the history of cartography, and should be on the shelves of libraries supporting these programs.

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