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From the editor . . .

The archaic and unsatisfactory way in which North American libraries romanize Chinese geographical names should be of growing concern to cartographic information specialists. Libraries continue to use the Wade-Gilles romanization system, rather than the newer and more commonly accepted pinyin system. For place names in the People's Republic of China this causes of a growing data retrieval problem as an increasing proportion of clients query catalogs and reference personnel using place names in pinyin romanization, e.g., Beijing, Xi'an, and Guangdong, rather than Peking, Sian and Kwangtung.

Most creators and dispensers of information that contains Chinese place names use pinyin, and it is largely from these sources that the users of map and geographical information obtain their spellings. The popular press, including the New York Times, the Wall Street Journal, Time, and Newsweek, uses pinyin. So do major indexing and abstracting tools, such as the Reader's Guide and the Social Science Index. More important, pinyin is used by the major map and atlas publishers, among them Rand McNally, the National Geographic Society, and the Central Intelligence Agency, and pinyin is recommended by the United States Board on Geographical Names.

Arguments can be made for the political, linguistic, and ethnic superiority of either system, but the essential fact is that libraries—and curiously, the publishers of Webster's New Geographical Dictionary and of American encyclopedias—are about a decade behind the rest of the information industry in switching to pinyin, and are increasingly out-of-step with the needs of their clients.

The Chicago Manual of Style states, "... pinyin ... has now largely supplanted the older Wade-Gilles romanization system ... [O]ne sensible practice for scholarly publications is to use Wade-Gilles in books about the pre-1949 period and pinyin in those about the period after 1949."

The geo- and cartographic information community should take the lead in resolving the present difficulty by working with the Library of Congress and other interested organizations to establish pinyin as our primary romanization system for Chinese geographical names. One possible solution would be to use pinyin for post-1949 names in China, and to continue to use Wade-Gilles for places not extant after 1949 as well as for those in Taiwan, and to default to pinyin in cases of doubt. The inevitable switch to pinyin will be costly, but to delay would be even more costly.

Meridian's readers are reminded to submit papers, research notes, and other contributions for publication. Material in any of map librarianship's subfields is welcome, but especially desired are papers on the administration of cartographic collections and on new means of transmitting, storing and organizing cartographic information.

Philip Hoehn

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The design of the cover for Meridian was developed by Donna P. Koepp, George F. McCleary, Jr., and Brian Yodler, of the University of Kansas. The type was prepared by Yodler (of the Department of Design) who modified Bodoni Book using MacDraw. The map is an interrupted flat polar quartic (equal-area) projection; it was constructed and compiled by McCleary using F. Webster McBryde and Paul D. Thomas, Equal Area Projections for World Statistical Maps (U.S. Coast and Geodetic Survey Special Publication 245, 1949).

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Women's Contributions to North American Cartography:

four profiles

by Mary McMichael Ritzlin

Women were involved in various aspects of cartography during the seventeenth, eighteenth and nineteenth centuries. The lives of four are profiled: Virginia Farrar (1628-1668), compiler of a map of Virginia; Mary Biddle (1709-1789), editor of Scull's 1762 map of Philadelphia; Elizabeth Simcoe (1766-1850), who executed manuscript maps, circa 1792-1796; and Emma Hart Willard (1787-1870), who developed teaching methods requiring extensive map use and who published several geographies and histories with atlases. The contributions of Juliette Magill Kinzie, Eliza Colles, Elizabeth Lenthall Stone, Esther Love, Lydia Bailey and Roxanne Farmer are cited as further examples of pre-twentieth century women involved with American mapmaking.

During the 1970s, the women's movement inspired several studies of unknown women artists of the past: books such as Our Hidden Heritage: Five Centuries of Women Artists (Tufts 1974), Anonymous Was a Woman (Bank 1979), and Women Artists (Petersen and Wilson 1976) attempted to answer the question "why were there no women artists before the modern period?" Research proved there were numerous women artists who flourished in times past, but, for a variety of reasons, were overlooked in current art histories and surveys. The conclusion that "a collective and, rather recent, cultural neglect" (Tufts 1974, xv) contributed to the popular notion that women produced virtually nothing in the field of fine art can be applied to women mapmakers as well.

The same kind of benign neglect has been exhibited by the vast majority of cartographic reference books in use today. However, more recent publications include information about the cartographic activities of women, and it is hoped the contributions of the seventeenth, eighteenth and nineteenth century women profiled in this article will throw some additional light on this overlooked subject.

Virginia Farrar

An example of a map partially the work of a woman is the "mapp of Virginia discovered to ye Hills . . ." dated 1651. At the lower edge it bears the legend "Domina Virginia Farrar Collegit" and is, perhaps, the most familiar map of those described in this article. It is reproduced in Cumming's Southeast in Early Maps (pl. 29), Schwartz and Ehrenberg's Mapping of America (pl. 63), and Skelton's Explorer's Maps (fig. 170). The map also appears on page 269 of The Discovery of North America by Cumming, Skelton and Quinn. It can be compared with the original watercolor map drawn by Virginia's father, John Farrar, conveniently reproduced on the facing page.1

The printed version of John's map was prepared for Edward Williams's Virgo Triumphans: or, Virginia Richly and Truly Valued. It also appeared in some
copies of Edward Bland’s *Discovery of New Britain* and a copy was found in the *Blathwayt Atlas*. John Overton eventually acquired the plates, circa 1667 and, not surprisingly, erased the date (Cumming 1958, 141-42).

The Farrars (or Ferrars) were a remarkable family chiefly remembered through the religious and literary activities of John’s brother Nicholas. The brothers had been intimately involved in the fortunes of the Virginia Company (*Dictionary of National Biography*) and had many influential friends. After some years of enduring the intrigues of the Jacobean Court, Nicholas rejected the worldly life, took holy orders and retired to a small country estate, Little Gidding, which he had purchased in 1624. Nicholas was joined by his elderly mother, brother John, sister Susanna Collet and their respective families.

**Virginia Farrar** was born at Little Gidding on Christmas Eve, 1628 (Carter 1893, 119), and grew up there enjoying the company of her siblings and many cousins; it is thought seventeen or more children were living with their parents on the estate. Exhibiting a progressive attitude for the time, Nicholas saw to it his nieces received the same education as his nephews. A small private school was set up for their benefit, as well as some neighbor children, and three masters were employed to teach English, Latin, arithmetic, writing and music (Carter 1893, 120). The girls were also instructed in the niceties of seventeenth century housekeeping and—as a somewhat unusual “accomplishment”—the art of bookbinding.\(^2\)

The Farrars led a quiet though busy life at Little Gidding with the day’s activities planned around the canonical hours (*Dictionary of National Biography*), family members taking turns praying in the chapel throughout the night. Although much admired in Royalist and high church circles (Charles I visited Little Gidding two or three times), the Farrars were distrusted by the Puritans. Nicholas died in 1637, but the family continued to live at Little Gidding, following the routine set by him. Their way of life was attacked in a pamphlet published in 1641, “The Ariminan Num-

**Mistress Virginia Farrar** did not limit her life to psalm singing, prayer and the creation of fine bindings for bibles.

**Virginia Farrar**, by seventeenth century standards, had received an excellent education.

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John Farrar did not turn his back entirely on the world but retained an active interest in the colony of Virginia while his daughter, too, felt a special relationship to her namesake land.\(^3\) Mistress Virginia Farrar did not limit her life to psalm singing, prayer and the creation of fine bindings for bibles. Hoping to assist the colony in its goal to become a major silk-producer, “she carried out a series of highly technical experiments and corresponded with many growers and other settlers in the colony. There seems to be no doubt that the steadily growing prosperity of the industry in the second half of the seventeenth century was due largely to her discoveries in proper methods of breeding and cultivation . . .” (Maycock 1938, 167-68). Her work was described in Samuel Hartlib’s *The Reformed Virginia Silkworm . . . Found Out by a Young Lady in England. She Having Made Full Proof Thereof in May Anno 1652*.

The “mapp” of Virginia contains a number of misconceptions, chief among them the narrowness of the North American continent and the belief the Pacific—and New Albion—would be reached by marching ten days west from tidewater Virginia. But it also contains place names, “shires and county divisions and other details in Virginia and Maryland for the first time on any map” (Cumming 1958, 141). Virginia Farrar’s name appears on the third and fourth states of the map. Both states contain numerous additions, and decorative elements have also been added, the most prominent of which is the portrait of Sir Francis Drake at the top of the map.

**Virginia Farrar**, by seventeenth century standards, had received an excellent education; she had served as her father’s secretary (Maycock 1938, 167) and was familiar with his correspondence and other papers. As we have seen from her work with silkworms, Virginia was in touch with many colonists, one of them possibly her uncle William (a less pious perhaps, but more adventurous Farrar who emigrated to Virginia in 1618) (Maycock 1938, 11) or his children. All...
these reasons contributed to Virginia’s ability, while still in her early twenties, to incorporate the necessary changes on the map and to take credit for the work in Latin, the language of educated people at that time.

The name of Virginia Farrar is not associated with any other map, but then neither is John’s. Little Gidding was “spoiled” by the Roundheads in 1648 (Dictionary of National Biography), and the family scattered. Eventually Virginia returned to the estate of Little Gidding, but not the manor house which had fallen to ruin. She did remain single and lived with her brother and his wife for some years. This remarkable woman died in 1668 (Carter 1893, 319).

Mary Biddle

Virginia Farrar notwithstanding, women’s names seldom appear on maps. When they do, it is generally as engraver, publisher, bookseller, or as the subject of a dedication (usually a sovereign). The title “editor” is far from common on any map, yet a woman, Mary Biddle, is credited as editor of Nicholas Scull’s 1762 map of Philadelphia, a map described by Wheat and Brun (1978, 97) as “the most important engraved plan of Philadelphia since the Thomas Holme plan of 1682.”

The title and dedication are combined: “To The / Mayor / Recorder / Aldermen Common Council / And Freemen of Philadelphia / This Plan / Of The Improved Part Of The City Surveyed And Laid Down By The Late Nicholas Scull Esqr. Surveyor / General of the Province of Pennsylvania Is Humbly / Inscrib’d By / The Editors.” The map is large—53 × 69 cm.—and decorative. It features inset plans after Holme and Eastburn as well as an index to 26 points of interest, numerous ships in the Delaware River and a rococo cartouche. A reproduction of this map appears in John Rep’s Town Planning in Frontier America (fig. 70), in which he discusses its importance. A copy of the map is in the Library of Congress.

The editors identify themselves near the lower neatline: “Published according to Act of Parliament, Novr. 1st, 1762 and sold by the editor’s [sic] Matthew Clarkson and Mary Biddle.” Clarkson was a member of the American Philosophical Society and later served as mayor of Philadelphia. He kept a shop where he sold prints and views (Bridenbaugh 1968, 198), so it is not unusual to see him dealing in maps as well. But who was Mary Biddle?

Traditionally widows carried on the trade of their late husbands, but no listing of engravers, booksellers, printers or even shopkeepers produced a Biddle with whom Mary could be connected. A search through the names of parents and spouses of prominent Biddles proved rewarding—Mary’s maiden name was Scull. (Dictionary of American Biography, s.v. “Biddle, Nicholas, 1750–1778”). She was the oldest child of Nicholas Scull and Abigail Heap. A memoir written by one of Mary’s sons and privately printed in 1883 by two of her grandsons disclosed a sound reason for her name to appear on this map—that of economic need.

Mary was born in 1709, the eldest of nine children (Biddle 1883, 389). At age 21 she married William Biddle, grandson of one of the original proprietors of New Jersey. William seems to have lacked business acumen and had the misfortune soon after their marriage to lose the use of his right arm during a fight with an absconding debtor (Biddle 1883, 1). Nonetheless, his various business pursuits kept his family in comfort until a set-back changed their circumstances. Mary Biddle can best tell her own story: “I was married 19 years . . . and had nine children, and one at my breast,” she wrote many years later, “when Mr. Biddle informed me one morning that he had involved himself and ruined me and his children. I was much shocked, but begged he would settle his affairs, and hoped he would be better off than he expected. We had an estate in Jersey, which he sold for two thousand pounds . . . we paid all our debts, and Mr. Biddle entered into a partnership with one Jacobs, a man supposed to be possessed of a great fortune. In one year he broke, and we had to pay fourteen hundred pounds for him. This quite sunk Mr. Biddle. We had very little left. My
Dear Mr. Biddle was taken with a lingering disorder. For six weeks before he died I never slept with my clothes off. The situation of my children made me exert myself to provide for them” (Biddle 1883, 2-3).

Although Mrs. Biddle’s letter does not specify dates, evidence points to the upset occurring around 1753. Mary’s last child was born in 1752 (Biddle 1883, 367), and an ad in the May 17, 1753 Pennsylvania Gazette offers land for sale in Morris County, New Jersey, describing it as “late the property of William Biddle” (Scott and Clarke 1977, entry for 17 May 1753). This must have been a very difficult time for Mary as her mother Abigail Scull died on May 21 of that year (Biddle 1883, 385).

William Biddle’s “lingering disorder” persisted for some time; he died in 1756. At appropriate ages, the Biddle children were apprenticed, one joined the army, two went to sea (one serving on the same Arctic expedition as the youthful Horatio Nelson (Dictionary of American Biography, s.v. “Biddle, Nicholas, 1750-1778”), and we can reasonably suppose Nicholas Scull would do what he could to assist his daughter and grandchildren in those pre-life insurance, pre-welfare days.

Scull died in January of 1762, just months before the publication of the plan of Philadelphia. Did he leave Mary the rights to this map? Was she already working with him on it prior to his death? Her nephew William published maps during the Revolutionary War period; was he involved in the map trade at this juncture or was he too young? And how does Matthew Clarkson figure in this? Possibly, as he had a ready outlet for sales, Mary Biddle entered into a partnership with him. Legal or family records may yet shed some light on the role of Mary Scull Biddle and this intriguing episode in American cartographic history.

Mrs. Biddle, born in the reign of Queen Anne, lived to see President George Washington ride by her door (Biddle 1883, 24); she died in 1789, having been supported and cared for by her children. Her obituary appears in the May 20, 1789 issue of the Pennsylvania Gazette. Though it praised her piety and good sense, no mention was made of her selling or editing maps (Biddle 1883, 242).

Elizabeth Simcoe

The name of another eighteenth-century woman appears in Wallis (1973, 13), which lists a single reference to a Mrs. Simcoe: “The King’s Topographical Collection contains a wealth of plans and views . . . many illustrating forts and scenes of battle, others the peaceful development of a territory . . . such as the birch bark map and drawings by Mrs. Simcoe, wife of the Governor General of Upper Canada.” Here was a rare instance of a woman producing a manuscript map—and on birch bark, no less. Indeed, Mrs. Simcoe drew more than one map and deserves further notice than she has thus far received.

Elizabeth Posthuma Gwillim was the daughter of Col. Thomas Gwillim, an aide-de-camp to Wolfe at Quebec. Seven months after her father's death in 1766, Elizabeth was born and immediately orphaned as her mother died in childbirth (Simcoe 1965, 2). Raised by an aunt, Elizabeth was educated at home. Her legal guardian was another relative, Admiral Graves who was also godfather to John Graves Simcoe. Possibly Elizabeth and John met at family gatherings, or perhaps their marriage was arranged, but married they were in 1782 when she was just 16 and her bridegroom 30. He was a dashing army officer, having served with distinction during the American Revolution (Encyclopaedia Britannica, 11th ed.). To modern eyes this union may smack of “marriage à la mode” to keep Elizabeth’s considerable fortune under family control, but the two were a devoted couple who shared many interests.

Existing portraits suggest that Mrs. Simcoe was not a conventional beauty though a contemporary pen portrait describes an animated, intelligent person: she was “small and slight, not more than five feet tall . . . [with] sharp dark eyes in a small face with a strong
pointed chin.” Sharp is also used to describe other attributes. “[She has a] sharp interest in detail . . . a botanist, a gifted observer, and an artist with pen, pencil and water colour” (Simcoe 1965, 2). Indeed, Mrs. Simcoe’s artistic abilities rate her an entry in Women Artists in America and a group of her watercolors are located in the Sigmund Samuel Canadiana Gallery of the Ontario Archives, along with other Simcoe material.

In 1792 John Simcoe was appointed Lieutenant Governor of Upper Canada (now Ontario Province). Elizabeth decided to accompany her husband although Upper Canada was largely unsettled and considered somewhat dangerous; its climate was deemed unhealthy (Fowler 1977, 87-88) and its southern border was a potential source of friction with the fledgling United States, the Treaty of Paris notwithstanding.5 These conditions and the fact that ten years of marriage had produced six of the couple’s eventual 11 children did not deter Elizabeth. Leaving the four oldest children at the family estate in Devon under the care of a friend, the Simcoes sailed for Canada with their two year old daughter, three month old son, and a retinue of servants.

The family’s baggage was considerable and included the tent which Captain Cook had used on his last voyage—referred to by all as the “canvas house”—and a wooden “pentograph” purchased by Mrs. Simcoe in London just prior to their journey (Simcoe 1965, 16, 27).

During the years the Simcoes spent in Canada, Elizabeth traveled extensively with her husband, sometimes in an open boat on Lake Ontario, by sleigh, horseback, or in bone-jolting carriage rides over rough trails. It is our good fortune she kept a diary which she sent home in installments to her young daughters. The entries make lively reading, and the pages were embellished with little sketches and maps (Simcoe 1965, 24). Mrs. Simcoe also produced larger maps and watercolor views as presents for such luminaries as the Duke of York and the Prince Regent, as mementos to friends, and for her own amusement.

Mrs. Simcoe’s cartographic work did not go unnoticed; people such as Pitt’s under-secretary of state for foreign affairs received one of her sketch maps, enclosed in a letter from Lt. Gov. Simcoe (Martin 1977, 107). And the Duc de la Rochefoucauld-Liancourt, visiting Ontario in 1795, reported Elizabeth’s ability “to make maps and plans enables her to be extremely useful to the Governor” (Simcoe 1965, 19).

There are many references to maps in Mrs. Simcoe’s diary and from it we learn how Elizabeth used her time on the outward voyage. She drew a map of the Genesee Country, an area in western New York bordering Lake Ontario (Simcoe 1965, 32), which was of concern to her husband. Perhaps she used her new pantograph for this project.

The comments in Mrs. Simcoe’s diary could be astringent. Regarding the field surveyors—whom, it must be noted, were working under less than ideal conditions—she remarked, “The surveyors draw slowly and I am told when they want to suit their map to the Paper do not scruple cutting off a few miles of a River or adding to it” (Simcoe 1965, 54). She could appreciate good work, too as indicated by her entry for August 11, 1793. “Lt. Smith [the Acting Deputy Surveyor General] has drawn a fine map of the La Tranche River. From what has been surveyed it is proved that Charlevoix’s Map describes the Country with great truth” (Simcoe 1965, 104). A domestic mishap involving a map inspired some mock-serious verse from John, but Elizabeth’s prosaic entry tells the tale succinctly. “I left Trojan my Hound in my Room while I went to dinner and he tore to pieces my best Map of Canada and the United States which I had taken great pains to draw. I must paste it together again but its appearance is spoiled,” she reports with admirable understatement (Simcoe 1965, 83).

Although much original material by Mrs. Simcoe is housed at the National Archives of Canada and the Archives of Ontario, the famous birch bark map is at the British Library. It measures 48 x 80 cm. and is executed in ink and watercolors. It is a synthesis of her husband’s journeys between March, 1792 and

---

5 The famous birch bark map is at the British Library.”
Figure 1. Emma Hart Willard (1787-1870), founder of the Troy Female Seminary, published several atlases to accompany her popular histories and geographies.

September, 1795, and indicates proposed sites for cities and the like.

Throughout the article "Portrait of Mrs. Simcoe," Marian Fowler makes reference to the kind of education a young woman of Elizabeth's standing would have received, and how it would have affected her world view. It is obvious Elizabeth benefited from lessons in painting and drawing, but the question arises where did she develop her map drafting skills? Perhaps her own artistic abilities came into play, perhaps she acquired the knowledge through geography lessons from a governess, or perhaps John provided the necessary training. Elizabeth could not have been long out of the school room when they married. It is reported John "occupied himself in building a new house and laying out roads on the estate." The estate of 5,000 acres was purchased with Elizabeth's money and it is not hard to picture the newly married pair working out plans for the house and roads together. John's military training included map making, and his book *Journal of the Operations of the Queen's Rangers* (1787) contains several maps (Simcoe 1965, 3).

If Mrs. Simcoe produced any maps on her return to England, they would have been for her own use. Health problems kept John from active service—and Elizabeth from acting as his aide—until 1806 when he was appointed commander-in-chief of British forces in India. Mrs. Simcoe and her eldest daughter were preparing to accompany him when he died suddenly (*Encyclopaedia Britannica*, 11th ed.). Had he lived to take up his post, the King's Topographical collection might have been graced with further maps and sketches by Elizabeth Simcoe.

This was not to be. Like a prototype Queen Victoria, Mrs. Simcoe entered into a long widowhood (surviving her beloved John by 44 years), and intimidated her children (Simcoe 1965, 23). She maintained her interest in Canada, however, until her death in 1850 at age 84.

**Emma Hart Willard**

Mistress Farrar, Mrs. Simcoe and Mrs. Biddle have interesting personal histories, but their impact on the cartographic world was limited. On the other hand, educator Emma Hart Willard developed teaching methods which placed great emphasis on map use. These methods were outlined in popular geographies and histories and were later picked up in texts by Olney, Goodrich, Guyot, Fitch and Hall (Neitz 1961, 223).

Emma Hart was born in Connecticut in 1787, the 16th of 17 children. She was influenced by her father, a farmer and state legislator who shared with her his great love of classical literature. Emma was a bright and inquisitive child and received encouragement from her family in her studies. During her teens she alternated between teaching in village schools and furthering her own education (Lutz 1974, 2-8).

By age 20 Emma headed the Middlebury Female Academy in Vermont where she met Dr. John Willard, a widower. A romance bloomed and, despite the objections of his grown children, the May-December pair were married. Emma
Willard’s . . .

retired from teaching to start her own
family (Lutz 1974, 13, 19).

A few years later, around 1814, Dr.
Willard suffered financial reverses. With
some reluctance on his part, the Willards
opened a boarding school for girls in
their home, calling it the Middlebury
Female Academy (Lutz 1974, 4). The
reputation of the school grew, particularly
after the publication of Emma’s
Plan for Improving Female Education,
which appeared in 1818. “Mrs. Willard’s
work marked such an advance over
anything known before that her pamphlet
has appropriately been called the Magna
Carta of women’s education,” writes
Elizabeth Dexter (1950, 22).

By 1821 the school had moved by
invitation to Troy, New York, and been
renamed the Troy Female Seminary.
There Mrs. Willard further developed
her teaching techniques which used
maps extensively, not only for teaching
geography but history as well. She
decided to publish a new text based on
her successful classroom technique and
was assisted by a talented pupil (and
later instructor at the Seminary), Eliza­
abeth Sherrill, who drew maps to
accompany the text for this and possibly
other books by Willard (Fairbanks 1898,
104).

As is often the case with an idea
whose time has come, another innovator,
equally dissatisfied with current practice,
had undertaken a similar project. He was
William Channing Woodbridge, who had
taught at several leading institutions
including William and Mary. In 1821 he
published Rudiments of Geography . . .
(Dictionary of American Biography, s.v.
“Woodbridge, William Channing”) and
had begun work on another text. At this
point the educators collaborated resulting
in publication of A System of Universal
Geography on the Principles of Com­
parison and Clarification. Mrs. Willard’s
contribution to the work consisted of the
sections on ancient geography, problems
on globes, and rules for the “construction”
of maps (Lutz 1974, 40). The date
of publication is given variously as 1822
and 1824. The new system of teaching
advocated by Woodbridge and Willard
“produced a revolution in the method of
presenting geographical facts in the
schools” (Dictionary of American Biogra­
phy, s.v. “Woodbridge, William Chan­ ning”).

Mrs. Willard built on her initial suc­
cess and issued several geographies,
histories and other works which sold
well. Just before her official retirement
as principal of the Seminary in 1837 she
published A System of Universal History
in Perspective, Accompanied by an Atlas,
Exhibiting Chronology in a Picture of
Nations and Progressive Geography in a
Series of Maps. This book summarized
her teaching methods, which required
that each pupil demonstrate her under­
standing of the day’s lesson by drawing—
from memory—the appropriate map
on her slate, “marking the paths of
navigators and explorers, and the march
of armies” (Lutz 1974, 40). The pupil
would then give an oral explanation of
her map to the instructor and class­
mates. It is hard to envision a similar
performance from today’s students,
given the neglect geography has suffered
in recent decades in the American school
system. However, it apparently suited
the educational goals of our great-great­
going parents. The popularity of blank
maps used in other school geographies
by mid-century and even later may have
been inspired by the Willard method
(Fairbanks 1898, 16).

As one of the first institutions in this
country to prepare women for a teaching
career, Troy Seminary served as a
model for other schools. Mrs. Willard’s
influence did not end with her retire­
ment. She wrote and traveled exten­
sively on behalf of women’s education
and worked for the establishment of
normal schools (Lutz 1974, 20). Living
on campus until her death in 1870, she
remained a force at Troy, inviting new
pupils to tea (presaging Mr. Chips) and
keeping in touch with old students
through visits and correspondence.

A preliminary survey of the approxi­
mately 350 young women who attended
Troy during its first decade (1822-1832)
shows that more than 30 earned their
living by teaching. A few worked as
governesses or as staff members of an
existing institution, but most served as
principals and/or founders of schools
based on the Willard system. Troy had
enjoyed such prestige that the daughters of governors, senators, and other prominent people were enrolled there and the new schools attracted similar students. Over 7,000 young women were students at Troy during its first 75 years (Fairbanks 1898, 3), and biographical notes for a great many of them were gathered for an anniversary book published in 1898. Some of these notes are sketchy, yet they may serve as a starting point for tracing the spread of Emma Willard’s system.

**Other Mapmakers**

Use of maps is not restricted to teachers, of course. A student who attended Troy for one year only was responsible for publishing the first map printed in Chicago (Byrd 1966, 182; Danzer 1984, 22). Juliette Magill (1806-1870) married Indian agent John Kinzie, a man who survived the Fort Dearborn Massacre when a lad of nine. Mrs. Kinzie distilled the collective family reminiscences of that seminal event in Chicago history and produced a work which was for many years mistaken as a genuine eye-witness account (James 1971, 2:336-37). Published in 1844, the slim pamphlet *Narrative of the Massacre at Chicago August 15, 1812* contains a simple sketch map of the route of the doomed party from Fort Dearborn at the mouth of the Chicago River, south along the lake front. Although Mrs. Kinzie was a talented painter in watercolor (several of her paintings were reproduced in *Wau-bun*, her own book on the Black Hawk War period), her sketch map would not appear to strain the abilities of one who had been subjected to the curriculum at Troy Female Seminary. A large reproduction of this map appears in Danzer (1984, 14-15).

It will be noted there is no particular thread uniting these women—each was isolated from the others by time, distance, and the nature of her involvement with maps. Virginia Farrar was dedicated to helping the colony so closely associated with her family. Drawing and copying maps was Mrs. Simcoe’s way of assisting her husband’s career beyond the usual domestic graces, and may have been another outlet for her artistic inclinations. Mrs. Willard considered the problem of appropriate textbooks and attacked it with Yankee vigor and ingenuity. And Mrs. Kinzie’s map serves more of a literary function than a purely geographic one.

Was there a cartographic tradition for women? I believe the answer is yes, and Mrs. Biddle comes closest to following it. Most of the names of women known to us were those involved in the commercial side of map making—the engravers, colorists, publishers, printers, vendors. Like their European counterparts, American women in the pre-industrial period were expected to contribute to the economic well-being of the family unit (Clark [1919] 1968, 7). And where did they learn their trade? “Women acquired their skills the same way as did the men, through apprenticeship training, frequently within their own families” (Lerner 1979, 161).

Koeman, Pastoureau and Tyacke have produced excellent cartographic reference works, each containing information on women in the European map trade, but no comparable studies are available for this country. Hudak (1978) provides details on the careers of 25 early American women printers, and a few maps may be found among their thousands of imprints. It is possible more names will be discovered in all aspects of the map trade as further research is conducted on the pre-twentieth century business activities of women, both in Europe and the New World.”

Obviously fewer women participated in the American map trade than in Europe; however several additional American “map ladies” may be mentioned here:

Eliza Colles (1776-1799) engraved maps for two projects developed by her father Christopher Colles. They were *Survey of the Roads of the United States* (1789) and the *Geographical Ledger* (1794). Unfortunately, neither of these proved financially successful. A reproduction of a plate from the *Geographical Ledger* signed by Eliza appears in Ristow’s *Early American Atlases* (fig. 1-7). Little is known about Miss Colles but it is thought she died in the yellow
Figure 2. This map of Pennsylvania appeared in the 1810 edition of *The New Encyclopedia* and bears the imprint of New York Printer E(uther) Low.
fever epidemic of 1799 (Ristow 1979, 333).

Elizabeth Lenthall married engraver William J. Stone and is mentioned in various art reference books as an adjunct of her husband. "His wife also engraved maps" is a typical comment (Grocce and Wallace 1957, 607). One of her maps is entitled "Map of the City of Washington. Published by John Brannan 1828. Drawn by F.C. de Krafft, city survey. Engd by Mrs. W.I. Stone." It is described by Phillips as "cleanly engraved," and he also reports it was reprinted in 1833 (Phillips 1917, 58-59). Fielding (1986, 621) notes that William D. Morrison published a map of the city in 1840 which bears the credit line of Mrs. Stone. Elizabeth had many associations with Washington, D.C. as she was the niece of Nicholas King, surveyor and friend of Jefferson, and her father served as superintendent of construction under Latrobe during the building of the Capitol (Ehrenberg 1971, 45, 59).

Esther Lowe, or Low, was probably the widow of John Lowe, a New York City publisher (Hudak 1978, 687). In 1810 she reissued his New Encyclopedia and several maps that work carry the imprint of E. Low. The peripatetic Mrs. Lowe conducted business from four different addresses during the five years she is listed in the New York City Directory (1810-1815). Esther is also listed in Wheat and Brun (1978, 41).

Lydia Bailey (1779-1869) of Philadelphia was, perhaps, the most prolific of early women printers. She took up her late husband’s business in 1808 and ran it until her retirement in the 1860s, serving as city printer for many years under Whig administrations (Hudak 1978, 613). In 1830 Mrs. Bailey printed A Connected View of the Whole Internal Navigation of the United States for “a citizen” (George Armroyd). The book contains a handsome folding map of the United States, re-engraved after Tanner. The map in the Newberry Library copy is hand colored.

Roxanne Farmer, her daughter Esther and sons John and Silas did business under the name “R. Farmer & Company” after her husband’s tragic death in 1859 (Ristow 1985, 276-77). In 1862 Mrs. Farmer issued Farmer’s Rail Road Map . . . of Michigan and Chart of the Lake . . . The following year Silas bought the company from his mother and siblings. He later published a history of Detroit; although he writes about Roxanne he says nothing of her business activities, listing only involvement with her church and the local orphanage (Farmer [1890] 1969, 651-52).

**Conclusion**

Other names could have been cited, but these few will serve to represent the many women who worked with maps during the seventeenth, eighteenth, and nineteenth centuries. In the past women were neither permitted nor prepared to conduct field surveys, explore uncharted lands, or even devise map projections. Still, they had a role to play. They were capable of compiling cartographic information, of engraving maps, of printing, publishing and selling maps, and did so on a regular basis. When opportunity for participating in those areas decreased, women turned to teaching map drawing and usage, and to writing texts in which maps were an important component.

The intention of this article is to increase awareness of women’s activities in all aspects of map making. If the maps of Virginia Farrar or Elizabeth Simcoe seem more interesting than the mundane work of tradeswomen Bailey, Colles, Lowe—or even author/teacher Willard—we should remember each woman’s contribution enriches our knowledge of the history of cartography. Like Alice Hudson (1989), I look forward to seeing more research conducted in this previously neglected field.

NOTES

The author wishes to acknowledge the assistance of Jim Ackerman and Robert W. Karrow, Jr. of the Newberry Library, Edward H. Dahl of the National Archives of Canada, Sara Schechner Genuth of the Adler Planetarium, and Barbara Wyle of the Emma Willard School.

1. See also Verner (1950) and Black (1976).

2. Carter (1893, 126-27) reports that for one year the "daughter of a Cambridge bookbinder" lived at the Manor house, teaching her own daughter to the girls at Little Gidding. She was probably the daughter of Thomas or John Black, brothers who were printers and bookbinders active in Cambridge ca. 1625-1670. See Plummer (1977). At least one example of Virginia's work survived to this century; it was a fine binding for a Harmony of the Four Gospels, executed and inscribed by her in 1649 when she was but 12 years old (Carter 1893, 127).

3. Nicholas and his mother named John's infat daughter "... out of their affection to the... plantation of Virginia... so that speaking unto her, looking upon her, or hearing others call her by name, he [John] might think of both at once..." (Carter 1893, 119)—a very pretty metaphorical conceit, appropriate from one who was a friend of the poet George Herbert. Later, John suspected another reason for Nicholas's selection of the name Virginia, and hinted it was the young girl who was a virgin (Maycock 1938, 167). What Mrs. John Farrar thought of this is not recorded.

4. Todd (1959, 572) describes William as Nicholas's son. Scull was the father of five sons, none of them named William (Biddle 1883, 389); probably William was a grandson.

5. It is well to remember that during much of the Simcoes' stay in Ontario, Mad Anthony Wayne was conducting his Indian campaigns (1790-1795) and that at times the "general conduct of the British fell barely short of open alliance" with the tribes fighting the U.S. At the same time, nearly 40,000 Loyalists had emigrated to Upper Canada and New Brunswick, many of them understandably harboring anti-American feelings (Andrews 1962, 148, 1904).

6. Not only did teachers trained at the Seminary work throughout the United States, but they established themselves in schools in Bogota, Columbia and Athens, Greece. In 1896 Congressmen Chancery Depew praised Mrs. Willard's work, stating her influence helped wear down "the prejudices against women's education" and conditions of the most conservative nations; it created Girton and Newnham Colleges under the shadows of Oxford and Cambridge..." (Fairbanks 1886, 14, 19, 24).

7. In addition to books already cited on women's position in pre-twentieth century society, Helga Mobius (1984) and Antonia Fraser (1986) provide many details on this topic.

8. A private conversation with a descendant of Christopher Colles, knowledgeable in his family's history, revealed no new information about Eliza.

LITERATURE CITED


Fairbanks, Mrs. A. W. 1889. Emma Willard and Her Pupils, or Fifty Years of Troy Female Seminary, 1822-1872. New York: Mrs. Russell Sage.


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Voyage to the Holy Land: The World’s First Illustrated Travel Book

By David A. Cobb

Bernhard von Breydenbach’s 1483 pilgrimage to the Holy Land is described in his 1486 publication, Peregrinatio in Terram Sanctam. The book quickly became a European best-seller and is famous for many firsts, including its exceptional woodblock illustrations.

From the earliest days of Christianity annual pilgrimages to the Holy Land had been increasingly popular among Europeans. Included in the voyages were nobility, members of religious sects, and ordinary citizens who would all face the hardships buoyed by their idealism. The Crusades had served the early wanderlust and now the pilgrimage returned as a worthy substitute. Although some have suggested differently, the writings from these pilgrimages added greatly to the cultural and geographical knowledge of the area. The manuscript writings of William Wey and Felix Fabri were copied many times and used by numerous travelers. Wey is also known for his large, colorful map of the Holy Land, albeit it somewhat fanciful (Wey, 1857). Few other maps have survived from this early period and those which have, such as the Isidore 1472 T-O world map, are compiled from religious sources emphasizing the importance of Jerusalem by placing it at the center of the world.

The most significant of these pilgrimage writings was first printed in Mainz on February 11, 1486. Bernhard von Breydenbach’s Peregrinatio in Terram Sanctam represents one of the finest illustrated books of the fifteenth century and is considered the first illustrated travel book (Davies 1962; Davies 1911). Breydenbach apparently undertook this pilgrimage to atone for the sins of his youth. He was at the time a canon at the Cathedral of Mainz. Breydenbach began his voyages in the spring of 1483 accompanied by another 150 pilgrims. Breydenbach’s pilgrimage was unique because he had the foresight to commission an artist-engraver to accompany him and thus to preserve the voyage in illustrations. Erhard Reuwich from Utrecht is the first single painter to supervise the printing of an individual book. He is also the first to accurately depict the famous places visited. The book is more than a mere description of the voyage as it also includes a description of Palestine, the fall of Constantinople, the life of Mohammed and various laws and customs of the region.

Breydenbach and Reuwich remained in the Holy Land for nearly six weeks and travelled to Mount Sinai, the Red Sea, Cairo and Alexandria. They returned to Venice on January 5, 1484 and immediately set upon publishing the account of their trip. Breydenbach employed Martin Roth of Heidelberg to compile the text of the first Latin edition to accompany Reuwich’s illustrations.1 From its first printing, the Peregrinatio was a success, with a German edition published only four months later and subsequent editions through 1505.

The volume opens with the frontispiece of a woman representing Mainz with the coats of arms of Breydenbach and of two friends who accompanied him to the Holy Land. Hind (1935, 356) describes this illustration as the finest example of allegorical and heraldic decoration produced in Germany during the
... the earliest evidence of cross-hatching in a woodcut.

Breydenbach frontispiece. (Courtesy of the University of Illinois at Urbana-Champaign).

The town of Parenza is depicted in the next view. It is located almost due east of Venice across the Adriatic in Yugoslavia, and is now named Porec. The view shows the town’s fortified walls and its famous Byzantine cathedral.

The view of Corfu, measuring 30.5 × 41 cm, accurately depicts the harbor area of Kerkira, the island’s capital. The island came under the control of the Venetian republic in 1386 and was an important port of supply for the pilgrimages.

Modon (Methoni) was the next stop on the Breydenbach voyage. Located on the southwest Peloponnesus, on the Ionian Sea, the city was known for its splendid fortifications. The view includes not only ships and the docks, but also people, animals, crates, wine casks, and windmills.

The ship then moved on to Candia on the island of Crete, where pilgrims’ galleys stopped for supplies. The city’s massive fortifications, arsenal, and cathedral date from the earliest Venetian occupation.

Rhodes was one of the most popular stops for pilgrimages because of its renowned hospitality and international population. The walled castle, which dominates the view of Rhodes, was constructed by the Knights of Saint John of Jerusalem. The “City of the Knights” is reputed to be the finest example of medieval fortification in the world.

Although the city views are replete with buildings, the only one to be shown more than once is the Holy Sepulchre, which Reuwich includes in two separate illustrations. The Sepulchre was the goal of all pilgrims and Reuwich’s woodcuts verify the significance of this structure.

The text is printed in a handsome German Gothic type. With only one exception the initial letters are supplied in red or blue by contemporary hand. Large missal type introduces the pilgrimage to Mount Sinai and the Shrine of Saint Katherine.

Reuwich also prepared six woodcuts illustrating the different nationalities in the region. Pollard (1964, 115) however, laments:

"Unfortunately, far too much of [Reuwich’s] labour was spent on great
maps or views of Venice, Parenzo, Rhodes, and other places passed on the way. But in the text of book there are just a few sketches from the life, Jewish moneylenders, and groups of Saracens, Syrians, Indians, etc.; and these are so vivid and vigorous that we may well regret that the labour bestowed on the great maps left time for very few of them."

These oblong cuts are the first definitive attempt to represent persons in a lifelike way and drawn from actual observation. The first of these shows a gathering of Saracens and a woman with a cage-like veil hiding her face. On the same page is believed to be the first printing of the Arabic alphabet. Examples of other alphabets found throughout the text are Hebrew, Greek, Syriac, Coptic, and Ethiopic, some of which may also be the first printings. Additional realistic cuts also include those showing Jews, Greeks, Syrians, Abyssinians and a group of resplendent Turkish jannissaries on horseback.

Perhaps Pollard’s critique of Reuwich for spending too much effort on the views has some validity despite our admiration for them. It is possible that Breydenbach rushed Reuwich to publication, pressuring him to finish the views, but to leave out some other woodcuts. Should a woodcut showing Armenians belong in the blank space above the text describing Armenians? Additional illustrations do not appear in later editions either, including Reuwich’s German edition published four months later. Is it coincidence that these blanks, numbering five, are all above the nationality descriptions? We shall probably never know, but their absence is intriguing.

Although not the largest, the most magnificent illustration in the book is of Palestine. Most authorities classify this as the first printed map of the Holy Land drawn from actual observation (Neben-
... perhaps the first printing of a recipe to cure sea-sickness.

It is a most unusual example of superimposition, with the view of Jerusalem placed in the center of the map at an exaggerated scale. Furthermore, the view of Jerusalem is oriented from the east while the map in the background is viewed from the west.

A more detailed view of Jerusalem is dominated by the Temple of Solomon drawn with a pointed dome; the temple is actually covered by a rounded one. Also shown are the Holy Sepulchre and, just to its left, the “Hospital” where pilgrims visiting Jerusalem could rest, and the Tower of David.

As previously mentioned, Breydenbach and Reuwich extended their stay in the Holy Land to visit Mount Sinai and Egypt. Reuwich attempted to provide details for this region on his map of Palestine by showing Sinai, the monastery of Saint Katherine, “Mare Rubrum” or the Red Sea, and details of Egypt including the Nile, Cairo, and Alexandria.

The remaining text illustrates Breydenbach’s natural curiosity, which goes beyond simply recording his pilgrimage to the Holy Land. On the verso of the Jerusalem view is a full page woodcut showing animals supposedly seen on the voyage. Some, such as the giraffe, crocodile and camel, are meticulously accurate and easily recognizable. However, the appearance of a unicorn seriously questions the credibility of Reuwich or Breydenbach.

Two tables follow: the first being two pages recording the distances of the itinerary from Venice; the second a two page vocabulary of “Saracen” words with their Latin equivalents. Finally, and possibly most important for future sea-voyagers, is perhaps the first printing of a recipe to cure sea-sickness.

Research continues on the paper and
its watermark: a bull topped with a tau cross. Preliminary findings suggest that the paper was made in Rappoltsweiler (now Ribeauville) southwest of Strasbourg.

The known "firsts" for the Breydenbach work place it as a significant volume in the history of cartography and medieval illustration. It is the first illustrated travel book ever printed; the first book to include folding plates; the first authentic representation of famous places visited; the first instance in which a single painter drew the illustrations for a book; the first printed map of Palestine from actual observation; it includes the first woodcuts to use cross-hatching; and it includes the first printing of the Arabic alphabet and probably others as well.

Soon after Breydenbach's pilgrimage, travel to the Holy Land became more dangerous with the rise of the Ottoman Empire, the fall of Rhodes, and Turkish control of Jerusalem. Therefore, at the end of the fifteenth century, the Breydenbach volume stands as the most accurate delineation of Palestine and Jerusalem and remained so until the appearance of Ortelius' Theatrum Orbis Terrarum and Braun and Hogenberg's Civitates Orbis Terrarum in the 1570s. The influence of Breydenbach is best summarized by Pollard (1964, 115) when he states, "With the Mainz Breidenbach we feel that we have passed away from the naive craftsmanship of the earliest illustrated books into a region of conscious art."

David A. Cobb is Map and Geography Librarian at the University of Illinois Library, Urbana-Champaign. This is a revision of a paper he presented at the MAGERT annual conference in July 1988. The MS submitted February, 1989.

NOTE
1. The University of Illinois recently acquired this first Latin edition to celebrate the acquisition of its seven millionth volume. It is an unusually tall copy, measuring 30.5 x 21.5 cm, has been expertly restored and bound in a Riviere brown morocco including floral lozenges and five raised hands on the spine. The copy originates from Francis Egerton, heir to the Earl of Bridgewater Library and was also owned by Lucius Wilmerd- ing and more recently by Eric Sexton.

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National Geographic Society, Cartographic Division. Supplement to National Geographic, December 1988, Vol. 174, No. 6, Page 910A.
73.5 x 116.5 cm. Scale 1:30,840,000.
Robinson projection.

In a century of publication National Geographic (Magazine) has been supplemented with over a dozen world maps. The first of these sheets appeared in 1896, accompanying an article on "The Submarine Cables of the World." On the Mercator projection, this map was a "facsimile" of U. S. Hydrographic Office chart 1530 (Herrle 1896, 107). The second was offered to the 3,400 members of the Society in 1905; again, "through the courtesy of the Hydrographic Office of the Navy Department . . . a chart of the world on Mercator's projection, showing the submarine cable lines and their connections and ocean routes" [NGM 1905] was provided.

The 1922 map supplement, the first prepared by the Society staff for general reference, was presented on the Van der Grinten projection. "The product of several years of research and labor," the Society pointed out that the new map "materially reduces distortions of size and shape, the most serious defects in the familiar Mercator projection" [NGM 1922.] The Van der Grinten became the mainstay of the world maps of the Society and was used with only a few exceptions until December 1988.

At that time, after having carefully assayed the serviceability of more than twenty projections and with fanfare in both the popular and the professional press, the Society adopted the Robinson projection for its world map. In a four-page article introducing the map, the Chief Cartographer of the Society, John B. Garver, Jr., summarized the situation succinctly: "In the combination of shape and area [the Robinson projection] matches reality more closely than its venerable predecessor. . . . we believe that its compromises are the most reasonable for a general reference map of the world" [Garver 1988, 913].

The Robinson projection is part of the continuing cartographic struggle to solve the problem of portraying effectively the earth's spherical surface on a flat sheet. National Geographic has a circulation of over 10,000,000. If only a small percentage of these subscribers use the map and organize their personal "mental maps" using Robinson's geographical structure, then a considerable number of people will have a more accurate image of the relative sizes of things on the surface of the earth. This map has an extraordinary potential.

CHARACTERISTICS OF THE PROJECTION
"A globe is an accurate model of the earth and is the only possible medium of showing all geographical relationships truly. But globes have their practical drawbacks. . . . Hence systems of projections, based on the geometry or trigonometry of the sphere, have been devised through the centuries to help the map-maker cope with this problem as well as possible . . . a spherical surface cannot be reproduced with perfect accuracy on a flat surface. [Map projections] are really common-sense solutions of an insoluble problem. . . . A projection represents a map-maker's effort to show all or part of the spherical earth on a flat surface in a way which best suits the purpose for which the map is made." [Chamberlin 1947, 52-53]

The Robinson projection is a compromise; it seeks to minimize the distortion of shapes which occurs when the sphere is transformed to a plane while, at the same time, hold size variations to a minimum. This is an impossible task, for these properties cannot both be retained in the conversion. To understand the...
map, the nine characteristics “deemed desirable or mandatory” by Rand McNally when the specifications for the new projection were first considered in 1961 are important; these are discussed thoroughly in “A New Map Projection: Its Development and Characteristics” [Robinson 1974, 147-48]:

a) The projection system should be appropriate for either a wall map display or a small-scale atlas map.
b) The entire earth must be shown in uninterrupted form.
c) Each major continent must appear essentially as a unit, that is, be located in its entirety in one section of the projection.
d) The major continents should have the least possible appearance of shearing, that is, noticeable angular deformation.
e) The major continents should have, within their extent, the least possible apparent change of area scale.
f) Each of the continents should appear to be approximately its correct relative size.
g) The graticule should appear simple and straightforward.
h) The outer limit or overall shape of the projection should be suitable for a sheet format with a proportion of approximately 1.4 to 1.0, with some of the vertical space to be used for extra material, such as polar maps, legend, title, etc.
i) The system should be suitable for use by readers of all ages, that is, the projection should minimize the possibility of inducing lasting erroneous impressions, such as might result, for example, from the marked variation in area scale of the conventional form of Mercator’s projection.

These characteristics yielded a series of specifications which “describe, in general terms, an uninterrupted, non-equal-area, pseudo-cylindrical projection, with the poles being lines rather than points, and with straight line parallels evenly divided by the meridians” [Robinson 1974, 149]. The projection was developed using an “iterative process, a sort of graphic successive approximation, . . . repeated until it became obvious that further adjustment would produce no improvement, at least to the eyes of the author” [Robinson 1974, 152].

If one examines the distribution of areal deformation and angular distortion, familiar patterns emerge. The projection has little deformation and distortion at the center but there is significant size exaggeration and shape distortion in the high latitudes and polar regions. As is the case with pseudo-cylindrical projections, angular deformation is great in the higher latitudes; further, by design, areal exaggeration is significant in these areas as well.

While the pattern of angular deformation (figure 1) is that presented by Robinson (1974), the pattern of areal exaggeration has been redeveloped for presentation here. Robinson points out that, conceptually, the standard lines for the projection are the thirty-eighth parallels; these are the same length as the parallels on a sphere with a surface equal in area to that of the projection. Thus, along these “standard lines,” the areal scale factor is considered to be 1.0; while the areal scale increases poleward, it decreases toward the equator. At the equator the scale of the projection is about twenty percent smaller than along these standard lines; it increases poleward and along the eighty-fifth parallel, it is 228 percent larger. “It is worth noting that more than 75% of the earth’s surface is shown with less than a 20% departure from its true size” [Robinson, 1974, 154]. There is, however, in this “departure” a 40 percent difference in size. If one looks at relative size relationships using the equator as the benchmark for developing the comparison, then the areal exaggeration is over 400 percent at the eighty-fifth parallel (figure 2).”

CONTEXT
Without an extensive review of the history of map projections, it is impossible to explore all of the factors which provide a context for the Robinson projection. Several key points can, however, be made.

... the projection should minimize the possibility of inducing lasting erroneous impressions ...
It seems that every discussion of map projections begins with Mercator. To be sure, there were world projections before 1569, but none has had so great an impact as this sixteenth-century masterpiece. There were a variety of equivalent projections produced after Mercator, but the historical precedence of his conformal perspective established it thoroughly and maintained it as the principal structure for world maps for centuries.

Compromises (Van der Grinten and Miller), interruptions (Goode’s Homolosine), and different orientations (Briesemeister) are primarily twentieth-century ventures, for it has been principally within the past century that geographers (and others) have sought suitable alternative solutions to “the impossible problem” (figure 3). “There is no single solution ... it is simply a matter of finding [the projection] that best suits the purpose” [Garver 1988, 912]. It is in this context that the Robinson projection fits. Given the purpose (general reference map of the world), the assets and liabilities of all of the projections available (and possible), and the legacy established by the Van der Grinten, not only is the graphic structure inviting but also the thoroughness of Robinson’s logic is persuasive.

CLAIMS

We must view statements made about map projections cautiously. Robinson’s position and procedures, set down in his 1974 article, are straightforward. In the article accompanying the new map, Garver notes that this is “a different and more realistic view of the world” [1988, 911]. From the perspective of the National Geographic Society, it is, indeed, different and more realistic. It is markedly different than the Van der Grinten (a point which the Society’s news releases make forcefully; figure 4): There is considerably less areal exaggeration overall, and the exaggerations of the sizes of areas in the high latitudes and polar regions have been much reduced. On the other hand, while there is considerably less shape (i.e., angular) distortion on the Van der Grinten, angular deformation is a less important factor in a map for this purpose.²

Size variation was a major focus of the publication announcement, and (as was pointed out above) it is important to recognize that the amount of size variation among the areas on the projection is actually greater than indicated, for some areas have been reduced in size while others are enlarged.

Garver concludes that the Robinson projection “does not espouse any special point of view, and we [the National Geographic Society] believe that its compromises are the most reasonable for a general reference map of the world” [1988, 913]. If this is not “the most reasonable” choice for a new projection for a map of this type, it is a solution which has been very carefully considered.

I cannot agree with Garver, however, that “the projection does not espouse any special point of view,” for, indeed, it does. It takes the position that a general
OTHER ISSUES, INCLUDING LAYOUT AND DESIGN

While this review is concerned primarily with the projection used for *The World*, several other aspects of this map supplement require comment.

The essay, "Endangered Earth" (one large and five small maps, along with a graph and considerable text), which appears on the reverse side of *The World* could be examined at some length. For our purposes, the most significant aspect of this essay is the fact that it presents data for the world on three maps, using the Mollweide (an equal-area) projection.

Rand McNally has used the Robinson projection for small-scale topical maps, in both *Goode’s World Atlas* and *The International Atlas*. On *The World* the two topical maps use the Interrupted Goode Homolosine projection. (Garver [personal communication] points out that the National Geographic Society has as a goal for its reference maps the use of a wide variety of projections).

Continuing the tradition of including two inset maps of the polar regions, the Society has positioned the north polar region map in an orientation such that the North Atlantic Ocean is the most truncated sector of the map. Repositioning the map would have made it possible to provide a clearer view of a most important area for the American reader.

Grinten is one of a number of compromises that curried favor; it reduced the extreme size exaggeration found on the Mercator and avoided the extreme shape distortions which mark the equivalent projections. The Robinson projection reduces these size exaggerations further, but does not eliminate them—thus it is not so extreme in the compression and shearing of shapes in the higher latitudes, the situation which characterizes equal-area projections (a point which is emphasized by both Robinson and Garver). Shearing and compression are, among other problems, characteristics of the Peters (or, more correctly, the Gall-Peters) projection which has generated considerable discussion [Peters, 1983; Robinson, 1985 and 1987].

Every map is a product, a reflection, of the culture which produced it. The Mercator grew from an exploration-oriented, maritime-based world; it has the properties critical to that purpose. That it dominated the "world map scene" for so long is not surprising, for it was only with the emergence of educational programs in geography that consideration of different perspectives became fashionable. The Van der
There are two hemispheric maps (using the orthographic projection), one eastern and one western, showing in pictorial form the relief of the land surface and oceanic floor. These are not titled or annotated in any way, and there is no indication of the scale or the projection which was used.

*The World* has always included from two to six small scale topical maps; here religion and population density are shown. As was noted above, the Eckert (and, in some instances the Mercator) projection used for these types of maps on earlier editions has been replaced with the Interrupted Goode’s Homolosine. In the effort to increase the scales of these two maps, portions of them cover the graticule designations along the bottom of the map as well as portions of Antarctica.

Wind and current information were last presented on the oceans in the 1970 map supplement; these were omitted in 1975 and there has been considerable generalization in the representation of ocean floor features since that time, providing a much cleaner appearance for these parts of the map. The 1988 map continues this trend and oceanic areas now provide a good background for land features and their labels.

The design (symbolization, typography, etc.) of the map itself deserves attention. While the style of *The World* has evolved to its present form over half a century, there are significant changes in the content and graphic structure of this map when compared to its predecessors. One expects a particular graphic style (especially in the use of color and typography) from the National Geographic Society; this style will be found here. It is accompanied, however, by considerable simplification; there are fewer place names on the map than in earlier versions, and linear features (e.g., coastlines) are more generalized.

Garver [personal communication] points out that uninhabited or sparsely inhabited areas will no longer be filled with names of places. If one compares the 1981 map with the new version, a reduction from 64 to 46 names will be found in Algeria, Mali and Niger. A similar reduction in the number of names can be found elsewhere (for example, the number of names in Iceland has been reduced from 25 to 11; further, San Sebastian and Huelva no longer appear in Spain, and San Angelo, Wichita Falls and Port Arthur are no longer mapped in Texas—but Lubbock and Odessa are).

Finally, even though there are areas outside the map itself where such information could have been displayed, the names of the 28 members of the
Society staff who developed the new map are printed on the surface of Wilkes Land (Antarctica). Similarly, there is a note about “Map Projections” printed in the Indian Ocean. Scales and other legend information are, in traditional fashion, printed in the South Pacific Ocean. For this reviewer, these are annoying disturbances of the map surface; it would seem that all of them could have been avoided.

SUMMARY

For 66 years the Van der Grinten was the world projection of the National Geographic Society—this was a response by the Society to the Mercator projection, which had been the standard for mapping the world for centuries. In adopting the Robinson projection, the Society has chosen to reduce the areal exaggeration on its world maps significantly; by doing this the “pendulum” has shifted closer to equivalence of area, distorting shape (i.e., increasing angular deformation) significantly. Robinson’s approach to the “impossible problem” is a significant change in spatial perspective. This and the reduced amount of information shown on the map are important innovations in a tradition which has been characterized by accuracy, currency and utility. In its new form and design The World should be just as useful as its predecessors, if not more so.

NOTES

1. Consult, for further explanation and examples, Elements of Cartography, by Robinson et al., 1984. For a more extensive perspective on pseudo-cylindrical projections, see Snyder, 1977.
2. Snyder (1987, 242) points out that “the formulas for scale factors [on the Van der Grinten] are quite lengthy.” Lacking these, it is not possible to say exactly how much angular deformation difference there is between the two projections. It is obvious, from a visual examination, that there is much more on the Robinson projection.

LITERATURE CITED


George F. McCleary, Jr.
Department of Geography
University of Kansas
Lawrence, KS
[World map of 1448].
Andreas Walpersger
43 cm in diameter on sheet 73.5×59.5 cm.
(Accompanying English pamphlet: ISBN 1-55928-039-5.) $100.00.

[Marine map of the Mediterranean Sea and part of the North Atlantic Ocean, 1508].
Andrea Benincasa
61×96 cm, on sheet 64.2×99.3 cm.
(Accompanying English pamphlet: ISBN 1-55928-034-4.) $120.00.

[Marine map of the Mediterranean Sea and part of the North Atlantic Ocean, 1497].
Jehuda Ben Zara
65×92 cm, on sheet 67×106 cm.
(Accompanying English pamphlet: ISBN 1-55928-033-6.) $100.00.

Additional publication information for the three above maps: [Yorktown Heights, N.Y.: Belser Inc., 1988]. ([Belser Facsimile Editions from the Vatican Library]).

Reviewing facsimiles of maps is not an exercise in map reviewing in the usual sense. The three maps under review here have been in existence for about five centuries and should be above both praise and reproach. What can be examined, however, is the facsimiles as publications in their own right, considering such aspects as the appropriateness of the selection, the quality of the facsimiles, their visual appeal, and the relevance and usefulness of any accompanying textual material.

The original charts in the Vatican Library are obviously objects of great beauty; great care has been taken in producing these facsimiles to not lose any of the aesthetic qualities of the originals. Modern printing technology, including the laser scanner, have been put to good use to reproduce the originals' subtle colors and tones, and the text and drawings are probably as clear as we can ever expect to see them short of having the originals before us.
The backs of the charts have also been photographed and that image has then been printed on the backs of the facsimiles. The originals of all three are drawn on animal hides; the facsimiles are printed on “special tear-proof paper” that has a feel resembling that of the original skins.

(A sheet accompanying each facsimile declares it to be “an exact reproduction” of the original, a statement that must be accepted with “we know what you mean” since the facsimiles under magnification are seen to be composed of dots of the three primary colors, with some black added.)

I claim no special expertise in the cartography of the era represented by these maps. Reading the texts that accompany these facsimiles and supplementing this with some of the “suggested readings” mentioned at the ends of the essays (and, most important, with David Woodward’s chapter on medieval mappaemundi and Tony Campbell’s on pre-1500, published in History of Cartography (Harley and Woodward 1987) after the appearance of these facsimiles), one readily becomes aware of the importance of these works. The corpus of charts and maps of this early period is small; with the broad study in which we can now engage, these documents can be appreciated as remarkably rich sources of information about, and insight into, the perceptions of their makers and the times in which they were made.

Every map collection that aims to be in some sense comprehensive needs several selected examples of significant maps representative of different periods, cultures, types and so forth. No attempt should be made to collect all of these early maps unless one’s collection is specializing in such material, or a year-end surplus of funds leaves one looking for nice pieces on which to splurge. If seeking to acquire such a selection, map curators will probably not regret spending money on the facsimiles discussed here.

And if you do purchase any or all of these, it would be wise not to merely frame or file them, but rather to familiarize yourself with them by working through some of the secondary literature recommended, especially the chapter mentioned by Woodward and Campbell. The charts deserve it; the effort will be richly rewarded.

LITERATURE CITED


Edward H. Dahl
Early Cartography Specialist
National Archives of Canada
Ottawa, Ontario
Historical Atlas of the United States.
By the National Geographic Society (U.S.)
289 pages.
$59.95; 0-87044-748-3 (deluxe edition
with slipcase and 17 map portfolio)
$74.95.

The Historical Atlas of the United States, like the nation whose history it portrays, is so rich in its variety and
texture, that one hardly knows where to begin a review. This is a work which
should be in every reference collection and every map collection of every library
in the country. Doubtless, it will also find its way into the hands of historians both
professional and amateur, and a place on
many coffee tables. All of which is to say
that the Historical Atlas is a work which
can be used, and enjoyed, by a wide
variety of readers.

Presenting the entire history of the
United States in a single volume, ori
tented towards graphics rather than text,
is a daunting task. The editors have
elected to simplify matters by hewing to
a straight factual approach, avoiding, by
and large, any excursions into interpreta-
tion, or addressing any historical contro-
versies. They have succeeded admirably,
with one conceptual failing discussed
below, in their task.

When confronted with a project of any
magnitude, any historian may elect either
a straight chronological approach, or take
up the subject in a series of thematic
essays. The Historical Atlas adopts both
approaches, alternating thematic sections
with chronological ones. There are six
thematic sections: land, people, bound-
daries, economy, networks, and commu-
nities, all with coverage into the 1980's
where appropriate. The thematic sec-
tions are separated by chronological
essays, covering 1400-1606, 1607-1788,

Both externally and internally the
thematic sections of the Historical Atlas
move from the general to the particular.
Thus the atlas starts with unpopulated
land, adds people, organizes the people
into regions, creates the economic
framework, the communications net-
work, and finally analyzes communities
which combine all the previous elements
in one locale. Internally the various
articles are structured in a similar
fashion. In the section on land, for
instance, we move from large, continent
wide topics (landforms, climate, hydro-
logy) through more localized matters
such as flora and fauna, to finally
consider the human impact on the
environment. The Historical Atlas does
not hesitate to present the negative
aspects of the latter. A two page (16-17)
section is titled "The Natural Heritage
Under Stress," and contains a box titled
"Eden Made Hell in a Century" which
deals with the effect of coal mining in
Eastern Kentucky.

The chronological sections use a split
page format to present information. The
top three-fourths of the page contains
textual and illustrative material that
addresses the topic, while the bottom one-
fourth of the page carries a chronological
time line detailing dates and events.
Pages 168-169, for instance, cover
the Civil War to Vicksburg (a heading,
incidentally, showing that the editors
recognize that the fall of Vicksburg was
more important strategically than Lee's
retreat from Gettysburg on the same
day). The top of the page contains a two
column essay, a contemporary Civil War
map of Vicksburg, a modern map show-
ing troop movements and battles through
1863, five illustrations, and a graph. The
top bottom line starts in February 1861
and continues through June of 1863.
Major battles and events are dated, but
so are little bits of minor history: in 1861
brass sax horns (a cross between a tuba
and a trumpet) were made by the
Wurlitzer company under contract to the
Union Army; a shipment of Lucy Ann dolls was used to conceal quinine being smuggled into the Confederacy in 1863.

The thematic sections of the book are the longest—193 pages or 72% of the material. The chronology occupies 60 pages or 22%, the balance being taken up by a U.S. map, an extensive bibliography, a list of consultants, and an excellent index.

The book is designed so that the two facing pages are integrated both textually and artistically. Instead of two 18- by 12-inch units of information the reader looks at a single 18- by 24-inch combination of text and illustrated matter dealing with a single topic, or limited time period. While the designers have, for the most part, avoided having critical data disappear into the gutter, there are the occasional lapses. The gutter runs right down the middle of Lake Michigan in the reproduction of Franquelin’s 1688 “Carte de l’Americre Septionale” on pages 78-79, for instance.

Each topic or time period usually contains a textual essay, maps both new and old, illustrations (photographs and/or paintings or drawings) and occasionally statistical charts to supplement the text. One of the articles about Chicago (pages 250-251) contains seven new maps drawn for the article, a 1933 railroad map of the downtown area, five pictures (including a portrait of Al Capone), all supplementing a 350 word article.

The editors have clearly made good use of their Washington, D.C., location to provide illustrative material for the Historical Atlas. Many of the historical maps used have the Library of Congress property stamp visible on them. A reading of the bibliography and list of sources (pages 260-273) indicates that the Library of Congress, various national galleries, the National Archives, various units of the Smithsonian, and other government agencies all provided material for the Historical Atlas. The editors did not stop in Washington, however. Also noted as sources, among many others, are the Bodleian Library, the Royal Library at Windsor Castle, the Woodstock, Vermont, Historical Society, and the Bishop Museum in Honolulu. The result is a rich combination of historical maps and illustrations to accompany the new material drawn or photographed by the National Geographic Society for the Historical Atlas. The list of contributing or consulting scholars is also most impressive.

It is very difficult to criticize a work such as this. As mentioned in the first paragraph, this is an atlas which should be in every library, public and personal. Along with the ‘gutter’ problem mentioned above, there are a few minor irritations attributable to the design and layout of the book. First, there is a great deal of material presented on any given two page spread. Particularly in the chronological sections, with their split page design, this leads to some very “busy” pages. One is almost overcome by the amount of information being presented, and the accompanying amount of effort expended in filtering out the specific data desired. The second nitpick is a function of the first. In presenting a great deal of material in a limited space, some of it winds up being reduced beyond the point of legibility. The picture of the Drake brass plate on page 24, and the Dee map on page 25 are examples of the problem.

The only major conceptual criticism to be made is the “Anglo-East coast” approach to exploring and settling the United States. The usual Anglo-centric approach is to assume that everything started at Jamestown, and ignore the Native Americans, Blacks, and Hispanics who played a part in the early settling of the continent. The treatment of Native Americans and Blacks in the 1400-1606 chronological section, and the People thematic section is thorough in the context of the book. Later immigrant groups are also noted. What is missing almost totally is coverage of the early Spanish presence in what became the American Southwest. Except for a small map on page 37, the long Spanish history in the southwest is hardly addressed in the entire Historical Atlas. Surely some attention could have been paid to the third largest cultural grouping in the country?

Those criticisms aside, the Historical Atlas of the United States is an impressive work, both conceptually and
physically. The design may be a trifle busy to some eyes, but the quality of the print, paper, and reproduction of illustrations are all superb. This reviewer’s copy came with a magnifying sheet of plastic, an overlay template showing additional data at the four map scales used in the atlas, and a 24- by 35-inch map with a National Geographic Society United States on one side, and Erwin Raisz’s familiar Landforms of the United States on the other.

The Historical Atlas is billed as the Centennial Edition because its release coincides with the centennial of the National Geographic Society. The Society is to be commended for this superb addition to the literature.

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Cartographical Innovations: An International Handbook of Mapping Terms to 1900.
Edited by Helen M. Wallis and Arthur H. Robinson.

Cartographical Innovations is, at bottom, a kind of history of cartography, or more specifically, a classified outline history of maps and mapmaking. It is the result of an international, cooperative effort by the Working Group (now a Standing Commission) on the History of Cartography of the International Cartographic Association; the editors acknowledge the assistance of no fewer than 96 “contributors and correspondents.” They state as their purpose “to identify on a worldwide scale the main points of advance and change in the science and art of cartography,” and more specifically, “to show how ideas developed, how processes and techniques began, when materials were first used, and how knowledge of innovations was diffused and transmitted” (xi). Their procedure is to provide brief historical essays on 191 map types, processes, techniques, and materials, and to arrange these essays in classified order.

Terms are arranged in eight broad groups: 1) Types of maps, 2) Maps of human occupation and activities, 3) Maps of natural phenomena, 4) Reference systems and geodetic concepts, 5) Symbolism, 6) Techniques and media, 7) Methods of duplication, and 8) Atlases. Within these groups, the terms and subdivisions of terms are arranged alphabetically. Each term is assigned a unique classified number constructed, it would seem, so that other terms could be interpolated at a later date. Each essay is divided into three parts: a definition of the term, prefixed by the capital letter A; the essay proper, a narrative which usually takes a chronological approach and is prefixed by the capital letter B; and bibliographical references to the essay, prefixed by the capital letter C.

The advantage of a classified arrangement of these terms is, of course, that related terms are brought together. Thus, we find Copper engraving, Etching, Gravure, and Steel engraving all together under Intaglio technique rather than scattered throughout the alphabet. By reading the essays which precede and follow a given term, it is possible to gain a conspectus of the subject as a whole. The coverage is very thorough. Virtually all the map types and technical elements that one might wonder about are here, from Land-use map, Botanical map, and Satirical map, to Prime meridian, Square grid, and Spot height. And the editors have made a valiant effort to avoid Eurocentrism. They cite many maps from the Orient, Middle East, and South Asia as well as maps by preliterate peoples. On the other hand, the classified approach perhaps encourages more repetition than is necessary or desirable. For instance, the general term Route map includes information about Egyptian and Chinese maps of waterways, and on Roman, medieval, and modern road

... brief historical essays on 191 map types ...

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...an abundance of "firsts," "earliests," and "notables."
... it appears to be aimed at a popular audience...

... a new synthesis of the topic... representing the state of the art" at the present time.

Presentations and, of a more permanent nature, a series of publications, have been produced commemorating the momentous events of the 1580's. As part of that series, the present work is intended to bring together in a single brief account what we know of the explorations related to the English colonial ventures of that period, and the geographic information they produced. Although not specifically stated, it appears to be aimed at a popular audience rather than a scholarly one.

There is no one better qualified to produce a treatise on this subject than William P. Cumming, a native North Carolinian and the dean of historians of American discovery and exploration. He has produced an extended essay, divided into nine chapters, totalling 63 pages of text. The scope of the work is quite broad. It starts by examining the cartographic materials and information available to the English explorers and colonists prior to setting out for the New World, beginning with the reports and maps from the earliest voyages. Cumming discusses these voyages in detail, and carefully analyzes the maps associated with them. He documents the extent to which English perceptions of the Atlantic coast of North America were conditioned by Spanish explorations and maps. He devotes an entire chapter to "foreign" maps which were, or might have been, available in England just prior to the voyages of Humphrey Gilbert and Walter Raleigh. He then follows through with what the English colonists actually found when they arrived on the outer banks, and how the picture of the coast that they constructed found its way into subsequent European cartographic production.

The text is presented in a large format (8½" by 11-inches), and though set in a single column on the page, the type is large enough and with broad enough margins to be easily read. A separate 20-page section of 228 notes, numbered in a single sequence, set in much smaller type which is difficult to read, follows the text. The notes are followed in turn by a brief appendix comparing the coastal nomenclature on sixteenth century Spanish charts, a very useful feature. The volume concludes with a section of 28 plates, photographically reproducing many of the more important maps discussed in the essay. Each map is reproduced on a single sheet, accompanied by an extensive caption.

Those familiar with Professor Cumming's work will not be surprised to learn that he has produced a well researched, thoroughly documented, literate and very readable account. His text reveals a profound understanding of not only the minutiae of the various expeditions and voyages he chronicles, but also of the perilous nature of seafaring expeditions in the early era of sail, and the politics governing the control and access to the geographic information these expeditions produced. He even demonstrates a thorough command of the geologic and hydraulic forces which created and then altered the coastal landscapes mapped in the documents he discusses.

Professor Cumming has covered much of this ground before. In numerous articles and several books he has examined and reported in detail on the explorations and the maps they produced. His *Southeast in Early Maps* (Cumming 1962) remains the definitive work on the subject, and the folio of maps, with commentary, that he produced for the North Carolina Department of Archives and History more than two decades ago served a model for many similar productions (Cumming 1966). Some of Cumming's earlier work, and even some of the same language, inevitably finds its way into these pages as well. (For example, compare the discussion of Juan Vespucchi on pages 13 and 14 with that on page 84 of the *Discovery of North America* (Cumming, Skelton and Quinn 1971)).

This is not to say that the present work is merely a rehash of previous publications. It is instead a new synthesis of the topic, incorporating the most recent scholarship and interpretation, representing the "state of the art" at the present time. Its real value is in bringing together all of this material in a single brief, readable account.

The book has its shortcomings, however. Many of the map reproductions are
so small and blurry that they are impossible to read. Why, for example, must the detail from Juan de la Cosa’s 1500 world chart be reduced to scarcely more than 3-by-5-inches, surrounded by a sea of white on the 8½-by-11-inch page? I found it necessary to refer to better reproductions of the maps published in other books; ironically, some of these were Cumming’s own works, notably the magnificent Discovery of North America cited above. Finally, the book lacks both a bibliography and an index, features which would prove extraordinarily useful, especially for the popular audience for which it was evidently intended. These defects do no detract from the merits of the text, they merely limit its usefulness. It nevertheless remains a welcome addition to the literature and, at the price, a bargain for individuals and libraries alike.

NOTES

1. This reviewer’s own work with Texas maps (Martin and Martin 1982) is among the many which consciously followed the Cumming North Carolina model.

2. As an author who has himself been victimized by designers and printers in much the same way, this reviewer recognizes that this is a criticism to be laid at the feet of the publisher, not the author.

LITERATURE CITED


Martin, Robert Sidney, and James C. Martin. 1982. Contours of Discovery:

Printed Maps Delineating the Texas and Southwestern Chapters in the Cartographic History of North America. Austin: Texas State Historical Association.

Robert S. Martin
Assistant Director of Libraries for Special Collections
Louisiana State University
Baton Rouge, Louisiana

Sheppard’s International Directory of Print and Map Sellers
(Distributed in the USA by Seven Hills Books, Cincinnati, Ohio 45202). 268 pages.

Perhaps this book reflects the “coming of age” for map collecting, as this volume will surely take its place in many libraries next to Sheppard’s Book Dealers in the British Isles (1987) and Sheppard’s Book Dealers in North America (1986). As the publisher states, “...there has been a marked growth in trade and the market is showing every sign of continuing expansion. Indeed, many more dealers now see prints or maps as their sole or principal line of business.

“The Directory contains standard information for more than the 700 dealers from Argentina to the U.S. Virgin Islands. Included are the title of the firm, full address, proprietor, telephone number, hours, description of stock and specialties, number of catalogs if issued and languages understood by the proprietors. This information is organized by country and alphabetically by town. The volume begins with two extremely brief (1½- and 2-page) overview articles on the international map and print trade. This is followed by listings of periodicals, reference books, and a too-brief glossary.

The geographical directory then occupies the majority of the volume with 172 pages. This is followed by an alphabetical
index of dealers and a potentially very useful specialty index of dealers.

This volume is attractively printed, adequately hardbound and easy to use. When compared to *International Directory of Map Dealers* (1982) or to *World Directory of Dealers in Antiquarian Maps* (Ritzlin 1980), it is obvious that Sheppard's is not only more comprehensive but also includes additional important information on stock and specialties. It is frustrating, of course, to find listings in the earlier titles and not to find them in Sheppard's. Such is the nature of collecting this type of information and the publisher is to be commended for bringing together information on over 700 dealers.

If your library either has an antiquarian map or print collection, is acquiring such materials, or serves a clientele that might benefit from this information, I believe this directory will prove to be a valuable resource. It is, in the final analysis, the most comprehensive and up-to-date information we now have on this segment of the map and print trade.

**LITERATURE CITED**

*International Directory of Map Dealers.*


David Cobb
Map and Geography Librarian
University of Illinois
Urbana, Illinois

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**Interpretation of Topographic Maps.**

By Victor C. Miller and Mary E. Westerback


The authors of this hefty paperback caught my attention immediately, with a persuasive assertion that one cannot interpret a topographic map; one can only interpret the topography as a map depicts it. The shift of emphasis is welcome because it encourages the reader to evaluate the maps, as well as the terrain, and thus occasionally to find things that were hinted at but not properly displayed on the map.

The next welcome surprise arrived in the form of a footnote on page 3, in which the authors assert that the difference between a linear feature that is slightly curved and a true curvilinear feature is "like the distinction between "large" and "fairly large" potatoes, (vague and arbitrary) but surprisingly workable." It is clear that the authors have looked over the shoulders of hundreds of literal-minded students and gently led them to appreciate (maybe even to revel in) the awesome ambiguity of the real world. The book is filled with subtle clues that address intermediate map readers where they are, not where they should be, and thus can teach them to learn on their own.

I use the word "intermediate" for a reason. The Introduction provides a sketchy road map of the book, and it tells beginners about a thoughtfully provided Appendix entitled "Getting Acquainted With Topographic Maps." Unfortunately, that appendix drops the reader directly into a not-too-clear discussion of bearings and azimuths, which is much more complex than is needed to read the rest of the book. A follow-up section on scale is also too detailed; the section on contours is reasonably straightforward; sections on latitude and township-and-range deal with symbols and ideas that have been carefully
expunged from all map examples in the book; and the discussion of gradient (which is the key to the approach used in the text) is left to last, after the patience of the reader has worn a bit thin.

Chapter One on General Principles is, by contrast, a good introduction to basic inferential geomorphology (though it does lavish a bit too much attention on the rather klunky old obsequent-subsequent-ressequent typology). It has its focus on stream dissected landscapes, and it ends with a restatement of the difference between real and depicted terrain. This flows neatly into a short chapter on the distinction between map reading and map interpretation, with a good choice of maps to illustrate the interplay of "normal" and "catastrophic" landforming processes.

And then the authors make a curious shift to glacial terrain for the first of nine chapters on individual categories of geomorphic processes. These chapters are quite well written but not especially easy. Each chapter has a mercifully short introduction and a series of longer expositions of individual maps. The maps, in turn, are wonderfully clear black-and-white abstractions of standard U.S.G.S. topographic maps, showing only contours and a bare minimum of elevational information. They are grouped together at the end of the text, for convenience in cross-referencing. These are preceded by an 11-page glossary, a scant page of references, a set of answers to text questions, and a list of map citations. Well-crafted block diagrams occur frequently in the text, but their orientation often differs from that of the maps, for clarity in showing a particular detail. All in all, the authors show a great deal of respect for the motivation and persistence of the readers, and readers who possess those qualities will be amply rewarded. One could quibble in many places—page 41 talks about ditches as reasons for straight contours, page 146 spends a lot of time analyzing the effects of a railroad, but a gorgeous collection of artificially leveled house-lots on map 4-2 is not mentioned in the text, even though the repeated use of the phrase "stair-step" in the narrative is almost sure to draw readers' attention to these squared-off features (and, by extension, away from the actual marine terraces that are the subject of the map). And the full-page reference maps of the United States are models of clarity, but they are rather large for the information conveyed. A gray-screened shaded-relief base map would have been much more informative in the same space.

The biggest problem with the book is its resolute focus on the excitingly unique. Many of the map descriptions have a "mystery-story" format, which begins to wear thin after one has tried to digest a few dozen exceptions to a rule that has never been clearly articulated. In this, the authors have plenty of company—they resemble nothing so much as an architect who directs our attention to an anomalous Swiss chalet on the Atlantic Coastal Plain, without showing us the stately Carolina-I and elevated logpen houses that dominate the vernacular house architecture of the region.

For that reason, I have difficulty recommending this book for classroom use, despite its authoritative tone and superb graphics. I don't mind owning two copies (I had bought one before receiving the review copy), because I suspect that at least one of them will be out on perpetual loan to advanced students, and I expect them to report on it in glowing terms. But I think I will need another book to get students up to speed to learn at this level. And, in my fondest dream, this book will stimulate some equally-talented human geographers to write a similar treatise. In my opinion, that is the fairest criterion for judging this book. By that criterion, it is a winner: I have found no book that even gets close to this level of sophistication in the interpretation of the cultural landscape as depicted on topographic maps.

Philip J. Gersmehl
Department of Geography
University of Minnesota
Minneapolis, Minnesota

Many of the map descriptions have a "mystery-story" format, ...
In foreign mapping, Map Link shows its strength...

The World Map Directory, 1989
by Aaron Maizlish and William S. Hunt
Santa Barbara, California: Map Link, 1988. 278 pages.

In this decade of catalog marketing, it was only a matter of time before a U.S. map dealer came out with a catalog approach to marketing map products. Last year’s Map Link’s Directory was a prototype of this more finished 1989 edition. As a first offering, the 1989 Directory is a success. Hopefully Map Link will continue to respond to its customers and grow to meet the market demands.

There are few surprises here for the map librarian, which is refreshing. For the general user, however, the expectations might surpass reality. A blurb describes the company: “Founded five years ago to facilitate map acquisition programs, Map Link has grown rapidly to serve many academic research libraries in the U.S. and Canada. Working initially with librarians to solve difficult acquisitions problems in Latin America and Africa, Map Link has become the nation’s clearinghouse for foreign and domestic map series from around the world. We now serve retail customers, companies, libraries and map stores.”

The catalog is a comfortably sized paperback. The typeface is easy to read (not recopied, like some vendor’s catalogs). The page layout is ample, with plenty of room for pencilled annotations. It’s geographic arrangement is according to the “G” Schedule of the Library of Congress classification scheme. Refined searches are best done with the G Schedule in hand, though the catalog works well enough without it.

For maps of the United States, major commercial map publishers’ wares are well represented, as are major federal mapping agencies. However, the local map publisher often goes begging as do state mapping agencies. Unfortunately, a degree of detail is lost. To give Map Link the benefit of the doubt, they claim, “if you have special needs, we’ll try and accommodate them.” Nor should we expect a truly comprehensive directory.

Each geographic heading is followed by an annotation which describes the major map publishers, preferred scales and best choice. Very helpful. Prices and discounts are indicated and seem reasonable, at least for the institutional buyer. Index maps are abundant and the cartography is clear and mostly original.

In foreign mapping, Map Link shows its strength, as one might expect of a company formed to acquire maps for research libraries. Particularly with maps of European, Latin American and African countries, the stock on hand seems to be more than adequate. Asian countries and Eastern Bloc nations don’t fair as well - again, as one might expect.

The Directory seems to list primarily topographic and political maps, though it describes itself as a more comprehensive map vendor. As a topographic map catalog it works well, though initially one looks for and expects more.

One type of map which this reviewer was particularly eager to find represented was absent. Maps for educators would be a fine addition to Map Link’s inventory. Wall maps are always difficult to keep track of and have a ready market on campus and with public school teachers. Educational slide collections and facsimile maps would be welcome additions as well. A major federal map publisher which provides important maps for educators and students was totally overlooked. CIA maps, both the “Briefing” and the “Country Study” series are in high demand in this reviewer’s map library. The 8½ x 11-inch format is copied and distributed in classes. A commercial vendor of these maps, singly and in bulk, would be a ready alternative to the Government Printing Office.

One final comment. An 800 telephone number would be a real benefit to this selector. As I was writing this review, I received a call from the regional Map Link sales representative. Great idea. I had no idea there was one (he’s new). Those names and addresses might be added to the catalog.

The overall impression with The World Map Directory, 1989 is that this is a well-planned marketing tool whose time has...
ELECTRONIC MEDIA REVIEW

GEODEX GEOgraphic Index System for Map Series.
By Christopher Baruth
One 5½-inch diskette and User’s manual, 82 p. $75.00.

GEODEX is a computer software program which provides a machine-readable inventory of individual sheets in map series. It was compiled by Christopher Baruth, of the American Geographical Society Collection at the University of Wisconsin-Milwaukee. GEODEX was originally designed to meet the needs of the A.G.S. collection, but interest in it by other map librarians prompted its publication.

The GEODEX software package consists of one 5½-inch diskette and an 82-page user’s manual. The system runs on IBM compatible microcomputers with DOS version 2.0 or higher, and supports IBM foreign character fonts. It requires two drives, one for the GEODEX program (which can be a fixed or diskette drive), and the other for data file diskettes.

Data which can be input for each sheet include map type, projection, prime meridian, scale, latitude-longitude extent, contour interval, edition number, series data, and compilation, field check, and print dates, as well as the number of copies in one’s collection.

GEODEX also has the capability to create subfiles based on the above data in variable or fixed fields, to make printouts of files in a variety of ways and formats, and to create an index to the files in the system. Other capabilities are creation of ASCII files which briefly list definitely come. The concept is timely. Continued development is critical. At $29.95 it is a little pricey to buy each year. A price supplement sheet might be an alternative, though I would think Map Link might send the next year’s edition gratis to active institutional buyers. All told, The World Map Directory, 1989 is a welcome addition to research collections and public libraries.

Patrick McGlamery
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sheets held or not held (for acquisition usages), and the backup of data files.

After one becomes familiar with the system, input of sheet level records can be done quite rapidly, as function keys can be programmed to enter repeated data common to a map series, such as scale or prime meridian. Mr. Baruth has also included a program which remembers the dimension of quadrangles after the first sheet's coordinates have been entered. For subsequent sheets, only the southwest corner coordinates are entered, and the system provides the other three.

Lest you worry that, even with the programming aids mentioned above, data input of map series holdings will require an enormous amount of time, it should be stressed that Mr. Baruth encourages cooperative efforts among the map collections which have acquired GEODEX. To this end, he authors a GEODEX newsletter providing news about cooperative data input efforts and lists of series already input. Libraries with complete holdings of particular series are encouraged to input them and make their files available to other collections.

Mr. Baruth has programmed GEODEX to sort data files you acquire to match the filing arrangement of your collection. After you become familiar with how to manipulate the file, this reconciliation is fairly rapid. GEODEX is programmed to search for records by point or by area, and entries for series as well as individual sheets can be displayed.

In the description of GEODEX's capabilities above, the reader should make notice of the caveat, "after one becomes familiar with the system ..." This statement alludes to a problem with the GEODEX user's manual. In it, the step-by-step instructions for following GEODEX programs and routines are vague and confusing. In being intimately familiar with GEODEX and computer programming, Mr. Baruth has written the instructions in a "shorthand" understood, perhaps, by people with considerable computer programming experience. A user's manual, written by an intermediary (as with many software packages), might be more easily understood by the average map librarian. Fortunately, Mr. Baruth does provide the A.G.S. Collection's toll free telephone number through which he is available to personally help one set up this program on one's computer and "walk you through" the routines.

The big question in evaluating this software program is: how will it help my operation? After the time and effort are invested to input the data, and establish a map inventory, what does one do with it? As mentioned above, GEODEX has the capability to create subfiles of sheets not held, for acquisition purposes. But, will it help with other library operations, such as reference? One of GEODEX's major functions is maintaining an index to the map series that have been input, whereby files are selected by geographic area searches. Geographic coordinate searches for individual map sheet coverage can only be accomplished after a series file is accessed. In terms of reference work, therefore, GEODEX does not seem to be as effective as determining what series map coverage is available for a geographic area as is consulting the library's online or card catalog, or for that matter, the series' index map.

In summary, GEODEX is quite effective in doing what it was designed to do, which is to provide rapid input and reconciliation of map series holdings. Mr. Baruth is to be commended for having the expertise to compile this software and for providing it to the map library community. If the user's manual is rewritten so as to be more "user friendly," GEODEX could receive more widespread acceptance and use. When considering whether or not to acquire it for one's library, computer hardware compatibility, availability of staff expertise and time needed to input and reconcile holdings should be evaluated, and how well your existing means of map series sheet control works for you.

Jim Coombs
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INFORMATION FOR CONTRIBUTORS

Meridian is published semi-annually by the American Library Association's Map and Geography Round Table. It contains articles which (1) advance the organization and dissemination of cartographic, geographic, and remote sensing collections and information; and (2) describe and document the major trends and issues in the professional development of cartographic and geographic librarianship in North America.

ALA members and other persons interested in the objectives of the Map and Geography Round Table are invited to submit manuscripts to the Editorial Board for consideration. Full-length manuscripts (generally not exceeding 7,500 words) as well as shorter commentaries, research notes and letters should be addressed to: Philip Hoehn, Library Map Room, University of California, Berkeley, California 94720.

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