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The Lithographed Map in Philadelphia: Innovation, Imitation, and Antebellum Consumer Culture

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Fig. 1 and 2. Photographs of Book Exhibit, Centennial Exhibition (Philadelphia, 1876). Free Library Dig Arch.

Printed maps loomed large at the 1876 Centennial Exhibition. The Exhibition was a celebration of international industry. But it was foremost a celebration of the United States and its post-war economy after ten years of reconstruction. By locating the Exhibition in Philadelphia, the celebration of industrial accomplishments was unambiguously anchored in the symbolic center of national life and early American industry. For the members of the printing industry, it was a matter of principle as well as calculated expectation that printed goods would be part of the celebration. The Philadelphia print exhibit didn't disappoint. More than ninety firms and organizations showed their products in a two-story iron pavilion inside the Main

Building (Fig.1 and 2).¹ The print exhibit's sponsor was the American Book Trade Association, and subsequently many of the objects were rather bookish specimens. Lavishly designed cases and shelving units showed school books and religious tracts, Bibles and American literature, medical, architectural and a host of other professional works, photo albums and scrapbooks. Yet, among all the bookish things the exhibit also displayed maps. Indeed, lots of maps. According to the exhibit's floor plan printed in the *Publishers' Weekly*, visitors wending their way through the various stalls would have confronted at almost every turn maps of all makes and sizes (Fig. 3).²

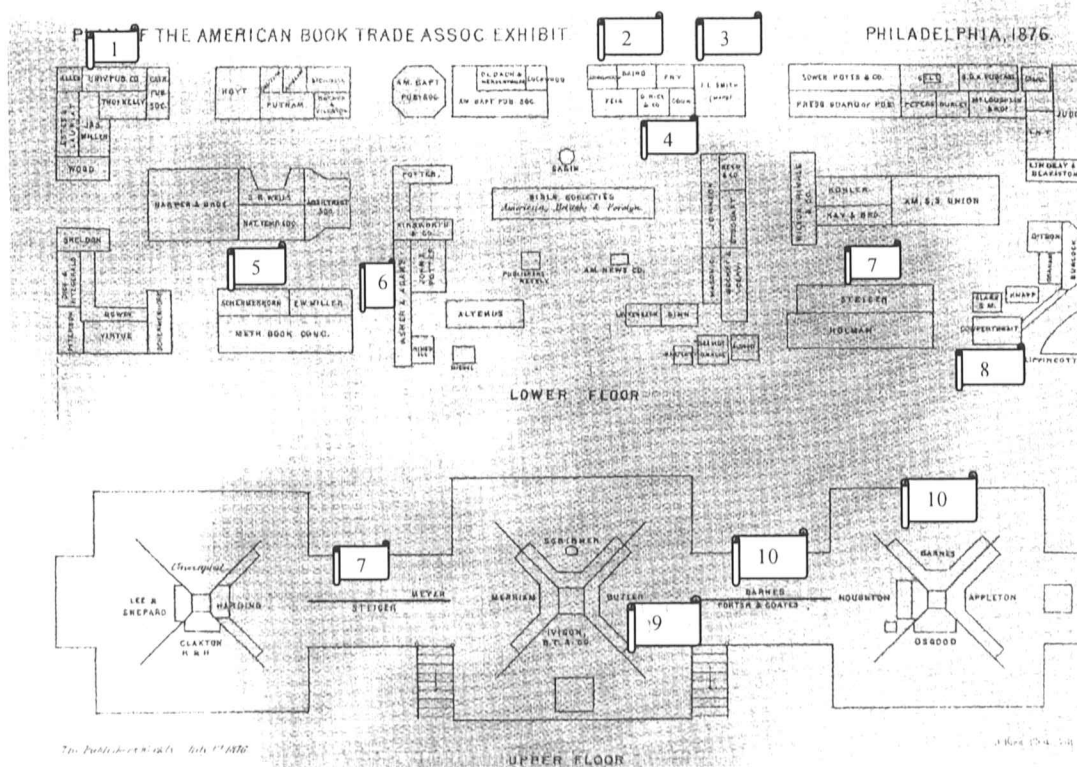


Fig. 3. "Plan of the American Book Trade Assoc. Exhibit" (*Publishers' Weekly*, 1876)

- (1) 2. University Publishing Co. (Ny): schoolbooks and maps
- (2) 19. Henry Carey Baird & Co. (Phila): maps and atlases
- (3) 21. J. L. Smith (Phila): maps
- (4) 24. Charles H. Davis & Co. (Phila): Zell's atlas
- (5) 41. and 45. J. W. Schemerhorn (Ny): textbooks, globes

- (6) 52. Asher & Adams (Ny): maps, atlases
- (7) 72 . and 84. E. Steiger (Ny): globes, maps
- (8) 79. Cowperthwait & Co. (Phila): educational publ.
- (9) 88. J. H. Butler & Co. (Phila): wall maps and schoolbooks
- (10) 91. and 93. A.S. Barnes & Co. (Ny): schoolbooks

A good ten percent of the exhibitors listed maps as their specialty. They included publishers from the nation's print centers like Boston, New York, and Chicago. But half of the displays specializing in maps were homegrown, products of Philadelphia printing firms. At the exhibit's ground level, visitors could inspect maps in showcases sponsored by "Map Publishers" (as indicated by bold letters in various stalls), such as Henry Carey Baird & Co., J. L. Smith (Fig.1), Charles H. Davis & Co. and Cowperthwait & Co. On the upstairs landing, multiple wall maps greeted visitors at the booth sponsored by J. H. Butler & Co. (Fig.2). On both of the exhibit's floors, the displayed maps were objects of "show-room" quality, that is, they were the publishers' best cartographic specimens. These display maps showed the world and the nation, counties and cities, based on the most up-to-date geodetical surveys; they were printed on paper of the highest quality; if the maps were in color, they were multi-colored; if bound in atlas, textbook, or pocket format, they were shown in the best binding materials available; and if they were wall maps they were glossily varnished and mounted on rollers made of hardwood (the Butler exhibit showed wall maps hanging on racks similar to carpet displays in a modern carpet store). As diversified as these map products were—differing in form, content, and implied function—the maps put on display at the Centennial Exhibit had one thing in common: they were mostly lithographed maps.

This easy to overlook commonality marks the completion of a gradual paradigm shift in early American cartography, affecting everything from patterns of production and consumption to cartographic content, iconography, and cultural significance. A little over two decades earlier, exhibitions at industrial fairs singled out lithographed maps as novelty objects. At the “Eighteenth Exhibition of American Manufactures” hosted by the Franklin Institute in 1848, the winner of the Third Premium Award was entry “No. 52. Universal Atlas in folio, a most beautiful specimen of the art of transferring and lithographic printing, from the press of P[eter].S. Duval, Philadelphia, transferred by [Frederick] Bourquin.”³ Ditto, in 1849, the catalog of the “Twenty-Second Annual Fair of the American Institute of the City of New York” singled out lithographed maps from a large host of copper- or steel-engraved maps by distinguishing the map-making process: “No. 1824. Specimens of Map Engraving on Stone, Samuel Moody, Philadelphia, PA.”⁴ Reproducing maps from copper plates to produce a hand-colored and oversized replication of an American cartographic staple such as the *Universal Atlas* (originally published by Henry Tanner in 1823) was then considered an isolated achievement.

If we fast-forward to the 1893 World Expo in Chicago, two decades after the Centennial Exhibition, the story of maps is rather different. On the one hand, maps were conspicuously absent from the usual catalogs listing paper goods (“Dept H. Manufactures”) and engravings or prints (“Dept. K. Fine Arts”).⁵ On the other hand, maps were an overwhelming feature in the exhibit housed by the “U.S. Government Building.” In the eponymous catalog the majority of departments, from the Department of State and War Department to the Weights and Measures Department and the U.S. Geological Survey, listed a large number of maps on display; that is, a very large number—hundreds of U.S.-made maps were kept ready for the inspection by the eager visitors’ gaze.⁶ Similar to the Centennial Exhibition, maps differed broadly in scale, content, and

size. But what was dissimilar was the way in which the World Expo catalog classified maps. Maps were listed by the most general features only, vacillating between basic content descriptions or technical classification (for example, [nautical] charts vs [geological] surveys vs [regional] maps). Maps were not once identified by publishers or cartographers/engravers, or for that matter, by the production process. At the World Expo, then, maps were presented as pure medium, denying human agency and craft, economic systems of production and distribution. Today we call them text, representation, object, or artifact. But in 1893 maps were presented as a ubiquitous industrial resource akin to a paper bag or a steel girder, a generic staple sold in bulk, untethered from its mode of production and the attending social and material circumstances.

In 1876, the display of well-documented lithographed maps not only celebrated the status of Philadelphia as a center of carto-technological accomplishments but could be viewed as the perhaps last promotional campaign by Philadelphia map-producers seeking to ward off impending changes that were beginning to affect the business of cartography and even traditional cartography's discursive regime. In what follows, I will attempt to trace the circumstances that contributed to the revaluation of maps by turning to the Antebellum decades, to the beginning of lithographic map production in Philadelphia and to a time when the identification of map authorship, publishers, and the place of publication were considered the distinguishing features of the map business. In this context, I would like to offer a note of authorial context: the following is an exploratory draft rather than a polished essay. I am examining materials freshly researched during my time recently spent as a PEAES fellow at the Library Company of Philadelphia. For now I am seeking to make sense of primary evidence without explicitly engaging historical, critical, or theoretical materials or agendas. Looking forward to the

conference, I hope to discuss in greater depth the latter in relation to the essay's premise, ideas, and concerns.



Fig. 4. Bass Otis, “Lithographic” in *Analectic Magazine* (1819). Library Company.

With the introduction of lithography to American audiences in the 1820s—the prevailing reference point is Bass Otis’s lithographed drawing of a mill published in the July 1819 issue of the *Analectic Magazine* (Fig. 4)—map-producers eagerly eyed lithography as an alternative to conventional printing processes that historically had been limited to woodcut and copperplate engravings. As David Woodward explains, “lithography created a turning point in the history of map printing, upsetting the neat distinction between relief and intaglio techniques.”⁷ For the (uninitiated) student of Antebellum cartographic history and culture this meant that lithography collapsed age-old distinctions in the printing industry in which the machinery of print shops and the resulting printed goods were differentiated (and priced)—among other factors—according to the nature of printing surfaces. With the advent of lithography the choice of printing surfaces and the labor that went into creating plates for relief or intaglio printing ceased to be of concern. Lithography allowed the transfer of images directly to the lithographic stone regardless of their

original printing process. High-end portraits or landscapes that were usually copper engravings were as easily transferred to lithographic stones, as were low-end images cut into wood; indeed, lithographers, were able to transfer practically all kinds of visual media, including type, ink drawings, etchings, aquatints, mezzotints, and so on.

During the period between 1830 and 1850 map-makers explored the technical potential of lithography. Quickly identified as “an extremely versatile autographic medium,” to quote Woodward, “[it] found favor with cartographic draftsmen, who could draw with pen and ink on paper and transfer the drawing to the stone or draw directly on the stone surface, and who could render a wide variety of tones with crayons and other grease-based media.”⁸ It was this versatility of applying colors and inscribing lithographic stones directly that provided map-makers with a means for managing the constant onslaught of and flux in cartographic information. Since the founding of the nation, map-makers had always struggled keeping up with geographical information. This was the period of intense geographic mobility and territorial expansion. Place names changed in rapid succession; as new roads and railroads were built, geographic expeditions, land surveys, and new local governments provided data that increasingly filled in areas formerly left blank on maps. Much to the frustration of early American map-makers—from Carleton Osgood and Samuel Lewis to John Melish and Henry Schenck Tanner to the early works by Samuel Augustus Mitchell and Joseph Hutchins Colton, by the time a map had been engraved and printed it was already out of date. To be timely and to keep up with the competition, map-makers had to re-engage old copper plates or wood-cuts, which was time-consuming, laborious, and above all costly. Lithography promised to be at once a technical and commercial solution to an old problem. While this procedure continued to depend on the skilled labor force of engravers—lithographed maps were often identified by the at times misleading

name of the “engraver”—it enabled a faithful reproduction of existing maps while offering the opportunity to edit, expand, or retouch them without having to take recourse to the original printing plates.

Recognizing the map-makers’ need for rapid reproduction and editorial flexibility, early lithographic firms were quick to include maps into their portfolio. A Philadelphia handbill from 1847 advertising “Wagner and McGuigan’s Lithographic Establishment” includes “Maps” in a list that also provides a hierarchical index of lithographic production: products ranged from “Portraits, Landscapes, Anatomical & Architectural Drawings” to “Views of Stores, Fancy Prints, Show Cards, Maps, Plans, Certificates, Circulars,... and Labels” (Fig. 5).

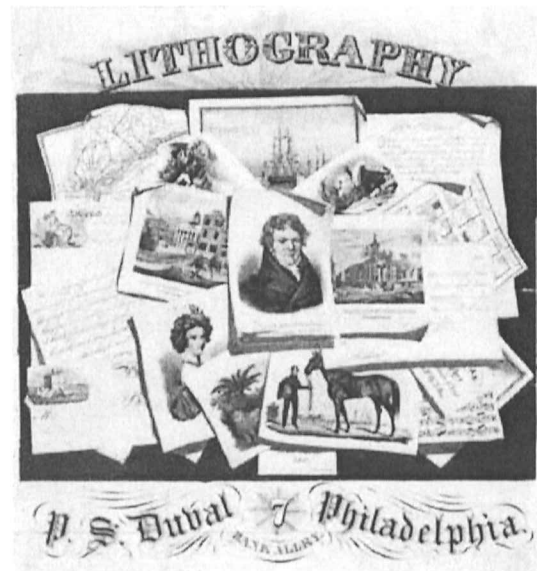
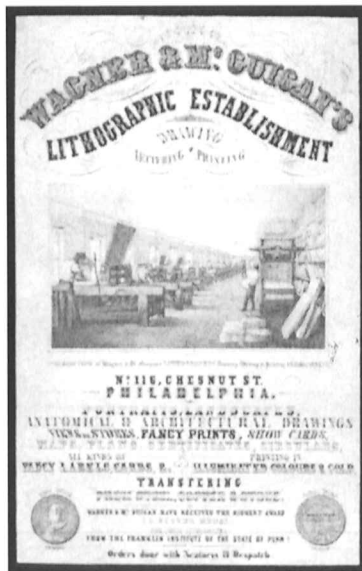


Fig. 5. Wagner & McGuigan. NMAH/ Library Company of Philadelphia.

Fig. 6. “Lithography. P. S. Duval 7 Bank Alley, Philadelphia (Philadelphia: Duval, 1840). Library Company of Philadelphia

Almost identical ads could be found in Philadelphia trade papers, such as *The Mercantile Register, or Business Man’s Guide*, which in 1846 posted a full page ad taken out by Peter S. Duval’s lithographic firm: “P. S. Duval, lithographer, No. 7 Bank Alley, near the Merchant’s

Exchange, Philadelphia: Portraits from Life, on Stone, Landscapes from Nature, Anatomical & Architectural Drawings, Machinery, Music Titles, Maps, Plans, Circulars, Checks, Bill Heads, Bills of Lading, Price Currents, Fac-Similes, Transfers from Steel, Copper, Wood, and Autographs, Printing in Colors, &c. &c. Executed in the best possible manner, and on low terms” (Fig. 6).⁹ Considering the sequence of goods listed and the inconspicuous placement of the word “Maps,” ads like these suggest that maps played only a minor role in filling a lithographer’s order book. Following the work of Walter Ristow and John Reps we can now say that most of the Antebellum lithographers tried their hand at reproducing maps.¹⁰ But hardly any of them specialized in maps; nor, did the majority of early lithographic firms seem to have pursued cartographic lithography as a market niche. Early Philadelphia lithographers, however, seem to be the exception to the rule. After a couple of the city’s major lithographers, Peter Duval and Robert Pearsall Smith, had experimented with maps during the 1830s and 1840s, several publishing companies pursued lithographic cartography as a profit-making entity in their production portfolio. When in 1856 *McElroy’s Philadelphia Directory* offered “Map Publishers” as a separate category, it listed nearly a dozen names and addresses, including Cowperthwaite & Co., Charles Desilver, S. Augustus Mitchell, Robert P. Smith, and Sower & Barnes.¹¹

Yet, prior to the 1850s maps received a rather tepid response from lithographers because engraved maps continued to outperform lithographed maps for reasons of technological difficulty rather than consumer response. During the early phase of lithographed maps, lithographers faced two main obstacles: on the one hand, an unreliable and labor-intensive transfer technique, and, on the other hand, the emergence of the rotary steam press. The early efforts of transferring map images were hampered by the fact that unlike landscapes or portraits, maps had to be drawn in reverse on stone, just as it was practice when engraving copper plates.

Depending on size, large lithographed maps required large stones, which were not only heavy and cumbersome but, depending on map size, difficult to handle in large printing presses. Moreover, because lithographic stones were inflexible, presses resisted the application of steam power thus delaying the mass production of lithographed maps (Fig. 7).

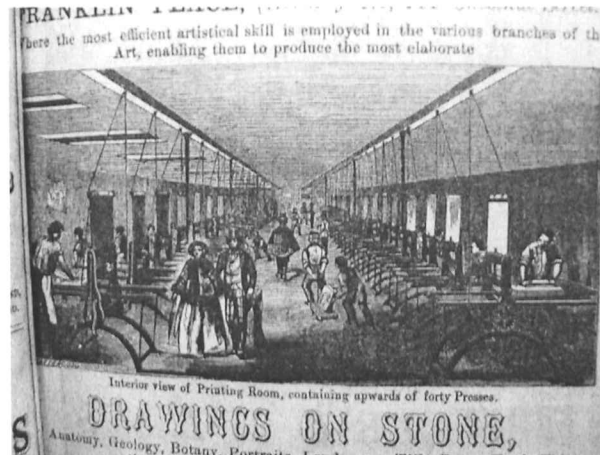


Fig. 7. Detail from advertisement of “Wagner & McGuigan’s Lithographic Establishment” in *McElroy’s Philadelphia Directory, for 1856* (Philadelphia: Edward C. & John Biddle, 1856) 9. Library Company. Notice the hand-crank.

However, lithographed maps became commercially viable after two specific inventions. First, the issue of transferring map images was resolved when the father-son team, John Jay Smith (then librarian of the Library Company of Philadelphia) and Robert Pearsall Smith (owner of the short-lived “Anastatic Office”), patented the anastatic printing process in 1845. With the aid of special paper and inks this process allowed the transfer of printed or handwritten images directly to a stone, eliminating the laborious process of drawing on stone in reverse.¹² Second, lithographic production adjusted to steam-power and rotary presses with Peter Duval and Frederick Bourquin’s 1849 invention of “zincography,” an off-shoot of anastatic printing. This allowed illustrations, including maps, to be transferred to flexible printing plates made of zinc,

thus replacing at once the inflexible lithographic stone and the need for the traditional and slow-working hand-press.¹³

From 1850 on forward, these technological innovations changed the nature of map production. Lithography's ability to reproduce practically any image in facsimile enabled map publishers to expand the portfolio of cartographic representation. Traditional costs involved in producing maps as intaglio images—ranging from expensive copper plates to hourly wages for copper engravers to purchasing special paper and hiring printers capable of supplying large roller presses—began to melt away.¹⁴ Whereas earlier map publishers had to worry about the investment in and salability of one particular map, lithographic printing allowed them now to concentrate more on maps as a versatile product addressing a multitude of consumer demands. For the first time in cartographic history, map publishers could produce maps relatively quickly and with a greater sense of immediacy in response to a marketplace that was increasingly driven by special cartographic interests, such as maps showing military installations, election campaigns, coal fields, railroad lines, or shopping districts (more on this below).

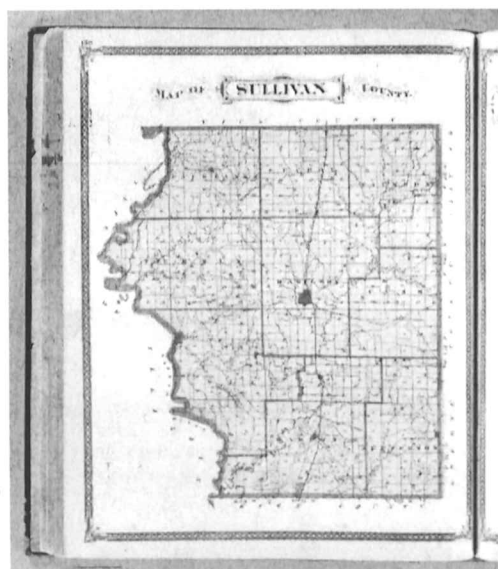


Fig.8. “Whittier’s Barefooted Boy” (Boston: L. Prang & Co., 1868). Online.

Fig. 9. Two-color (orange and black) “Map of Sullivan County.” A. T. Andreas, *Illustrated Historical Atlas of the State of Indiana* (Chicago: Baskin, Forster & Co., 1876). David Rumsey Historical Map Collection.

The spectrum of map genres was further influenced by the introduction of color. Lithographers specializing in chromolithography used multiple stones for the production of prints, also called “chromos.” While high-end reproductions, like that of Eastman Johnson’s painting, *The Barefooted Boy* (Fig. 8; based on John Greenleaf Whittier’s poem) employed twenty-six stones, maps and map-like city views required significantly fewer stones or plates—enough to compete with the long-existing cottage industry of workers specializing in map coloring (Fig. 9). Finally, the use of the steam-powered lithographic press lowered production costs even further. Whereas relief or intaglio printing limited the numeric output of maps significantly—after a run of 1,500 copies, plates had become dull and images looked faded enough that the plate needed to be re-engraved¹⁵—the introduction of steam power increased a formerly manual lithographic print run from twelve prints per hour to nearly one thousand per hour (Fig. 10).¹⁶ Ranging from oversized wall maps to book and pamphlet inserts to trade cards and specimen of “fancy type,” map images could now be made at a higher quality and faster speed previously unknown to map producers and consumers. It is perhaps not an understatement that from the point of view of manufacturing and map production, lithography essentially hailed the arrival of the “industrial map.”¹⁷

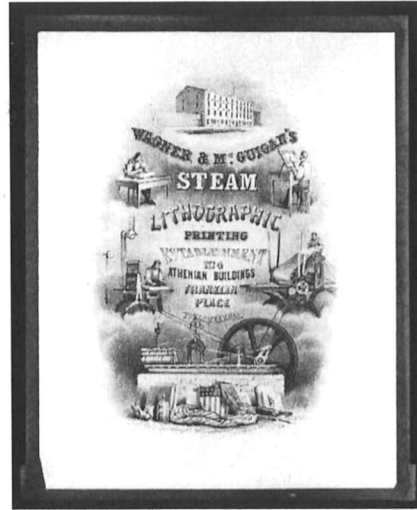


Fig. 10. Ad for Wagner & McGuigan's Steam Lithographic Printing Establishment (Philadelphia 1850). Library Company.

As industrial maps, lithographed maps expanded the spectrum of map genres significantly. After decades during which map production had revolved mostly around geopolitical representations of the nation's (and the world's) geography through the delineation of territorial boundaries and physical topography, lithographed maps diversified the overall content of maps. Beginning with the 1840s American map-publishers provided a new host of "thematic" maps showing military campaigns, economic and demographic data, political and/or historical change, not to mention local counties and their micro-geopolitics.¹⁸ A brief gallery (Fig. 11-21), (hopefully legible in Pdf.Format; digital files tend to be huge and don't always transfer very well), will serve to illustrate the thematic diversity in map genres.¹⁹

A. Military Maps

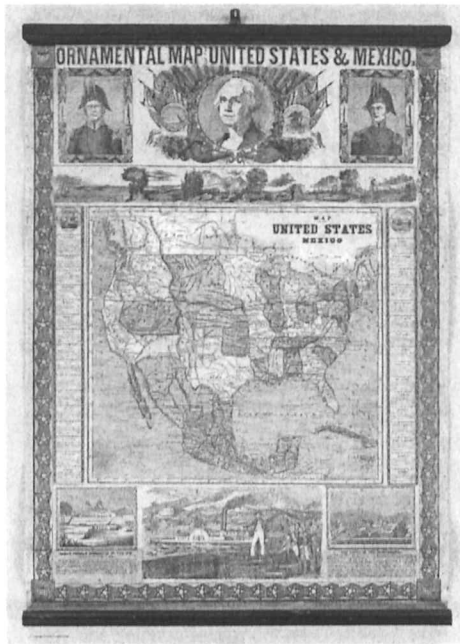


Fig. 11. Edward H. Ensign and Horace Thayer's *Ornamental Map of the United States and Mexico* (New York: Ensign & Thayer, 1851). According to the David Rumsey's website (Lunacommons.org) this map is mounted as a wall map. It is surrounded by drawings including pictures of Generals Taylor and Scott, a panoramic view from New York to the Pacific Ocean by the "contemplated Oregon railroad," the Great Temple destroyed by Cortez in 1521 and "The Halls of the Montezumas." David Rumsey Historical Map Collection.

Fig. 12. John Calvin Smith's *A New Naval and Military Map of the United States* (Philadelphia, 1862). According to the summary offered by the Library of Congress, this map includes state/county population (1860 census) tables, view of Washington, various Civil War scenes, time difference table, "table of air-line distances," three profiles and portraits of prominent Union military personnel along decorative border. Insets: Fall of rain and mean annual temperature with the mountains, plains & river systems of the United States -- Map of the world on Mercators projection -- Map showing the distribution of the slave and free colored population of the United States -- Map showing the distribution of staples in colors with the principle articles of export marked in the states severally, also the distribution of plants, trees, and animals. Library of Congress.

B. County Maps

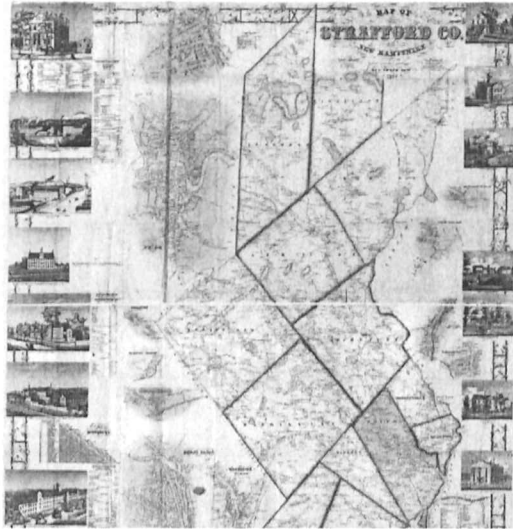


Fig. 13. *Map of Strafford County, New Hampshire* (Philadelphia : Smith & Bartlett, 1856). Includes twenty-six views, eleven village plans, a chart of distances, three directories, and a table of distances. Library of Congress.

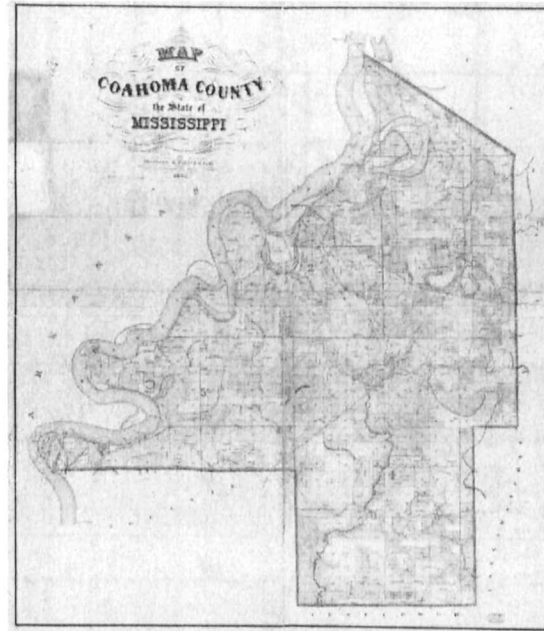


Fig. 14. *Map of Coahoma County in the state of Mississippi* (Philadelphia: Duval & Hunter, Lithogs., 1872). Shows landownership. Library of Congress.

C. Geological and Railroad Maps



Fig. 15. Nelson Saylor, *An Outline Geological Map of Tennessee* (Cincinnati, 1866). Library of Congress.

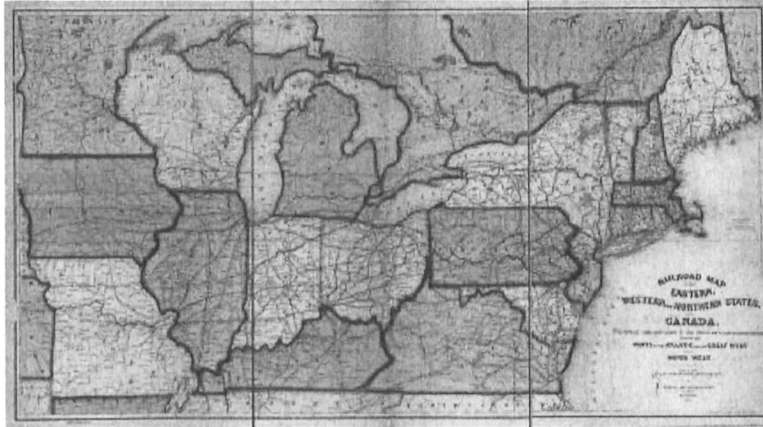


Fig. 16. [S.A.Mitchell], *Railroad map of the eastern, western and northern states, and Canada, showing conspicuously the lines of communication between the ports of the Atlantic and the great west and north west* (Philadelphia, 1859). General map covering the northeastern and north-central United States and part of eastern Canada. Shows drainage, cities, roads, canals, and “railroads completed” and “in progress.” Library of Congress.

D. City Plans and Views

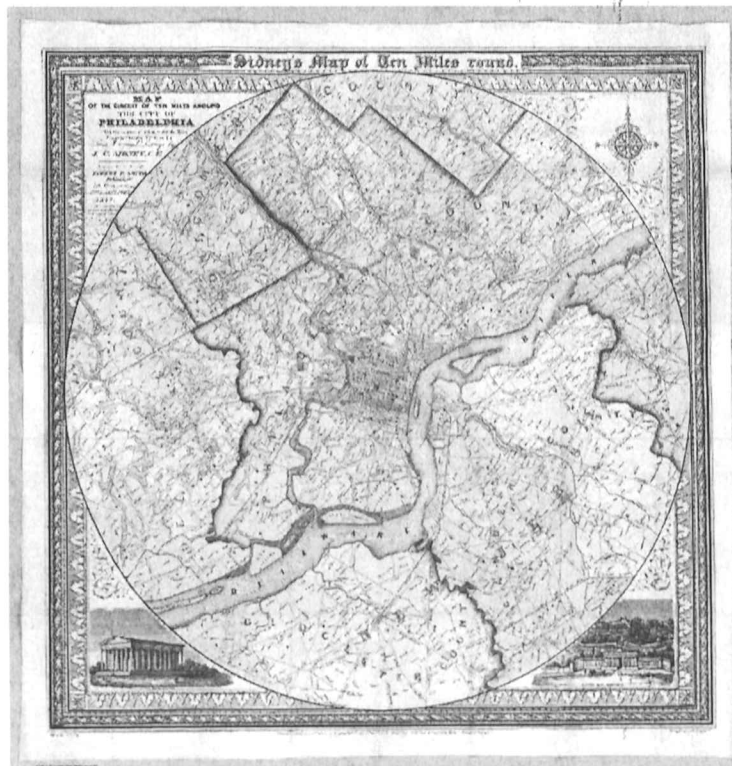


Fig. 17. *Map of...Ten Miles Round the City of Philadelphia* (Philadelphia: Robert P. Smith, 1847). According to Rumsey’s website (Lunacommons.org), Smith considered this to be “the most successful of our maps.” An example of early lithography printed by P.S. Duval, it shows a

view of Girard College and of Laurel Hill Cemetery in the lower corners of the map. The map is folded into burgundy leather covers with the title, "Sidney's Map Of Ten Miles Around Philadelphia," stamped in gilt. David Rumsey Historical Map Collection.

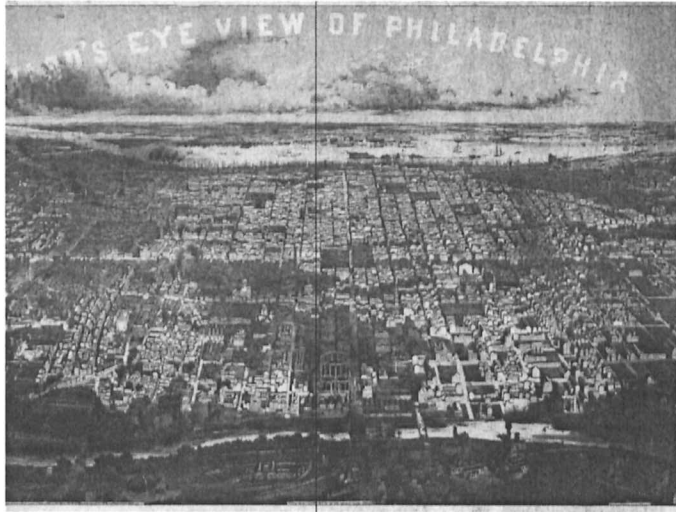


Fig. 18. *Bird's Eye View of Philadelphia* (Philadelphia: P. S. Duval and Son & Co., 1868). Library of Congress.

E. Map Inserts and Miscellaneous Map Imprints

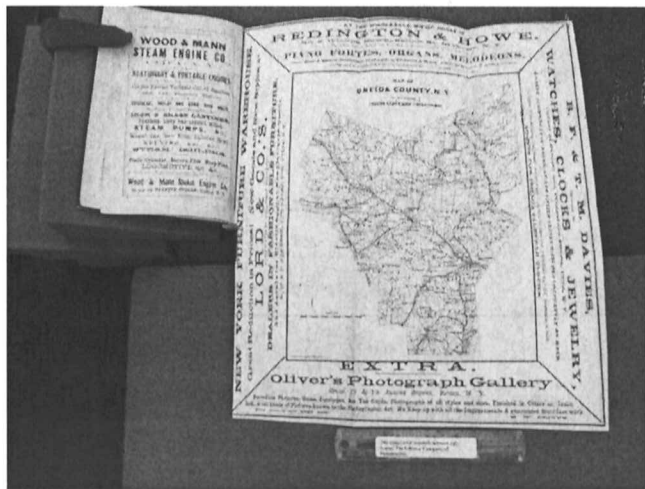


Fig. 19. Hamilton Child (comp.), *Gazetteer and Business Directory, Oneida Co.* (Syracuse, 1869). Library Company.

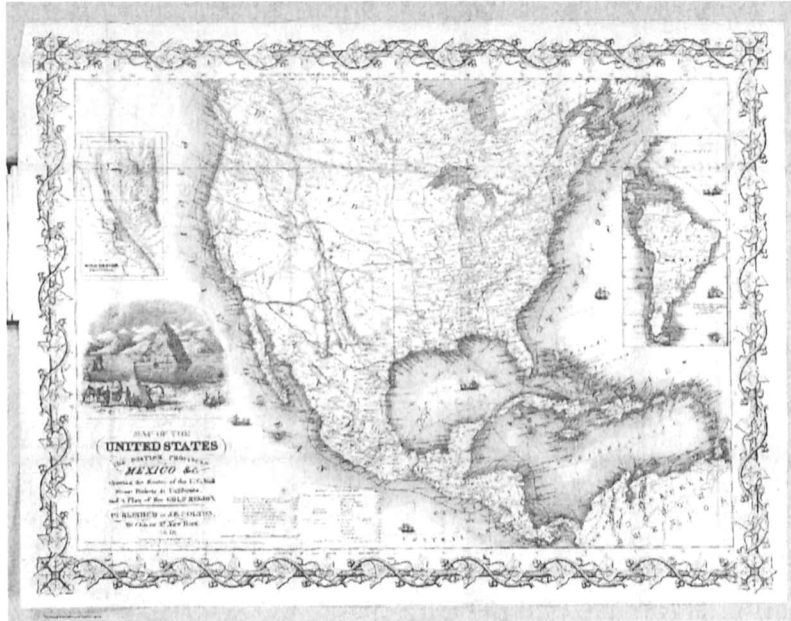


Fig. 20. Pocket Map “Plan of the GOLD REGION,” in J. H. Colton, *Map of the United States, The British Provinces &c. Mexico* (New York: Colton, 1849). Lithograph. David Rumsey Historical Map Collection

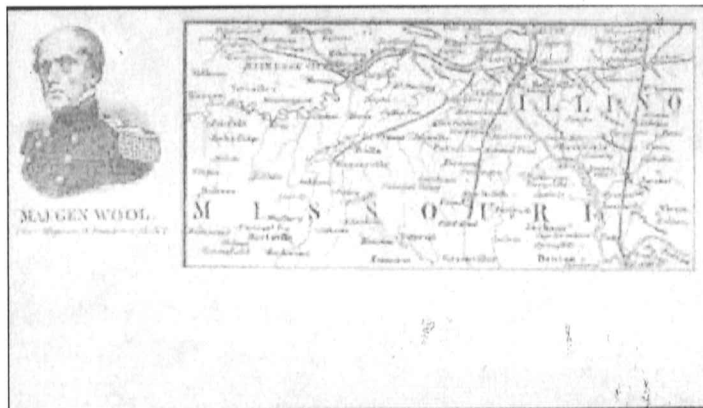


Fig. 21. Envelope with map letter-head (New York: Charles Magnus, c.1861-65). Winterthur Collection.

Even a cursory survey of these different map types and some of their descriptions reveals that with the introduction of lithography came a tremendous sense of possibility concerning the internal design and arrangement of maps. The thematic diversification of map content seems to have coincided with the reutilization of the map as a cartographic representation, on the one hand, and as a modern communication vehicle, on the other. Speaking from a strictly

cartographic viewpoint, it may come as a surprise that hardly one map looks alike. At the same time that map-draftsmen and map-engravers were beholden to a fixed grammar of “cartographic writing” (coordinates, lettering, cardinal orientation, symbols), they took great liberties in the selection and/or generalization of both geodetic and geographic data. While coordinates were increasingly more accurate (that is, they corresponded with ever greater certainty with phenomena on the ground), the actual graphic display of this data varied greatly even among maps drawn to the same scale and within the same genre. For example, county maps like that of Stafford, NH, and Coahoma, MO (Fig. 13 and 14), differed greatly in the representation of topography, roads, and settlements. Ditto, maps showing coal fields or small-scale military maps showing Civil War battlefields varied greatly, from being intensely detailed to schematic at best.²⁰ In addition to the cartographic principles of selection and generalization, the seemingly endless choice of map scale corresponded with the map-makers’ varied choices in physical map size: lithographed maps were printed on all paper sizes, ranging from giant wall maps measuring over six by six feet—in one instance “An immense railroad map of the United States, 25 feet by 17, is now on display in New York. It has been prepared for the London exchange for the information of capitalists”—to miniature-like map inserts used in handbills and on envelopes (Fig. 21).²¹

What lithographed maps have uniformly in common is an overdetermined emphasis on both ornamental and informational inserts. Pictorial inserts, decorative framing devices, and insets of tables and maps have been part of map publishing since Abraham Ortelius and Gerard Mercator printed their maps in the sixteenth century. Beginning with the Antebellum decade, lithographed maps took this convention to a new level. As the military maps by Ensign/Thayer and J.C. Smith (Fig. 11 and 12) from above show, cartographic information is presented similar

to a collage. Their maps contain materials including demographic data, time/distance charts, statistical information, and historical accounts. Paired with the imposing pictorial inserts—portraits, architectural landmarks, landscapes, etc.—the lithographed map projected a map image in which actual cartographic information almost begins to vanish amidst the extra-cartographic details.

Finally, the survey of lithographed maps reveals changes in the visual appearance of maps. Historians of cartography, print culture, and the visual arts have commented with great regularity on the way in which lithography altered the look of maps. Two detail maps published by the Mitchell publishing company, illustrate the optical differences (Fig. 22-25). Engraved maps, especially those engraved on copper plates, registered cartographic information in distinctive visual patterns marked by lines, dots, and symbols that, no matter how densely packed, generated map images that critics and customers celebrated for their clarity and overall legibility (Fig. 22 and 23). In the case of this particular example, the “Map of Brazil” is taken from the 1848 award-winning Mitchell atlas by the Duval-Bourquin team, which they had lithographed with the goal to demonstrate how the lithographic transfer resulted in map images that emulated the crisp, finely-carved look of intaglio printings.

By contrast, once lithographed maps were reproduced planographically via copy paper, stone, or metal plates, the visual experience of the map image changed. Bearing the same amount of information, the lithographed *Map of Brazil* published by S. Augustus Mitchell, Jr. now looks surprisingly more crowded and less legible (Fig. 24 and 25). During the lithographic process printing inks tended to affect visual variables, including letter spacing, colors and hues, lightness, saturation, and so forth, which, when all is told, generated images defined by starker contrasts. Maps looked bolder or even muscular (one could say, lithography creates the optical effect of

making map images “pop” or burst with more visual energy). The lithographed map’s decorative frame frequently amplified the map’s internal visual effect. While it was traditional for engraved maps to include some form of decorative border, the black-and-white border added to the lithographed map in Fig. 24 creates a *trompe l’oeil* effect: the borders’ width and perspectival interplay of floral designs and ribbons seemingly raises the two-dimensional print above the surface of the map sheet, thus imitating the three-dimensional shape of solid Antebellum picture frames.

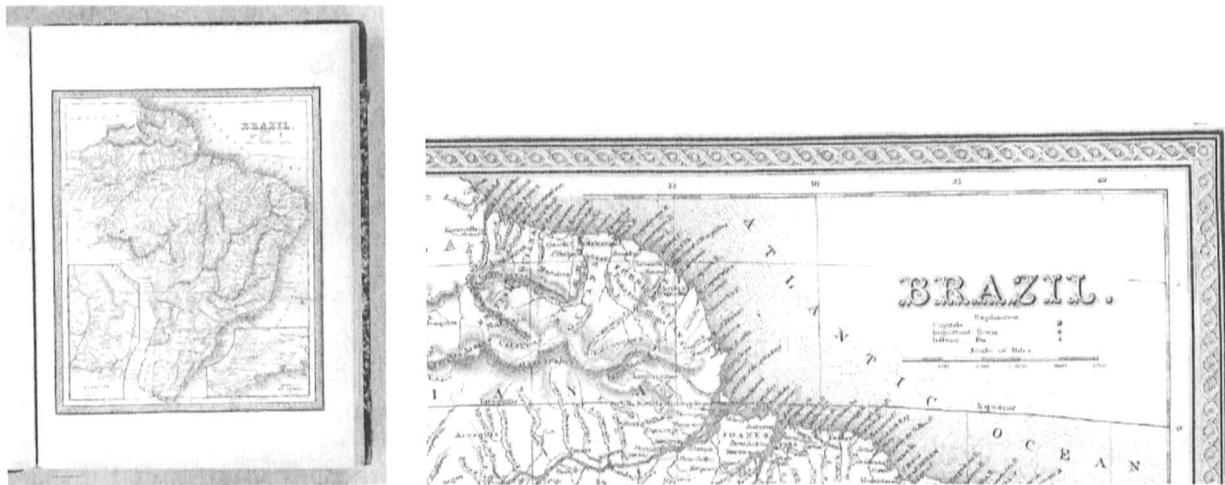


Fig. 22 and 23. “Map of Brazil,” in *A New Universal Atlas Containing Maps of the various Empires, Kingdoms, States and Republics of the World. With a special map of each of the United States, Plans of Cities &c. Comprehended in seventy sheets and forming a series of One Hundred And Seventeen Maps, Plans And Sections* (Philadelphia: S. Augustus Mitchell, [Sr.], 1848). This is from the award-winning lithographed copy submitted to the Franklin Institute by Peter Duval and Frederick Bourquin. David Rumsey Historical Map Collection.

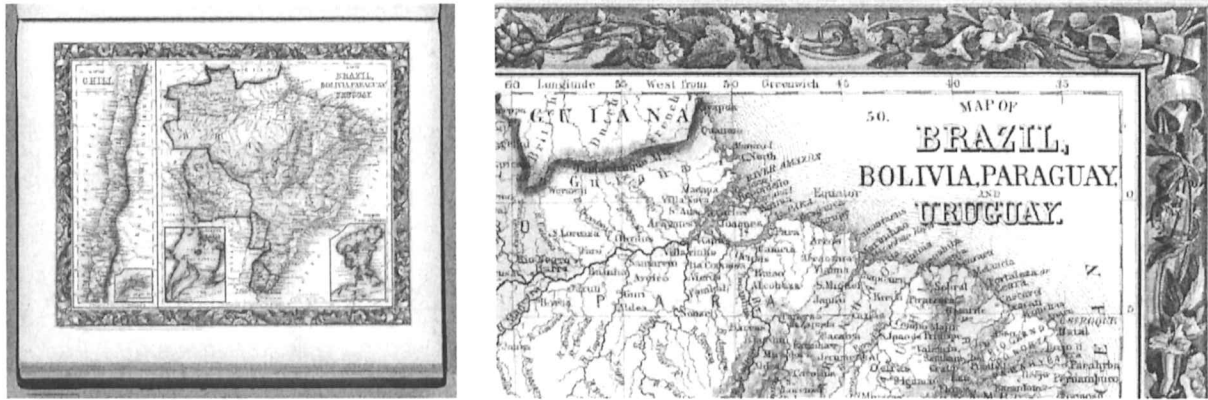


Fig. 24 and 25. “Map of Brazil, Bolivia, Paraguay and Uruguay,” in *Mitchell’s New General Atlas, Containing Maps Of The Various Countries Of The World, Plans Of Cities, Etc. Embraced In Forty-Seven Quarto Maps, Forming A Series Of Seventy-Six Maps And Plans, Together With Valuable Statistical Tables* (Philadelphia: S. Augustus Mitchell, Jr., 1860). David Rumsey Historical Map Collection.

The examples of thematic diversification and visual effect offer a first and perhaps more immediate key to understanding how the lithographed maps participated in the widespread redefinition of maps during the age of industrialization. The examination of material packaging, sales ads, and production patterns, on the other hand, provides a more substantial background. By the same token that a host of local institutions and interest groups had boosted the range of maps thematically—the perennial city directory maps, fire insurance maps (Hexamer), city maps of various scales, school maps, temperance maps, and maps of the underground railroad, to list just a few more not mentioned so far—the increase in thematic range simultaneously increased map use and the material nature of maps. By 1850 the map market had already adjusted to an expanded notion of map use, fulfilling functions from the specific decorative to the most general use function of all, navigation and education. With a few adjustments, involving lettering in map titles and paper quality, maps such as the 1847 reprint of Mitchell’s 1836 *Travellers’ Guide*

Through the United States (Fig. 26) could be offered in multiple formats, ranging from a page in a hefty folio atlas to a sturdy school map printed on card-board, to a pocket fold-out to a novelty article, such as the handkerchief or necktie map.

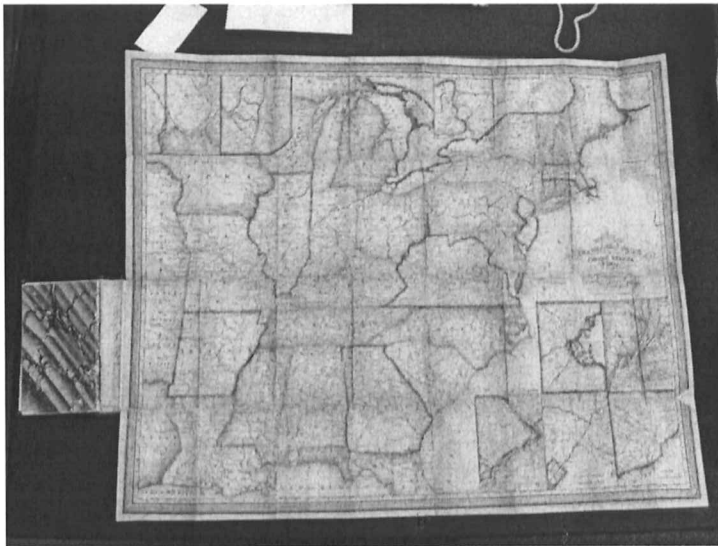


Fig. 26. *Mitchell's traveller's guide through the United States: containing the principal cities, towns, &c., alphabetically arranged; together with the stage, steam-boat, canal, and railroad routes, with the distances, in miles, from place to place* (Philadelphia: Thomas Cowperthwait, & Co., [1836]). Library Company.

While material versatility in paper, binding, and size had enhanced map sales since the seventeenth century, lithography was responsible for a significant adjustment in the map's material standing as a consumer object. Until the early 1840s, map publishers sold high-end wall maps—usually involving copperplate engraving, intaglio printing, hand-coloring, and hand-sewn cloth borders—for anywhere between \$7 and \$10.²² Throughout the decade, the introduction of machine-made paper and steam powered printing depressed prices for large-sheet maps so that by the end of the decade an engraved map measuring five by four feet would cost between \$3 and \$5.²³ A rare surviving price-chart, a broadside published in 1851 by Horace Thayer's firm called the "United States Map, Chart, and Book Establishment," confirms the going rate for wall

maps. Thayer charged \$3.25 for his *Ornamental Map of the United States and Mexcio* (see Fig. 11), which is market-appropriate considering that it was a steel-engraved, six-sheet wall map measuring 5 feet 1 inches by 4 feet 4 inches. At the same time, however, Thayer advertised a map bearing the same title as a lithograph, selling it wholesale at \$7 per 100, or at the drastically cheaper price of merely seven cents per copy! If this price quote refers to the same map advertised earlier, lithography was responsible for a momentous price collapse of maps, affecting everything from a map's immediate material value to its symbolic place inside a broader socio-economic system in which maps posed as aesthetic décor or educational capital. Following Thayer's claim—even if it sounds exaggerated—that “during the twenty-three years this house has been in operation, several millions of maps, charts, and other works have been published, at prices that have induced agents to engage extensively in selling them,” the economics of cartography saw the great debunking of the engraved map during the 1850s.²⁴ At the close of the 1850s, it is not an exaggeration to say that the mass-produced, wholesale-marketed lithographed map was beginning to dominate the American marketplace.²⁵ According to the *American Encyclopedia of Printing* the take-over was more or less completed by the early 1870s. In a brief entry devoted to “Maps” the editor wrote: “Map-printing constitutes, with some publishers, a distinct business, and various devices have from time to time simplified and reduced the cost of the process. Formerly fine maps were all printed by the copper-plate process; now they are frequently lithographed, and sometimes printed from electrotypes on typographic presses.”²⁶

This encyclopedic entry no longer needed to explain the fact that the lithographed maps' ascendance in the marketplace was—technological innovation and mechanization aside—the result of a fundamental shift in the economic organization of cartographic publishing. In Philadelphia the economic reorganization of the map industry took place during the 1820s, when

John Melish and Henry Schenck Tanner developed the business model of the “Map Publisher,” that is, they pursued an entrepreneurial model in which a publisher devoted his or her energies exclusively to the production of maps, managing and overseeing the various processes involved from map drawing to engraving, from printing to selling. In the 1820s this was not a new model; it had informed the cartographic businesses of Thomas Jefferys or Robert Sayer in eighteenth-century England, and it was the business model adopted by the Philadelphia printer-turned-book-and-atlas-publisher, Mathew Carey, during the 1790s and 1800s.²⁷ But by and large, as Walter Ristow and David Bosse have shown, American commercial cartography was a highly private and decentralized mode of production. Cleaving to the model of the independent shop-keeper, surveyors, map-draftsmen, engravers, printers, and sellers acted as separate agents. But for a map to succeed, its production required a constant stream of face-to-face exchanges: the process of engraving required a close relationship with the cartographer/draftsman; at the same time, the engraver had to work closely with the printer and the paper-maker; the map-maker in turn had to deal with the map colorist and map binder in case the map was part of an atlas; and so forth. This kind of labor division was often counterproductive, causing frequently delays and costly redundancies. While there was not much time or energy devoted to marketing maps or to the building of sales networks, as surviving correspondence shows, too much time was given over to bickering between the various parties involved.²⁸

John Melish, after having published a series of successful school atlases and wall maps between 1812 and 1815, changed the business model when seeking subscribers and sponsors for his now famous six-sheet copper-engraved map, *The Map of the United States* (1816), the first map to show the nation state as a trans-continental entity (Fig. 27). Melish began marketing himself as the middleman who would oversee the production of a map from start to finish. For

each published map, Melish took on the role of contract negotiator and sales agent, arranging everything from engraving, printing, paper selection to placing ads in newspapers and sending out free review copies. As early as 1816, convinced of the success of this new business model, Melish designed a trade-card advertizing his name and new professional title: “Geographer & Map Publisher” (Fig. 28). In 1822, when Melish’s business failed, his creditors were the very parties he had sought to manage: printers, papermakers, and publishers selling his maps on commission were his main creditors.²⁹ But his business model survived. His main rival, Henry Tanner and his sons refined it during the 1820s and 1830s, developing cartographic publishing into a profitable business (Fig. 29).³⁰

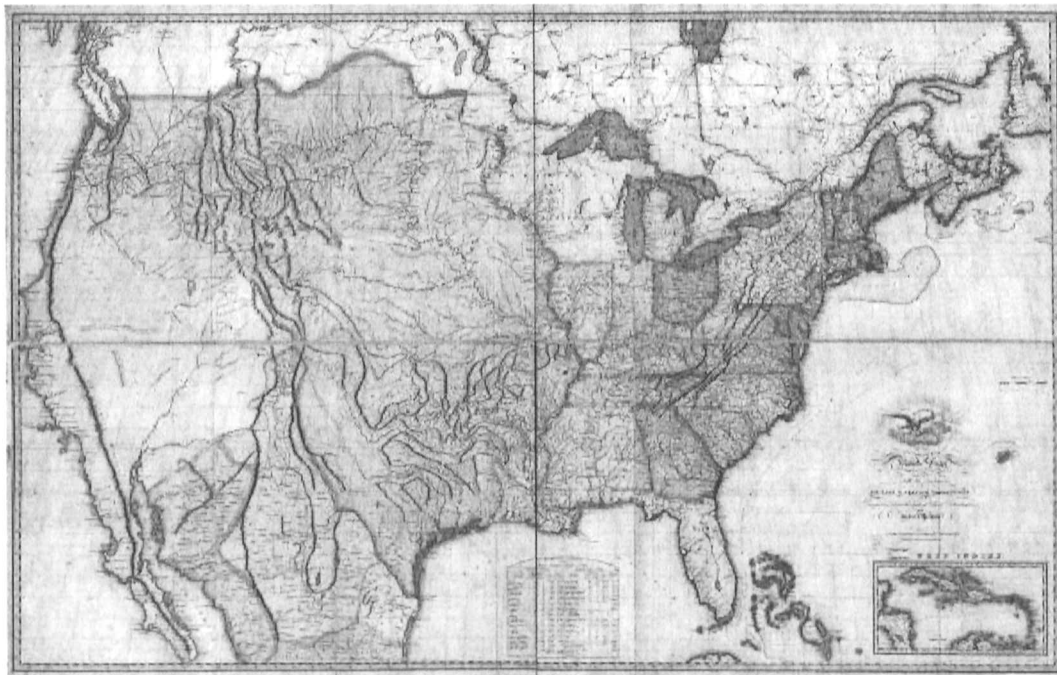


Fig. 27. John Melish, *Map of the United States* (1816). Library of Congress



Fig. 28. Engraved prototype of Melish's Tradecard. Detail from *Prospectus of a Six Sheet map of the United States* (Philadelphia: Melish, 1816). Library Company.

Fig. 29. Frontispiece. H.S. Tanner, *A New American atlas containing maps of the several states of the North American union* (Philadelphia : H.S. Tanner, 1823). Tanner submitted seven maps from this atlas to the 1825 Exhibition of the Franklin Institute.³¹ David Rumsey Historical Map Collection.

The generation of map publishers that followed in the footsteps of Melish and Tanner continued their business model, but with a few important modifications. First, the advent of lithographic printing stream-lined the production process. By hiring lithographic firms major map publishers, such as the S. Augustus Mitchell emporium, and minor ones, like Cowperthwait & Co., Charles Desilver, and J. C. Smith, were able to consolidate the number of work stations and reduce the number of personnel (and thus the potential for interpersonal friction, too). Whereas the Tanners' outsourced work such as engraving, coloring, and printing, steam-powered "Lithographic Printing Establishments"—such as Duval and Wagner & McGuigan—combined these steps of map production under the same roof (see Fig. 10).

Second, Philadelphia's unique commercial urban geography strongly contributed to the building of more efficient and even synergistic relationships between map publishers and

lithographic printing offices. Many of the main firms shared the same neighborhood between Market and Chestnut Street, and were thus within walking distance. A few specific buildings housed successive generations of map publishers. For example “144 Chesnut St.” (old street numbers; Fig. 30) served as offices for Tanner & Co. during the late 1820s and early 1830s, and then for Robert P. Smith’s “Anastatic Office” in the 1840s. According to Philadelphia directories from the 1850s, and addresses published in maps and map advertisements, a whole generation of map publishers and printers of lithographed maps flourished on Chestnut Street alone: the “map publisher” Samuel Augustus Mitchell was at Fifth and Chestnut; the printers of Cowperthwaite & Co. were at Chestnut above Sixth Street; Wagner & McGuigan’s lithographic firm was located at 116 Chestnut Street (Fig. 31); and Charles Desilver’s publishing address was “714 Chesnut Street.” If we add the names and addresses of people, who, employed as map engravers and/or “map painters,” were living in the vicinity, the sheer density of shops and people involved in the map-making enterprise ought to give Chestnut Street the sobriquet of being the nation’s “Map District” prior to the Civil War.³²



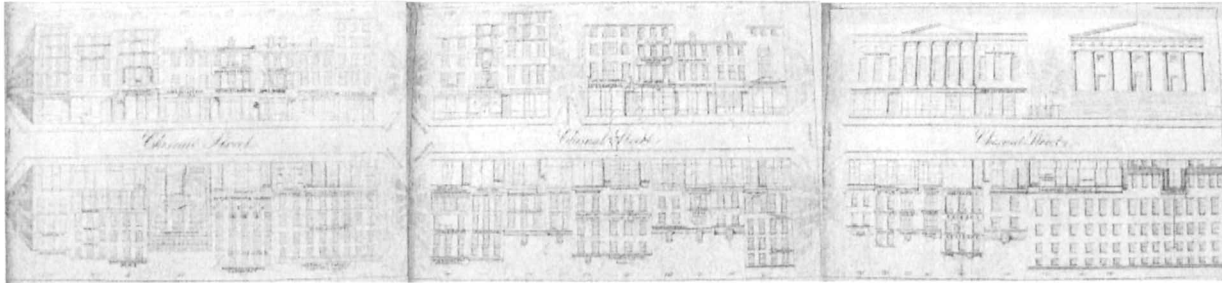


Fig. 30. 144 Chestnut Street. Home of the Tanners' and Robert P. Smith's office.

Fig. 31. 116 Chestnut Street (opposite of the offices of *Godey's Lady's Book*)

Fig. 32. Chestnut Street between Third and Fifth Street.

Fig. 30-32. Details and Panorama, from *Rae's Philadelphia Pictorial Directory and Panoramic Advertiser* (1851). Library Company.³³

Antebellum shopping culture was the third modification that changed the cartographic business model. Philadelphia's map district was located in one of the nation's most established shopping districts. As the panoramic street survey in *Rae's Philadelphia Pictorial Directory* illustrates, map publishers shared Chestnut Street with all kinds of commercial establishments, and were only a few blocks away from public centers of entertainment such as "Barnum's Museum," "Dr. Davidson's Arcade Baths," and the "Chestnut Street Theater." Each panorama shows house fronts whose upper floors provided space for large bill boards while the first floor contained massive shop windows (Fig. 32). This architectural lay-out of storefronts coincided with the well-documented rise of a new generation of consumers who explored their new spending power in newly designed and visually overdetermined retail spaces: the emergent middle-class man or women of leisure who, flaneur-like, were not only rapidly becoming used to window-shopping and store-browsing, but, as suggested by the *Ladies Philadelphia Shopping Guide* (1859), considered a visit to the shopping district—with map in hand—a form of sociable entertainment.³⁴ Lithographic advertisements, such as the one for "Finn & Burton. Paper

Hangings” by August Kollner (Fig. 33), showed window displays to be lavishly designed to lure pedestrians into the store. Map publishers competed thus with an emergent retail culture that only recently had begun to explore a “sight-and-seen” sales tactic emphasizing the material and visual display of wares. In order to keep up with the competition, map publishers—especially those located along Chestnut Street—in all likelihood imitated window displays shown in the late 1860s and early 1870s catalog for the J.A. Bancroft & Co.’s “School Furnishing House”: window shoppers are dwarfed by unfurled wall maps and massive globes (Fig. 34).³⁵

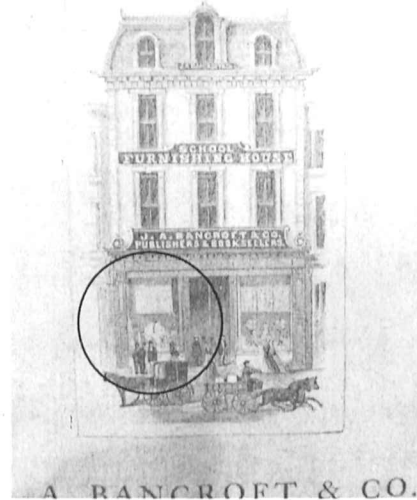


Fig. 33. A. Kollner. “Finn & Burton. Paper Hangings. 142 Arch St (Philadelphia, 1850?). Library Company.

Fig. 34. Detail from title page, *Illustrated Catalogue of School Merchandise, Furniture, Apparatus, Charts, &c.* (Philadelphia: J. A. Bancroft & Co., n.d [1867-1875?]). 512 Arch Street.

By now the lithographed maps had become not only the dominant mode of cartographic production, but in the wake of commercialization and mass distribution lithographed maps had established their look as the representative form of nineteenth-century “mapness.” Consumed by railroad passengers using lithographed pocket maps and by real estate agents poring over

gigantic city maps, the inky and robust look of lithographed maps became the basis of mainstream map perception from the moment when a new generation of school children studied geography using updated lithographed editions of, for example, *Mitchell's New Outline Maps*³⁶ (Fig. 35) or “Map of the United States and Territories” published in *Mitchell's New General Atlas* (Fig. 36). With the rise of chromolithographed maps, color rather than detail anchored the cartographic imagination—a fact satirized by Mark Twain’s novel *Tom Sawyer Abroad* (1894). Traveling in a balloon across the United States, Huck Finn challenges Tom’s navigational skills as they debate their combined cartographic memory based on popular school maps:

“[W]e ought to be past Illinois, oughtn’t we?”

“Certainly.”

“Well, we ain’t.”

“What’s the reason we ain’t?”

“I know by the color. We’re right over Illinois yet. And you can see for yourself that Indiana ain’t in sight.”

“I wonder what’s the matter with you, Huck. You know by the COLOR?”

“Yes, of course I do.”

“What’s the color got to do with it?”

“It’s got everything to do with it. Illinois is green, Indiana is pink. You show me any pink down here, if you can. No, sir; it’s green.”

“Indiana PINK? Why, what a lie!”

“It ain’t no lie; I’ve seen it on the map, and it’s pink.”

You never see a person so aggravated and disgusted. He says:

“Well, if I was such a numbskull as you, Huck Finn, I would jump over. Seen it on the map! Huck Finn, did you reckon the States was the same color out-of-doors as they are on the map?”

“Tom Sawyer, what’s a map for? Ain’t it to learn you facts?”³⁷

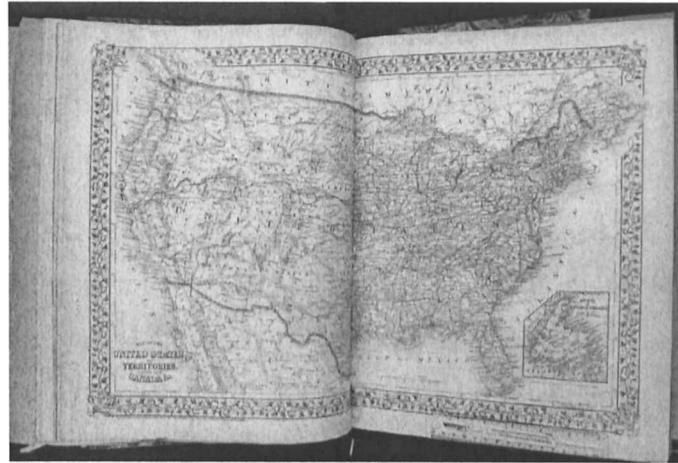


Fig. 35. *Mitchell’s Atlas of Outline Maps. Intended to Be Filled Up By Pupils Studying Mitchell’s School Geography...* (Philadelphia: Thomas, Cowperthwait, & Co., 1839). David Rumsey Historical Map Collection.

Fig. 36. S. Augustus Mitchell, *New General Atlas, containing maps of the various countries of the world, plans of cities, etc., embraced in fifty-five quarto maps; forming a series of eighty-seven maps and plans, together with valuable statistical tables* (Philadelphia: S. Augustus Mitchell, Jr., 1874). Library Company.

While Twain’s comical treatment of map perception could be vaguely construed as a rebuke of lithographed maps (or considering the date of publication, as a rebuke of offset-printing), the dialogue between Tom Sawyer and Huck Finn echoes the same fundamental change in map production noted at the beginning of the essay. When Huck says, “I’ve seen it on the map,” he refers to the map as a ubiquitous construct that can be cited without the need to specify any particulars about the map’s make, author, or publisher. Had Twain written this dialogue in the 1840s and 1850s, he invariably would have felt compelled to identify the map by either the name of the map author or the publisher. In Antebellum newspapers, magazines, and

especially educational journals conversations about maps were carried out by shorthand reference: authors weighed the pros and cons of a “Melish map,” a “Finley atlas,” or a “Mitchell school map.” Even fiction writers like the novelist Fanny Fern who devoted a passage in her novel, *Ruth Hall* (1854) to caricature Antebellum geography lessons, mentions names—here the map/atlas publisher, Joseph Worcester.³⁸

This response was in keeping with a centuries-old mode of map classification predicated on authorship, identity, and personal accountability. Until lithography took over engraving as the dominant mode of map production, a map-maker’s name was the equivalent to a modern brand name; it stood for style, quality, accuracy, and integrity of cartographic knowledge. A close inspection of copper- or steel-engraved maps published either single sheet or bound into Tanner’s and Mitchell’s atlases, reveals that the map-makers’ and the publishers’ names were prominently shown next to the map title—and often for a second time in small font at the bottom of the map sheet. However, with the ascendance of lithographic map publishing, cartographic authorship increasingly ceased to register. By the time Mitchell, Jr. published the *New General Atlas* (1874)—an atlas that continues to use a frontispiece and maps originally drawn by Henry Tanner and others for his 1823 masterpiece, *A New American Atlas*—only select maps are identified by the name of the “Engraver.” More than half of Mitchell Jr.’s atlas maps, which in previous decades had diligently carried the name of the cartographer, were now anonymous images identified by the title of content and the publisher’s name securing his copyright to the map. There are several explanations, too long to develop now, but to be considered in the future. With lithographic production, the role of the map-maker was split into that of the specialist “cartographer” and “engraver.” Whereas Melish and Tanner used a stable of engravers living in Philadelphia, publishers of lithographic maps either relied on in-house artists or on an extensive

trans-regional network of subcontracted illustrators.³⁹ One result of this redistribution of labor was that map-makers increasingly ceased to identify themselves or become identified with the final product. The publisher's name took over the role of authorship and the ideological risks of what Michel Foucault has called the "author-function," including the now frequently conflicting demands that came with questions of originality and copyright in the age of industrial production. In the end, going over the various changes and developments that were either introduced by or that accompanied lithographic map production, the perhaps most significant change was the death of the map author. Long live the map publisher!

¹ That large maps were on display is often overlooked. See Scott E. Caspar's description of the exhibit in Scott E. Caspar, Jeffery D. Groves, Stephen W. Nissenbaum, Michael Winship, *A History of the Book in America, Vol. 3* (Chapel Hill: University of North Carolina, 2007) 17-25.

² "Plan of the American Book Trade Assoc. Exhibit," *Publishers' Weekly* 10 (1 July 1876).

³ *Catalogue of the Eighteenth Exhibition of American Manufactures, held in Philadelphia, 1848...* (Philadelphia: Young, 1848) 9.

⁴ *Catalogue, Containing a Correct List of All the Articles Exhibiting at the Eighteenth Annual Fair of the American Institute of the City of New York, 1849* (New York: The Institute, 1849) entry no. 1824

⁵ Neither maps nor other printed goods are listed in the Expo's catalogs detailing the contents of "Engravings, Etchings, Prints" or "Typewriters, Paper, Blank Books, Stationary" in Part 8 and 11 of the "Manufacture and Liberal Arts Building." See Moses Purnell Handy (ed.), *The official directory of the World's Columbian exposition* (William B. Conkey Co., 1893).

⁶ "P[ar]t. 16, United States government building," in *The official directory of the World's Columbian exposition*, ed. Moses Purnell Handy (William B. Conkey Co., 1893) 17-121.

⁷ David Woodward, *The All-American Map. Wax Engraving and Its Influence on Cartography* (Chicago: University of Chicago Press, 1977) 8. A more expansive history of lithography and maps is in Walter W. Ristow, "Lithography and Maps, 1796-1850," in *Five Centuries of Map Printing*, ed. David Woodward (Chicago: University of Chicago Press, 1975) 77-112; see also his cumulative work, *American Maps and Mapmakers. Commercial Cartography in the Nineteenth Century* (Detroit: Wayne State University Press, 1985).

⁸ Woodward, 8. For a quick and useful introduction to map-printing techniques see J. S. Keates, *Cartographic Design and Production* (New York: Wiley, 1973) esp. 123-137.

⁹ *The Mercantile Register, or Business Man's Guide* (Philadelphia: Orr, 1846) 198.

¹⁰ Ristow, "Lithography and Maps," 106-111; John Reys, *Views and Viewmakers of Urban America: Lithographs of Towns and Cities in the United States and Canada* (Columbia: University of Missouri Press, 1984) 35.

¹¹ Ristow hedges when declaring it to be impossible seeking to tally American lithographers involved in map production between 1830 and 1850. Jefferson Moak (who generously shared research notes with me), when providing a comprehensive survey of Philadelphia, also hesitates to declare that lithographers considered maps a profitable entity in the lithographic business. That said, my research into Antebellum city directories confirms Moak's hypothesis that cartography was a major staple of Philadelphia lithographic production. See *McElroy's Philadelphia Directory, for 1856* (Philadelphia: Edward C. & John Biddle, 1856) 796.

¹² Smith produced in facsimile two now famous historical maps of the city, Holme's map of 1681 and of Hill's map of 1774.

¹³ Ristow, 110; Woodward, 9.

¹⁴ On the economics surrounding maps prior to the Antebellum decades see Mary Sponberg Pedley, *The Commerce of Cartography* (Chicago: The University of Chicago Press, 2005) and David Bosse, "Maps in the Marketplace: Cartographic Vendors and Their Customers in Eighteenth-Century America," *Cartographica* 42, 1 (2007): 1-51.

¹⁵ I am averaging out conflicting numbers offered by print historians: according to some the image quality suffers after five hundred copies; others calculate that image quality deteriorated after "a few thousand impressions." See Ristow, *Maps for an Emerging Nation. Commercial Cartography in Nineteenth-Century America* (Washington: Library of Congress, 1977) 19. Also Pedley, 3-5, 244.

¹⁶ Michael Winship, "Manufacturing and Book Production," in Scott E. Caspar, Jeffery D. Groves, Stephen W. Nissenbaum, Michael Winship, *A History of the Book in America, Vol. 3* (Chapel Hill: University of North Carolina, 2007) 66. He cites Bamber Gascoigne, *How to Identify Prints: A Complete Guide to Manual and Mechanical Processes from Woodcut to Ink-Jet* (New York: Thames & Hudson, 1986) sec. 20c.

¹⁷ Here I am adapting the label used by book historians for Antebellum book production. See Scott E. Caspar et al., *A History of the Book in America, Vol. 3*.

¹⁸ See also Arthur Howard Robinson, *Early Thematic Mapping in the History of Cartography* (Chicago: University of Chicago Press, 1982).

¹⁹ Where applicable, images identify their online source. The sources cited most often are the Library of Congress's "Map Collection" at <http://memory.loc.gov>; and David Rumsey's Historical Map Collection at <http://www.lunacommons.org/luna>.

²⁰ See map galleries at the Library of Congress.

²¹ American Geographical Society, prepared by H.V. Poor [or George Shroeter acc to obit in *The Sun*; 10-29-1860; XLVII 142]; *Lowell Daily Citizen and News*; Date: 07-15-1856; Volume: VI; Issue: 67; *Boston Evening Transcript*; Date: 07-11-1856; Volume: XXVII; Issue: 7987.

²² The figures cited can be found in map advertisements published in American newspapers and magazines. See the entries for "map" between 1830 and 1860 in the online data base, *America's Historical Newspapers*. The reader will notice that while there are thousands of hits, the actual number of sales ads is more manageable because sales ads for one particular map or publisher would be printed for weeks in a row and in dozens of different newspapers. See also the prices listed in map catalogues, such as John Melish, *Geographical intelligence: the following geographical works have been published by John Melish, and are for sale, at the price annexed* [Philadelphia: John Melish, 1818]; and Henry S. Tanner, *Catalogue of Maps and Geographical Works* (Philadelphia: [Tanner,] 1829) and his "A List of Maps, Charts and Geographical Works, Recently published, and for sale by H.S. Tanner, geographer and map publisher, No. 51 South Third Street, Philadelphia," in H.S. Tanner, *The American Traveller; or Guide Through the United States...* (Philadelphia: Published by the Author, 1838).

²³ With the introduction of machine-made paper by Joshua and Thomas Gilpin, as Judith McGaw has observed, "during the 1820s and 1830s cylinder paper-making machines superseded hand manufacture, and when in the 1840s and 1850s the Fourdrinier paper-making machines became viable options, hand paper making vanished from the American scene." See Judith McGaw, *Most Wonderful Machine. Mechanization and Social Change in Berkshire Paper Making, 1801-1885* (Princeton: Princeton University Press, 1987) 9.

²⁴ *United States Map, Chart, and Book Establishment: Horace Thayer & Co., publishers, no. 50 Ann Street, New-York, and 127 Main-Street, Buffalo. E.N. Dodge, agent. The attention of agents, booksellers, and the public, is respectfully invited to this establishment* (New York: Horace Thayer & Co., 1851). Conversely, a statement by an 1853 map seller confirms the economic battle; seeking to sell *Colton's Map of the United States*, a wall map, for \$5 a piece like, the sales pitch was that as a "steel engraving [Colton's map is] better than [Jacob] Monk's lithograph." See *Portsmouth Journal*; Date: 01-15-1853; Volume: LXIV; Issue: 3.

²⁵ The paper industry echoed or mimicked this economic turn. By 1870 wholesalers working in the paper and printing industry, such as Theodore De Vinne, kept two kinds of "map paper" in stock: the first kind, "used exclusively for printing, might properly be classified with Writing papers, as it is thin, hard, sized paper, made from selected stock, with special reference to strength and flexibility. It is seldom to be found in any paper warehouse, the demand for special sizes and weights being too capricious to be provided for." The second kind, "a superior quality of linen stock, made for pocket maps, is made to order... A commoner quality, not unlike that of fine book paper, but tougher, is also made to order only." See Theodore Low De Vinne, *The Printer's Price List. A Manual for the use of clerks and Book-Keepers in Job Printing Offices* (New York: Francis Hart and Co., 1871; c 1870) 22-23.

²⁶ Luther J. Ringwalt, (ed.), *American Encyclopedia of Printing* (Philadelphia: Menamin & Ringwalt, 1871) 303. It should be noted that as early as 1854 map-making had come under scrutiny as a "mechanical" profession. As one critic observed, "A description of the methods of constructing maps scarcely belongs to a work devoted to Useful Arts and Manufactures; we must therefore refer the reader to some special treatise on the subject." See Charles

Tomlinson, *Cyclopedia of the Useful Arts, Mechanical and Chemical, Manufactures, Mining, and Engineering*, Vol. 2 (New York, 1854) 222.

²⁷ On early cartographic businesses see Pedley or Bosse; on nineteenth-century map production and publishers see Walter W. Ristow, *American Maps and Map-makers. Commercial Cartography in the Nineteenth Century* (Detroit: Wayne State University Press, 1985). On the rise of the “publisher” see James N. Green, “From Printer to Publisher: Mathew Carey and the Origins of Nineteenth-Century Book Publishing” in: *Getting the Books Out. Papers of the Chicago Conference on the Book in 19th-Century America*, ed. Michael Hackenberg (Washington, DC: Library of Congress, 1987) 26-44. Rosalind Remer, *Printers and Men of Capital. Philadelphia Book Publishers in the New Republic* (Philadelphia: University of Pennsylvania, 1996).

²⁸ For examples, see the correspondence of Lewis Evans about his map production in 1750s; reproduced in PMHB 59 (1935): 295-301; and the correspondence of Melish about the “Map of Ohio” (1815) in the Richard Clough Anderson Papers, Folders 34-43 (U of Illinois, Urbana).

²⁹ Remer, 118.

³⁰ Ristow, *American Maps*. ADD chpt.

³¹ *Report of the Second Annual Exhibition of the Franklin Institute of the State of Pennsylvania, for the promotion of the Mechanic Arts* (Philadelphia: Printed for the Institute, 1825) 43.

³² See *McElroy's Philadelphia Directory* published between 1837 and 1856.

³³ Julio Rae, *Rae's Philadelphia Pictorial Directory and Panoramic Advertiser: Chestnut Street from Second to Tenth Streets* (Philadelphia: Julio H. Rae, 1851).

³⁴ A street map of Philadelphia's center city accompanied [Solomon E.] Cohen, *Ladies Philadelphia Shopping Guide & Housekeeper's Companion. For 1859* (Philadelphia: Published by the author, 1859). On the American urban middle-class and consumerism see Stuart M. Blumin, *The Emergence of the Middle Class: Social Experience in the American City, 1760-1900* (Cambridge: Cambridge University Press, 1989); Richard L. Bushman, *The Refinement of America. Persons, Houses, Cities* (New York: Vintage, 1992). On the interplay of architecture, geography, and American retail culture see Jonathan Crary, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century* (Cambridge: MIT Press, 1990); Dell Upton, “Another City: The Urban Cultural Landscape in the Early Republic,” in *Everyday Life in the Early Republic*, ed. Catherine E. Hutchins (Winterthur, DE: Henry Francis du Pont Winterthur Museum, 1994) 61-117; Mona Domosh, “The Feminized Retail Landscape: Gender Ideology and Consumer Culture in Nineteenth-Century New York City,” in *Retailing, Consumption and Capital: Towards the New Retail Geography*, eds. Neil Wrigley and Michelle Lowe (Harlow, Essex: Addison, Wesley, Longman, 1996): 257-270; and David Henkin, *City Reading: Written Words and Public Spaces in Antebellum New York* (New York: Columbia University Press, 1998).

³⁵ *Illustrated Catalogue of School Merchandise, Furniture, Apparatus, Charts, &c.* (Philadelphia: J. A. Bancroft & Co., [1867-1875?]).

³⁶ Sold at “7 in the set, 24 x 28 inches, mounted on muslin, in portfolio, and with key. Map of World and U.S. are each two sheets, the others single sheets.” *Illustrated Catalogue of School Merchandise*, 28.

³⁷ Mark Twain, *Tom Sawyer Abroad, by Huck Finn, ed. by Mark Twain* (New York: Webster, 1894) ch. 3. Here cited via ebook: <http://www.gutenberg.org/files/91/91-h/91-h.htm#2HCH0003>; accessed 09/22/2010.

³⁸ Fanny Fern, *Ruth Hall* (1854. New Brunswick: Rutgers University Press, 1986) 101-103.

³⁹ Ristow, *American Maps*. Jefferson M. Moak, *Philadelphia Mapmakers* (Philadelphia: Shackamaxon Society, 1976).