

*The Graver, the Brush, and the
Ruling Machine: The Training of
Late-Nineteenth-Century
Wood Engravers*

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WINSLOW HOMER'S illustrations of American life, Thomas Nast's political cartoons, and many other images emblematic of nineteenth-century America originally reached the world through the efforts of wood engravers. Wood engraving was the predominant medium used to reproduce illustrations in books, magazines, and newspapers during the mid to late nineteenth century, and there was a high demand for skilled practitioners of the art.¹ Legions of young men and women who dreamed of lives as fine artists recognized the economic uncertainties of such a life and instead sought training in wood engraving. The numerous illustration firms and illus-

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1. Frank Weitenkampf, *American Graphic Art* (New York: Henry Holt and Co., 1912), 120-21.

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trated magazines in New York, Boston, Chicago, Philadelphia, and other cities employed hundreds of engravers, but only until the mid 1890s when photographic processes of reproduction largely replaced wood engraving.

Before the perfection of such photographic processes as halftone and line block, wood engraving was the reproduction process best suited to the needs of illustration because it produced a relief printing block which was the same height as letterpress type. This block was printed simultaneously with the text using the same press. Lithography and metal engraving were also used to reproduce illustrations, but were less practical because they required the use of one kind of press for the illustrations and another for the text.

A wood engraving was a relief print made from a very hard, fine-grained block of boxwood cut across the grain, rather than parallel to the grain as in a woodcut. Since boxwood comes only in very small sections, printing blocks were usually made from multiple pieces bolted, dowelled, or glued together. The engraver cut into the surface of the block to remove the areas which would not print. He used a narrow, sharpened metal rod called a graver, similar to the burin used in metal engravings. The graver cut fine white lines and its point made tiny white triangles for stippling. When the engraver finished work on the block a metal casting called an electrotype was made from it. The electrotype was printed along with the text on the page.

The engraver himself seldom drew the original illustration to be reproduced. His work was purely reproductive and for this reason illustrators and fine artists tended to regard him as a common, insensitive workman. An illustrator made the original illustration, a more or less finished drawing which he or another artist, known as a designer on wood, copied onto the surface of the boxwood block using pencil, India ink washes, and Chinese white watercolor.²

2. Nancy Carlson Schrock, introduction to *American Wood Engraving: A Victorian History*, by William J. Linton (Watkins Glen, N. Y.: Published for the Athenaeum Library of Nineteenth Century America by The American Life Foundation & Study Institute, 1976), 1.



Fig. 1. Russell & Richardson, Engravers on Wood, Temple Place, Boston. Undated photograph. Courtesy of the Division of Graphic Arts, National Museum of American History.

The unique drawing on the wood was destroyed as the engraver worked, making corrections very difficult. The engraver cut out the white areas around black lines and interpreted grey tones of the drawing into a network of white lines or dots. He employed a ruling machine as an aid in engraving large fields of parallel straight or wavy lines representing grey tones.³ A wood engraver is using a ruling machine at the left in figure 1.

Later in the century art to be engraved could be transferred to the block photographically. Patents for processes of photography on wood were granted to Robert Price in 1857 and to C. B. Boyle in 1859, but it was several years before these processes were widely

3. David M. Sander, *Wood Engraving: An Adventure in Printmaking* (New York: Viking Press), 21-22.

used.⁴ Photography on wood allowed the engraver to use the original art or a separate photograph of it for a guide while he worked (fig. 2). This technology could transfer any kind of art onto a block, which meant that the engraver often had to translate the tones of a photograph, oil painting, or watercolor into white lines and dots.⁵

In 1877 engravers working for *Scribner's Monthly* (which became *Century Magazine* in 1881) and *Harper's Monthly* magazines began to put increased emphasis on tone and texture rather than line in interpreting the brush strokes of paintings and the grey tones of photographs.⁶ They created a variety of intricate effects using the previously spurned techniques of white dot stipple and cross hatching with white lines to make fields of fine black lozenges. Such rising young masters of the craft as Timothy Cole (1852-1930), Frederick Juengling (1846-84), and John G. Smithwick (fl. 1870s-80s) worked with the narrowest of tools to reproduce the effects of the original art. They and their followers were known as the New School, in contrast to the linear Old School. At first glance, some of their illustrations hardly strike the viewer as relief prints. Their lines and dots can be so fine as to read almost as continuous grey tones rather than the marks of a graver.

Alexander W. Drake, art superintendent of *Century Magazine* from 1881 to 1912, was a major advocate of the New School.⁷ In 1883 Timothy Cole went to Europe to make wood engravings for *Century* directly from Old Master paintings. The *Century's* readers received Cole's virtuoso engravings with tremendous acclaim. Cole remained in Europe until 1910, then engraved paintings from American collections for several years, continuing to make wood engravings long after they ceased to be the most widely

4. Robert Taft, *Photography and the American Scene: Social History* (New York: Macmillan, 1942), 422-23.

5. George Howes Whittle, 'The Swan Song of Wood Engraving,' *The Printing Art* 34 (January 1920): 392.

6. Weitenkampf, *American Graphic Art*, 126-28.

7. Peter Hastings Falk, ed., *Who Was Who in American Art* (Madison, Conn.: Sound View Press, 1985), 172.



Fig. 2. W. Klasen of *Harper's* engraves a block, consulting a reference photograph of the art he is reproducing. Undated photograph. Hiram C. Merrill Collection, Boston Public Library.

used form of reproduction.⁸ Before practical methods of photo-reproduction and convenient travel, the reading public was thrilled to be able to see high-quality reproductions of otherwise inaccessible great art.

In the 1860s, 1870s, and 1880s wood engraving looked like a very promising field for a young person to enter. By 1870 there were about 400 wood engravers employed in the United States, and the number increased rapidly.⁹ For those seeking to enter the world of art without expensive academic education, this industry offered training that led to dependable employment in a field intimately related to art. The expansion of publication and illustration in the United States in the middle of the nineteenth century provided plenty of picture books and illustrated magazines to inspire children with ideas of art and illustration. Those inclined to art found a ready supply of wood-engraved illustrations to study and to copy. The industrially-oriented drawing classes taught in Massachusetts public schools and other school systems that emulated them also encouraged numerous young people to look to art as a possible career.¹⁰

People wanting to learn wood engraving might find instruction in manuals like William A. Emerson's *Hand-Book of Wood Engraving with Practical Instruction in the Art for Persons Wishing to Learn Without an Instructor* (1881). Although Emerson thought that prospective professionals might use his manual, he admitted that 'It is not reasonable to suppose that a book of this kind, however full and complete, will take the place of a good teacher.' The introduction to the second edition states that the first edition had been received with favor by amateurs.¹¹ Such manuals did not seem to play a significant part in the training of professional wood engravers.

8. Alphaeus P. Cole and Margaret Ward Cole, *Timothy Cole: Wood-Engraver* (New York: The Pioneer Associates, 1935), 36, 141-55.

9. Sue Rainey, *Creating 'Picturesque America': Monument to the Natural and Cultural Landscape* (Nashville, Tenn.: Vanderbilt University Press, 1994), 179, 349.

10. Diana Korzenik, *Drawn to Art: A Nineteenth-Century American Dream* (Hanover, N.H.: University Press of New England, 1985), 153-54.

11. William A. Emerson, *Handbook of Wood Engraving* (Boston: Lee & Shepard, 1881), 7-8.

In his wood engraving manual of 1890 William Norman Brown described a group considered well suited to be professional wood engravers: 'refined women who from various causes, compelled to battle with the world alone, have turned to some one or other artistic pursuit for the means of earning an honourable and respectable livelihood.'¹² Sarah E. Fuller (c. 1829-1901), who engraved for *Harper's* and other magazines, wrote a manual on wood engraving in 1867 in which she urged women to become professional wood engravers.¹³

The majority of wood engravers, however, were male. An apprenticeship of four to seven years was the normal method of training for male wood engravers, but some had shorter apprenticeships. Timothy Cole's training began almost by accident. Young Cole had always loved to draw, so his father, who loved big words and was enchanted by the word lithographer, planned to apprentice him to a lithographer. On the morning when the father was taking his son to begin his apprenticeship in a lithography shop in Chicago, the pair happened to see the wood engraving shop of Bond & Chandler. Cole's father asked his son if he would like to be a wood engraver. When Cole answered positively, the boy was promptly apprenticed for seven years. Cole served only two years of his time, for when the great Chicago Fire interrupted his studies in 1871, he had already mastered the art of engraving.¹⁴

Although William B. Closson (1848-1926) began by teaching himself how to engrave, he had to serve some time as an apprentice before his work reached a professional standard. Closson conducted his self-instruction while working as a railroad clerk. He got up at four o'clock every morning to practice by copying illustrations he had seen. On entering a Boston wood engraving

12. William Norman Brown, *Wood Engraving: A Practical and Easy Introduction to a Study of the Art* (London: C. Lockwood, 1890), v.

13. Fuller, S. E., *A Manual of Instruction in the Art of Wood Engraving* (Boston: Joseph Watson, 1867), iii-iv; Chris Petteys, *Dictionary of Women Artists, An International Dictionary of Women Artists Born Before 1900* (Boston: G. K. Hall & Co., 1985), 266.

14. Cole and Cole, *Timothy Cole*, 5-6, 9-10.

firm, Closson began his apprenticeship at the salary usually paid to second-year apprentices.¹⁵

Elbridge Kingsley (1841–1918), a wood engraver famed for the refinement of his work interpreting paintings, began work in New York as a typesetter with J. W. Orr's illustration firm. Orr's was one of many shops that contracted to provide illustrations for books, magazines, newspapers, advertisements, broadsides, product labels, and catalogues. Kingsley had drawn and painted since he was a child and was interested in moving into a career concerned with art. He recalled in his autobiography: 'I think here I was in a wavering state of mind. Many young men were going abroad to study Art, and somehow I thought I could do it as well as another. But somehow the acquaintances that I made had no faith in Art as a means of getting a living, and so finally I got into the Engraving Rooms as the safest way to support myself and perhaps study Art too.' So in 1863 Kingsley became an apprentice wood engraver for J. W. Orr.¹⁶

Such a shop is seen in figure 1, a photograph of Russell & Richardson, Engravers on Wood, Temple Place, Boston. The engravers are shown working at a row of desks next to a row of windows, utilizing natural light filtered through paper shades. At night, gas lamps provided light that was focused by the water-filled globes seen on the shelves at the far left. The engravers used magnifying lenses to reduce the strain on their eyes.

Hiram Merrill (1866–1958), a wood engraver whose life is well documented in the Hiram Campbell Merrill Collection of the Boston Public Library, began his career in the typical fashion with an apprenticeship of several years in an illustration firm. Two major factors urged Merrill, like so many young people in the late nineteenth century, toward a career in wood engraving: he was poor and he was interested in art. His father was a wheelwright

15. George Howes Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (April 1918): 118.

16. Elbridge Kingsley, 'Life and Works of Elbridge Kingsley, Painter-Engraver,' Northampton, Mass.: Forbes Library; Washington, D.C.: microfilm roll #48 in Archives of American Art, Smithsonian Institution), 32–33.

and, as the family probably had no connection to art, Merrill is unlikely to have received any particular encouragement in that direction. Despite this, from an early age he drew from nature and dreamed of being a painter.¹⁷ Merrill attended drawing classes at Shepard Grammar School in Cambridge, Massachusetts, and a surviving report card records that he received excellent grades in drawing.¹⁸ Merrill summed up his situation: 'The necessity to earn money decided me to embrace wood engraving, as I was told it was lucrative.'¹⁹

In 1882 he began an apprenticeship in the shop of John Andrew and Son. This shop on the corner of Temple Place and Tremont Street, Boston, specialized in fine book illustration. Merrill recorded that when he entered the shop 'An apprenticeship of four years was agreed on: two dollars a week for the first year; three dollars the next year; then four dollars; and, finally, five or six dollars, according to my ability. I am happy to say I got that six dollars.'²⁰

New apprentices spent much of their time running errands, cleaning the shop, and stealing moments on the side to practice cutting lines on boxwood. Occasionally Grottenthaler, a boxwood dealer in Boston, would give apprentices like Merrill small pieces of wood for practice.²¹ Even though Edward Howard Del'Ormé was the son of a wood engraver, he had to save his pennies to buy his own practice blocks and to get art photographed onto them.²²

It took a long time for a beginner to learn to control his graver. For Elbridge Kingsley 'the mechanical training in engraving was never easy. . . . I know it was some time before I could cut a clean

17. Hiram Campbell Merrill, *Wood Engraving and Wood Engravers* (Boston: Society of Printers, 1937), 4.

18. Report card in the Hiram Campbell Merrill Collection of the Boston Public Library.

19. Merrill, *Wood Engraving and Wood Engravers*, 4.

20. *Ibid.*

21. Hiram Merrill manuscript notes in Hiram Campbell Merrill Collection of the Boston Public Library.

22. George Howes Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (August 1918): 429.

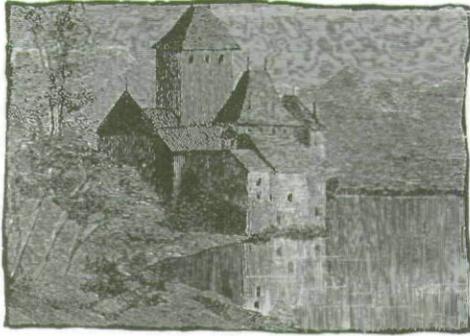


Fig. 3. *Chateau Chillon, Lake Geneva, Switzerland*, wood engraving by Hiram Merrill after unknown original, 1882. Merrill's first wood engraving made while he was an apprentice. Hiram C. Merrill Collection, Boston Public Library.

line or finish a reliable transfer. . . . A beginner's work is usually fac-similie [*sic*], made up of lines drawn or transferred on the block [instead of grey tones which practiced wood engravers could interpret into lines]. The student is required to cut these lines sharp and clean so as to print as well as the original copy. . . . I did gradually conquer the fac-similie stage and was able to be of some use, and then slowly came the ability to make light and shade by the means of line and picks [by stipple made with the end of a graver].²³

In Merrill's very first wood engraving (fig. 3), made in 1882, we can see a beginner learning to describe simple shapes with tints made of parallel lines. As a manual observed, 'It is not probable that the learner will succeed in keeping the tool from going upward, thus making the line thinner, or downward, making it thicker; but by following the directions closely he may succeed in making a fair line.'²⁴ Figure 4 shows a vastly more polished illustration made just four years later by the same engraver at the end of his apprenticeship.

Busy at their blocks, veterans seldom took time to instruct the

23. Kingsley, 'Life and Works,' 33.

24. Emerson, *Handbook*, 54-55.

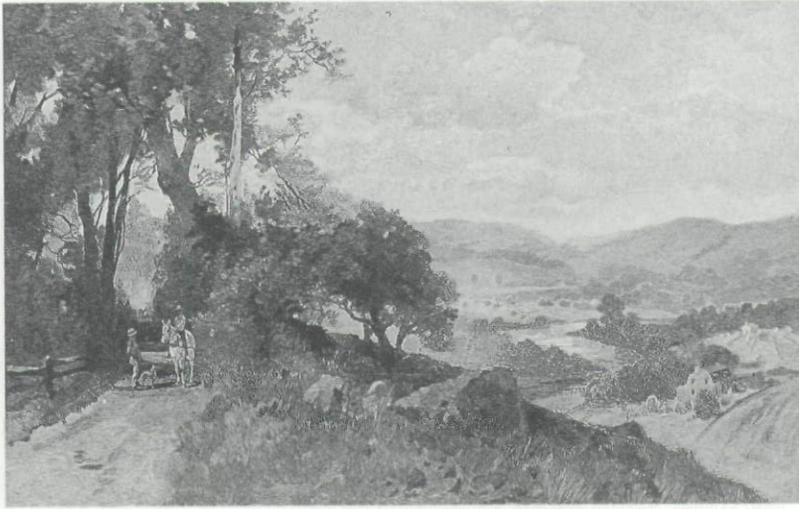


Fig. 4. 'Australian Landscape,' wood engraving by Hiram Merrill after Frederick B. Schell, c. 1886. Illustration made for *Cassell's Picturesque Australasia*, by Edward Ellis Morris (New York: Cassell & Co., 1887). Reproduced in *Wood Engraving and Wood Engravers*, by Hiram C. Merrill (Boston: Society of Printers, 1937). Hiram C. Merrill Collection, Boston Public Library.

apprentices. The best instruction came from observing the work done by the experienced engravers. Elbridge Kingsley described how 'The beginners were glad of a glimpse of the work of the older men while they were at dinner. In fact this was one of the ways to get on and acquire judgement in textures. And the advent of a new man was an especial chance to make comparisons. I remember the first appearance of John Minton at our office. He was noted for the purity of his line, and we could hardly wait for him to go out before examining his work. He cut a more refined line than any of our force, the only trouble with him being that he might be off on a spree before finishing the work in hand.'²⁵

This close observation caused certain stylistic traits to become characteristic of a particular shop. Hiram Merrill recalled that 'A wavy line, dating back to [Thomas] Bewick's time [the eighteenth century] or earlier, was too often used by the engravers in John

²⁵ Kingsley, 'Life and Works,' 36-37.

Andrew & Son's engraving shop. . . . It was called "Andrew's wiggle" by those inclined to be critical.²⁶ Andrew's wiggle may be seen in patches of shading in Merrill's engraving of an Australian landscape (fig. 4).

Apprentices also learned by collecting examples of wood engraving by various masters. According to Kingsley, 'Some apprentices were great collectors of prints, and eagerly discussed anything new.'²⁷ George Howes Whittle noted that 'The young engravers . . . were enthusiastic in collecting prints of wood engraving from current publications both American and foreign. The *Illustrated London News* and other English and French publications furnished interesting and instructive examples of the work of the period. Earlier engravings were sought for the boys' scrap-books and were highly prized and jealously guarded as potent influences and guides in the formation of their style.'²⁸

New stylistic ideas passed from wood engraver to wood engraver at John C. Bauer's New York City printing shop at 10 North William Street, where many engravers had their works proofed. Merrill recalled that 'here the engravers met and had many a warm discussion on the merits of this and that type of line, and working conditions in general.'²⁹ Kingsley called Bauer's shop 'the center . . . for the New School.'³⁰ While many artists, engravers, art editors, and the public enthusiastically embraced the New School, a small but vocal group protested against the abandonment of pure line and the effacement of the engraver's personal style of interpretation. Led by the British immigrant William J. Linton (1812-97), leader of the Old School, they scorned the New School engraver's imitation of other forms of art, even the imitation of brush strokes, as a blasphemous betrayal of the character of the wood.³¹

26. Merrill manuscript notes, Merrill Collection.

27. Kingsley, 'Life and Works,' 35.

28. George Howes Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (April 1918): 118.

29. Merrill manuscript notes, Merrill Collection.

30. Kingsley, 'Life and Works,' 45, 84-85.

31. William James Linton, *The History of Wood Engraving in America* (Boston: Estes and

Some veteran engravers occasionally took time to instruct and encourage the apprentices and younger engravers. The engravers in the Andrew and Son shop chipped in to buy a set of tools for Merrill as a Christmas present his first year as an apprentice.³² When Kingsley grew skilled enough to take part in the work in J. W. Orr's shop, he shared his desk with the older engravers John Minton and Phineas F. Annin. Kingsley commented that 'Both were generous by nature, and kind in helping along younger men. Annin would take my block and work a little on it; just to give me a hint.'³³

Henry Herrick, who was also an illustrator and a fine artist, was one of the established wood engravers who acted as mentors to younger people in the field. During his frequent visits to his parents in Manchester, New Hampshire, Herrick met young Henry Clay Cross and Joel Foster Cross, sons of a local farmer. Herrick soon realized the interest these children and their sister had in art and encouraged them to draw. He became a close friend of the Cross family and taught the boys the skills that enabled them to become professional wood engravers.³⁴ Later, when Herrick moved permanently to Manchester, his son became friends with his schoolmate Stephen Greeley Putnam. Putnam visited the elder Herrick's painting and engraving studio, where the boy saw many fine wood engravings and illustrated books. When Putnam was old enough to consider a career, he returned to Henry Herrick's studio to learn wood engraving.

Putnam gained his first engraving job through the aid of Frank French.³⁵ French was a New Hampshire farm boy who had learned about the profitable possibilities of wood engraving from an advertisement in *Scribner's Magazine*. Henry Herrick's protégé Foster Cross helped French to select blocks and tools and in-

Lauriat, 1882); facsimile edition reprinted as *American Wood Engraving, A Victorian History* (Watkins Glen, N.Y.: Published for the Athenaeum Library of Nineteenth Century America by the American Life Foundation & Study Institute, 1976), 45-71.

32. Merrill, *Wood Engraving and Wood Engravers*, 4.

33. Kingsley, 'Life and Works,' 41.

34. Korzenik, *Drawn to Art*, 31-33, 57, 60, 64, 67-69, 87, 100, 108-10, 124.

35. George Howes Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 32 (November 1918): 169-72.

structed him in how to use them. French received further instruction from Henry Herrick himself. He next went to work for the American Tract Society, a publishing firm in New York City.³⁶ Elias J. Whitney, superintendent of engraving for the Tract Society, further trained and encouraged French. Whitney taught many young engravers including his own younger brother, John H. E. Whitney.³⁷

A doctor who had once been a wood engraver guided Frederick A. Pettit in the direction of wood engraving after the young man injured his hip so seriously that he could not continue his work on a farm.³⁸ Wood engraving was considered a suitable career for those unable to do heavy work. The great New School wood engraver Timothy Cole trained several disabled people to engrave in the informal wood engraving school he ran in the tower studio of his Long Island home.³⁹

Many engravers, Cole and Kingsley among them, began working with firms that specialized in catalogue illustration and illustrations of machinery.⁴⁰ This work, while cold and mechanical in appearance and dull for the engraver, provided good discipline for a young engraver. Emerson's engraving manual emphasized that such machinery as stoves required absolutely perfect drawing in perspective. The least distortion in rendering a round lid on a stove top would make the metal look warped.⁴¹ A ruling machine was vital for the precise parallel lines needed to describe machinery and architecture.⁴²

Merrill's apprenticeship with a firm that did book illustration—among the finest and most artistic of the many varieties of wood engraving—was unusual. After a young engraver had mas-

36. George Howes Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (March 1918): 37.

37. George Howes Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 30 (October 1917): 88.

38. George Howes Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 32 (February 1919): 397.

39. Cole and Cole, *Timothy Cole: Wood Engraver*, 21, 26.

40. *Ibid.*, 6; Kingsley, 'Life and Works,' 34.

41. Emerson, *Handbook*, 81.

42. Sander, *Wood Engraving*, 21.

tered more straightforward work he would move on to the more artistic areas of illustration for newspapers, school books, magazines, and fine books. Figure 4, an illustration engraved by Merrill after a drawing by Frederick B. Schell for *Cassell's Picturesque Australasia* is an example of such fine illustration work. This book, like many others, was inspired by the great success of the lavishly illustrated *Picturesque America*, published by Appleton and Company starting in 1872.⁴³ Illustrated book engravers took their time engraving such illustrations. Merrill said, 'Work was leisurely done, a half day often being spent on planning ways to engrave an important subject—the size, direction, and varieties of line to use in interpreting it.'⁴⁴

In 1890 Merrill moved to New York City because he felt that 'the New York magazines seemed a wider field for advancement, and I was then engraving on the best class of Andrew's work.'⁴⁵ He found a job with *Harper's*, the great magazine publishing firm, where he found quite a different routine. The engravers were constantly working on the relatively fine and deliberate illustrations for the small format *Monthly*, but when the much larger pages of the *Weekly* required a large illustration, there was no time to lose. The illustrations for the *Weekly* were drawn in a coarser style than those for the *Monthly* and could be more quickly engraved, but the pressure of a weekly deadline made it impossible for one man to engrave a single or double page illustration spread in time. The blocks would be split into eight or more pieces and each piece would be given to a different engraver to be finished overnight. Merrill recounted the routine.

When a rush page for the *Weekly* was wanted, Mr. Smithwick (the director) would come around about three o'clock and whisper: 'We're going to be busy tonight, Merrill, so you had better go out and get the air. Be back by 6 o'clock!'

I would promptly head for Dietz's Weinstube, which was crowded

43. Albert F. Moritz, *America the Picturesque in Nineteenth Century Engraving* (New York: New Trend, 1983), 35-45.

44. Merrill, *Wood Engraving and Wood Engravers*, 5.

45. *Ibid.*

under the New York end of the Brooklyn Bridge, and soon another engraver would pop in, and another, until nearly all the eight engravers who were to work on the page were collected there. Some solid and liquid food was obtained, and then we usually started up Broadway to study art in the saloons along the way. There were some really good paintings in a few of the places. By 6 o'clock we had returned to the shop, rested and ready for the work. I cannot recall that the engraved work suffered noticeably in quality.⁴⁶

This anecdote makes it clear why illustration firms did not take on young women as apprentice wood engravers. The company of the male engravers was not considered at all appropriate for young ladies in the late nineteenth century. Instead, hundreds of women learned wood engraving at the Philadelphia School of Design for Women,⁴⁷ the Ladies School of Design attached to Cooper Union in New York, and similar institutions in Pittsburgh, Cincinnati, and other cities. The New York School of Design for Women opened in 1852 and combined with the newly founded Cooper Union in 1859. Over 200 women had learned wood engraving at the school by 1880, in addition to those who studied fine art.⁴⁸ Cooper Union discontinued wood engraving classes in 1890, when classes in pen and ink drawing suitable for photographic reproduction processes were substituted for them (fig. 5).⁴⁹

The most famous wood engraver alumna of Cooper Union was Caroline Amelia Powell. Old School wood engraver William J. Linton taught wood engraving at the school when she was there. Powell described Linton's teaching at Cooper Union:

He was a man who had much personal magnetism, and I remember how enthusiastic we girls were over him. His teaching was most irregular. Sometimes he would come for an hour or an afternoon every day in the week, and then we might not see him for a couple of weeks

46. *Ibid.*, 5-6.

47. Nina De Angeli Walls, 'Art and Industry in Philadelphia: Origins of the Philadelphia School of Design for Women, 1848 to 1876,' *The Pennsylvania Magazine of History & Biography* 117 (July 1993): 177.

48. Helena E. Wright, *With Pen & Graver: Women Graphic Artists Before 1900* (Washington, D.C.: Smithsonian Institution, 1995), 6-7.

49. Weitenkampf, *American Graphic Art*, 132; David Woodward, 'The Decline of Commercial Wood-Engraving in Nineteenth-century America,' *Journal of the Printing Historical Society* 10 (1974-75): 69.



Fig. 5. Women learning wood engraving at Cooper Union, New York, New York. Peter Cooper, the founder of the institution, is the man with the white beard at the left. About 1865. Reprinted from the *Magazine of Art* 40 (October 1947): 243. Reproduction courtesy of the National Museum of American Art, National Portrait Gallery Library.

or a month. We worked away more or less in the dark in his absence, but his visits were red-letter occasions, and his talks on engraving and art generally were most interesting and illuminating. He lent the class some of the priceless proofs of cuts in the *Illustrated London News* and other publications, some of them engraved when he was partner with Orrin Smith, the well-known English engraver. . . . They were beautiful proofs, and the most I learned at that time was from a faithful and incessant study of them.⁵⁰

50. George Howes Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (May 1918): 188.

On leaving Cooper Union, Powell tried to gain employment with *Scribner's Magazine*, but was told that her work was still not of the quality they required. Alexander W. Drake, art superintendent for the magazine, introduced her to Timothy Cole. Cole taught Powell the fine points of New School style engraving. She became a distinguished professional engraver elected to the exclusive Society of American Wood Engravers.⁵¹

Since the women engravers graduating from Cooper Union began their careers without the contacts in the field of illustration that men would have coming from the apprentice system, they needed aid from the school in beginning their careers. Cooper Union offered a special arrangement under which its alumnae and advanced students could execute commercial commissions in space provided at the school. The school arranged the commissions and took a percentage of the pay for them. When women finished their training and left Cooper Union and other schools, they did not work in male-dominated wood engraving shops. Most worked as free-lance engravers in their own homes.

A few women wood engravers ran their own shops which were staffed exclusively by women and took on female apprentices.⁵² Sarah E. Fuller, mentioned above as the author of a wood engraving manual, attended the New York School of Design for Women before it merged with Cooper Union. She ran a wood engraving firm on Broadway in New York City in the 1860s.⁵³ Leila Curtis and her sister Mary Curtis Richardson both studied drawing and wood engraving at Cooper Union in 1858 and 1859, then returned to their home in California to found their own wood engraving studio.⁵⁴ They trained Eleanor Peters Gibbons, who also studied at Cooper Union. In about 1880 Gibbons became head of the firm where she had been an apprentice.⁵⁵

51. *Ibid.*, 188-94.

52. Wright, *With Pen & Graver*, 7-8; Helena Wright, interview with author, November 29, 1994.

53. Wright, *With Pen & Graver*, 16.

54. Doris Ostrander Dawdy, *Artists of the American West: A Biographical Dictionary*, Vol. 1 (Chicago: The Swallow Press, Inc., 1974), 195.

55. Wright, *With Pen & Graver*, 16.

Ann Maverick (c. 1810–1863) was one of the first women wood engravers. She learned the art from her father, pioneer wood engraver Alexander Anderson (1775–1870). After the death of her first husband, Maverick supported her family by engraving. She married a second time, but when her second husband left her, she again turned to engraving for employment.⁵⁶

Male free-lance wood engravers worked in their own homes just as the women did to provide engravings to various firms. They might at times briefly enter the shops of illustration firms or magazine wood engraving shops when the workload exceeded what the permanent engraving forces of these firms could produce.⁵⁷ Free-lance engravers negotiated their pay by the block, whereas shops paid their employees an hourly salary based on the speed and quality of their work. Merrill reported that in the 1880s the best were paid about forty dollars per week.⁵⁸

Engravers who wished to rise in the field studied fine art to improve the quality of their engraving. For this reason, as well as because of their own interest in art, large numbers of wood engravers enrolled in fine art classes during the little leisure time allowed by their long hours of work. Despite a demanding schedule working for *Harper's*, Merrill took classes in drawing, composition, and painting at the Pratt Institute in Brooklyn and the Art Students League in New York City, where many wood engravers took classes.⁵⁹ In Boston, William B. Closson took evening classes at the Lowell Institute, where he studied drawing from classical casts and from life.⁶⁰

Besides taking classes, Merrill painted and drew as much as he could on his own time. Two of Merrill's sketchbooks show that in

56. Stephen DeWitt Stephens, *The Mavericks: American Engravers* (New Brunswick, N.J.: Rutgers University Press, 1950), 73–74.

57. Kingsley, 'Life and Works,' 32–33.

58. Merrill, *Wood Engraving and Wood Engravers*, 4.

59. Merrill manuscript notes, Merrill Collection; Marchal E. Landgren, *Years of Art: The Story of the Art Students League of New York* (New York: Robert M. McBride and Company, 1940), 57.

60. Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (April 1918): 118.

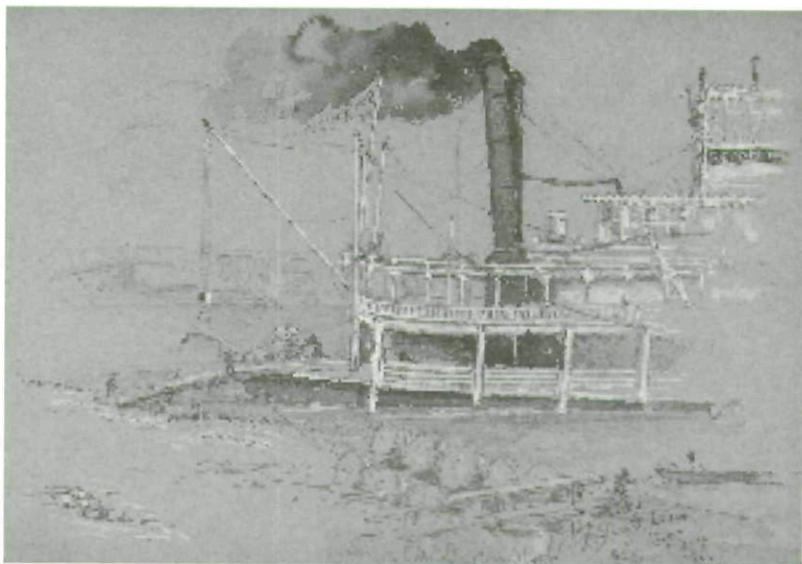


Fig. 6. *Levee, St. Louis*, watercolor sketch by Hiram Merrill, 1896. Hiram C. Merrill Collection, Boston Public Library.

1896 he travelled around the United States sketching wherever he went (fig. 6).⁶¹ An urban scene is unusual, for Merrill enjoyed depicting rural and park scenes, and the urban realities of life in Boston and New York seldom appear in his work.

Art clubs offered wood engravers a chance to extend their involvement with fine art. Elbridge Kingsley led a group known as the Original Workers on Wood which included as members the accomplished wood engravers John P. Davis, Frank French, and Walter Monteith Aikman. The group, symbolized by a woodpecker, took sketching trips in the woods of New England. Kingsley had fixed an enclosed wagon as a studio on wheels where he could draw, paint, and engrave landscapes directly from nature.⁶² Merrill was a member of the Salmagundi Club and the

61. Sketchbooks in Hiram Campbell Merrill Collection, Boston Public Library.

62. Frank French, 'Wood-Engravers in Camp,' *Century Magazine* 38 (April 1889): 569-75; Kingsley, 'Life and Works,' 97-124, 198-202, 230-32; Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (March 1918): 38; Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (June 1918): 277-78.

New York Water Color Club. Wood engravers also joined the Philadelphia Sketch Club and the Carbonari, a sketching club based in East Orange, New Jersey.⁶³

As one might expect, the engravers' work reproducing illustrations was a heavy influence on the original art they produced. Merrill, for instance, greatly admired such illustrators as Edwin Austin Abbey. They were an influence both on Merrill's style and on his subject matter. His art, like many of the illustrations he engraved, tended to be anecdotal and descriptive, with an affinity for picturesque, rural themes with nostalgic associations. Merrill often painted the New England countryside where his mother's family lived and where he enjoyed vacationing. The illustrations Merrill engraved for the many travel articles in *Harper's* gave him a taste for distant, unspoiled locations. He later indulged this interest during long vacations in Europe. Merrill's work, like that of many illustrators, was allied with the vein of late-nineteenth-century culture which T. J. Jackson Lears calls anti-modern because it tended to cling to comforting tradition in the face of rapid social and economic changes.⁶⁴

The engraving shop was not, however, the only influence on fine art made by wood engravers. Merrill's handling of color was much richer and more varied than one would expect of a person trained in a black-and-white field. The blue and purple shadows in his paintings from the teens and twenties reflect familiarity with the Impressionists and the American artists influenced by their work. The oil paintings that wood engraver William B. Closson made late in his career were often very painterly and atmospheric, qualities unexpected in the work of a wood engraver. Even as a wood engraver, however, Closson was well known for the subtle way in which he rendered softly shaded paintings.

63. Merrill manuscript notes, Merrill Collection; Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 32 (January 1919): 327.

64. Annette Stott, 'Dutch Utopia: Paintings by Antimodern American Artists of the Nineteenth Century,' *Smithsonian Studies in American Art* 3 (Spring 1989): 60; T. J. Jackson Lears, *No Place of Grace: Antimodernism and the Transformation of American Culture 1880-1920* (New York: Pantheon Books, 1981).

Wood engravers had the chance to study closely photographs of the art they reproduced, and sometimes the original art. For example, Closson was hired to engrave a painting by George Fuller, whose studio was in the same building as the engraver's studio. Closson said that 'I had the painting in my room during the time of engraving it, and before the work was finished I was completely in love with it and quite as completely won to admiration of Mr. Fuller as an artist and as a man.'⁶⁵

Considering the modest artistic backgrounds from which most wood engravers came, their experience in illustration shops was probably more broadening than limiting. They saw great amounts of art on a daily basis, not only work done specifically as illustration, but fine art as well. Popular illustrated magazines such as *Century* and *Harper's*, as well as art-oriented magazines like the *Aldine*, included many articles about current art and the history of art in the United States and Europe. Working on the illustrations for such articles must have proved a fine education for the engravers.

For some people, however, reproducing the art of others could never be enough. Such artists as Willard LeRoy Metcalf, George Inness, Childe Hassam, and Thomas Moran served apprenticeships in wood engraving shops, but quickly left to become painters. These men were totally unsuited to the precise, black-and-white work of an engraver. They did, however, find that background in wood engraving was useful, since it offered an understanding of monochromatic design and gave them contacts in the publishing business.⁶⁶ Other artists remained in the engraving field for years before following the call of fine art. California-based painter

65. Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (April 1918): 119.

66. Thurman Wilkins, *Thomas Moran: Artist of the Mountains* (Norman: University of Oklahoma Press, 1966), 20; Joni Louise Kinsey, *Thomas Moran and the Surveying of the American West* (Washington, D.C.: Smithsonian Institution Press, 1992), 79; The Corcoran Gallery of Art, *Childe Hassam: A Retrospective Exhibition* (Washington, D.C.: The Corcoran Gallery of Art, 1965), 11; National Gallery of Art/Detroit Institute of Arts, *American Paintings from the Manoogian Collection* (Washington, D.C.: National Gallery of Art, 1989), 194-96.

William Keith served an apprenticeship starting in 1856, duly became a wood engraver, worked for *Harper's*, and went into partnership with another engraver. By 1868 he had become disgusted with engraving and left the firm to become a painter.⁶⁷

Like any new technology, the introduction of photographic methods of reproducing illustrations required a long period of experimentation before the costs were competitive and results were uniformly acceptable. Only then were these techniques widely adopted. The decline of wood engraving as a career was precipitated by a price war among illustrated magazines that broke out in the early 1890s as halftone and lineblock reproductions became more popular. By then these processes had become cheaper and more efficient. In 1893 a magazine could purchase a halftone for less than twenty dollars, while the cost of a full-page wood engraving was \$300.⁶⁸ Halftones began to replace the comparatively costly and slow wood engravings for tonal illustrations. The photographic process of line block replaced engravings of line drawings.⁶⁹

The camera gradually supplanted the New School of wood engraving as the medium for reproduction. Both the public and artists whose work was being reproduced demanded illustrations that were faithful to the original art, while the publishers required the cheapest and most time-efficient methods of reproduction. Despite complaints from the public (and from the wood engravers) about the dull, grey, lifeless appearance of halftones, the new technology prevailed.

When halftone and other methods of photoreproduction began to gain in popularity in the 1890s, the wood engravers who had remained in the profession found it collapsing beneath them. By 1894 *Harper's* let go about half of their engraving force.⁷⁰

67. Eugene Neuhaus, *William Keith: the Man and the Artist* (Berkeley, California: University of California Press, 1938), 8-11; Brother Cornelius, *Keith: Old Master of California* (New York: G. P. Putnam's Sons, 1942), 11-12.

68. Frank Luther Mott, *A History of American Magazines, Vol. IV, 1885-1905* (Cambridge: Harvard University Press, 1957), 4-5.

69. Woodward, 'The Decline of Commercial Wood-Engraving,' 66.

70. Merrill manuscript notes, Merrill Collection.

Scores of engravers in the many illustration firms around the country lost their jobs and had a difficult time finding other jobs in the area of the arts. By 1900 there were still 145 wood engraving firms in the United States, but the work for wood engravers had shrunk considerably.⁷¹ Opportunities continued to exist, primarily in the fields of advertising and catalogue illustration, but most engravers had to find other ways to support themselves.⁷²

Skilled engravers were able to continue working for illustration houses by learning to perform the reworking required by the early halftone plates.⁷³ Merrill was one of those who learned to burnish the areas of the plate intended to print the darkest and to cut out the white areas in a process closely resembling wood engraving.⁷⁴ M. Lamont Brown, writing in *Penrose's Pictorial Annual* (a British publication for professionals in the business of reproducing illustrations), singled out Merrill as one of the finest halftone engravers in the United States.⁷⁵ Merrill and his colleagues found work on halftones dull and lacking in the happy camaraderie of the wood engraving shop. In 1900 Merrill began working at home and eventually left *Harper's* to work for Alexander W. Drake at *Century*.⁷⁶ To take a break from his work on halftones and to widen his artistic experience, Merrill took two long vacations in Europe. He made many drawings, paintings, and photographs, particularly in his favorite villages in Brittany.

Some engravers who could not get or did not want halftone work, went into other aspects of illustration house work or became illustrators.⁷⁷ One of these was Alice Barber Stephens, who

71. Sander, *Wood Engraving* (New York: Viking Press, 1978), 20.

72. William Gamble, 'Catalog Illustrations,' *Penrose's Pictorial Annual. The Process Year-Book for 1900. A Review of the Graphic Arts* 6 (1901): 1-2; Woodward, 'The Decline of Commercial Wood-Engraving,' 69-72, 77.

73. Woodward, 'The Decline of Commercial Wood-Engraving,' 70.

74. Merrill, *Wood Engraving and Wood Engravers*, 8; Whittle, 'Half-Tone Etching as a Fine Art,' *The Printing Art* 29 (June 1917): 261.

75. M. Lamont Brown, 'Process Work in the States,' *Penrose's Pictorial Annual. An Illustrated Review of the Graphic Arts. The Process Year-Book, 1901* 7 (1903): 101-3.

76. Whittle, 'Half-Tone Etching,' 259; Merrill, *Wood Engraving and Wood Engravers*, 8.

77. Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 33 (April 1919): 99.

after studying at the Philadelphia School of Design for Women, was a commercial wood engraver for about twenty years. In the 1890s she became a book and magazine illustrator and worked in that capacity for about thirty years.⁷⁸ Those with the best training in fine art, such as William B. Closson, frequently turned to painting or etching portraits and landscapes.⁷⁹ Wood engravers with little fine art training or ability had to look for work outside the arts. Less fortunate wood engravers, even some very skilled ones, were unable to find steady work and became aimless drifters.⁸⁰ They must have felt completely betrayed by their training in wood engraving.

Looking at the legacy of Merrill, Kingsley, and the other engravers, we can form a good idea of the training and experiences of New School wood engravers. They existed in a unique time that they saw as a golden age of illustration. They were the last manifestation of pure craft in a field that worked to communicate unique art to the public. Technology surrounded them, aided them, and eventually displaced them. In the end, the 'ruling machine' in the lives of the wood engravers was the camera. A few engravers fulfilled their dreams of becoming fine artists, but many more found their way into related commercial fields. The lot of the wood engravers was mixed, made up of drudgery, camaraderie, satisfaction, and disappointment. Judging from the attitude of Hiram Merrill, Elbridge Kingsley, and many of their fellow wood engravers, they were willing to take the good with the bad so long as they could exist in the world of art.

78. Wright, *With Pen & Graver*, 19.

79. Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 31 (April 1918): 122.

80. Whittle, 'Monographs on American Wood Engravers,' *The Printing Art* 30 (December 1917): 226, and (January 1918): 299.

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