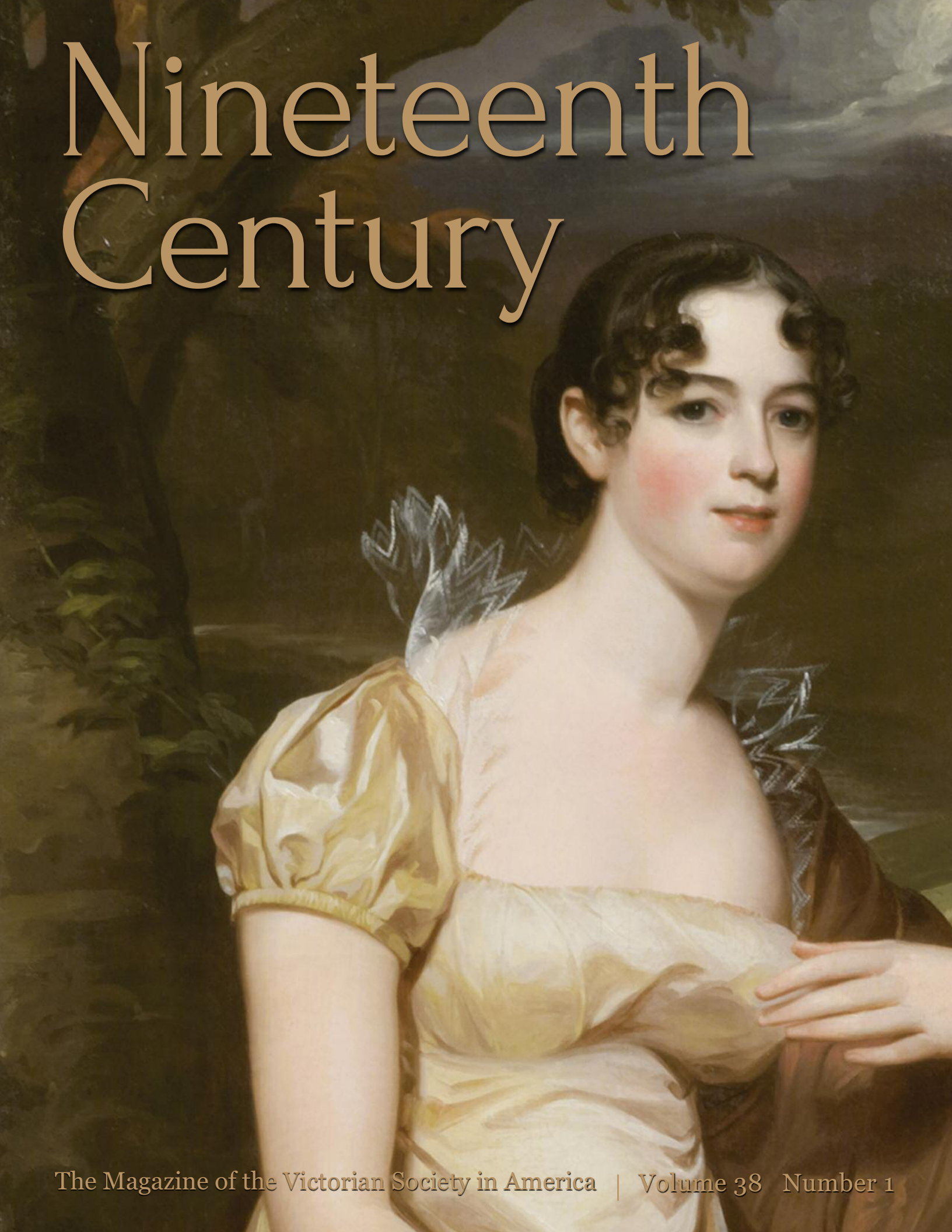
Nineteenth Century



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Cover: Thomas Sully, *Portrait of Mary Siddons Whelen* (1788-1867), 1812. Philadelphia Museum of Art.




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Henry Sargent (1770-1845), *The Tea Party*, 1824. This depiction of a drawing room, before gaslight, in a Boston townhouse illustrates the absence of chandeliers and the darkness of principal rooms, even when lighted for social occasions. Courtesy Museum of Fine Arts Boston.

The Shrewsbury-Windle House

A CASE STUDY FOR MID-NINETEENTH CENTURY GASLIGHT INSTALLATION

Keith E. Letsche and J. Craig Maue

One of the finest late-Greek Revival residences in Indiana, or perhaps anywhere, is the Shrewsbury-Windle House National Landmark, in Madison, Indiana.[1] Now owned by a local preservation agency, Historic Madison, Inc., the house was built for Charles L. Shrewsbury, a flour manufacturer and pork merchant, between 1846 and 1849, when Madison reigned briefly as one of Indiana's largest and most important commercial cities. The house was designed by Francis Costigan, a Baltimore architect who moved his practice to Madison and also designed the neighboring Lanier Mansion, the city's other notable Greek Revival residence, now a state-owned museum. The house is distinguished architecturally by a fifty-three-step spiral stair case that rises masterfully three floors from its central hall.

The Shrewsbury-Windle House is also distinguished by another feature: its mid-nineteenth century gaslighting installation. Likely put in about the time of the establishment of Madison's gasworks in the early 1850s, it survived three private owners of the house remarkably unaltered. Undertaking the conservation of the house's lighting in 2016-2017 as part of an overall preservation and restoration of the house itself, the authors had an unparalleled opportunity to investigate closely not only the gasoliers, brackets, and other externals of the installation, but the portions of it beneath floorboards, behind walls, and in the cellar. Because of the completeness and quality of the fittings, the Shrewsbury-Windle House's installation provides a rare opportunity for a "case study" for gaslighting in a mid-nineteenth century upper middle-class American home. It reveals a gaslighting installation that is manifestly different not only in ornamental style, but in general profile, from gaslighting in the post-Civil War period.

The Shrewsbury-Windle House, Madison, Indiana. 1846-49. Francis Costigan, architect.

Background:
Gaslighting in Antebellum America

The fitting of American homes for gas to any significant degree had begun less than twenty years before installation of the Shrewsbury-Windle House's system, even where the gasworks serving them had come into existence substantially earlier. This is in contrast to Great Britain where gas appeared in homes much earlier and more frequently. The history of early gaslighting usually encountered is that of its development in Great Britain. The late emergence of gas as a domestic illuminant in the United States, however, suggests that gaslighting's evolution in this country was very different from that in Britain. Looking briefly at gaslighting in antebellum America therefore will help highlight aspects of its development that are apparent in the Shrewsbury-Windle House's installation.

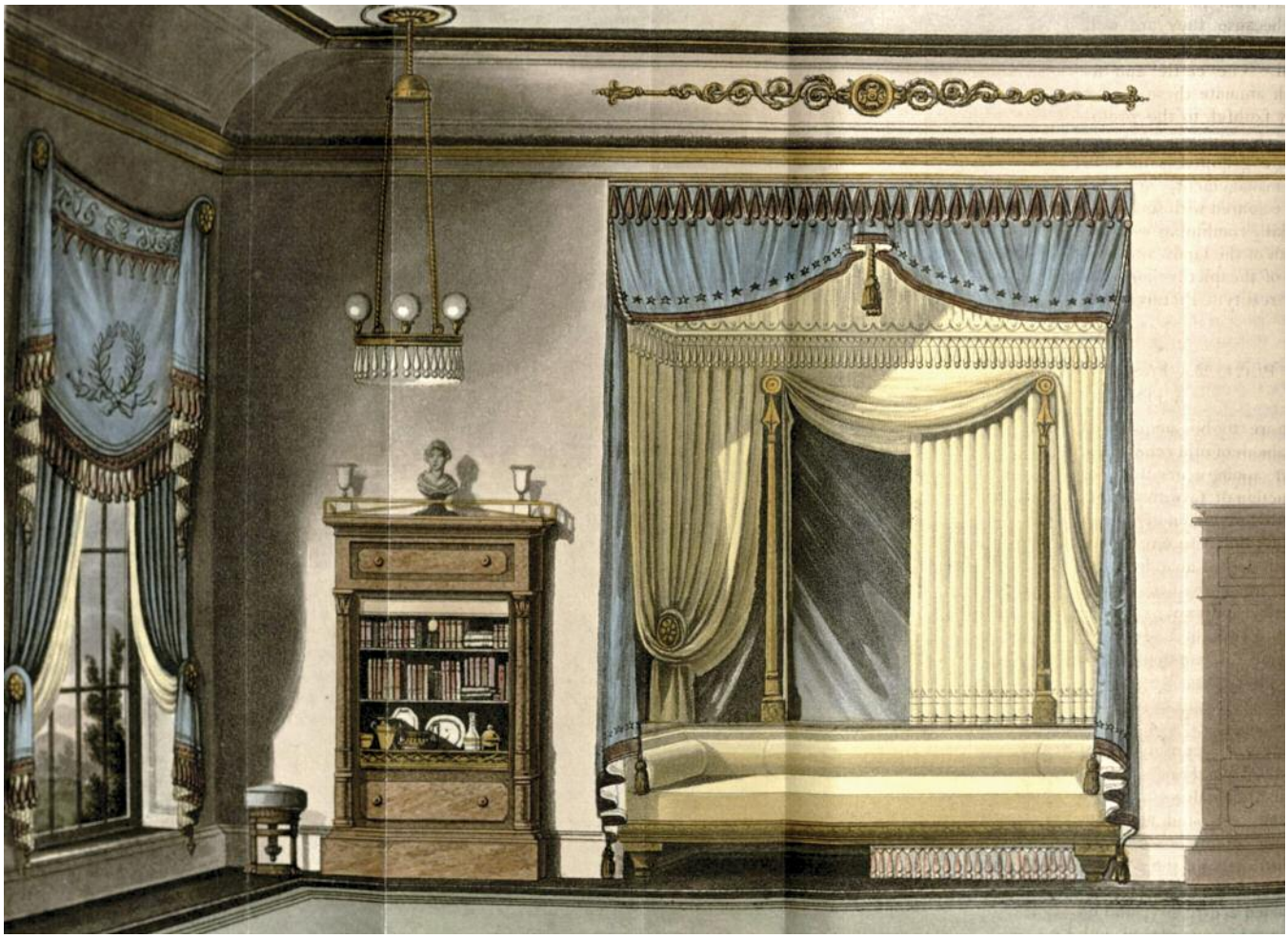
Origins of Gaslighting in Great Britain and France

Like other technologies of the first industrial revolution, gaslighting was an "import" to the United States, in particular, from Great Britain and France.

Between 1792 and 1795, the rudiments of gaslighting were worked out by William Murdoch, a young Scottish engineer who lighted his home in Redruth, Cornwall, with gas produced from coal. This led his employers, the famous engineering and manufacturing firm of Bolton and Watt, to contract for the lighting of a calico mill in Manchester, which, completed in 1807, is often regarded as the first commercial installation of gaslight.[2]

Simultaneously and independently of Murdoch, Philippe Lebon, a French engineer, received a French patent in 1799 for the production of gas from various combustibles. In 1801 he began giving demonstrations of what he called "thermolampes," flaming jets of gas from retorts burned in open air or in enclosed globes.[3] Whereas the attention of Murdoch and Bolton and Watt was directed at private gasworks for lighting large factories and mills, Lebon envisioned a public gas system that could heat and light all buildings, including small shops and residences. His proposal for such, however, was turned down by the French government.[4]

The first realization of Lebon's vision of centrally manufactured gas supplied through mains to homes and other smaller spaces came about largely from the efforts of Friedrich Albrecht Winzer, a Moravian immigrant, who had become an ardent disciple of Lebon's after witnessing his demonstrations of gaslighting. In 1802, he crossed the channel, and anglicizing his name to Frederick Albert Winsor, began to vigorously promote the establishment of a central gas generation and distribution system.[5] His activities bore fruit in London in 1812 with the chartering of the first municipal gasworks, the Gas Light and Coke Company,[6] which by the end of 1815 had laid twenty-six miles



"Fashionable Furniture, A French Bedchamber," from *The Repository of Arts, Literature, Commerce, Manufactures, Fashions and Politics*, January 1815. Courtesy Winterthur Library, Periodical and Printed Book Collection, (accession no.RBR AP4 R42.)

of main.[7] In 1815, also, what is perhaps the earliest depiction of domestic gaslighting appeared in the monthly *Repository of Arts, Literature, Commerce, Manufactures, Fashions and Politics*, where a gasolier was shown as substituted for a chandelier in an illustration of a fashionable French style bedchamber.[8]

In the next decade and a half, the introduction and improvement of purification systems and consumer gas meters facilitated the use of centrally manufactured gas as an illuminant in Great Britain, and gaslighting developed rapidly there. By 1822, according to one source, London's four largest gas companies were supplying 7,268 lights on streets, squares, and other public spaces and 61,203 lights on private premises.[9] By 1829 there were some 200 gasworks throughout Great Britain, with virtually no town of 10,000 population or more being without gas.[10]

The Emergence of Gaslighting in America

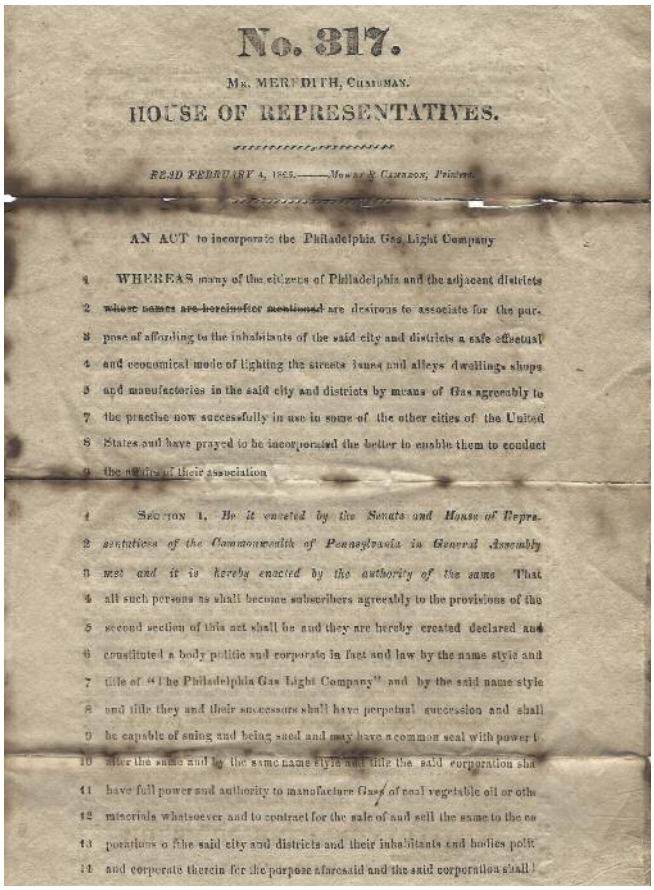
Interest in gaslighting in the United States surfaced about a decade after Murdoch's initial explorations. In 1802 Benjamin Henfrey, an English immigrant, received what is probably the first US patent for making coal gas[11] As Lebon and Winsor did, he thereafter gave public demonstrations of a "thermo-lamp" using coal gas, based probably upon Lebon's design, in Baltimore, Richmond, and Philadelphia.[12] At this time he also proposed lighting the streets of Baltimore and Richmond with gas.[13]

More substantive were the accomplishments of David Melville, a former Newport, Rhode Island, hardware and stationery shop proprietor, whose investigations and installations of gaslight paralleled, to remarkable degree, those of Murdoch. By one report Melville had lighted his house and the street outside it with gas as early as 1806.[14] In 1810 he received a patent for a "Lamp, Gas," and in 1813, installed gaslighting in factories in Watertown, Massachusetts, and near Providence in what were the first commercial gaslighting installations in the United States.[15] Equally significant, all of the fittings for lighting the two factories were not imported, but manufactured by the Newport brass foundry of Lyon & Chafee.[16]

About the same time in Philadelphia, chemist Benjamin Kugler received a patent for producing what he called "carburetted hydrogen gas" from pitch.[17] Rubens Peale, son of American artist Charles Willson Peale, had been considering the use of gas to illuminate the museum in Independence Hall he managed for his father ever since learning of demonstrations of gas street lighting in London in 1808.[18] In 1814 Rubens installed Kugler's system in the museum.

Museum attendance was boosted not only by better illumination, but also by public curiosity about gaslighting.[19] The latter led to its being installed shortly thereafter in a theater as an attraction and even in a private house whose owner invited common council members to inspect it. In 1820 Kugler's system was also installed in Philadelphia's new Masonic Hall.[20] The success of the installation in the Independence Hall museum and public curiosity about it induced Ruben's brother, Rembrandt Peale, to light his Baltimore Museum with Kugler's gas in 1816.[21] Rembrandt's installation also used fittings made by Lyon & Chafee.[22]

The gas installations by Melville, the Peales, and others used on-premise gasworks. However, Rembrandt Peale's interest in gaslighting also extended to public illumination. He and other prominent Baltimoreans proposed to the common council the lighting of Baltimore's streets with gas and the organization of a company for that purpose. After receiving a state charter in 1817, The Gas-Light Company of Baltimore became nation's first public gas utility.[23]



No. 317.

MR. MEREDITH, CHAIRMAN.

HOUSE OF REPRESENTATIVES.

READ FEBRUARY 4, 1825.——Mowry & Cameron, Printers.

AN ACT to incorporate the Philadelphia Gas Light Company

WHEREAS many of the citizens of Philadelphia and the adjacent districts whose names are hereinafter mentioned are desirous to associate for the purpose of affording to the inhabitants of the said city and districts a safe effectual and economical mode of lighting the streets lanes and alleys dwellings shops and manufactories in the said city and districts by means of Gas agreeably to the practise now successfully in use in some of the other cities of the United States and have prayed to be incorporated the better to enable them to conduct the affairs of their association

SECTION 1. *Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met and it is hereby enacted by the authority of the same* That all such persons as shall become subscribers agreeably to the provisions of the second section of this act shall be and they are hereby created declared and constituted a body politic and corporate in fact and law by the name style and title of "The Philadelphia Gas Light Company" and by the said name style and title they and their successors shall have perpetual succession and shall be capable of suing and being sued and may have a common seal with power to alter the same and by the same name style and title the said corporation shall have full power and authority to manufacture Gas of coal vegetable oil or other materials whatsoever and to contract for the sale of and sell the same to the corporations of the said city and districts and their inhabitants and bodies politic and corporate therein for the purpose aforesaid and the said corporation shall

Title page of an 1825 Pennsylvania General Assembly bill to authorize the incorporation of The Phildelphia Gas Light Company.

Despite these auspicious beginnings, the growth of gaslighting in the United States lagged greatly behind that in Britain. Besides the company in Baltimore, only three others had been organized in the United States by 1830: Boston (1822), New York (1823 and 1830), and Brooklyn (1825)[24]–whereas, as stated previously, some 200 gas companies existed in Great Britain by this time. A decade later only seven additional companies had been incorporated in the United States, bringing the total number to eleven in 1840.[25] Of the ten largest American cities according to the census of that year, four–Cincinnati, Ohio; Albany, New York; Charleston, South Carolina; and Washington DC–still lacked gasworks.[26]

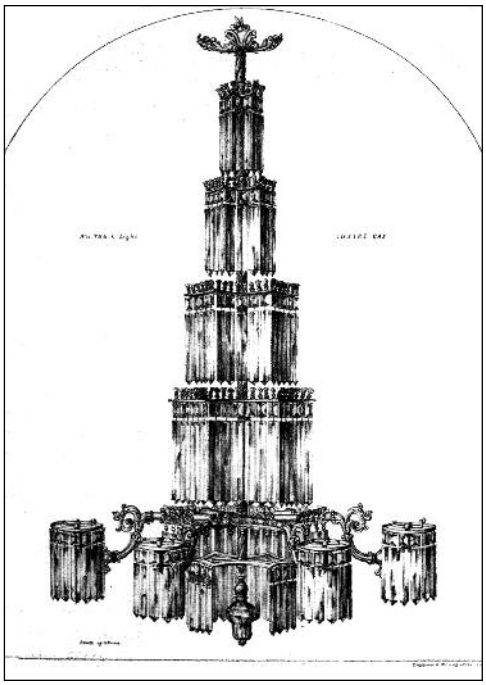
Certainly a major factor in gaslighting's slow growth in the United States was the country's largely rural nature at this time in comparison with Great Britain. Gaslighting is an urban technology, and just over 10 percent of Americans were urban dwellers in 1840; this increased to slightly more than 15 percent by 1850.[27] By contrast, in 1831, 25 percent of the population of England and Wales lived in towns and cities and by 1850, half did.[28]

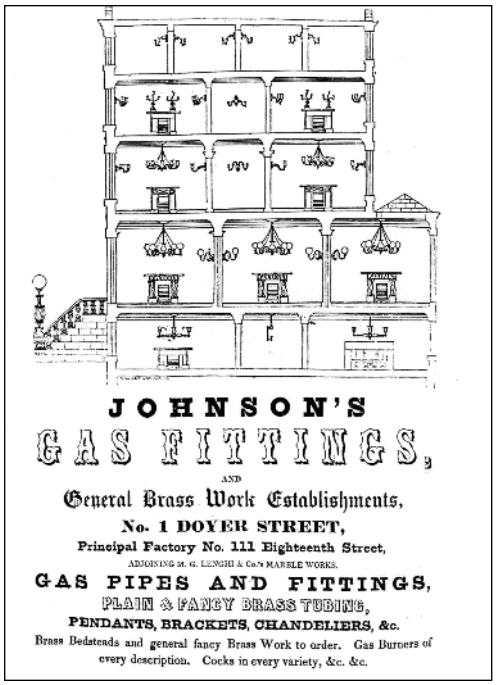
However, the absence of gas in major commercial cities like Cincinnati and Charleston and seats of government like Albany and Washington, DC suggests that other conditions in the United States affected the growth of gaslighting. Chief among these perhaps was the unavailability of necessary materials and technical knowledge in the country for the construction and operation of gasworks. As a result, nearly all of the early gas companies experienced severe start-up problems. Initially, mains, meters, and even coal had to be imported from Great Britain.[29] Perhaps to economize, the companies in Boston and New York first attempted to generate gas from fish oil, instead of coal, a method that had been advanced in Great Britain as a means of avoiding the problems of purification posed by coal and simplifying construction of gasworks. In Baltimore, tar was used.[30] These substitutions generally produced unsatisfactory gas, and in some cases, had disastrous consequences for the companies. In Boston the operation of the gasworks was delayed seven years, and in Baltimore the gas system had to be entirely reconstructed for the use of coal.[31]

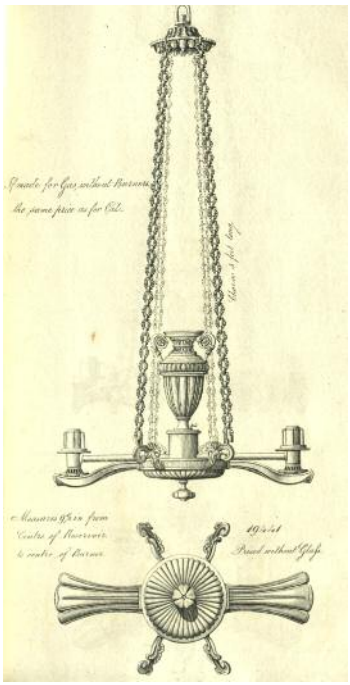
Technical blunders like these scared away potential investment in gas companies and produced a wary attitude toward the new light in cities that did not yet have it. It was observed that in Philadelphia, the problems of the Baltimore and New York gas companies, together with the nuisance created by that city's Masonic Hall gas plant, resulted in a "deep-rooted...prejudice against gas lights."[32] Attempts to organize a gasworks there in 1825 and again in 1827 were defeated by public opposition, and it was not until 1835, when the "younger portion of the community" forced public consideration of the question of gaslighting still once more, that a gasworks for Philadelphia was finally approved.[33]

Gaslight Comes to the American Home

Although the technical difficulties of the early companies had been largely worked out by 1830, gas, as indicated previously, was much slower to make its way into the home in the United States than in Great Britain. In Boston, where the gasworks had been in operation since 1828, Edward Everett Hale, author of *Man Without a Country*, recalled that "[g]as was not introduced into dwelling-houses until Pemberton Square was built by the Lowells, Jacksons, and their friends, in the years 1835, 1836, and later"[34] [as noted elsewhere in this edition of the magazine in our companion piece about early electric illumination–editor]. J. A. Adams, an employee of The Gas-Light Company of Baltimore in the 1830s, could not recall any dwellings lighted by gas in that city in 1836.[35]







L to R: Gas lustre chandelier No. 764 as seen in *Catalogue of Bronze and Ormolu Goods & Lamps Manufactured by Henry N. Hooper & Co.*, Boston, 1850. Advertisement for Johnson's Gas Fittings and General Brass Work Establishments, *The New York City Mercantile Register, 1848-1849*. Plate from *Lamp Book*, c. 1830, showing a two-light Argand chandelier. Courtesy Winterthur Museum, Garden and Library, (accession no. NK8360 L23FTC.)

Among the factors delaying gas's entry into American homes was the priority that early gas companies often gave to laying mains in commercial areas. In its 1838 report to the city, the Philadelphia Gas Works stated that it had consistently refused applications for the piping of residential streets, leaving only dwellings on predominantly commercial streets the option of using gas.[36] Also discouraging household use of gas was its high cost. In the 1820s the rate in Boston was $5.00 per 1,000 cubic feet, and in New York City, a whopping $10.00 per 1,000 cubic feet![37] The companies often set rates purposely high to prevent excessive consumption and depletion of supplies, a practice considered necessary prior to meters coming into general use.[38] High rates limited the potential use of gas to only the more affluent. Additionally, for households wanting gas, there were the initial costs of plumbing the residence and purchasing new fixtures and fittings, most of which prior to the 1840s would have been imported.[39] Further, where meters were used, householders would have had the new—and perhaps unsettling—experience of having a device owned and controlled by the gas company determine their cost of light.[40] In 1834, when meters were introduced in Baltimore, an ordinance was immediately proposed to ban them.[41] Although metering won out, consumer suspicion of meters as devices manipulated by the gas company lingered.[42] Not surprisingly, therefore, given the expenses associated with gas and the novelty of the technology, even the wealthy saw little reason to adopt it for their homes as long as the cost of sperm oil and spermaceti candles remained reasonable.

Less apparent but equally discouraging for the residential use of gas at this time was the perception of its unsuitability as a domestic illuminant. In contrast to Great Britain, early gasworks in the United States had been promoted principally as a means of providing better illumination for streets, public squares, factories and warehouses, and courthouses and other public buildings, rather than for lighting homes.[43] Street lighting contracts and other municipal funding were often critical to the success of the early gas companies. The formation of the Madison Gas Light Company, for instance, was probably assured when the City of Madison received permission from the state legislature to purchase up to $15,000 in shares of company stock with the right to appoint one company director. Even before the system was complete, the city had installed seventy-three lampposts, which guaranteed the company a flow of revenue from the beginning.[44] Gas therefore tended to be viewed as an "outdoor" or "shop" illuminant. In his 1840 essay, "Philosophy of Furniture," Edgar Allen Poe vigorously condemned gas in the home, especially in the large lustre chandeliers then becoming fashionable:

> *Glare* is a leading error in the philosophy of American household decoration....We are violently enamored of gas and of glass. The former is totally inadmissible within doors. Its harsh and unsteady light offends. No man having both brains and eyes will use it....The huge and unmeaning glass chandeliers, prism-cut gas-lighted, and without shade, which dangle in our most fashionable drawing-rooms may be cited as the quintessence of all that is false in taste or preposterous in folly.[45]

Although it may seem strange to twenty-first century eyes that gaslight should be regarded as abnormally bright, it must be remembered that candles still formed the largest part of household illumination in the 1820s and 1830s, and that a single gas jet, using a fishtail or batswing burner, could produce as much light as thirteen spermaceti candles.[46] Even in the 1850s, after solar and other brighter forms of lamps had

been commonplace in American homes for more than a decade, the brilliance of gaslight could still be surprising and disconcerting. When Henry Wadsworth Longfellow and his wife turned on the gas for the first time in January 1853 in the Vassall-Craigie House, their historic Cambridge, Massachusetts, residence which had once been George Washington's war-time headquarters, Longfellow wrote, "It had a ballroom look–the house had–and made me quite restless."[47]

Nevertheless, as the occasion for Poe's diatribe indicates, gas, by 1840, was emerging as a domestic illuminant in the United States. Aiding its debut was the increasing price of sperm oil at this time, the average consumer price for which had risen from $0.84 a gallon in 1835 to $2.50 a gallon in 1840.[48] While a number of new illuminants, like burning fluid and lard oil, were also coming onto the market then, none were wholly satisfactory replacements for good quality sperm oil. Meanwhile, gas rates were dropping. By 1836 gas in Baltimore was $4.00 per 1,000 cubic feet and only $3.50 in Philadelphia.[49] Gas rates would continue to decline throughout the 1840s and 1850s, with gas costing, for instance, only $2.25 per 1,000 cubic feet in Boston by 1860.[50] By 1840 also American-made fixtures and other gaslighting components were becoming available.[51] Indeed, by the time the Shrewsburys and other of Madison's more affluent were plumbing their homes for gas, gasoliers and other fixtures as well piping and meters could be conveniently had from Baker & Von Phul's "Emporium of Light" just upriver in Cincinnati.[52] Additionally, thanks in particular to the appearance of the solar lamp about 1840, which would become virtually ubiquitous in middle-class parlors by end of the decade, light levels in American homes were increasing, making gaslight seem less harsh than it would have earlier. By 1840, too, more Americans were directly experiencing gaslit interiors in larger cities as gas began to displace other forms of illumination in court houses, market places, hotels, and shops.[53]

With the return of prosperity in the second half of the 1840s, gasworks were being established rapidly throughout the United States: 38 or so gas companies were chartered in the years 1845 to 1850–more than three times the number previously–in states ranging from Maine to Georgia to California.[54]

Samuel Hollyer (1826-1919), *Henry W. Longfellow in his Library at Craigie House, Cambridge*, 1882. Library of Congress. A gas fixture, fitted with a detachable reading drop that has a patented tin shade, is visible above the table. The home had gaslight installed in 1853.

Mid-Nineteenth Century
Domestic Gaslight Installations

In the absence of modern building codes and industry standards, identifying a typical residential gaslighting installation of the 1850s is far more challenging than it would be for a lighting, heating, or other system today. In the 1850s

the numbers and kinds of gas fittings installed depended almost exclusively on the personal desires and the resources of the householder. Adding to the difficulty of the task is the scarcity of documentation of residential installations from this period.

A rare illustration of a complete mid-nineteenth century domestic installation appears in an advertisement by Johnson's Gas Fittings and General Brass Work Establishments in the 1848-1849 *New York City Mercantile Register*, which shows the cross section of a New York town house of four stories and a basement fitted with gas.

In the illustration six-branch, or perhaps eight-branch, gasoliers together with single-branch wall brackets appear in first and second stories spaces that are probably representations of a parlor, drawing room, and other principal spaces. On the third story, in what might be main bedchambers, two-branch brackets appear with pairs of three-branch gas girandoles on the fireplace mantles. On the fourth floor, in servants' quarters, or possibly children's rooms, there single-branch brackets, and in basement work areas, utilitarian "T"s. An outdoor newel post lantern is depicted on the front stoop.

As might be expected of a piece promoting sales of gas fittings, the installation in the Johnson's advertisement is elaborate in both number and kinds of fittings, perhaps overly so, when compared with other evidence of gaslighting from the period. For instance, the 1850 catalog of Boston lamp and fixture manufacturer Henry N. Hooper & Co. shows more two- and four-branched gasoliers than other sizes. Only three styles of eight-branch gasoliers appear. This suggests that smaller gasoliers, rather than the six-, or eight-branch, ones shown in advertisement were more typical. While the Hooper catalog does depict three varieties gas girandoles like those in the two third-floor rooms of the advertisement, the overwhelming number of girandoles offered, thirty-one, are for candles, an indication that gas girandoles were probably more of a novelty.[55]

Joseph Shoemaker Russell, *Parlor at Mrs. A. W. Smith's Boarding House, Broad and Spruce Streets, Philadelphia*, 1853.
Courtesy Philadelphia Museum of Art. Purchase with funds contributed by the Barra Foundation, Inc., 1994-85-2.

Certainly exaggerated also is the use of the gas brackets shown in the illustration flanking entries, fireplaces, and other architectural features. Unlike in the post-Civil War period, photographs and other depictions of antebellum rooms rarely show pairs of flanking gas brackets that would have been used

for general illumination.[56] Additionally, gas would not have been common in attic servants' or children's rooms, although it could have been found in kitchens or other work areas. An outside gas lantern for a private residence would have been most unusual in this period.[57]

In one respect, however, the Johnson's advertisement is accurate in depicting gasoliers that have only a single tier of branches, as opposed to the massive double- and multi-tiered fixtures that would appear in the mansions of post-Civil War America. The single tier is probably a reflection of the Argand chandelier on gasolier design, as early gasoliers are often shown in lamp makers' catalogs of the 1830s as alternatives to chandeliers fitted with lamps. Argand chandeliers in homes were invariably single-tiered.[58] No multi-tiered gasoliers appear in the Hooper catalog. Given the predominant number of smaller gasoliers offered there, it is also safe to conclude that single-tiered gasoliers provided adequate lighting for virtually any sized antebellum domestic interior.

At the other end of the scale from the installation in the Johnson's advertisement is the one shown in a series of drawings, done in 1853-54, of the interior of Mrs. A. W. Smith's Philadelphia boarding house by Joseph Shoemaker Russell, one her boarders. Gaslighting appears only in the drawings of the parlor and the dining room, and not in those of the bedrooms of Russell or his daughters. The installation in both rooms consists merely of a single-branch gas bracket. In the parlor the bracket, which is located mid-level on an inner wall, has a rather ungainly extension with a drop at the end to a gas stand on a small table. In the dining room, the bracket appears between the two windows without an extension to a lamp and no shade.

The minimal nature of this installation suggests Mrs. A. W. Smith as a person of reduced circumstances, also apparent perhaps in the simple and sparse furnishings of the rooms and her taking in boarders, and that the plumbing of the house for the two brackets was all that was affordable by her. In this case the appeal of gas may not have been its greater luminosity, but the convenience it offered of freeing her from having to manage candles or oil lamps in the common areas of the house. Equally true, though, with eyes in the early 1850s still accustomed to the light of candles and small lamps, light from a single bracket in each room could have been deemed sufficient for general illumination.

The Shrewsbury-Windle House Installation

The gaslighting in the Shrewsbury-Windle House falls within the range of the installations depicted in the Johnson's advertisement and the drawings of Mrs. A. W. Smith's boarding house. Uninfluenced by the factors suggested by those installations, it probably represents a truer profile of the kinds and number of fittings that would have been found in an upper middle-class residence.

L to R: Decorative morning glory vine and lion-head medallion on the first floor hall gasoliers, as restored. A restored four-branch gasolier in the east side bedroom. Courtesy Historic Madison.

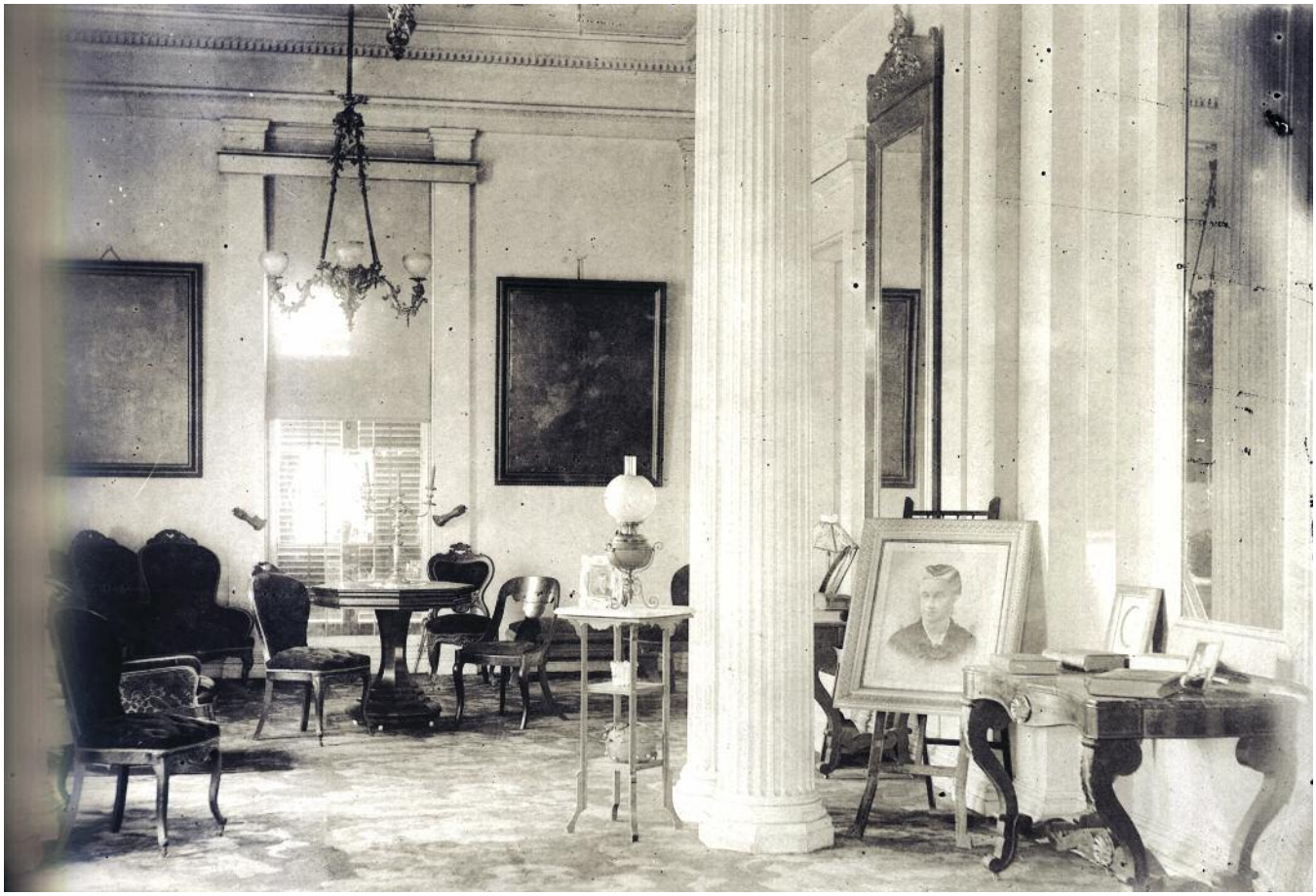
It is not known precisely when the Shrewsburys installed gas in their house. As discussed later, the house appears not to have been plumbed for gas when built, but could have been as early as 1850, the year the Madison Gas Light Company was chartered. The installation, however, most likely dates from after City of Madison's subscription for gas company stock and entry into the street lighting contract in 1852, which would have assured the viability of the company.[59]

As indicated at the beginning of this article, the Shrewsbury-Windle House's gaslighting is remarkable both for the quality of its fixtures and its completeness. Elaborately ornamented gasoliers and other fittings survive in all of the principal rooms except two. Their Rococo Revival style and the presence of red wax on the drop-pipe joints (typically used to seal gas fittings in the 1850s) points to their having remained in situ from the original installation until removal for restoration. Three fixtures, in fact, were never electrified.[60] There are also extensive survivals of the original gas piping in the house.

Additionally, the size and design of the gasoliers and other fittings suggest that they were carefully chosen for the purposes of the spaces in which they are located. This aspect of the installation can be more fully appreciated by having some familiarity with the house's layout and the use of the rooms in the Shrewsburys' time. The house consists of an almost square two-story main portion with a one and one-half story wing on its west side and a kitchen, originally detached from the house.

Drawing Room

The largest and most elaborate of the house's gas fittings are two matching four-branch gasoliers that hang in the center of each half of drawing room, which occupies the entire east side of the main portion of the house. This room, ornamented with a full entablature and carefully articulated clusters of pilasters in the corners, and divided by pairs of columns in antes, is the house's grandest, and would have been the center of the Shrewsburys' formal entertaining. A photograph of the drawing room c. 1910 shows one of the gasoliers with what are probably the original 1850s tulip-form shades.



Drawing room of the Shrewsbury-Windle House, c. 1910. The gasolier with the original shades is visible at left. Courtesy Historic Madison, Hutchings Photograph Collection.

As indicated previously, gas lustres, popular in Greek Revival interiors of the 1840s and railed against by Edgar Allen Poe, were still available in the early 1850s and could have been chosen for this room in keeping with its stateliness. The Rococo Revival style of the gasoliers that are in it, however, offered a touch of fashionableness that the ponderous lustres could not give. Though lighter in feeling than the lustres, especially because they are suspended from rods rather than a central column, the fixtures, with their gilded exuberant ornamentation against dark bronze bodies, nevertheless standout conspicuously against the grey-white surfaces of the room. Their highly wrought ornamentation incorporates a complete hierarchy of classical motifs, ranging from vines around the suspension rods, to lion's heads holding each branch, to female heads terminating the branches and supporting the burners.

Unlike the illustration of the principal rooms in the Johnson's advertisement which show numerous brackets, the gasoliers appear to have been the only gas fittings in the drawing room.

First Floor Hall

Two matching three-light gasoliers, ornamented with an entwining morning glory vine and lion head medallions on the branches, are located in the front and the back of the central first floor hall.

The number of lights and ornamentation may seem excessive for a passage way. However, in the mid-nineteenth century, a wide central hall like this often served as an adjunct to parlors and drawing rooms for entertaining. Martin Van Buren's hall even had a dining table placed in it for dinner

parties.[61] Elevating the importance of the first floor hall also is the Shrewsbury-Windle house's most distinctive architectural feature, the magnificent spiral staircase that rises from the hall's center. Fixtures more elaborate than simple harps like those in the second floor hall therefore would have been de riguer for this space.

Reception Room

A single three-light gasolier hangs in the center of the reception room. This room, immediately to the right of the front entry, is simpler in detail and more intimate than the drawing room across the hall, as would be appropriate for the greeting of visitors. The gasolier is therefore smaller and less exuberant than those in the drawing room. Nevertheless, it is a conspicuously decorative piece, with full-figure putti atop its branches that would have left callers and guests with no doubt as to the station and refinement of the Shrewburys.

With celebratory vine leaves wreathing their heads, they look down, holding what appears to be fruit or flowers in outstretched arms, perhaps in a gesture of welcome to guests being greeted below.

There is also one single-branch bracket just above the fireplace mantel to the right. As commented on earlier, brackets, when used for general illumination in flanking pairs in conjunction with a chandelier, would have been rare in the Civil War period. However, the location of this unpaired bracket at the end of the fireplace suggests that it was probably not intended so much for general illumination as a convenient light that would have allowed a chair to be drawn up to the fire place for reading or sewing. The presence of the bracket and its location may indicate that the reception room served as the Shrewsburys' sitting room when not used for entertaining.

Bedrooms, West Side and East Side (Ballroom)

Neither of the pair of bedrooms on west side of the second floor of the house's main portion appears to have had gasoliers. The only evidence of their having been gaslighted is the presence of a single capped nipple protruding from the wall above one end of the fireplace in each room. These would have probably had a bracket attached as in the reception room.

The absence of a ceiling fixture seems odd because of the likelihood of these rooms having been the Shrewsburys' main bed chambers, from each being directly connected to a servant's room at the rear. However, as the single brackets in the parlor and dining room of Mrs. A. W. Smith's boarding house suggest, their light would have provided sufficient general illumination for these rooms. One- or two-light fittings are frequently found in bedrooms in pre-Civil War period bedrooms, even in the homes of the affluent.[62]

Although there is an externally mounted gas line and capped nipple in the servant's room attached to the front bedroom, it is later in date, which would indicate that gas was not put in the servants' rooms when the house was originally fitted.

In contrast to the west side bedrooms, matching ornamental four-branch gasoliers hang in the center of each of the east side bedrooms. Their installation in these two rooms, which open into one another, indicates that, though bedrooms, they served as entertainment spaces when necessary. It is known that the Shrewsburys used them for music and dancing or a housewarming party in 1849.[63] Although highly ornamented with acanthus leaves, seed pods, and other flora, the gasoliers are less elaborate than those in the drawing room, having only four small male heads, barely conspicuous, at the top and tiny birds on tendrils encircling the arms. Their subordination to the drawing room gasoliers in this respect is appropriate, given that the bedrooms would have been an ancillary entertainment space to the drawing room.

Second Floor Hall

Matching hall harps with short unshaded single burners (called "Scotch tips") are located at each end of the second floor hall. Although ornamental, their detail is much simpler than that on the fittings in the other social spaces of the house. This suggests that, though providing access to the east side bedrooms, the second floor hall was regarded principally as a passageway, and not as a space for guests to congregate, when the bedrooms were used for entertainment. Interestingly,

Elbow and couplings at the gas line's turn to cross under the drawing room.

neither of the harps had been electrified, and one of them is still fitted with a cast iron tip, commonly used prior to the Civil War.

Piping

Almost as singular as the survival of the majority of Shrewsbury-Windle House's gasoliers and other fittings in situ is the degree to which the system's original piping remains, significant portions of which can be studied in the cellar. The cellar piping shows that a cast iron line from the street main entered the cellar at the front of the house and ran along the east side of a brick support wall underneath the drawing room and the first floor hall wall. Midway across the cellar, the line turns east and travels about three-quarters the width of the cellar under the drawing room floor. There it is joined to a pipe that extends up through one of the pair of columns on the east side of the drawing room into the area between the first floor ceiling and the floor above. Underneath the second story floor there are branches to all of the first floor gasoliers and fittings. At some point a vertical branch connects that would have carried gas to the east bedroom gasoliers, second floor hall harps, and perhaps the brackets once attached to the capped nipples in the west bedrooms.

One notable feature, visible in the cellar, is a reducing bushing above the elbow connecting the line from the street main to the pipe extending though the column. The purpose of the bushing was probably to increase gas pressure to assure a more even flow. Unlike today, where natural gas is delivered under high pressure and reduced to consumption level by a pressure regulator at the point entry into a building, manufactured gas in the mid-nineteenth century was delivered at the pressure at which it was used by the consumer. Variations in pressure, such as produced by sudden changes in demand, could cause flames in fixtures to drop or blow. Constricting the flow of gas at this point before distribution to fixtures would have helped assure even pressure to reduce or eliminate the effects of pressure variations.

What features, then, of the Shrewsbury-Windle House's gaslighting define a mid-nineteenth American domestic installation and distinguish it from those of the post-Civil War period? One is modest nature of its extent and numbers of fittings. Gaslighting is found only in the house's principal social and family areas, and, with the exception of the kitchen, does not extend into service areas. General illumination in the principal rooms is from gasoliers unsupplemented by brackets, torchères, and other mid-level fittings. Aesthetically, the single-tiered gasoliers of three or four branches, despite their elaborateness, do not dominate their spaces in the way gasoliers in the post-Civil War do. Also, the Shrewsbury-Windle House's installation shows a concern for the appropriateness of the size and design of the fittings in accordance with the purposes of the space. These aspects are perhaps a reflection of a technology that was still somewhat novel and its introduction into spaces intended for illumination by candles and small lamps where, aesthetically, lighting would not have been a major component. These features of earlier gaslighting are in distinct contrast to the installations of the Gilded Age mansions of the post-Civil War era, whose palatial interiors were intended for, and could only be lighted adequately by, the massive multi-tiered gasoliers and multiplicity of brackets and girandoles that aesthetically dominated, if not overwhelmed, them, and where pretensions to grandeur could lead to the same fixture used in the reception room being hung in the bedroom.[65]

The authors are indebted to Mr. John Staicer, president and executive director of Historic Madison, Inc., and Mr. Benjamin L. Ross, preservation specialist, RATIO Architects, Inc., for their reviewing and providing photographs for this article, and to Ms. Linda Roaks, of the Jefferson County (IN) Historical Society Research and Archives, for her research on the Madison Gas Light Company. The opinions expressed in this article are the authors' and not necessarily those of Historic Madison, Inc., RATIO Architects, Inc., or the Jefferson County Historical Society.

Editor's note: this is a somewhat abridged version of a longer article that was published in the March 2018 issue of *The Rushlight*, the journal of The Rushlight Club, a publication of the International Association of Collectors and Students of Historic Lighting. While we do not often use work that is published concurrently elsewhere, we make this exception so that our readers interested in historic lighting might have an opportunity to familiarize themselves with this unique organization.

Notes

1. Roger G. Kennedy, in his *Greek Revival in America* (New York: Stewart, Tabori & Chang, 1989), 349, observes that "Madison is the most diverse assembly of high-quality Grecian work to be found anywhere in America."
2. John Griffiths, "Ex Fumo Dare Lucem" in *The Third Man: The Life and Times of William Murdoch, 1754-1839, Inventor of Gas Lighting* (London: Andre Deutsch, 1992), 239-280, is the source for the information on Murdoch and Bolton and Watt. For the case for the Phillips and Lee calico mill as the first instance of the commercial installation of gaslighting, see Stirling Everard, *The History of the Gas Light & Coke Company, 1812-1949* (1949; repr., London: A & C Black, 1992), 15-16.
3. Griffiths, *The Third Man*, 240-241.
4. Ibid., 241.
5. Ibid., 241-242.
6. Everard, *Gas Light & Coke Company*, 25.
7. Griffiths, *The Third Man*, 276.
8. Vol. 13, no. 23 (January 1815): 295.
9. Griffiths, *The Third Man*, 276.
10. Jane Brox, *Brilliant: The Evolution of Artificial Light* (Boston: Houghton Mifflin Harcourt, 2010), 71.
11. Allen W. Hatheway, "History and Chronology of Manufactured Gas, 1800-1809," *Former Manufactured Gas Plants,* accessed December 15, 2017, www.hatheway.net/chronology/chron_1800.htm.
12. John Thomas Scharf, *History of the City and County of Baltimore, from the Earliest Period to the Present Day* (Philadelphia: L. H. Everts, 1881), 500; Christopher Castaneda, "Manufactured and Natural Gas Industry," *EH.Net Encyclopedia*, ed Robert Whaples, September 3, 2001, accessed December 15, 2017, eh.net/encyclopedia/manufactured-and-natural-gas-industry/; Hatheway, "History and Chronology of Manufactured Gas."
13. Sharf, *History of the City and County of Baltimore*, 500; Burton

Kumerow and Mary Blair, *BGE 200 Years: Moving Smart Energy Forward, A History* (Baltimore: Maryland Historical Society Press, 2016), 34.

14. Daniel W. Mattausch, "David Melville and the First American Gas Light Patents," *The Rushlight*, 64, no. 4 (December 1998): 3.
15. Ibid., 5-6.
16. Ibid., 3; Daniel W. Mattausch, "The Lyon Collection: America's Oldest Gaslight Artifacts," *The Rushlight*, 66, no. 4 (December 2000): 6-9. The later article depicts one of the actual batswing gas burners made by Lyon & Chafee for Melville illuminated.
17. Robert Patterson to Thomas Jefferson, 20 June 1816, Founders Online, National Archives, last modified June 29, 2017, accessed December 17, 2017: www.founders.archives.gov/documents/Jefferson/03-10-02-0103-0001. Although Patterson ascribes the system to Rubens Peale in the body of the letter, in the remarks following, he states that Peale "gives credit to Dr. Kugler for his present system of gas-lights."
18. Mattausch, "The Lyon Collection," 8.
19. Castaneda, "Manufactured and Natural Gas Industry."
20. John Bach McMaster, *A History of the People of the United States*, vol. V, 1821-1830 (New York: D. Appleton, 1914), 126-127.
21. Castaneda, "Manufactured and Natural Gas Industry."
22. Mattausch, "The Lyon Collection," 8-9, 13 n 13. One of the Baltimore Museum Peale burners is illustrated in Fig. 9, p. 9.
23. Scharf, *History of the City and County of Baltimore, from the Earliest Period to the Present Day*, 500-501.
24. Denys Peter Myers, *Gaslighting in America, A Guide for Historic Preservation* (Washington DC: U. S. Department of the Interior, 1978), 249.
25. Ibid.
26. Although Myers, *Gaslighting in America*, 249, gives 1844 as the year of the earliest chartering of a gas company in Philadelphia, the Philadelphia Gas Works began operations in 1836.
27. Table 4. Population 1790-1990, accessed December 15, 2017, www.census.gov/population/censusdata/table-4.pdf.
28. Marjorie Bloy, "The Peel Web," A Web of English History, last modified March 4, 2016, accessed December 15, 2017, www.historyhome.co.uk/peel/social/pop.htm.
29. Hugh Entwistle Macatamney, *Cradle Days of New York (1609-1825)* (New York: Drew & Lewis, 1909), 117; "Looking Back 150 Years: Boston Sees the Light," 3rd art., *Boston Gas History: 1822-1972*, accessed December 18, 2017, www.simson.net/ref/1995/Boston_Gas_History.pdf.; *Report of the Trustees of the Philadelphia Gas Works, to the Select and Common Councils of the City of Philadelphia, January 15, 1838* (Philadelphia: J. Crissy, 1838), 7.
30. "Looking Back 150 Years: Boston Sees the Light," 2nd art., *Boston Gas History: 1822-1972*, accessed December 18, 2017, www.simson.net/ref/1995/Boston_Gas_History.pdf.; M. R. Moran, "The Early Development of Gas Lighting," *The American Gaslight Journal*, 95, no. 19 (November 6, 1911): 294-295. On the use of fish oil, see William Matthews, *An Historical Sketch of the Origin, Progress, & Present State, of Gas-Lighting* (London: Rowland Hunter, 1827), 107-116.
31. "Looking Back 150 Years," 2nd art.; Moran, "Early Development of Gas Lighting," 295.
32. Moran, "Early Development of Gas Lighting," 295.
33. McMaster, *A History of the People of the United States*, vol. 5, 127-128; *Report of the Trustees of the Philadelphia Gas Works*, 6.
34. "Looking Back 150 Years," 2nd art.; Edward Everett Hale, *A New England Boyhood* (Boston: Little, Brown and Company, 1927), 5.
35. Edward Stoops Thompson, "A History of Illuminating Gas in Baltimore," 19 January 1928, MS, 20.
36. *Report of the Trustees of the Philadelphia Gas Works*, 12.
37. Moran, "Early Development of Gas Lighting," 295.
38. "Looking Back 150 Years: Boston Sees the Light," 3rd art.
39. Myers, *Gaslighting in America*, 11.
40. Brox, *Brilliant*, 68-69.
41. Kumerow and Blair, *BGE 200 Years*, 40.
42. As late as 1860, the general manager of an English gasworks observed, "[T]he greater percentage of dissatisfaction...is with parties who look at the meter as a kind of *automaton*, and the [meter reader] as a *conjurer* who can make it say whatever he chooses. Alfred H. Wood, *A Guide to Gaslighting, Being a Manual for Consumers* (Hastings, UK: George P. Beacon, 1860), 17.
43. Scharf, *History of the City and County of Baltimore*, 500; Macatamney, *Cradle Days of New York*, 116.
44. Agreement dated April 7, 1852, between the Madison Gas Light Company and the City of Madison; Ordinance, adopted April 1, 1852, authorizing the City of Madison to subscribe for gas light stock.
45. *Burton's Gentleman's Magazine and American Monthly Review*, May 1840, 243.
46. Wood, *A Guide to Gaslighting*, 4.
47. "Longfellow's Historic Lighting Fixtures Illuminated," *Longfellow House Bulletin*, December 1999, 6.
48. Bob Buck, "How Expensive Was Spermaceti Oil, Really?," *The Rushlight*, 55, no. 3 (December 2000): 17.
49. Thompson, "A History of Illuminating Gas in Baltimore," 20; Moran, "Early Development of Gas Lighting," 295.
50. "Looking Back 150 Years: Boston Sees the Light," 3rd art.
51. Myers, *Gaslighting in America*, 11.
52. Advertisement, *Daily Nashville* (TN) *True Whig*, July 19, 1855, accessed January 10, 2018, www.chroniclingamerica.loc.gov/lccn/sn86071224/1855-07-19/ed-1.
53. E.g., The Philadelphia Gas Works reported in 1838 that gas was being used in "the City Hall, State House, the public offices, the market houses, theatres circus, all public hotels and most stores, on the line of the pipes...[and] in several churches...." Report of the Trustees of the Philadelphia Gas Works, 12.
54. Myers, *Gaslighting in America*, 249.
55. *Catalogue of Bronze and Ormolu Goods, Lamps, Manufactured by Henry N. Hooper & Co., Boston* (1850). A conveniently available reproduction of this catalog is in Gerald T. Gowitt, *19th Century Elegant Lighting: Argand, Sinumbra, and Solar Lamps* (Altglen, PA: Schiffer Publishing, Ltd., 2002), 25-74.
56. The only pairs of flanking brackets in antebellum era domestic gaslight installations that the authors readily recall are one in the library of the Longfellow House—Washington's Headquarters National Historic Site, and one shown in a c. 1890 photograph of the drawing room of the house of New Jersey Governor Marcus L. Ward in the collection of The Newark Museum, Newark N. J.
57. Myers, *Gaslighting in America*, 241.
58. *The Lamp Book*, for instance, shows only single-tiered chandeliers.
59. April 7, 1852, Agreement; April 1, 1852, Ordinance.
60. J. Craig Maue, *Shrewsbury-Windle House Lighting Report for Historic Madison, Inc.* (Salem NJ, 2013).
61. National Park Service, "Virtual Tour of Martin Van Buren Historic Site," accessed January 10, 2018, www.nps.gov/mava/learn/photosmultimedia/virtualtour.htm.
62. E.g., William G. Seale, *The Tasteful Interlude: American Interiors Through the Camera's Eye, 1860-1917*(New York: Praeger Publishers, 1975), 41, pl. 13, shows a simple double pendant in an 1866 photograph of a bedroom in the house of Dr. Henry K. Oliver, Boston.
63. John Staicer, Historic Madison, Inc., e-mail message to Keith E. Letsche, December 28, 2017.
65. E.g., the reception room gasolier in the A. T. Stewart house, New York City, was identical to the one in Mrs. Stewart's bedroom. This same gasolier was also in the hall and the music room. Arnold Lewis, James Turner, and Steven McQuillin, *The Opulent Interiors of the Gilded Age* (New York: Dover, 1987), 34, pls. 1 and 2; 36, pl. 4; and 37, pl. 6.

Figures representing inventors Stephenson, Barrett and Scott on the Transportation Building. Adler & Sullivan, architects, 1893.

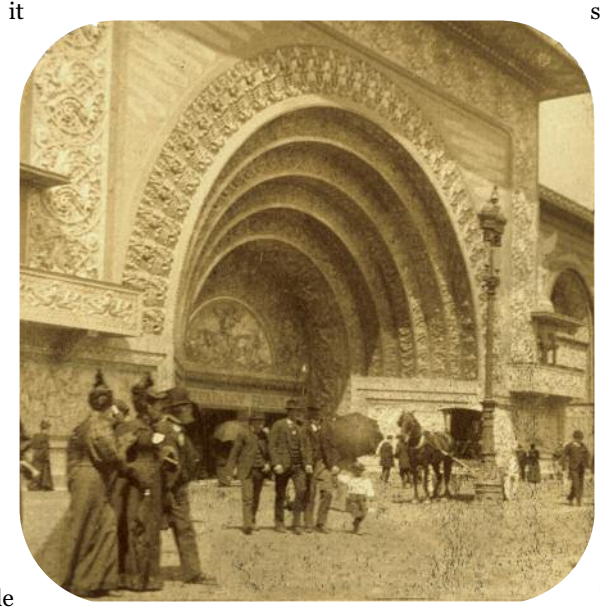
The Allegorical Program of Louis Sullivan's Transportation Building

AT THE WORLD'S COLUMBIAN EXPOSITION OF 1893

Jonathan Hall

Louis Sullivan's Transportation Building, when viewed against the white classical buildings lining the Court of Honor at the World's Columbian Exposition in Chicago, was a peacock among the swans. Its glittering golden portal and brilliantly polychromatic arches injected a strident note of color into the White City, which took its name from the alabaster-tinted buildings of the fair. Sullivan's rebellion was not just chromatic: his building was as radical in conception and form as it was in color. It is among his most famous buildings, and every Sullivan scholar has discussed it. But most scholarship begins and ends with its colorful Golden Door, focusing on its contrast with the rest of the White City. But I would like to suggest that while the Transportation Building is one of Sullivan's best known buildings, it also his most poorly known.

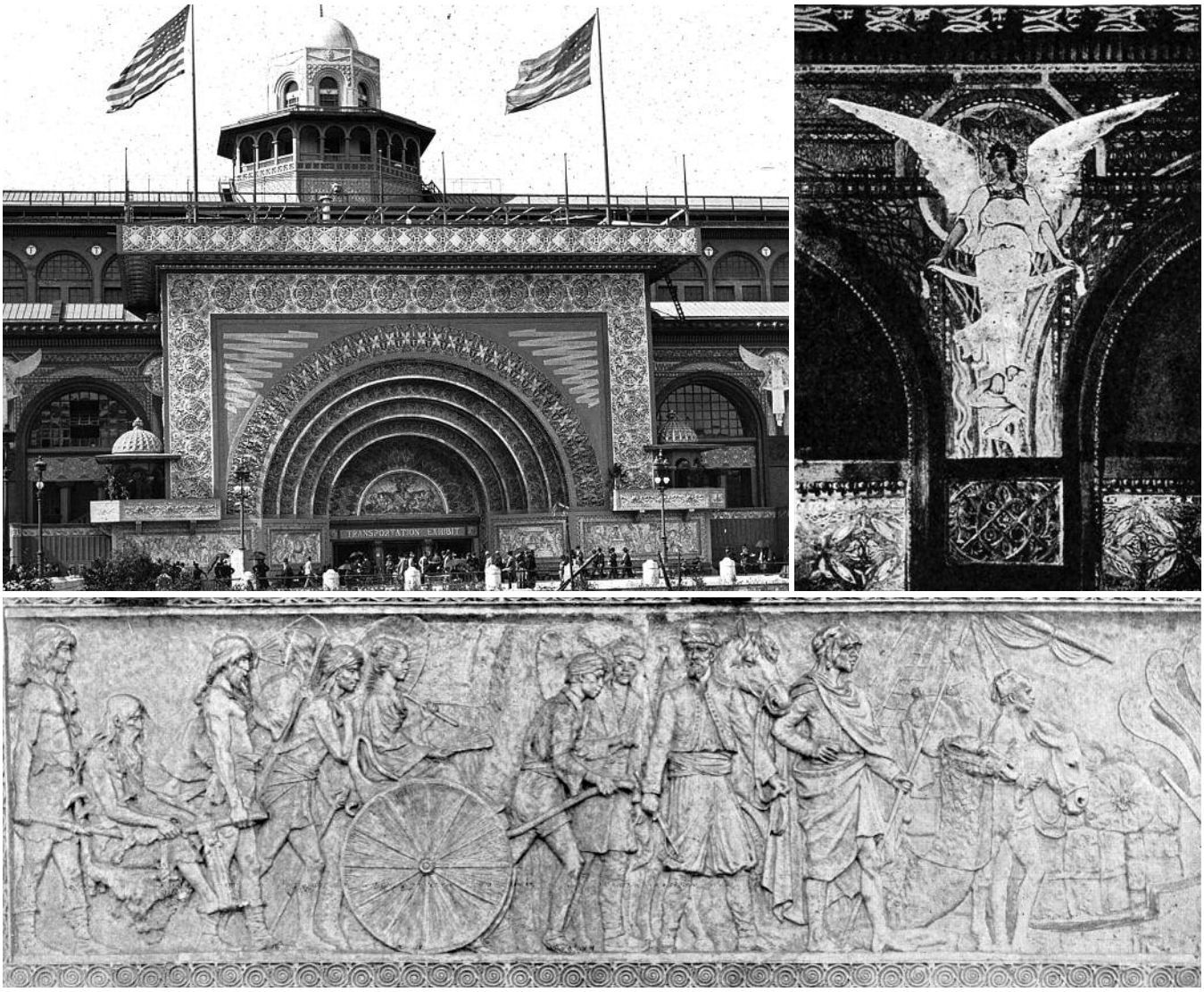
Every account of the Transportation Building shows its celebrated east facade, never its north and south entrances, although these too were richly ornamented, if not as richly as the Golden Door. And one must sift through 1890s accounts of the fair even to find a floor plan of the building. It was enormous: the rectangular main hall was approximately 950 feet long by 256 feet wide and covered about nine acres; a trapezoidal large annex, added late to the plan, enclosed another nine acres to the rear. This vast space was filled to the rafters with models and full-size train cars, steam engines, battle ships, mail steamers, locomotives, and saddles. Among the countries allotted their own exhibition space were Australia, Britain, Canada, France, Germany, and Mexico, while the United States expanded beyond its designated area and was effectively represented throughout the hall. Modern scholarship, however, has also slighted the building's capacious interior, and published images are rare.



The Golden Door of the Transportation Building at the World's Columbian Exposition, Chicago, 1893. Strohmeyer & Wyman, Publishers, 1893. The New York Public Library.

But the greatest omission is the Transportation Building's architectural sculpture. It had a complicated and intricate allegorical program, of which the Golden Door was only one element. Not only has this never been systematically studied but there is not even a comprehensive inventory of the statues and architectural sculpture. Among recent scholars only Wanda Corn has described the sculptural program, although without discussing its meaning in relation to the larger structure. That meaning is elusive, of course, since neither the architect nor the sculptor left a written record of their collaboration. But enough strands of evidence are available in contemporary publications to permit a tentative reconstruction of Sullivan's allegorical program, of which this essay is a first step. With these new documents and photographs, it might be possible to "work backwards" and figure out some of Louis Sullivan's larger intentions behind this most peculiar of his buildings.

The firm of Adler & Sullivan was given the commission for the Transportation Building in early 1891; it is generally understood that Dankmar Adler, the senior partner, was not significantly involved. It was Sullivan who devised the idea of a box-like exhibition hall, treated like a Roman basilica with a raised clerestory, and fronted by an elaborate Romanesque portal in the middle of the east side. A similar portal to the west was eliminated when the rear annex was later added to the program. Other than this richly sculpted Golden Door, the rest of the building was treated in terms of flat planes. Sullivan evidently wished to express the temporary nature of the exhibition buildings, which were light frames sprayed with "staff" (a coating made from plaster of Paris and hemp fiber). And so rather decorating the building with fictitious architectural elements such as columns or cornices, he treated it in the manner of a flat canvas, decorating primarily by chromatic means, i.e., with paint. His pigments, as Sullivan himself boasted, "comprise nearly the whole galaxy, there being not less than thirty different shades of color employed." The Golden Door, with its lavish use of gold leaf, was the climax of the color scheme, but there was also considerable visual interest in the angels in the spandrels between the clerestory arches. Handbooks to the fair described them as "spirits of transportation," although one contemporary critic, Gustav Kobbé, waggishly suggested that they were "symbolic of the many fatal accidents caused by the public conveyances of the time, the victims of which were then 'transported' to a better world"!



Top to bottom: Exterior of the Transportation Building, with spandrel angels visible; detail of a spandrel angel in linen, designed by Louis Sullivan; John J. Boyle, *Ancient Transportation*, 1893.

But even as Sullivan designed his ornament, he commissioned a battery of allegorical sculpture for the Transportation Building. It is not known why he selected John J. Boyle (1851-1917), a prominent Philadelphia sculptor who trained at the École des Beaux Arts. But they had many points of contact, including the same patron, Martin Ryerson, who commissioned Boyle's first public sculpture as well as a number of buildings from Sullivan. Boyle's commission was announced in early October 1891: he would model five bas-reliefs to be placed around the entrance beneath the Golden Door, in addition to which he would model eight heroic groups of three figures as well twenty-four life-size single figures–37 sculptures in all, an astonishingly audacious commission to execute in little over a year. And yet Boyle accomplished it, or nearly all of it.

The keystone of the Transportation Building's allegorical program was the image that visitors saw in the tympanum above their head as they entered the building: *The Apotheosis of Transportation*. A male nude, the largest figure of the relief, barely graces the globe with one foot, his arms outstretched, and his clothes billowing behind. He might as well be weightless. The essence of transportation, Boyle tells us, is to cover great distances with little effort:

> The central panel is the apotheosis of transportation and represents the world floating in space, surmounted by the strong armed, swift footed genie of transportation, circling one quarter of the globe at a stride. The four horses, symbolizing the four winds of heaven, give life and motion to the group, and the graceful figures at right and left are emblematic of prosperity and action.

Boyle uses conventional symbols to depict prosperity (and peace) in the form of a cornucopia and palm branches, but he depicts action in the most modern means possible: the woman holds a bundle of thunderbolts above her head triumphantly, a nod to the recent surge in understanding of electricity. All of this swirls around the fixed globe, marked by the signs of the zodiac. In other words, through transportation, man has brought the whole world under his control.

When a photograph of Boyle's clay model was published in February 1892, the tympanum was entitled *The Genii of*

Transportation. The subsequent change from Genii to Apotheosis is telling; the mythical theme remains but moves away from a conception of progress as the result of sudden inspiration or genius and towards its being the result of a longer, gradual process. To borrow from evolutionary biology, it is progress from gradualism, not punctuated equilibrium. The theme of long incremental progress is restated in the bas-reliefs to either side of the entrance, representing respectively *Ancient Transportation* and *Modern Transportation*.

Immediately to the left of entrance was *The Genesis of Transportation*. A young man holding a branch leads an ox-pulled cart in which an old man, woman, and child are sitting. The procession reads from left to right, all of its participants are barefoot and dressed in rags. Detail is sparse but one thing is clear: no one is enjoying himself. The man, shaggy in his tattered clothing, is slouching his shoulders and hanging his head. His feet hang limply off the forward edge of the tiny cart. And the woman seems to be having a similar experience, holding her baby tight. Even the oxen are slightly emaciated. The young man at the front of the procession, however, stands ramrod straight and looks forward at the mural's modern pendant, gazing ahead to a better future.

Sculptor John J. Boyle with an unfinished clay model of *Genesis of Transportation*, as published in *The Railroad Car Journal*, 1891.

Boyle wanted visitors to look between the two panels. He told interviewers that he deliberately made Biblical travel seem as arduous as possible in order to heighten the contrast with the modern world:

> it will be contrasted with a bas-relief representing a traveling party on board a Pullman sleeping car, in order to show to the extremes of rudeness and elegance in traveling.

This too depicted a family in transit, except traveling in the comfort of a modern train car, seated at a table and waited upon by porters bringing food and drink.

A photograph of Boyle's clay model of the Genesis of Transportation appeared, fittingly enough, in *The Railroad Car Journal* with a striking epigram:

> And Pharaoh said unto Joseph, say unto my brethren … take your wagons out of the land of Egypt, for your little ones and for your wives, and bring your fathers and come …and Joseph gave them wagons according to the commandment of Pharaoh.

The quotation is an edited version of Genesis 45:17-21, in which the Pharaoh tells Joseph to go and fetch his brothers and father and come back to Egypt so that they can be rewarded by the Pharaoh. It is abridged in order to emphasize not the coming back, but the initial going out. With his panel, Boyle gives us a biblical injunction to travel into new lands; just as *Apotheosis* is the divine conclusion of transportation, *Genesis* is the divine beginning.

Just to the left, a second panel depicted an ancient procession moving to the right, where a ship is docked. As one moves from left to right, and as one approaches the door to the building, technology gets more and more advanced. The composition is crowded, but a few main group are distinguishable by cultural-specific clothing and their transportation. A contemporary description identifies these ethnic groups and arranges them in a strict–and to modern viewers, uncomfortable–civilizational hierarchy:

> First, the rude litter of the mountaineers, the most primitive method of travel; then a chair carried on the back of an Indian as is done to this day over the mountains of South America; then the jinrikisha, in which the Japanese ladies take the air, drawn by their humbler compatriots…followed by the dromedary of the Bedouin, the horse of the Arab, and the series concluded with the highest type of ancient Civilization, the Grecian galley.

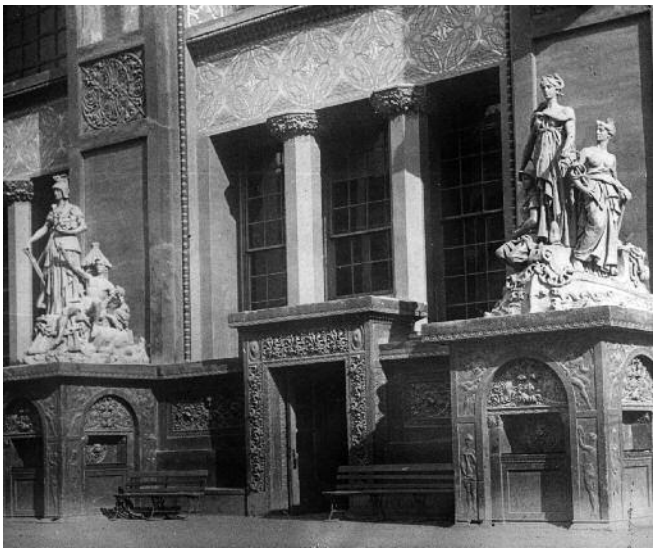
This description with its inventory of specific details (e.g., "jinrikisha") suggests that this description also comes directly from Boyle or his now lost written program.

The corresponding outer panel to the right is less unified. A couple and an older man of unspecified relation walk, porters carrying their luggage, on a train platform towards the left and the Golden Door, but here the directionality is not as strong. Behind them is a large locomotive, and in front of them is a trio or workers that they will soon pass. Once again, the ease of modern transportation is emphasized in order to contrast with the arduousness displayed in this mural's ancient counterpart:

> There were sailors under the command of an officer hauling freight up the sides of the vessel by the means which modern invention has made labor easier. There is a locomotive and a group of travelers in the background, and a group of travelers by rail. These were a young couple and an old man, very carefully worked out in every detail of dress and accessories, even to the parasol carried by the lady and the roll of rugs in a shawl strap in the hands of the old gentleman. They were followed by porters wheeling luggage along…

Boyle was thinking not only in terms of content but of shape and form, and he organized his composition elegantly by making circular wheels dominant in three of the four panels. The train wheels on one side echo the wheel-like barrels on the other side, linking the panels visually and restating the theme of wheels turning and moving throughout time.

Because Sullivan opted for an essentially planar building, he could not employ any architectural sculpture except the relief. Any figural sculpture had to stand apart from the building itself. His "eight groups of heroic figures (each group three)" were placed in pairs along the east facade, to either side of the Golden Door, atop little kiosks that projected from the building and served as drinking fountains. According to



Top to bottom: Exterior of the Transportation Building, with *Land Transportation* and *Navigation* visible; inventor figures surrounding the Transportation Building; main entrance of the Transportation Building, courtesy Massachusetts Institute of Technology, Ernest M. A. Machado Collection.

the official guide to the fair, these sculptures collectively represented "the ship of state," a poetic allusion to the civic role of transportation in moving goods and ideas. Because photographs of the building invariably show the dramatic central portal, these are poorly documented. Yet we have descriptions of at least two of them, and they show the same imaginative approach to allegory as the central bas-reliefs.

These are the pair that represented *Sea Transportation* and *Land Transportation*, which depicted "the inventions that have made possible the advances…of modern industry." The former was expressed as a triad of figures, which depicted Navigation, Commerce, and Conquest:

> Three female figures of heroic size compose the piece. The central figure typifies the spirt of Navigation. To her left is Commerce, bearing the caduci [caduceus] and sextant; on the right is Conquest, helmeted and slightly armored and bearing the sword in her right hand. Although the work is to partake of the temporary in its use the artist has put himself into it with a conscientious study worthy of more enduring reward.

Land Transportation was represented by the cowcatcher of a locomotive, upon which presided an updated version of the ancient statue of Athena in the Parthenon, flanked by heroic nude figures. Instead of wielding a sword and shield, this Athena operated a mechanical brake, and instead of a statue of Nike in her right hand, she bore a model locomotive. Boyle cleverly extended the lines of her fluted Greek peplos until they transformed seamlessly into the framework of the cowcatcher, a witty union of the ancient and modern.

If the east facade treated transportation poetically, the secondary entrances to the north and south stressed its practical side, preparing visitors to see the technical inventions on display within. This Boyle achieved with an array of realistic life-sized statues of inventors, scientists, and engineers, mounted atop a low balustrade in groups of four. Many were shown holding models of their inventions: James Watt with his pioneering steam engine, Robert Fulton with his paddleboat steamer, Denis Papin with his steam safety valve, and so forth. These early pioneers flanked the north entrance, while at the south entrance were the executives and capitalists who created the great American railroad companies, such as Cornelius Vanderbilt (New York Central Railroad), John Edgar Thompson (Pennsylvania Railroad) and John W. Garrett (Baltimore & Ohio Railroad). In addition to these historical personalities, two purely emblematic figures represented sea and land transportation, and in their most active form: a Helmsman guided a ship's wheel with an expression of "intense watchfulness" while a "stalwart, alert and youthful" Brakeman performed the difficult and dangerous task of stopping a train car (which often required him to stand atop the caboose).

There is no comprehensive list of these sculptures. Although Boyle was originally commissioned to create twenty-four, we only have the names of fourteen historical and two symbolic figures. Perhaps Boyle, pressed by time, had to cut back his order to sixteen. This might explain why the Helmsman and the Brakeman each appeared twice, on both the north and south entrances. They stood at the outer ends of the row of figures, farthest from the portals, so the arriving visitor would pass from the symbolic realm to the specific and the real–until finally, within the building itself, one would

encounter not merely the images of reality but reality itself in the form of the actual objects.

In Sullivan's *Kindergarten Chats*, a rather bewildering fictional conversation between an architect and his pupil, Sullivan's alter ego tells his apprentice that "it stands to reason that a thing looks like what it is, and vice versa, it is what it looks like." From the beginning, critics have been baffled by the Transportation Building which did not seem to look like what it was. A contemporary Australian journalist complained that he

> never met anybody who could explain what it all means, or how such a sanguinary-looking blot was allowed to be placed in the White City.

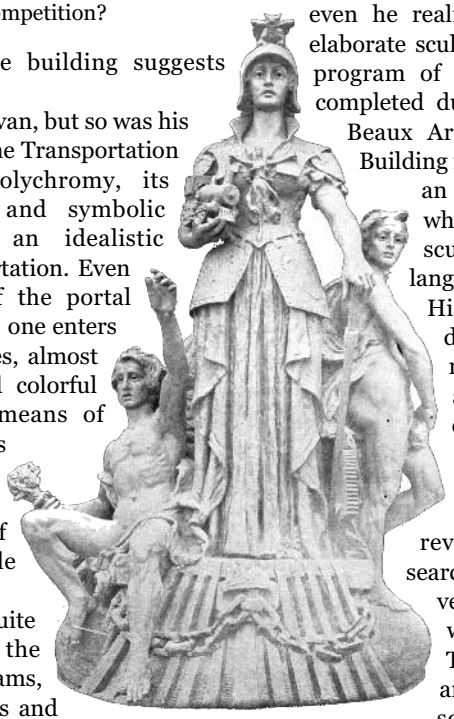
Some have proposed that such an extravagantly personal building could only be explained as an expression of colossal ego. David Van Zanten has asked:

> Was the array of pavilions at the Columbian Exhibition anything to him except a challenge, a place to perform, an opportunity to outdistance the competition?

The overlooked sculpture of the building suggests another possibility.

Ego was certainly a big part of Sullivan, but so was his idealism. The allegorical program of the Transportation Building–its Golden Door, its polychromy, its encyclopedic array of figurative and symbolic sculpture–is nothing less than an idealistic representation of the idea of transportation. Even the exotic and mystic character of the portal expresses the nature of modern travel: one enters the door of a train or ship and arrives, almost without transition, at a remote and colorful destination. To express this by means of conventional classical architecture was impossible. And it would have been sacrilege to present a concept so intrinsically tied to the progression of society with an architectural style rooted firmly in the past.

All this is spelled out by Sullivan, quite literally, on the facade. Flanking the Golden Door are inscribed two epigrams, too faint to read in most photographs and therefore never cited. On the left, philosopher Francis Bacon is quoted:



John J. Boyle, *Land Transportation*, 1893.

> There be three things which make a nation great and prosperous—a fertile soil, busy workshops, and easy conveyance for men and goods from place to place.

On the right, the historian Thomas Babington Macaulay:

> Of all inventions the alphabet and the printing press alone excepted, those inventions which abridge distance have done most for civilization.

These quotes make textually explicit what the program suggests visually. Here Sullivan did not pair an ancient and a modern, but a Renaissance philosopher and a contemporary historian, both modern men, and men of reason.

In the end, Sullivan and Boyle do more than celebrate transportation as both an index and enabler of human progress. They stress the role of individual genius in the history of transportation, as expressed in the statues of prominent inventors, but they show that individual achievement is a component in the vast forward movement of civilization and technology that is progress. The interlocking relationship between the various bas-reliefs at the entrance makes this clear. Each panel emphasizes the ease or difficulty of transportation of its respective era, and is spatially paired with a facing panel showing a similar subject. *Ancient Transportation* shows how far we have come; *Modern Transportation* shows how far we have left to go, especially when compared to the stirring globe-bestriding vision of Apotheosis.

In the end, Sullivan's allegory tells us that the inventions on display in the Transportation Building are only means to an end, and that end is the commerce and cultural exchange and exploration–in short, progress–that it enables. Here is the source of Sullivan's famous dissent from the academic neoclassicism of the White City. Perhaps it took a while before even he realized how radical his building was. Boyle's elaborate sculpture was in the spirit of the rich allegorical program of Charles Garnier's Paris Opera, which was completed during Sullivan's brief term at the École des Beaux Arts. When he designed the Transportation Building in February 1891, he naturally saw sculpture as an integral part of the design. Two years later, when it was finished, he no longer spoke of its sculpture, stressing the abstract architectural language of its polychromy and symbolic portal. His own careful description of the building, drawn up on February 25, 1893, omits any mention of Boyle's work. So began the century and a quarter of neglect that this paper seeks to correct.

A final note: the Transportation Building, a temporary structure, was reduced to dust well over a century ago. And yet the digital revolution has made available, and easily searchable, documents that were not available until very recently. This paper could not have been written in its present form even a decade ago. The expansion of digital conservation efforts, and the exponential progress of its tools, is something that Sullivan would have appreciated.

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An earlier version of this paper was presented at the Student Symposium of the Society of Architectural Historians, New England Chapter (NE/SAH) on February 25, 2017.

Interior staircase of Chateau-Sur-Mer, Newport, Rhode Island. Courtesy The Preservation Society of Newport County. Photo by Gavin Ashworth.

Illuminating Etiquette

INTERIOR ILLUMINATION AT THE TURN OF THE TWENTIETH CENTURY

Amber L. Wingerson

Mrs. J. E. H. Gordon declared in her 1892 London guide, *Decorative Electricity*, "In electric lighting, as in other matters, there is a right and a wrong way of doing things." American Gilded Age society agreed with her, and, in the late nineteenth and early twentieth centuries, a remarkable amount of attention was directed to artificial interior illumination, electricity, and lighting effects. The social and technical literature of the period revealed how society incorporated changes in lighting technology into societal rituals, which led to the creation of new distinctions between social and decorative versus practical and work lighting. Contemporary etiquette manuals, technical treatises, and interior design guides specified details from where the light switches should be in each room to what lighting source should be used to how different rooms should be lit. Fashionable households followed these guides in order to be up-to-date. However, household lighting schemes still varied, due to conflicting personal style opinions, and the spotty availability of new technologies. At the same time, the adoption of new lighting technologies altered residential architecture, because detailed planning was needed to achieve the desired effects dictated by etiquette and fashion guides. These guides promoted a range of specific instructions that dictated the locations of lighting devices as well as lighting mechanisms, such as fixtures, switches, wiring, and sockets. As interior illumination became more advanced and sophisticated, Gilded Age society adopted a new set of conventions and built their homes to present fashionable, tasteful, and deliberate lighting.

Residential gaslighting was introduced to the United States in the first half of the nineteenth century and reached high levels of popularity in the late nineteenth century. One of the earliest documented instances a residence utilizing gas light in the United States was made by author Edward Everett Hale of Boston Massachusetts, who stated that

> gas was not introduced into dwelling-houses until Pemberton Square was built by the Lowells, Jacksons, and their friends, in the years 1835, 1836, and later.

Gaslighting was found primarily in urban areas, due to the need for a more developed infrastructure. In order for residences to have gas lighting, the necessary gas works and gas lines had to be buried under the streets and gas pipes installed into building walls. This made the technology cost-prohibitive in some areas well into the 1880s. Piped into rooms throughout the home, residences with gaslighting employed lanterns, newel-post lightings, wall brackets, and gas chandeliers, which were referred to as "gasoliers" in the time period. In comparison to candles and oil lamps, gas lighting was more static due to the need for a pipe or tube to be connected to a lighting fixture. However, it provided a stronger light and was less expensive than the best contemporary illuminants such as sperm oil. Furthermore, unlike candles, users could adjust the height of the gas flame, which provided new levels of controlled flexibility, allowing for unique lighting levels for different rooms and social events. Gaslight's advantages over other nineteenth century illuminates were vast and included the convenience of not having to complete daily cleanings and fillings of the lamps. Gaslight was also safer than candles and oil lamps, because they could not be accidentally knocked over, resulting in a fire. However, in the advent of electricity, gaslighting's flaws were highlighted in some etiquette sources despite its advantages over candles, oil lamps, and early electricity.

In the late nineteenth century, gaslighting still posed serious hazards to housing and residents. Due to the open flame and constant potential for gas leaks, residents were constantly struggling with fires and leaks, which led to a series of health problems and deaths. Guides on fire prevention were circulated into the twentieth century, warning gaslight customers to not have short brackets, to keep gas flames more than six inches from wood, fabric, or plasters, and that gas jets should not be closer than twenty-four inches from the ceiling. Such guides sought to educate gaslighting customers in order to lessen the danger of the lighting source, but episodes of fires and gas poisonings were still consistently reported throughout the time period.

Safety risks, however, were not the disadvantages noted by many etiquette sources when comparing the advantages of gaslighting and electric light. Rather, such authors criticized gas lighting for producing unwanted heat and odorous fumes, which in their opinion made gas lighting an inferior illuminate for specific rooms and events. For instance, Eliza M. Lavin of *Good Manners* stated in her 1888 guide,

> In the matter of light, gas is not most favored…the objections to it are many and chief among them are its heating and glaring tendencies.

Authors of contemporary etiquette manuals often described both gas and electric light as glaring or too bright for specific rooms and events. However, gaslighting received more criticism when comparing the two technologies and the heat produced by the illuminant was a common complaint. Author Marian White stated several reasons for preferring electric to gas lighting in her 1909 etiquette guide, when she wrote that of the advantages of electricity, "there is no escape of gases or other products of combustion into the air of the room in which it is used." As described in White's guide, odors were another common complaint about gaslighting after the introduction of electricity. Electric lighting finally gave

consumers an interior illuminant that was not dependent on gas, fuel, or an open flame, and interior decorators and etiquette sources rejoiced in the aesthetic and comfort improvements. Interior decorator Eloise de Wolfe stated

> Gas light is more difficult to manage than electricity, for there is always the cumbersome tube and the necessity for adding mechanical accessories before a good clear light is secured. Gas lamps are hideous, for some obscure reason, whereas there are hundreds of simple and excellent wall fixtures, drop lights, and reading lamps to be bought already equipped for electricity.

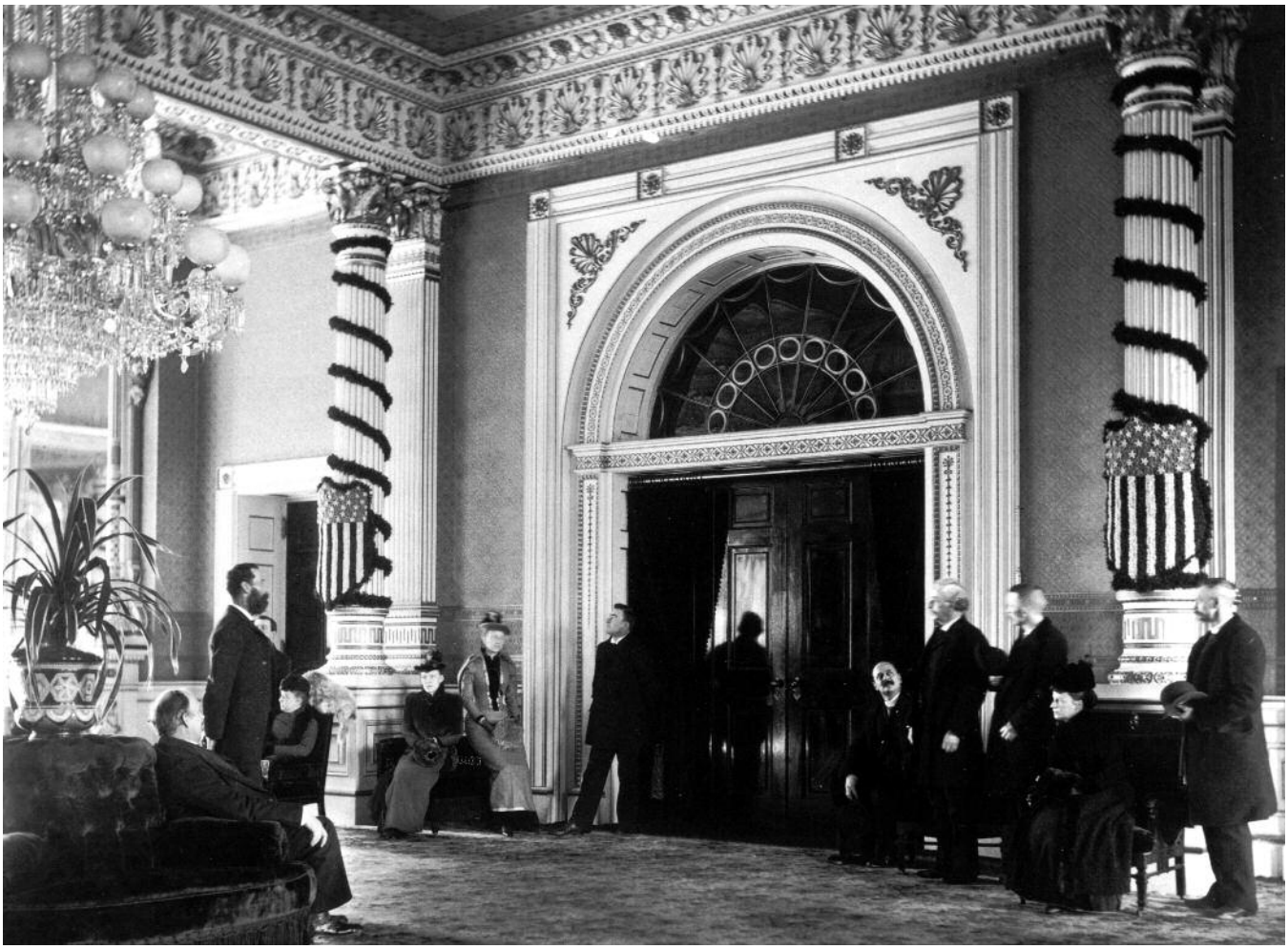
However, electricity presented a new list of issues from the costs to its own aesthetic dilemmas.

The enormous cost of installing electricity was one such dilemma and this initially allowed for only the elite to enjoy residential electric lighting. Early customers included well-known members of the Gilded Age elite, such as J. P. Morgan and William H. Vanderbilt, although Vanderbilt's home was only a partial electrification and retained its gaslighting. Morgan's New York City home was the first to be exclusively lighted with Edison's incandescent lamp after his system became commercially available. Even the White House hesitated to fully embrace electric lighting, waiting until 1889 to combine electrical lights with the contemporary gas light system. The new electric lighting was installed for

> general illumination, mounted high on the walls, leaving the gasoliers as the principal sources of illumination... only a supplement to gaslight at the White House.

In utilizing both gas and electricity, the White House was part of a larger trend in the early days of electric lighting. Many homeowners desired the novelty of the new electric light, making it part of a larger trend of conspicuous consumption in the late nineteenth century. However, the cost and functional advantages of the two kinds of lighting made combination gas and electric light fixtures especially appealing. As previously mentioned, gas was cheaper and brighter than electricity. With its upright position, it provided superior general illumination for households, while electricity could be pointed downward and at angles for shadowless task lighting. Additionally, the heat produced by gas lighting could be viewed as an advantage in the winter months for many households.

The conveniences of combination gas and electric light fixtures as well as the improvements to gaslighting at the end of the nineteenth century contributed to the continued commercial viability of gaslighting into the twentieth century. Electrical companies and developers were aware of such biases and the industry integrated technical terms from the gas and water industry into their professional language. Additionally, many of the designs of electrical components



Tourists visiting the East Room of the White House, c. 1890. Courtesy White House Collection, White House Historical Association.

L to R: Early electric snap switch manufactured for the Edison System by Bergmann & Co., c. 1882. Porcelain-covered decorative switch, c. 1890, maker unknown. Student lamp manufactured by Bergmann & Co., c. 1881, identical to one used in the library of J. P. Morgan.

were based on mechanisms of the other two industries as well, including electric wall switches that rotated like gas taps, and individual sockets fitted with twist switches on electric chandelier lamps. While electricity required new apparatuses that were more complex and could not be completely based on earlier technologies, developers attempted to integrate familiar features into their components where they could.

Installing electricity into homes required developing a completely new system, and early electricity was often installed with exposed systems of wiring secured with wooden or porcelain cleats. In early electrical installations, contemporary author John W. Urquhart considered the exposed wiring system preferable to a concealed system. Urquhart stated

> It is very desirable to expose the wires to view if possible. It prevents moisture from accumulating, renders the detection of leakages and faults comparatively simple, and compels the wiresman to observe that the proper distance is maintained between the wires.

However, exposed wiring systems presented issues with the aesthetics in grand homes, where residential electric lighting was often found. Concealed wiring systems developed early and dominated residential electrical systems by the 1890s. However, industrial and commercial systems as well as the utilitarian areas of homes continued to utilize exposed wiring systems. One early concealed system incorporated into grand homes required the wires to be laid into the plaster finish of walls and ceilings, either during a repair or initial construction. While the wires were completely hidden, thus not disturbing the grand interiors of many homes, the plaster deteriorated the wire insulation. The National Electric Code halted the use of this concealed system by 1901.

Mrs. J. E. H. Gordon, the author of *Decorative Electricity*, directly cited another concealed system of wooden casing or moldings in her writing. Wooden casing was one of the most commonly used forms of concealed wiring used in early electricity. Due to easy installation, the wooden molding was especially useful for installations in existing residences and could be incorporated into the interior decoration. This was emphasized by Gordon, asserting

> If the house is about to be decorated at the same time as the electric light is installed, the wooden casing containing the electric wires can be let into the walls and papered over.

Since early electric lighting was typically found only in elite households, the desire to hide the wiring so it did not compete with the elaborate decorative schemes of the Gilded Age, was essential. However, the safety risks were not overlooked by all contemporary authors, particularly since most fires were due to flawed installations. Robert Hammond, a contemporary of Gordon, noted

> If that wire has been hidden away under a cornice, or embedded in a wall, the danger to surrounding woodwork is apparent.

After choosing a wiring system, Gilded Age homes then focused on the social needs associated with lighting, which were dictated by the etiquette and fashion manuals of the time. The rules of etiquette during this time period were meant to show one's class and culture in society, and it extended to the appearance of one's home. This necessitated that each room had to be lit to specific levels, which required a thoughtful process of electrical installation as well as defined locations for outlets and switches. Mrs. Gordon explained why it was imperative to have a plan prior to installation

> The young electrician arrives with his notebook, and with the catalogue of fittings belonging to his firm. He knows the practical part of his work thoroughly well, and

> has the fire insurance rules by heart, and is entirely to be depended upon for the scientific details of his business; but of the requirements of a gentleman's house, and the best arrangement of lights in a lady's boudoir, he knows nothing.

Therefore homeowners needed to find a balance between the rules of etiquette and society, their personal style choices, and needed levels of lighting, and relay this to the electrician at the time of the installation. All of this required a technical and decorative plan, which many authors communicated to their readers. For instance, Eloise de Wolfe declared in her publication *The House in Good Taste*

> My first thought in laying out a room is placing of the electric light openings. How rarely does one find the lights in the right places in our over-magnificent hotels and residences!

Having electric lighting in the "right place" required planning for the placement of the light fixtures, sockets, and wiring, but the placement of the light fixtures was the most important. De Wolfe's "electric light openings" referred to the leads where the sconces and other light fixtures were to be placed. As explained in a 1926 advertisement for "Effective Fixtures" by McKim Electrical Sales Co., "Bring the plan of your electric light openings to us and from our stock select the fixtures that will give you the desired results." Lighting plans required an understanding of lighting needs and desires, and the ideas of what was considered proper interior illumination.

In addition to the plans for the light fixtures and wiring, homeowners also needed to have a technical and decorative plan for the light switches, which could also differ from room to room. As previously mentioned, early electrical light switches mirrored gas light switches due to the design precedent, which were followed by the push button switches of the mid-1890s. Based on the similar but smaller paired button switches used in electric gaslight ignition work, the push button switches were buttons that came in pairs with one over or next to the other to turn the light on and off. Authors explained that the suitable location for a room's electrical switches was right inside the door of each room at a reasonable height, so that whomever turned them on, did not need assistance. However, if there were ten or more switches, the electrician was to mount them on a wooden block and, in more lavish rooms such as the drawing room, use a decorative

Dining Room of The Elms, Newport, Rhode Island. Electric wiring is hidden so as to not detract from the interior decoration. Courtesy The Preservation Society of Newport County. Photo by Gavin Ashworth.

cupboard to house the switches. Furthermore, Gordon recommended for rooms with several decorative electrical lights that the mistress

> keep the key of this cupboard to herself and only unlock it when the decorative lights are required. I consider that a great deal of electricity is wasted by people turning on the light to show their friends.

This statement reminded contemporary and modern audiences of the expense of electric lights even in the wealthy residences of the Gilded Age.

While electricity required new technology and detailed planning, the practice of illuminating specific rooms differently dated prior to the invention of gas and electric lighting. However, with the introduction of these technologies, the rules for interior illumination became more sophisticated and elaborate as well as specific to rooms, class, and social events. In the Gilded Age, dining room lighting attracted the most attention in etiquette manuals and other interior design references. The etiquette manual, *Correct Social Usage: A Course of Instruction in Good Form, Style, and Deportment*, addressed many of the issues and rules of dining room lighting, stating

> It is a sad mistake to fill a dining-room with the trying glare from an electric or gas chandelier. Too sharp and inharmonious lights destroy the color scheme of the table, flowers, and the gowns of the feminine guests, weight on the eyelids, and weary many sensitive persons. The dinner table is best illuminated by an abundance of shaded candles or shaded lamps, placed on the board itself…Side gas brackets, their jets half-turned, or one or two shaded lamps, on tables next to the wall, provide all the glow required for clearly yet softly illuminating the remainder of the room.

Gilded Age dining was ceremonious and lasted far longer than most modern dining practices, so it was believed that the diners needed lighting that would not fatigue their eyes and glare was a common complaint with gas and electric lighting. Therefore, etiquette and fashion sources regularly recommended candle light as the main form of artificial lighting. In the cases of large dining rooms or a desire for more light, many authors, including the author of *Correct Social Usage*, agreed that the combination of candles on the table and gas or electric wall sconces was the most appropriate

Wall sconces and candelabra provide the lighting in the Dining Room of Marble House, Newport, Rhode Island. Courtesy The Preservation Society of Newport County. Photo by Gavin Ashworth.

The Library in the home of J. P. Morgan, New York City, *Artistic Houses*, 1883. A Bergmann & Co. electric lamp is seen on the desk.

option. In observing specific examples, this set-up is exactly what you see in the dining room of Marble House, the Newport summer home of Alva and William K. Vanderbilt. Wall sconces and candelabra on the table provide the only lighting, because there are no chandeliers.

Etiquette also dictated that the dining room candles be equipped with silk or paper shades. Hosts selected colored shades that often coordinated with the room's decorations and flowers, but many authors suggested pink shades, with Gordon of *Decorative Electricity* noting that pink was "the most satisfactory" color. Additionally, candles were part of the ceremony of the dining table. During the passage of soup at one meal, an author addressed the role of the candles and small lamps:

> During this part of the dinner, the guest has time to look at the beautiful Queen Anne silver, the handsome lamps, if lamps are used (we may mention the fact that about 26 candles will well light a dinner of 16 persons), and the various colors of lamp and candle shades.

The recommendation of specific numbers of candles addressed what many authors believed was a dimly, yet adequately lit dining room, as well as a statement of fashion and etiquette.

The practice of lighting the dining room dimly was prescribed after artificial lighting became more common place, more efficient, and brighter. As described in an 1887 London source:

> At one time, a dinner guest used to be ushered into a perfect blaze of light, such as at present we could only use in a ballroom. Now we keep a room rather quiet before dinner, the servants being instructed only to turn the lamps up and light additional candles when dinner is nearly finished, so that the full beauties of the room are not distinctly visible until the ladies come up from dinner. Old fashion people grumble at the semi-light room, but the modern fashion has much in its favor, as it lends itself distinctly to change of effect.

This transition from a well-lit dining room to a semi-lighted dining room is reflected through numerous sources that date into the 1920s. During this time period, both gas and electric lighting sources produced higher levels of light, which many argued was unnecessary for many rooms, especially the

The Dining Room of the Larz Anderson House, Washington, D. C., c. 1905. Library of Congress.

dining room. However, the ballroom utilized the brighter light available according to personal tastes rather than strict etiquette.

Often the instructions on lighting the ballroom were more generic and centered on the consistent note that it should be "brilliantly lit." Most period etiquette manuals did not define or elaborate on what "brilliantly lit" meant, or address other questions such as how many sources of lighting the ballroom should have. However, some gave a few clues. In the 1907 publication, *Correct Social Usage: A Course of Instruction in Good Form, Style, and Deportment*, the author stated

> Light in the ballroom should be bright, but not glaring, and if possible, not concentrated in one chandelier. Wall lights, produced by gas, electricity, or oil, and which are powerful, but shaded by pink paper or silk, produce the most agreeable and artistic illumination.

Similar to several publications about the lighting of dining rooms, this source specified pink paper or silk shades, which were thought to produce a more flattering, shaded light. Another more specific description of how a ballroom was to be lit was found in *The Decoration of Houses*, published in 1898. Authors Edith Wharton and Ogden Codman noted

> For a ball-room, where all should be light and brilliant, rock-crystal or cut-glass chandeliers are most suitable: reflected in a long line of mirrors, they are an invaluable factor in any scheme of gala decoration…If a ball-room be properly lit and decorated, it is never necessary to dress it up with any sort of temporary ornamentation.

In this description, the reader was informed of what lighting fixtures would be most fashionable and that there should be multiple chandeliers. However, it was still up to the host and hostess on what kind of lighting was considered bright rather than glaring.

In not addressing the specifics about lighting or defining what "brilliantly lit" meant, the lighting of the ballroom in the Gilded Age was much less structured by etiquette and therefore left more to the taste of the host and hostess. Particularly during a time when electricity was still a commodity enjoyed by few, fewer social rules meant that the elite could display this new technology however they pleased in the ballroom. However, not everyone wanted copious amounts of electricity in ballrooms and the desire for the

The butler's pantry of The Breakers, Newport, Rhode Island, with a combination gas and electric light fixture, c.1910. Library of Congress.

flattering, shaded, or less brilliant light of the other social spaces was expressed by some members of society. For instance, in her 1952 memoir *The Glitter and the Gold*, Consuelo Vanderbilt Balsan described a ball at the Duke of Wellington's Apsely House in London at which King Edward VII was present, stating, "I thought the women have never looked lovelier—perhaps because the rooms were lit with candles." As discussed in the etiquette for lighting the dining room, many believed that candles produced the most becoming light and preferred this to the brighter light produced by the newer technologies. However, domestic manuals and etiquette sources of the period, while not going into detail on what level or how it was to be accomplished, agreed that a ballroom should be bright.

The bedrooms of the elite were not immune to the laws of etiquette, especially in the case of guest bedrooms. Guest bedrooms were meant to continue to impress upon the visiting persons the wealth, fashion, and good breeding of the household, in addition to providing a level of comfort. Therefore, the lighting was under scrutiny as well. Elsie de Wolfe noted in her interior design manual,

> There are two things that are as important to me as the bed in the bedroom that I furnish, and they are the little tables at the head of the bed…the little table must hold a good reading light, well shaded, for who doesn't like to read in bed?

This sentiment was echoed in etiquette manuals with authors continually calling to have efficient lights provided for guests, whatever the technology of the household. Electric light, gas lights, or candles were to be provided with the proper equipment needed, and the lights were to be lit before the guests entered their bedrooms. This allowed the interior illumination effects of the public spaces to seamlessly continue for guests as they entered their private rooms. Such effects, however, were reserved solely for the family and guests of the grand residences of the Gilded Age.

The etiquette, fashion, and ceremony that dictated the lighting of the social areas of the Gilded Age home did not extend to the servants or work spaces. As would be expected, homeowners furnished these areas with much simpler and inexpensive lighting fixtures, but, in some cases, the servants' areas were also lit by different lighting technologies. A case study for this is Anderson House, the Washington, D. C. home of American diplomat Larz Anderson, completed in 1905. The original blueprints note the locations and type of lighting technology used throughout the home, and illustrate that the Andersons furnished many of their servants' areas with gas lighting. The remainder of the home had electric lighting. Additionally, the blueprints suggest that the family was very deliberate in where they installed gas fixtures rather than electric. For instance, areas where meals were prepared, such as the kitchen, serving room, and pantry, were outfitted with

electric light fixtures, while the servants' dining hall, housekeeper's office, and servants' living room, all down the hall from the kitchen, were lit by gas. The servants' areas illuminated by electricity rather than gas lighting were meant for food preparation for the Anderson family and guests. Other examples of differences in lighting methods throughout the house include the sewing room located next door to Mrs. Anderson's bedroom. Anderson's bedroom is lit with electricity, while the sewing room on the other side of the wall utilizes gaslighting. In comparing this discrepancy to that of the food preparation areas versus the servants' personal areas, one can speculate that the Anderson family did not want the fumes or other by-products of gaslighting to affect themselves or their meals, but did not mind if the same by-products affected their servants.

While not all houses used lighting technologies to create divisions between the family and the servants, some early electrical guides implied that electrical light in servants' areas was to be treated like a luxury, rather than light to work by. For instance, Gordon noted:

> A rule should be made, that if ever a nail is found in the case, the electric current to the servant's departments should instantly be cut off till the electrician has examined the place. A day or two's return to paraffin lamps and tallow candles teaches carefulness.

Furthermore, in many grand houses, lighting in the servants' areas, especially personal spaces, was typically sparse and focused for utility. For instance, the servants' bedrooms of the Breakers of Newport, Rhode Island and Biltmore House in Asheville, North Carolina have one electric light fixture, centered on one wall in each room.

With the development of gas and electric lighting, the technical and decorative rules, standards, and practices of artificial interior illumination altered residential architecture in practical and social ways. The installation of pipes and wiring required structural and aesthetic modifications for residences, but the most significant changes were fueled by the social philosophies of the time period. The etiquette of lighting advanced as more efficient and brighter light became available, therefore creating a need to define how rooms should be illuminated. Etiquette manuals dictated these new instructions and standards, which in turn determined how lighting and the necessary mechanisms needed to be installed. Additionally, in shaping the etiquette of interior illumination, Gilded Age society provided opportunities for new levels and effects in lighting for specific public spaces, while also creating a division between the classes within the elite home. Some practical aspects of lighting were considered; however, the appearance and installation methods of fixtures and accessories was specified by the aesthetics of high-end residence owners, who could afford the technology. In exploring these details about the lighting technologies and the rules of etiquette that advocated how the lighting should appear, we have a better understanding of the impacts they had on future residential architecture for the middle class as well as the deliberate lighting effects employed throughout the elite homes of the late nineteenth and early twentieth centuries.

L to R: An example of kitchen lighting as illustrated by Herbert Fell in *Decorative Electricity*, 1892. View of a servant's bedroom with a single electric light fixture at Biltmore House, Asheville, North Carolina. Courtesy Biltmore House.

This research was conducted as part of the author's 2016-2017 residential Research Fellowship with The Preservation Society of Newport County, Newport, Rhode Island.

Thomas Sully, *Abby Ann King Turner Van Pelt*, 1832. Williams College Museum of Art.

Thomas Sully and the Studious Subject

Michael J. Lewis

Thomas Sully is the most significant American painter of the age of romanticism, and his legacy is stupendous. In his lifetime he painted a total of 2,017 portraits, each fastidiously itemized in his account book, a great galaxy of willowy beauties and gallant officers. His nimble draftsmanship and ravishing color sense went hand-in-hand with a gift for lively expression. Sully's faces are not the aloof wooden masks of his colonial predecessors; they seem to engage us socially, sparkling with humor and intelligence. Philadelphia, his chosen city, never looked so good. Sully could flatter the most unpromising pictorial material; he even made Queen Victoria look succulent.

Not all of Sully's subjects, alas, were dashing, attractive, or young. A good number were studious or bookish types–ministers, scholars, and scientists, who did not lend themselves to Sully's vigorous technique. For example, William Wagner, the merchant and amateur scientist who created the Wagner Free Institute of Science. Or Rev. William H. Furness (1801-1896), the learned Unitarian minister and translator of German literature. They interest us because of their inner life, not their outward appearance. But how does one make visible the life of the mind, let alone make it vibrant and appealing?

Thomas Sully, *Portrait of the Artist,* c. 1808. Philadelphia Museum of Art.

Thomas Sully was born in England in 1783 to a family of itinerant actors.[1] His parents emigrated to the United States in 1792 and performed throughout the south. Sully appeared as a child actor, even appearing in a play written by that newly arrived English architect Benjamin Henry Latrobe. He also absorbed a certain mobility from his parents, for both the itinerant painter and the vagabond actor must constantly search out new audiences and, until Sully finally settled in Philadelphia, he moved about restlessly. Perhaps he also acquired an eye for the lively theatrical gesture that marks his best work. Art certainly loomed large in the family: his older brother Lawrence and their brother-in-law were both painters of miniatures, and it was natural that Sully, at the age of 16, would follow their example.

The brother-in-law was Jean Belzons, a refugee from the French Revolution who settled in Charleston. Belzons took Sully as a pupil but he was evidently an imperious tutor; their relationship training ended in a fistfight with the Frenchman bleeding on the floor. Sully left for Richmond, where he moved in with Lawrence, a more agreeable tutor. By the time he was eighteen, in 1801, Sully was already a capable painter of miniatures, delicate little performances of watercolor on ivory, but he aimed higher. He wanted to learn oil painting, something his brother could not teach him. Ever resourceful, Sully commissioned a portrait from Henry Benbridge, an elderly relic of the colonial art world, just to watch him paint.

As Sully was struggling to learn the craft, there came a crisis. His brother died in late 1804, leaving a widow and three children. Sully promptly assumed responsibility for the family and events took their natural course: he married Sarah Sully two years later. To do this they had to move to North Carolina (Virginia still enforced English law, according to which it was illegal for a man to marry the widow of his brother). In due course the Sullys would have another nine children.

This was the definitive moment in Sully's life. From one moment to the next he had become a father with a large family to support, and his life decisions were now carefully weighed. First he took the family to New York, where he had friends and a wider scope of possibilities. Again he tried to learn oil painting by commissioning a portrait from a master–John Trumbull, whom he paid to paint Sarah. But crotchety Trumbull, like Benbridge, was interested in Sully only as a patron and the relationship went no further.

This was not the case with Gilbert Stuart, whom Sully met during the course of an 1807 visit to Boston. Stuart was a rogue and chronic defaulter of debts, but he was also exceptionally generous to fellow artists. Stuart coached Sully for three weeks, watching him as he painted and offering criticism. These three weeks were Sully's only sustained education in oil painting. But he learned much from it, and was inoculated with Stuart's style–his flashy brushwork, his

quick, occasionally slapdash method, and love of the visible lustrous viscosity of paint. He also learned that most important of artistic lessons–when to stop (Sully's portraits are rarely over-finished). When he left, Stuart encouraged him to "keep what you have got and get as much as you can."

With Stuart dominating the portrait trade in Boston, and John Wesley Jarvis in New York, Sully could not hope to compete. Accordingly, he moved in 1808 to Philadelphia, where he immediately began to receive commissions. For the next 64 years, until his death in 1872, he would be a Philadelphian. Still, he was keenly aware of his own artistic limitations. How could he not be, having seeing Stuart at work? Sully's 1808 portrait of his wife, now at the Philadelphia Museum of Art, shows his weaknesses clearly. The face is endearingly natural and unaffected, and yet the composition fails to come together. The pose is contrived, the costume is uncertain, and there is even bit of trouble in her left eye. The head covering is splendidly rendered but Sully's draftsmanship is not yet completely in service of his painting, and he is too good of a painter not to know it.

Sully now took a bold step and sailed to England on a one-year study trip. He was twenty-six. To fund the trip, he made the same arrangement that Benjamin West had made in 1759: he would borrow money from his sponsors which he would repay by making copies of important paintings while in Europe. In the meantime, Sarah and the children would stay with friends. It is curious to know what she felt at these sudden changes of status, to be married, widowed, married again, and then abandoned for at least a year.

Sully's first move in London was to visit the elderly Benjamin West, who was unfailingly hospitable to every American artist. West inspected Sully's sketch of a head and said that the uncertain drawing revealed an imperfect knowledge of anatomy, which expressed itself in uncertainness in the drawing. He advised Sully to study osteology, the science of bone structure. West gave Sully the run of his studio, and even made a touching request: when Sully returned to America, he was to paint West's birthplace in Swarthmore, a house he had not seen for half a century. The watercolor survives, a wonderful gesture across the artistic generations: the American émigré asking the English émigré to draw his house in America.

L to R: Thomas Sully, *Portrait of Sarah Sully, Wife of the Artist*, 1808; *Portrait of Mary Siddons Whelen* (1788-1867), 1812.
Philadephia Museum of Art.

West was apologetic that he could give more detailed instruction: "I don't paint portraits myself," he confessed, "go about and see whose portraits you like best." We know from Sully's fragmentary autobiographical sketch that he promptly sought out Thomas Lawrence, England's most radiantly talented portraitist. Lawrence was then at the top of his game, achieving a richness of flesh, and a softness and delicacy of expression that made him the pinnacle of English romanticism. Here was the culmination of the great English portrait tradition that began with Van Dyck. No other painter came closer to Sully's ideal, and the influence on his work was immediate and transformative.

When Sully returned to Philadelphia in 1810, he was essentially complete as an artist. The technique and the personal aptitude now aligned seamlessly, as see in his 1812 *Portrait of Mary Siddons Whelen*. He is now in absolute

control of his pictorial tools: elegant composition, the atmospheric landscape, the careful drawing, and the exquisite color–all working toward the same pictorial goal–to convey her fragile and elegant beauty: a 24-year old woman, casually draped in a gown that decorates her gracefully tapered arms, looks out at us with amiable poise. And her arms achieve just the attitude that he tried unsuccessfully to convey with his wife's portrait, an air of casual ease.

Having now watched a great many painters at work, from Trumbull and Stuart to West and Lawrence, Sully had now distilled their lessons into a technique all his own. He spells it out in his *Hints to Young Painters*, published posthumously in 1873. The document is revealing, for it not only shows how Sully could do so much, so fast; it also shows the secret of his great vitality and freshness of expression. Sully's method, above all, was workmanlike. For an average sized portrait (35" x 26"), it involved only six sittings by the subject–no more. The first two were preliminary, to establish the pose and composition, and only the last four involved the painting.

> The first sitting took very little time at all. When the person calls on you...observe the general manner, etc., so that you may determine the attitude you had best adopt. The first sitting may be short, as pencil sketches on paper, of different views of the person, will be sufficient to determine the position of the portrait.

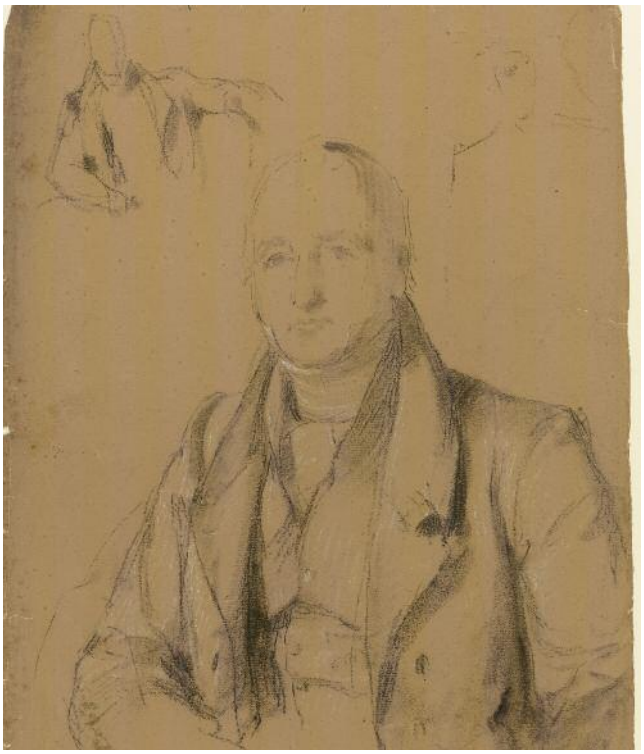
The goal here was evidently not to make a psychological study, to lay bare the sitter's inner life, but rather to show what might be called the social self–the face we present to the world when we are at our best and most relaxed.

At the second sitting, the portrait was essentially created. After arranging the figure in a pose, Sully made a drawing on a specially prepared gray canvas, using charcoal. The canvas gave the middle value while chalk was used for the highlights. Here the painting's entire underlying scaffold was created–pose, costume, head, expression. And all this was accomplished with a dazzling rapidity–"I found that two hours is long enough to detain the sitter," Sully reports, and we have no reason to doubt him.

Once the sitter left, Sully began the process of transferring the sketch to the canvas, drawing with burnt umber–his principal tint–on a white ground. There was no hard-edged underlying drawing. On the contrary, he advised the student to "Paint freely, as if you were using watercolors, not too exact but in a sketchy manner." Sully indeed painted as with watercolors, and sometimes so fluidly that his paint sometimes literally flowed. He confessed,

> being too much diluted it is inclined to run. To prevent this, I place the work horizontally for an hour or two.

Sully worked quickly, even impatiently, forcing the oil to dry by placing his canvases in the sun by the window. In the



Thomas Sully, *Two Sketches of a Man, and a Sketch of a Head and Shoulders*, c. 1850.; *Sketch of Two Women*, c. 1850. Philadephia Museum of Art.

winter he placed it before the fireplace. All of these techniques would be regarded as bad artistic practice, but for Sully they worked. And it is in this rapidity of method that the secret of the spontaneity of Sully's work, a spontaneity that is always present no matter how carefully finished they are. The result is the appealing sense of painterly looseness that marks Sully's mature work, the legacy of an artist whose formative experience was in watercolor.

Over the course of the next four sittings, Sully added color to the umber under painting–"tints" he called them–scratching a little vermilion and white on the lips and cheek as highlights. During the sitter's appearance he would concentrate on the face, leaving the background and costume to be finished between sittings, with his children serving occasionally as stand-ins for body and hands.

Sully's painting looks so glossy and translucent that one assumes he is a master of glazing, that technique where thin transparent layer of paint is carefully placed on top of another, to create the depth of color and transparent shadows that are the summit of the art of oil painting. But in fact, Sully used very little glazing. Only at the final sitting did he apply any glazes at all, a thin gloss of madder lake (a red) and asphaltum, which he used "to darken and improve the shadows of the flesh tints." Otherwise, most of his painting was direct painting, opaque paint forming the visible surface of the canvas. Manet would bring this practice into modern painting but it was not unknown earlier (after all, the great Fragonard was a direct painter). Still, it was quite rare.

At this point the painting was finished, usually about three weeks from start to finish. The fee would be $150 or so. And of course Sully would always have several in the works at the same time. This thundering great tempo of work, flogged even faster by the fireplace and an excessive use of drying agents in the paint, was good business. So was Sully's knack for flattery, at times blatant, incorrigible flattery, was evidently deliberate professional policy. He quoted approvingly a conversation with the Scottish painter David Wilkie:

> it was well to increase the beauty of the complexion and give the appearance of youth, as this in a measure compensates for the want of life and motion.

To this Sully added his own gloss:

> no fault will be found with the artist, (at least by the sitter,) if he improve the appearance.

One should imagine the eyes of the canny businessman twinkling as he said this.

Here then is the formula by which Sully made his serious subjects, even those of the most studious and bookish sort, lively and attractive, and almost–but not quite–scintillating.

William Wagner (1796-1885) was a Philadelphia merchant whose real interests were science and education. He founded the Wagner Free Institute of Science, and built its extraordinary museum and lecture hall, which to this day conducts a program of free classes in science that he established in 1855. Wagner's portrait is a gem of the Sully method, painted in a brisk nineteen days.[2] The amateur scientist is rendered as pink-cheeked and fresh in his high-collared shirt, gazing pleasantly to the left with just the hint of a smile. There is the casual straying lock of hair, the great elegant V of the collar, outlined in yellow and pale blue, and

Top to bottom: Thomas Sully, *William Wagner*, 1836 (Wagner Free Institute of Science). *Rev. William Henry Furness*, 1831 (private collection) Philadelphia Museum of Art.

the discrete note of crimson in the chair that anchors the bottom of the portrait. Our impression is that of a vital and youthful subject, and so we are surprised to learn that Wagner was forty at the time of the portrait. Sully was clearly doing just what he had recommend, giving "the appearance of youth to compensate for the want of life and motion."[3] It was not merely the preternaturally smooth face and rosy complexion that did this; Sully also employed the indirect means of color and light to suggest vitality. He puts a glint in the glasses, giving a spark of alertness to Wagner's eyes. And splash of color in the pale blue and yellow of the lapels are picked up in the moody colors of the sky, giving a happy unity to the whole.

The Rev. William Henry Furness was an even more challenging subject. Furness was a Unitarian minister, and he came to Philadelphia shortly after his graduation from Harvard Divinity School in 1823. He was a man of enormous personal charm but also high moral courage; he would become Philadelphia's most outspoken Abolitionist cleric, which exposed him to danger and death threats. His children would also win distinction, including Frank Furness, architect; Horace Howard Furness, the celebrated scholar of Shakespeare; and William H. Furness, Jr., the painter. By every account, Rev. Furness was an extraordinary man but not a flamboyant one. He was as bookish as could be, and when not giving sermons he wrote ceaselessly: books, hymns, and translations of German poems, the longer the better (he translated all 430 lines of Schiller's epic *The Song of the Bell*). But literary gifts were not easy things to paint. And Rev. Furness, as a minister, habitually wore somber clothes, and so Sully did not even have the tool that gave life to his portrait of Wagner, gorgeous color.

Faced with a quiet sitter in subfusc attire, whose only color accent is a drab cravat, Sully had to think creatively. During the first sitting in late September 1831, he evidently decided that Furness was at his most animated when expounding, when he was presenting a proposition to be considered. It is a curious gesture, compact and contained, the hand staying close to the body. But if it seems rather circumspect, it was for Furness the most dynamic thing he could possibly do–give you something to think about.

Wagner and Furness led ordered and disciplined lives, and at first glance they are as unlike the romantic painter as can be. The same dry and orderly procedures that Wagner brought to his foreign trade transactions distinguish his meticulously catalogued shell collection. And for fifty years, from 1825 to 1875, Rev. Furness conducted his ministerial business–baptizing, preaching, marrying, and burying (one of his funerals, alas, was Sully himself, in 1872). There was not much romance in them, and yet there was. For surely it is romantic to decide to devote the rest of your life and fortune to an institution providing free education and science. And surely it is romantic to stride to the pulpit, knowing that when you condemn slavery, half your congregation will stomp out in quivering fury. All their romanticism was contained in those single heroic acts, and Sully's understated paintings are remarkable in the way he coaxed those qualities out of them, not by any deeper psychological means than his own empirical method, laboriously put together during his fitful artistic education.

What do Sully's studious sitters (and there are many others besides Wagner and Furness) tell us? They are not his most immediately captivating paintings, but they repay closer looking. For it is there we see Sully's artistic mind working at its hardest, and where he was forced to peer most searchingly into the hearts of his taciturn sitters and find the passion quietly smoldering there.

I am grateful for the good-humored assistance of Kathleen Foster, Philadelphia Museum of Art; Kevin Murphy, Williams College Museum of Art; Lynn Dorwaldt , Wagner Free Institute of Science; and Maria and Radclyffe Thompson.

Notes

1. The essential account is Edward Biddle and Mantle Fielding, *The Life and Works of Thomas Sully* (Philadelphia, 1921), the source of the biography recounted here.
2. According to Sully's ledger of paintings, it was begun on July 1, 1836, and finished July 19. It was paid for by a "Mr. Nugent," presumably a friend of Wagner.
3. There is another possibility. Sully's sitters were sometimes so charmed by the preliminary sketches that they never followed through and completed the portrait. In other instances, Sully made the preliminary sketch but did not complete the portrait until a few years had passed. We know that Sully painted "Mr. Nugent" at the request of Mr. Wagner in 1827. It is remotely possible that the two friends decided to swap portraits in that years and that Wagner's sketch remained unfinished for nine years. If this is the case, he would be 31 here.

Rediscoveries

A Tale of Two Screens: Memorial Rood Screens at St. James the Less and the Church of the Redeemer

Maria M. Thompson

Years before master metal worker Samuel Yellin (1885-1940) spoke of the poetry and beauty of iron, writers for the British journal *The Ecclesiologist* published by the Cambridge Camden Society were extolling the use of brass, copper and iron in fashioning chancel screens and other architectural details for Gothic Revival churches on both sides of the Atlantic. Toward the end of the nineteenth century Philadelphia architect Charles M. Burns, Jr. (1838-1922) had the opportunity to design two remarkable memorial rood screens for local churches, and the screen at Redeemer in Bryn Mawr, Pennsylvania, was judged

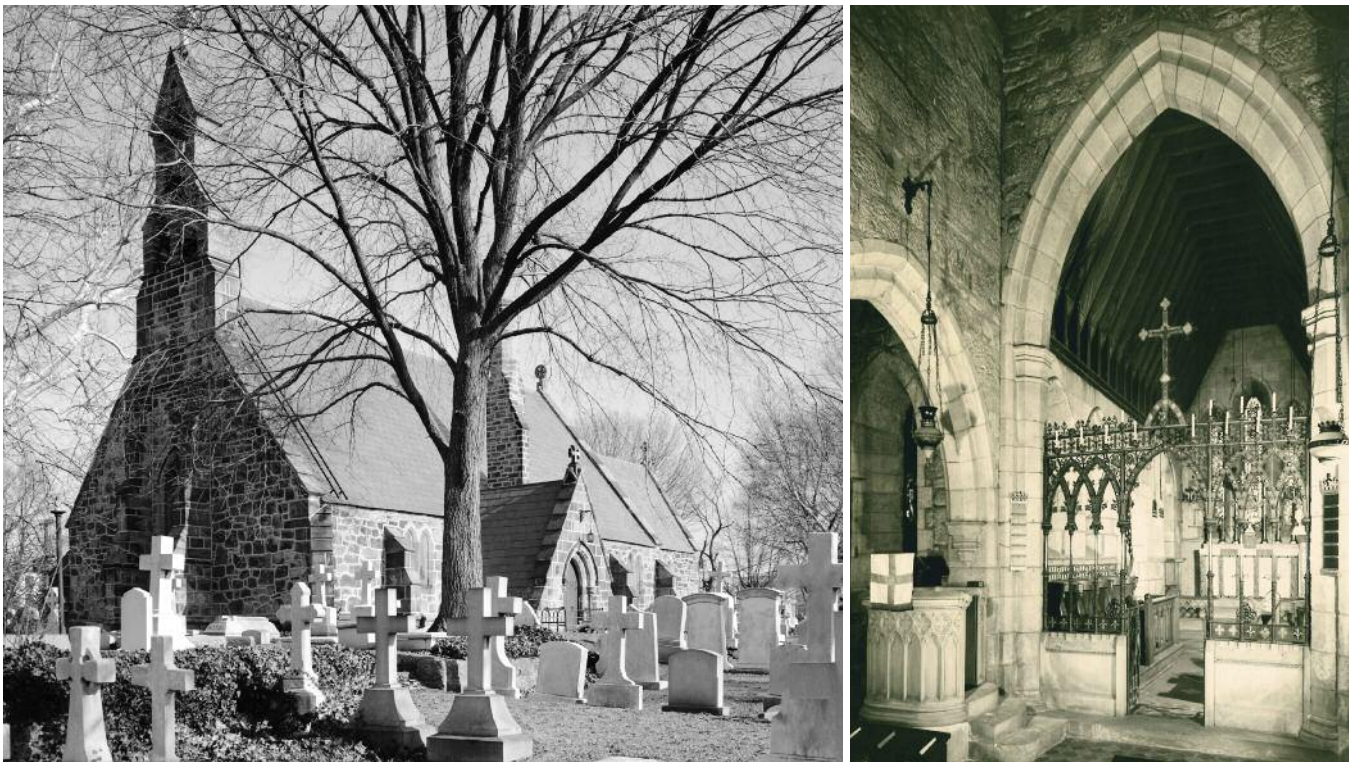
> one of the finest pieces of metal-work ever done in this country.

Burns was born and educated in the city. Both he and his younger brother Frank (1844-1913), who became an engineer, studied at the University of Pennsylvania. Charles, a member of the class of 1859, left without a degree at the end of his junior year. In 1860 he sent

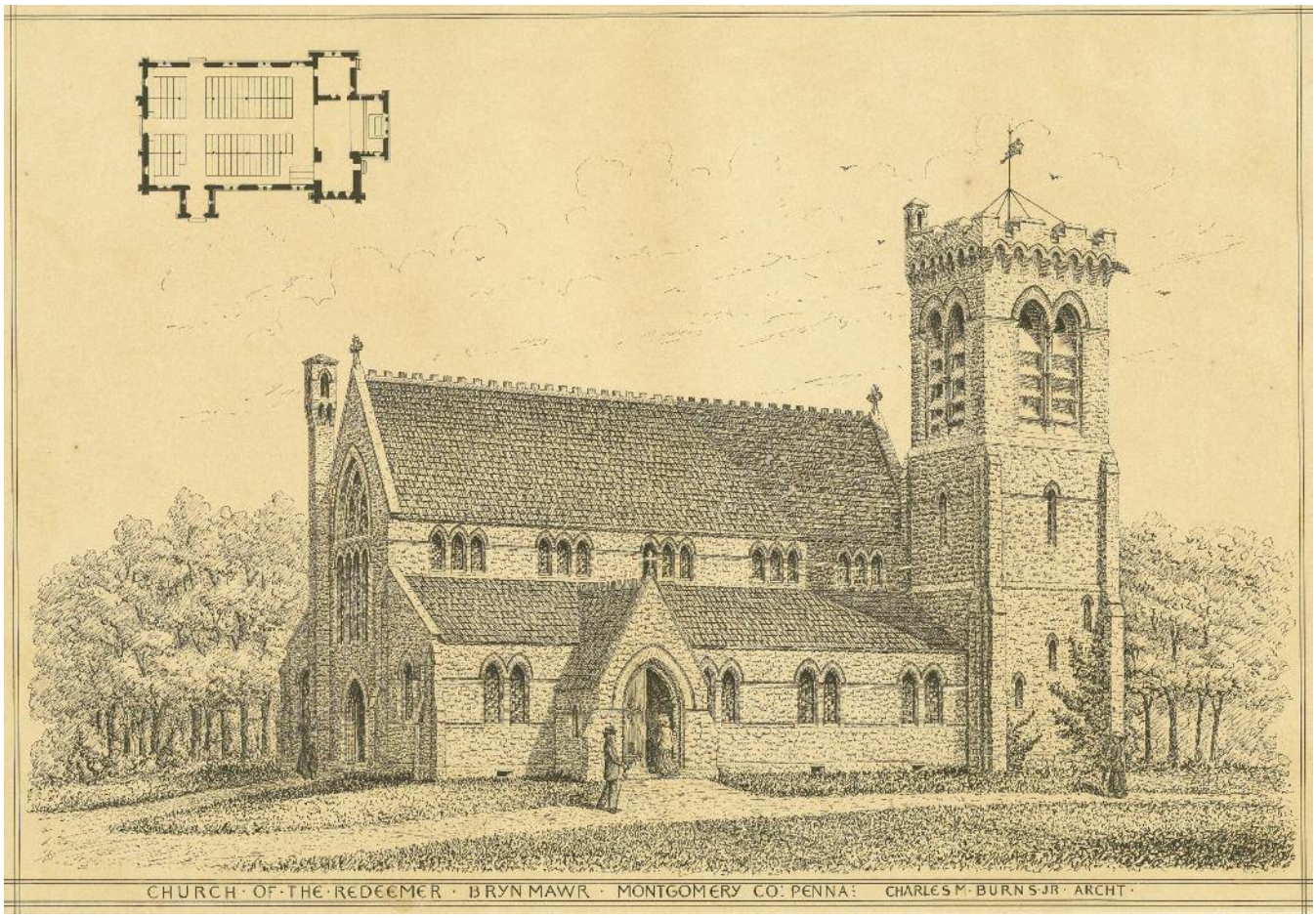
> drawing of a high tomb erected in the churchyard of St. James the Less…to the memory of Bishop H. U. Onderdonk.

to the British society for comment. This submission offers an important clue to Burns's understanding of stylistic preferences with respect to Gothic Revival architecture in general as well as stricter guidelines offered by the Ecclesiastical Society and its journal *The Ecclesiologist*.

After the Civil War broke out Burns joined the Navy on January 1, 1862 and saw action in New Orleans and, later, in the August 1864 battle for Mobile Bay. Burns left no papers or journals so we have no idea how these combat experiences



L to R: Exterior of St. James the Less, Library of Congress. Interior of St. James the Less, with rood screen visible, c. 1910. Electric lights were installed in 1913. Courtesy St. James the Less.



Exterior rendering of the Church of the Redeemer, Bryn Mawr, Pennsylvania., Charles M. Burns, Jr., architect. Courtesy of the Athenaeum of Philadelphia.

shaped his world view other than to note his post war participation in the Military Order of the Loyal Legion. He was discharged in April 1865 and, afterwards, submitted another design for a grave monument to the Ecclesiastical Society. This second submission confirms his ongoing commitment to the Gothic Revival ideals of the British society and its New York counterpart, which was founded in 1848.

Burns had design and drafting work in the late 1860's thanks to his association with several architects among them Henry Sims (1832-1875) who in 1872 wrote a letter of introduction that facilitated connections with European colleagues. In February of that year Burns applied for a passport and a newspaper notice in the summer of 1875 confirms his trip:

> Mr. Charles M. Burns, Jr., of this city, was among the passengers by the Pennsylvania, which arrived on Sunday. Before his departure for Europe, three years ago, Mr. Burns had already made a reputation as a thoughtful and cultivated architect, and we shall expect good fruits from his long and careful study abroad.

Burns often described himself as an artist so it is easy to imagine him filling multiple pocket notebooks with drawings of buildings and architectural elements. The rood screens at St. James the Less and Redeemer suggest Burns knew of Sir George Gilbert Scott's 1862 screen designed for the Hereford Cathedral and drew inspiration from it. Before being installed in the cathedral, the screen was on display at an international exhibit in London where it won a medal and was highly praised. It is likely Burns was aware of this acclaim and, perhaps, went to Hereford to see the screen for himself.

Upon returning from Europe, Burns participated in Philadelphia's artistic scene by enrolling as a student in the Pennsylvania Academy of the Fine Arts, exhibiting a watercolor at the Centennial and being appointed an instructor at the Pennsylvania Museum and School of Industrial Arts. This latter association brought him in contact with British designer and theorist Christopher Dresser (1834-1909) who lectured at the school in 1876. He established an office on Walnut Street and for most of his life lived in Germantown. Burns attended services at the Episcopal Church of St. James the Less in a section of the city known as Falls of Schuylkill and it is his association with this church, one of its rectors, and an affluent vestry member that led to the design projects for the two memorial rood screens.

By the 1840s the once rural Falls of Schuylkill was home to prosperous Philadelphians who had seasonal villas in the area. One of these, Mount Peace, was owned by China trade merchant Robert Ralston who was instrumental in the founding of St. James the Less and also an organizer of the New York Ecclesiological Society. The parish founders purchased land from the nearby Laurel Hill Cemetery Company, which had its own Gothic Revival chapel designed

by John Notman (1810-1865) in 1836, and proceeded to build

> the first church in the United States…under the direct supervision of the English ecclesiologists.

St. James the Less is a slightly altered copy of thirteenth century St. Michael's, Long Stanton in Cambridgeshire and even before the church opened for services in 1850 it proved very influential.

> Laymen and clergy could see the correct medieval proportions and relationships of the chancel and nave volumes…as well [as] principles of architectural design, a sense for materials, a feeling for pervasive scale, and an expression of function in design.

All was not perfect, however, and a writer for the May 1847 issue of *The Ecclesiologist* noted:

> There is to be a well-intentioned though unsuccessful Rood Screen; but the error will, we trust, be rectified.

The original screen was of wood.

Perhaps wanting his legacy to be that rectification, in 1878 vestry member Moro Phillips' wife died and Mr. Phillips contributed funds in her memory for alterations to the chancel to include an enlarged altar, elaborate painting and stenciling of the ceiling, and a rood screen. On April 22 of that year,

> a design for a metal rood screen prepared by Mr. Burns was submitted for approval of the Vestry…the design was approved, and permission for its erection granted.

The delicately scaled metal screen rests atop a grey, smooth grain stone base. On each side of the center arch and gate there are two intertwined pointed arches punctuated with colored stone cabochons of alternating sizes. The arches are supported by four banded copper and brass columns with stylized ornamental capitals. Seven candles are staggered along each side of the metal tracery above the arches and the rood features a crucifix and symbols of the four evangelists. There is an inscription at the base of the metalwork on the chancel side that reads:

> To the Glory of God and to the memory of Emily Lewis Levis wife of S. Moro Phillips Ao: XII: 1880

A small shield containing the two initials "C M" to form a cipher is below the inscription. While the name of the designer is known, that of the maker is not.

At the same time Burns was working on the chancel at St. James the Less, the church's former rector Reverend Edward Shippen Watson, D. D., accepted the position of rector at the Church of the Redeemer, a parish founded in 1851 as a "chapel of ease" for Old St. David's, a parish in existence since 1715. Redeemer's first church building of stone with pointed arch windows and a tower was on the Lancaster Road near Haverford. The Pennsylvania Railroad transformed Lower Merion and the surrounding townships and by 1878 suburban development led to increased demand for schools, hospitals, churches and burial grounds. Reverend Watson was hired to oversee a move of the parish from the Lancaster Road to a property in Bryn Mawr that Redeemer had owned since the 1860s. The first order of business was siting the church building and "laying out the grounds for burial purposes."

Reverend Edward L. Lycett, rector of the parish from 1856 to 1878, died on August 5 and "…was the first person buried in the new graveyard…" A year later, the Committee on Plans sent their "Instructions to Architects…for Designs for a Church with Chancel and Tower…" to three professionals and selected the design submitted by Charles M. Burns, Jr. A builder was named in October, the cornerstone laid on November 8 and the building completed in time for Easter Sunday in April 1881.

Vestryman Charles Wheeler (1827-1883) was a major supporter of the church building project and contributed the east window in memory of deceased family members submitting a plan to the vestry on September 7, 1880. The window is significant for several reasons but only one is relevant to this discussion. A small notice in *The Times* (Philadelphia) on October 7, 1881 states the window was made by Payne & Payne of Orange, New Jersey, a studio opened in the 1870s. That Wheeler commissioned a window made in the United States was, perhaps, a contributing factor when time came for his widow to ask Charles Burns to design and have made a memorial rood screen.

Burns made a pen and ink perspective rendering of the church exterior and a detailed view of the interior facing east that show his understanding of the principles of church arrangement as defined by the ecclesiologists as well as the elements of design as written about by theorists like John Ruskin (1819-1900) and Christopher Dresser. Ruskin's book *The Seven Lamps of Architecture* was first published in May 1849; subsequent editions appeared in 1855 and 1880. One imagines Charles Burns owned a well-thumbed copy. From details listed in the "Instructions to Architects" Redeemer vestry members were likely familiar with the book too. They specified the Gothic style of architecture, a polychrome tile, terra cotta or brick interior, columns of iron or steel "treated as metal," an open timber roof, and square end chancel–all of which would be pleasing to Ruskin and, as brought to being by Burns, reflected the influence of the "lamps" of sacrifice, truth, power, beauty, life, memory and obedience.

Church benefactor Charles Wheeler, a Philadelphia industrialist, died suddenly in New York in August 1883 and the following December the vestry considered a request from Mrs. Wheeler to place a rood screen of "metal upon a stone base, and a great ornament to the interior of the church" as a memorial to her late husband. Having designed the Phillips memorial rood screen for St. James the Less, where Burns was a parishioner and Redeemer's rector Reverend Watson had been rector from 1860 to 1869, it is likely Burns, at the least, told Mrs. Wheeler of the Phillips screen and, more probably, took her to see it because the two screens share fundamental design features. Although, as has been noted, the maker of the Phillips screen is currently unknown, there is an avenue for research to possibly determine its source. Construction of the Wheeler screen, on the other hand, is well documented. It was in place in the church by September 2, 1884, less than three months after the vestry saw the plans and drawings at their meeting on July 1. In press coverage the speed with which the screen was made vied with praise for its outstanding beauty.

Charles Burns asked his brother Frank to make a color drawing of the screen, which he submitted with a detailed description to *American Architect and Building News* for publication. The article and accompanying plate appeared in the issue dated December 5, 1885. Design attribution is straightforward but in the first sentence of the article Burns wrote

> this screen…was constructed in the shop of Louis Koenig in the short space of three months.

The statement elicited a letter to the editors of *AABN* dated December 7 from J. B. Shannon & Sons claiming:

> The rood-screen referred to was made by us, Mr. Louis Koenig being the name of the foreman in charge of the work.

It is puzzling that Burns would make such an omission because the screen itself bears an inscription in Latin giving the date (1884), names of the rector (Watson) and architect (Burns), and listing Koenig's name before the phrase (translated) "made in the workshop of J. B. Shannon and Sons Philadelphia." Who was Louis Koenig and what sort of firm was J. B. Shannon & Sons? The phrase "sewing machines" appears after Koenig's name in city directories but census records and his obituary are more revealing in describing him as a "machinist" who came to the United States from Germany in 1870. He did erect his own factory on his property on Germantown Avenue but that was not until 1889, after the Wheeler memorial screen had been in place for five years.

Available trade catalogues for J. B. Shannon & Sons advertise furniture and furnishings, hardware and hand tools and metal work products. The word "hardware" appears after the company name in city directories but none of the metal work in catalogues consulted resembled a project of the magnitude of the rood screen at the church of the Redeemer. The Shannon firm offers opportunity for additional research.

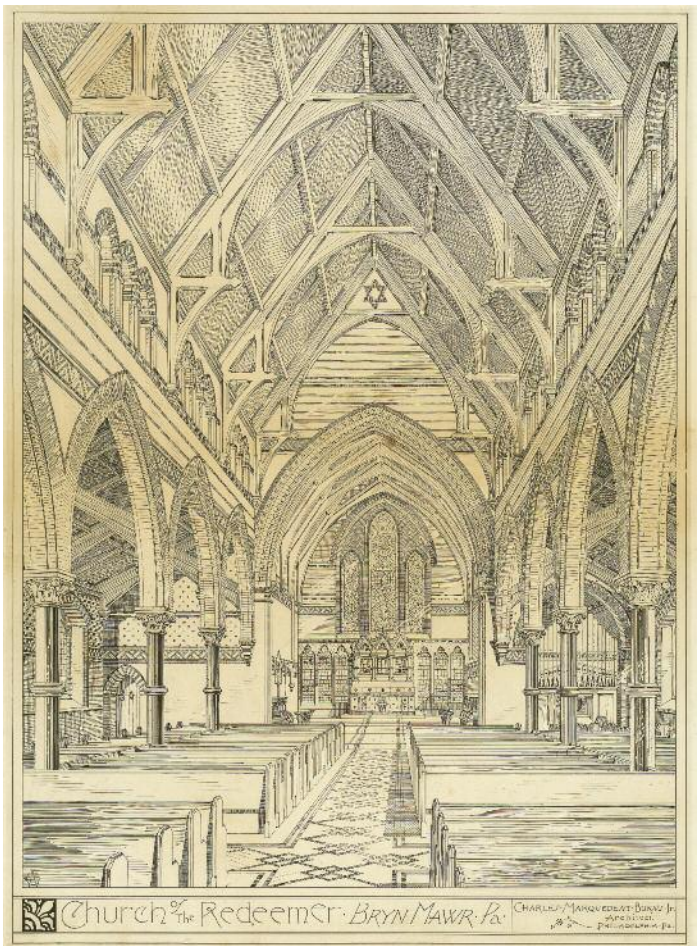
The name of another artist associated with the screen came to light at the end of a long article on the Cuthbert Studios, a center

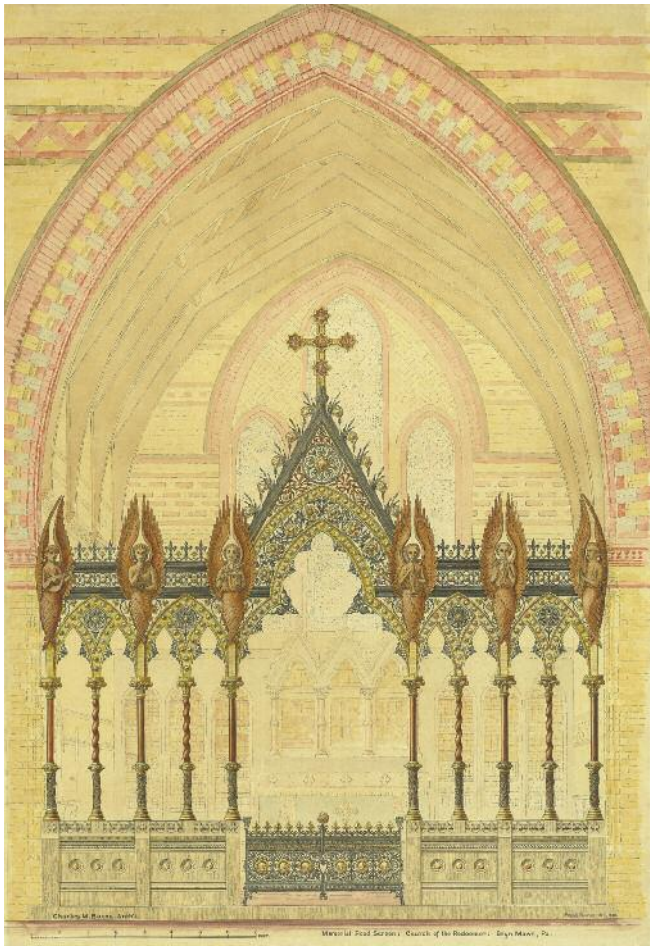
> of artistic and industrial interests…in the shadow of the great white church at Broad and Arch Streets.

Sculptor George Frank Stephens (1859-1935) was a founding member of the firm Stephens, Cooper & Godley and while Mr. Cooper was showing a reporter through the studios he remarked that those seeking first rate work

> are no longer obliged to send to New York city or to import foreign talent to beautify their residences and churches [demonstrating his point by showing] the original figures of the Seraph Choir, modeled by Mr. Stephens for the rood screen of a church at Bryn Mawr.

The description of the Wheeler screen in the *AABN* lists an impressive array of materials with qualifiers on how they were transformed by the craftsmen. These include metal work of wrought iron that was hammered and twisted, beaten, molded





L to R: *Church of the Redeemer*; *Memorial Rood Screen*, Bryn Mawr, Pennsylvania, 1881. Charles M. Burns, Jr., architect. Courtesy of the Athenaeum of Philadelphia.

and twisted brass, and hammered, twisted and chased copper, the whole inset with rock crystal, agate, heliotrope and Mexican onyx. Burns noted,

> These stones show equally well on both sides of the screen, and, as many of them are translucent, they produce, in connection with the east window, a play and sparkle of color which cannot be fully expressed by mere words.

So, the screen was designed to relate to the Payne & Payne window commissioned by Charles Wheeler and in place when he died. The article also reveals Burns' familiarity with the Gothic Della Scala family tombs in Italy because he describes

> the wings covering the lower portion, and those joining over the heads [of the Seraphim choir]... [as] beautifully wrought in hammered sheet-copper, similar to those attached to the figures of the Scaliger monuments in Verona.

The six copper angels, each playing a different musical instrument, bring the screen to a crescendo of sorts in the form of the central arch of elaborately

> hammered and twisted iron, forming a wreath of passion-flowers having rock-crystal centres.

At the apex of the arch, Burns placed a

> cinquefoil of delicately-wrought iron, in the centre of which is a white stone of conspicuous beauty, in allusion to Revelation 2:17: 'To him that overcometh will I give to eat of this hidden manna, and will give him a white stone, and in the stone a new name written, which no man knoweth saving he that receivth it.'

The cinquefoil with its white stone center is suggestive of a monstrance and its placement framing the crucifixion scene with Mary and St. John in the east window confirm the importance of the symbolism of the Eucharist and its message of Christ as sacrificial redeemer.

As on the rood screen at St. James the Less, medallions of the emblems of the evangelists are at the ends of the four arms of the cross, but a figure of a pelican, rather than that of a crucifix, is at the center. In Christian symbolism, the 'pelican in her piety' represents the sacrifice of Christ on the cross because, according to legend, the bird so loves its young it will pierce its breast to offer blood to nourish them. By using this symbol of Christ as redeemer, Burns gave primacy to the crucifixion scene in the east window while also invoking the name of the church. The metal work of this magnificent screen is built on a base of Indiana oolite, which is the same limestone Burns used for the massive Celtic cross marking Wheeler's grave in the churchyard, thereby connecting the two memorials.

Over thirty years after A. W. N. Pugin (1812-1852), British architect, designer and influential leader of the Gothic Revival, published his 1851 *Treatise on Chancel Screens and Rood Lofts, Their Antiquity, Use, and Symbolic Signification* the extent of his influence is apparent in not only the design but the placement of chancel screens in Britain and the United States. Pugin did not claim to be a master of taste but, rather, a promulgator of "vital principles" one of which was his claim that

> if any man says he loves pointed architecture, and hates screens, I do not hesitate to denounce him as a liar, for one is inseparable from the other.

Chancel screens eventually fell out of fashion as liturgical practices changed but not before multiple publications made enthusiastic comments about the Wheeler screen at Redeemer. The *Philadelphia Inquirer* noted the screen was made by Philadelphia workmen, and *The Sanitary Engineer* described it as

> one of the most elaborate pieces of metal-work ever made in the county,

while the Reverend T. William Davidson in an 1886 issue of *The Churchman* gave credit to Redeemer's rector, Reverend Edward Shippen Watson, D. D.

Interior of the Church of the Redeemer, 1897. Courtesy of the Church of the Redeemer.

> to whose interest and devotion the existence of the screen and church is in no small degree due.

Davidson went on to proclaim the screen

> a work of art, which is the more it is studied the more are its beauties perceived. There was a spirit of enthusiasm

> breathed into the work by those who did the actual labor not often to be found in these days. They gave to it that devotion, which we are wont to consider as distinguishing the artizans [sic] of the middle ages…Had it been found in some old cathedral in Italy and transferred to its present position, its praise would have at once been sounded throughout the land. Its value is none the less though it comes from an American workshop.

Other publications echoed praise for the screen's beauty and the achievement of its American craftsmen. Even *The Ecclesiologist*, had the journal still been publishing, would have approved of the Wheeler Memorial Screen at the Church of the Redeemer.

When Charles Burns died in 1922 he was buried at St. James the Less and the church looked much the same as he had known it as a parishioner and vestryman. Alas, the same may not be said of Redeemer. Burns was on the job at the parish until 1905 so alterations and additions to buildings made before that date are consistent with the initial design. Later modifications, including a major addition to the church, were awarded to a different firm whose charge was to extend the nave west by two bays and add a narthex and porte-cochere. Architects Evans, Warner and Bigger (fl. 1910-1912) respected Burns's treatment of the church interior by continuing the polychrome brick walls in a restrained manner but the exterior stone work, limestone trim and treatment of the narthex represented a shift away from the High Victorian Gothic. Changes to the interior were more dramatic. In January 1913 the vestry received a suggestion and accompanying design to replace the reredos. The project was initially tabled but later approved; architect James S. Warner (c. 1882-1914) was the designer and the reredos "…with figures inserted in panels instead of dark tiles…" was approved later that month. The following year there was a proposal to reline the north and south walls of the chancel and a preliminary sketch was approved in February 1914, but initially nothing came of the project and in March 1915 "the white stone lining of the chancel walls" was still under consideration. A new design was finally approved in October but it is unclear exactly what was done and the physical record of memorials in the chancel suggests the project was undertaken in stages but not completed until after 1928 when the rector announced the plans for the work were in hand and the donor was Mrs. Horace H. Furness, Jr.

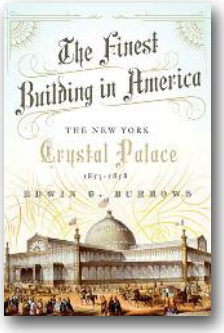
Interior of the Church of the Redeemer, 1977. Courtesy of George E. Thomas.

It was during this period that the six copper angels of the "Seraph Choir" and the rood screen gates were removed and stored in the undercroft. It is probable relining the chancel with Caen stone and installation of an organ required taking down the metal work of the rood screen. If so, it was reinstalled but without angels or gates and remained this way until the metal work was removed for cleaning in 1977. The parish was divided about whether or not the rood screen should be replaced but the traditionalists prevailed and it was reinstalled in 1978 and adorned the chancel arch into the twenty-first century. In 2009 the entire screen, including the limestone base, was taken down and crated to await reinstallation in a transformed 1885 Charles Burns designed sexton's cottage that will serve as a gathering space adjoining the parish house.

The memorial rood screens at St. James the Less and Church of the Redeemer are examples of the influence of nineteenth century gothic revival theories on proper modes of worship and represent a specific period in American Episcopal church architecture. That they survive, even if altered or no longer acting to separate clergy from laity, is mute testimony to the generosity of their benefactors, lives of those they remember, talent of their designer and makers, and commitment of the parishioners.

No research project is a solo undertaking. I am grateful for the assistance and support of many, especially Jim Carroll, Ken Garner, Rev. Andrew Kellner, Bruce Laverty, Jill LeMin Lee, Michael J. Lewis, the late Henry Mirick, Rev. Sean Mullen, Hyman Myers, Michael Seneca and George E. Thomas.

The Bibliophilist



The Finest Building in America: The New York Crystal Palace 1853-1858

Edwin G. Burrows, New York: Oxford University Press, 2018.

The first thing to notice about this book is its size. For portability it rivals the original 1853 exhibition handbook, the *Official Catalogue of the New-York Exhibition of the Industry of all Nations*, a feature appreciated by this subway reader. But its diminutive scale seems at odds with its self-important aim of lifting its subject—the first world's fair held in the United States—from obscurity. One cannot help but wince at the mere seven-by-five-inch trim size and wonder why it wasn't more generous.

The author, however, achieves his aim. "This little book," he writes in the prologue, "is my attempt to recapture the lost story of the New York Crystal Palace and to understand why this building mattered so much to antebellum Americans in general and New Yorkers in particular, yet would never be rebuilt." Edwin G. Burrows, professor emeritus of history at Brooklyn College, is better known as the co-author of *Gotham: A History of New York City to 1898*, which won the Pulitzer Prize for History. Two of that epic tome's 1383 pages were devoted to the Crystal Palace: the structure of (mostly) iron and glass that once graced today's Bryant Park. Doubtless the earlier effort sparked Burrow's desire to pen his new book, just as my late colleague David Jaffee's first curatorial project, "Visualizing 19th-Century New York," inspired his second, "New York Crystal Palace 1853," on view at the Bard Graduate Center Gallery last year. (The digital publication for this exhibition was reviewed in the Fall 2017 issue of *Nineteenth Century*.)

The book begins with the end so it is not much of a spoiler to reveal that the finest building in America went up in flames after only five years. But how it came to be, and what took place within, is a fascinating tale, ably told. Divided into four chapters, the first, "Glances at Europe," roots the enterprise in the first international fair the world had seen, The Great Exhibition of the Works of Industry of All Nations, held in London's Hyde Park in 1851, which came to be known as the Crystal Palace for its massive glass-paned pavilion designed by the gardener Joseph Paxton. Seen by many Americans, including *New-York Daily Tribune* editor Horace Greeley, who rallied civic-minded, deep-pocketed New Yorkers to stage their own Crystal Palace, it inspired a similar yet distinctive structure that in many ways improved on Paxton's. "Honor to the Country," the second chapter, charts the building's progress up to the fair's inauguration on July 14, 1853. The challenges of such an enterprise and the travails of the two European architects, Georg Carstensen and Charles Gildemeister, are told in nuanced detail.

"Wilderness of Objects," chapter three, speaks to the fair itself, which also came to be known as the Crystal Palace (formally the Exhibition of the Industry of All Nations) and ran for an astonishing fifteen months. Much was not ready by the time the exhibition opened and much changed by the time it closed, including the appointment of P. T. Barnum as president in an attempt to balance the books. Burrows does a fine job of setting the order of events straight, giving an impression of the vast range of goods, and framing the spectacle within the shifting cultural values that came with the rise of manufacturing and materialism. A minor complaint is that one wants to read more about individual displays beyond Hiram Powers's *The Greek Slave* and John Genin's *Bazaar*. The final chapter, "The Widowed Bride of Sixth Avenue," details the difficulties in upkeep and sustained use for such a building and charts its sad decline while an "Epilogue" circles back to the immediate aftermath of the fire.

The Crystal Palace represented an unprecedented civic enterprise that captivated many through its coverage in the popular press and depiction in wood engravings, lithography, and the new medium of photography. Burrows makes excellent use of a wide array of sources, interweaving myriad newspaper

accounts, memoirs and diaries, official reports, and available scholarship. He punctuates the text with pertinent illustrations to help the reader understand the Crystal Palace's larger significance, such as how it spurred the city's northward expansion and tourism. From the copious captions and notes, where many tidbits can be gleaned, one senses that a bigger story could be told. Nonetheless, Burrows has packed a lot into this small book. Those who have waited a long time for a definitive source on this largely forgotten piece of New York history will not be disappointed by this well-researched, thoroughly enjoyable, and handy account.

Reviewed by Caroline Hannah

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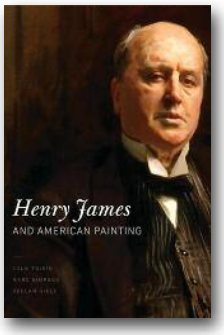


Henry James and American Painting

Colm Tóibín, Marc Simpson, and Declan Kiely.
University Park, PA: Pennsylvania State University Press and the Morgan Library and Museum, 2017.

This is an interesting look at a relatively unexamined aspect of the writings of the celebrated Anglo-American writer Henry James. It accompanied an exhibition of the same name held at the Morgan Library and Museum in New York in the summer of 2017. (A large selection from the Morgan's Henry James collection of manuscripts were included in the exhibition and analyzed in the catalog by Declan Kiely, but as his essay is largely unrelated to American art, it will not be reviewed here.)

The project, both exhibition and catalogue, were co-organized by Colm Tóibín, a professor of humanities at Columbia University, and Declan Kiely, curator of literary and historical manuscripts at the Morgan. Marc Simpson, art historian, collaborated. The book's title, *Henry James and American Painting*, might more accurately have been *Henry James and American Artists*, since it dwells more on his relationships with the producers of the artworks–both painters and sculptors–rather than the artworks themselves.

Colm Tóibín's essay, "Shadow and Substance," concentrates on the ways in which James's writings were informed by his interactions with his artist friends and their circles. Tóibín's highly praised "fictional biography" of James, *The Master*, is popularly thought of as the book that "outed" James. While it was not quite that, nor what Tóibín claims he intended, it did contribute to the scholarly acceptance that James probably was a deeply-closeted homosexual. This leads us to the first artist James wrote about extensively, the young sculptor Hendrik Andersen, with whom James had a long and close relationship. In their long and voluminous correspondence, James advised him to abandon his production of heroic nudes in favor of something smaller, more delicate, less naturalistic, less erotic, and (perhaps most important) more saleable. (Many of James's letters to Andersen survive, and, against the strong objections of the James estate, have been published, although James burned the ones Andersen wrote to him.) In other words, James is advising Andersen to follow the route James himself followed–one acceptable to the world at large, if filled with allusions and nuances of underlying forces and desires that could not speak their names.

The rest of the essay is of more interest to literary scholars than to those interested in visual culture. In case after case, Tóibín demonstrates, James loosely modeled characters and situations in his novels and short stories after his artist friends and their lives, loves, and idiosyncrasies. For instance, in *Roderick Hudson*, the relationship between artist John La Farge and James is reflected in the fictional characters Roland Mallet and Roderick Hudson. American artist Frank Duveneck is seen to provide

the model for no less than three James characters, in *Washington Square*, *The Portrait of a Lady*, and *The Golden Bowl,* respectively.

The title of Marc Simpson's essay, "I Like Ambiguities and Detest Great Glares," based on a quote from James, continues some of the same themes and unavoidably covers some of the same territory as Tóibín. Here, though, the focus is primarily on the artists and artworks mentioned in the many the art reviews James penned. The bulk of the reviews, beginning with one for the *Atlantic Monthly* in 1872, were for American magazines aimed at a general educated audience, not at art connoisseurs or specialists. Several other American publications followed suit, including *The Nation*, *The Galaxy*, and *Harper's Weekly Magazine* and *Harper's New Monthly Magazine*. The last of the James reviews appeared in the 1890s. By then James's novels and stories had became popular successes, and his reputation as a highly-sophisticated American Abroad soared; he apparently decided that there was no longer a need to write art reviews.

James's personal reasons for taking time away from his literary work, he told friends in letters, were two: money and "cachet." He was no art expert, although he had taken painting lessons from William Morris Hunt and was an avid gallery-hopper and museum-goer. Nor were his reviews particularly learned or incisive. But they appealed to those readers to whom James's other writings appealed. The name on the masthead added cachet and the Jamesian flair for language added tone. Although I enjoy all the glorious prose (I can read James just for the hypnotic effect of the Delphic effusions), I must admit that the criticism often boils down, when stripped to the bone, to "I liked it" or "I didn't like it." An example of his saying not much in many words (here discussing a painting by Sargent):

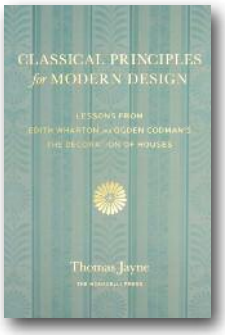
> …so far higher a triumph of painting than anything else in the place that, meeting it early in his course, the spectator turns from it with a grateful sense that the whole message of that art has on this occasion, so far as he is concerned, been uttered and that nothing can be added to it by anything else he may endeavor to get into relation with.

James mainly wrote about, and promoted, artists he knew and with whom he socialized. One of his acquaintances privately called his reviews "advertisements for his friends." At the top of the list were John La Farge and John Singer Sargent, men James knew personally and who, in temperament, personal preferences, lifestyle, and social milieu, resembled James. Whistler's works were at first derided by him, but after a few social invitations from the artist, and after sophisticated tastes shifted to support Whistler's art, James praised him.

American artist Frank Duveneck is in a class of his own. James had become a great friend of the widowed American textile industry heir Francis Boott, who had moved to Florence with his attractive daughter Elizabeth, with whom James established an avuncular mentoring relationship. Duveneck enters the picture, and the household, as Lizzie's art teacher, captivating the father and eventually marrying the daughter, effectively dimming the great writer's limelight there. James found himself in the position of having to give public praise to Duveneck and his art work in order not to lose his treasured relationship with the Boott family–but at the same time he privately wrote almost slanderously about both the man and his art

The Tóibín and Simpson essays in *Henry James and American Art* are a pleasure to read–both are excellent and engaging writers–and the fact that James's art reviews are less than top-drawer as art criticism does not lessen the importance of these essays. The book is also a visual pleasure, illustrated with many of the artworks James reviewed. A largely neglected corner of James's prodigious output has now been thoroughly examined, and this will probably be the last word on the subject. Recommended reading for all, but especially those familiar with "the Master" and his life and work.

Reviewed by William Ayres



Classical Principles for Modern Design
Lessons from Edith Wharton and Ogden Codman's The Decoration of Houses

Thomas Jayne. New York: Monacelli Press, 2018.

Edith Wharton and Ogden Codman's *The Decoration of Houses* (1898), is part Beaux-arts textbook, part Grand Tour travelogue, and a delightful glimpse into Belle Epoque domesticity. Like encyclopedic museums, world's fairs, and department stores, the book promoted the study of the world's antique treasures for cultural and personal enrichment. So enduring in its appeal and influence is it, that it has been in print continuously since first published.

The D-of-H, as it is known colloquially, carries with it the romantic associations of Wharton's novels, but is far more akin to the scientific writings of its age. It asserts with Victorian certainty that harmonious interiors are achieved by studying and applying a set of formal principles. Perfect proportion is described as a "mathematical calculation," and a "scientific adjustment of voids and masses." Many of the book's tenets read as a catechism of decoration, a study of taste-truths that seem timeless and definitive. Still, with this permanence comes an unfortunate aloofness perpetuated by the limitations of black and white photography and the fact that almost none of these interiors survive. It is difficult to imagine these rooms as they appeared in person, in their own time.

Enter Thomas Jayne, the scholar/decorator. His latest book, *Classical Principals for Modern Design: Lessons from Edith Wharton and Ogden Codman's The Decoration of Houses*, offers his contemporary interpretation on this famous tome through his own commentary and with illustrations of interiors produced by his firm. Jayne's beautiful book is refreshingly modest in scale. Thirteen chapters with rich, well-chosen illustrations (with disappointingly slight captions) chronicle how Jayne applies, and sometimes eschews, principles espoused by *The D-of-H*.

Jayne seconds Wharton and Codman's recommendation that for bedrooms, "simplicity is the most fitting." Apart from a nearly monastic Main Line example aptly captioned as "plain," other bedrooms in *Classical Principles* are anything but. Exquisite Indian palampores, whimsical folk art, Parisian *passementerie*, Delft tiles, and Baroque mirrors compliment each other so surprisingly and with such sophistication it is a wonder that anyone could fall asleep amongst them. (Perhaps Jayne is poking fun at the masters?)

Jayne, who has enjoyed a decades-long association with The Mount, Edith Wharton's Lennox, Massachusetts estate, knows full well that Wharton's interiors often contradicted her published advice. There was at one time wallpaper, in spite of *The D-of-H* arguing that

> a papered room can never, decoratively or otherwise, be as satisfactory as one in which the walls are treated in some other manner.

Jayne's design for a Nantucket bedroom with Chinese wallpaper and a Penobscot Bay hall with marine blue grasscloth butterfly chintz convey in contemporary terms what is difficult to see in *The D of H*: a vibrant dialogue between formal historicism and personal, country house quirk.

Wharton and Codman decreed that "overlaying pattern is always a mistake," but Jayne has made a career of brilliant juxtapositions, of color, pattern, material, style, and sentiment. For many of his contemporaries, juxtaposition has become a cliché. For Jayne, it is a superpower.

Jayne's creativity is firmly grounded in academic credibility thanks to formative studies at Winterthur and the Victorian Society in America's London Summer School, and internships at the Metropolitan Museum of Art, the Museum of the City of New York, the J. Paul Getty Museum, and a stint at the firm of Parish-Hadley. Jayne's success demonstrates the value of deep study of design, history, and *The Decoration of Houses*. The elegance and effortlessness of Wharton and Codman display in their book and their interiors seem to be a natural outgrowth of money and taste. We do not know if Jayne and his colleagues have had equal privilege and talents, but we can be sure that they have studied design history. There is no doubt that *The Decoration of Houses* should be required reading for designers and design historians. We can only hope that all readers of that classic will respond as thoughtfully as Jayne has done in *Classical Principals*.

Reviewed by Jennifer Carlquist

Milestones

Railroad R_x

Anne-Taylor Cahill

June 5, 1870: A brakeman at a remote western mine siding is attempting to guide a link-and-pin coupler into its slot when he slips on an oily cross-tie. His hand is crushed between the couplers. The fireman, not knowing what to do, wraps an oily rag around the stump. He lifts the brakeman into the caboose as the partly severed hand dangles in the wind. The nearest hospital is hundreds of miles away, but the conductor hopes to find a doctor in a large settlement down the line. In the meantime he can offer his comrade no comfort other than a few sips of water. The brakeman's cries of pain grow softer and the pool of blood beside him grows larger during the two-hour journey. He is unconscious when the train arrives at the settlement two hours later, and the crew carries him to a room in the station hotel. A local doctor amputates the hand, but gangrene develops in the wound. The brakeman begins to have fever and chills, and dies a few days later (RailwaySurgery.org).

Tales such as this abound in the annals of railroad history, which led to the first employer-offered health insurance. In fact, railroads hired their own doctors and opened their own hospitals. Employees paid a small insurance fee and the railroad paid the rest. For the railroads it was cheap insurance as workers could be treated under sanitary conditions, recuperate under medical supervision and get back to work quickly.

Because of the unusual type of injuries sustained by railroad workers railway surgery became a new medical specialty. In 1888 in Chicago, The National Association of Railway Surgeons held their first conference. The association eventually grew to 1,500 members and held conferences all over the country. The railroads supported the doctors and provided free first class travel to and from the conferences. Other than a medical degree, there was no special training or certification for railway surgery however, over time, these conferences affirmed the idea of this practice as a medical specialty. By 1894 a journal called *The Railway Surgeon* was being published bi-weekly. In 1899 a railway surgery textbook was published.

Because many injuries often occurred at night or in a remote spot, the railroad surgeons developed a hospital car which could be sent to the site of an injury. Hospital cars usually contained a holding area and a fully functioning operating room. This allowed surgeons to immediately stabilize a patient before sending him to a regular hospital. However, if needed, emergency surgery could be performed in the hospital car.

Ahead of their time, railroads hired women doctors. The first female railroad surgeon was Dr. Carrie Lieburg of Hope, Illinois. In Texas, Dr. Sofia Herzog was hired as chief surgeon for the St. Louis, Brownsville & Mexican Railway.

Moreover, the railroad surgeon was not limited to just railroad injuries. They also treated general illnesses, gave checkups and even delivered babies. Often the surgeons consulted with railroad officials regarding workplace health and safety issues. One result of these consultations was testing for color blindness. This was a major function of the surgeons.

Railway surgeon's emergency bag and instruments, manufactured by E. A. Yarnall Co, Philadelphia. *The Railway Surgeon*, 1894.

Color blindness in railroad workers who could not differentiate the colored signal lights had contributed to many fatal accidents. So the surgeons developed tests to determine color vision acuity. General vision tests were also developed. The eye test still used today with the big "E" at the top was one of their inventions. In addition, employee's hearing was tested. Using a pocket watch, employees who could hear its ticking from five feet away passed the test.

The first stand-alone railroad hospital was opened in 1869 in Sacramento, California. Though eastern railroads usually had access to general hospitals in the cities through which they passed, hospitals west of St. Louis were scarce. The railroad hospital concept essentially bloomed in the West.

Things had changed dramatically by 1920. The West was becoming more and more urbanized. Automobiles and trucks were competing with the railroads. Some people were beginning to have private health insurance and wanted to see their own doctors. By then most cities and towns had their own hospitals. Thus the railway surgeon slowly faded away. Notwithstanding the railway surgeon's demise, their influence on modern medicine and workplace safety remains with us today.

For further reading:

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Henry J. Short, *Railroad Doctors, Hospitals and Associations: Pioneers in Low Cost Medical Care*, Lakeport, C. A., Shearer/Graphic Arts, 1986.

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