

***Light! The Industrial Age 1750–1900: Art & Science, Technology & Society***, by Andreas Blühm and Louise Lippincott. Thames & Hudson, 2001. 304 illustrations, 195 in color, 272 pages, \$55 hardcover.

Review by Gail Leggio

It is difficult for us today to grasp how much life changed during the century and a half covered by this catalogue, which accompanied a recent exhibition at the Van Gogh Museum in Amsterdam and the Carnegie Museum of Art in Pittsburgh. Innovations in man-made lighting affected everything from high aesthetics to pop culture, extending the hours people could work in factories, visit museums, improve their education or simply prowl the streets. Scientists and thinkers grappled with mundane problems and mused on the relationship between how we perceive the world and how we think about it. The implications—from optics to epistemology, from urban planning to social engineering—are dauntingly pervasive. Despite the grand sweep of the catalogue's subtitle, authors Blühm, of the Van Gogh Museum, and Lippincott, of the Carnegie, pragmatically focus



Wilhelm Bendz, *The Life Class in the Academy of Fine Arts*, 1826  
Statens Museum for Kunst, Copenhagen

on the physical evidence of visual culture—paintings, prints, lighting fixtures and optical gadgets.

The most interesting aspect of this project is charting the evolution of artistic practice and audience response. How did the way artists represent light change? What kind of light did they work by? How did changes in lighting affect the display of art? The answers provided here are more scattershot than comprehensive, and this was not an



exhibition chock-a-block with masterpieces. But this is a fascinating topic, offering a fresh perspective on artists' working methods and a way to reconstruct how people lived before the onset of twentieth-century modernism.

As might be expected, Vincent van Gogh (1853–90) is one major artist who was well represented. Writing to his brother Theo in October 1888, van Gogh announced he had just ordered gas lines laid in the studio and kitchen of the Yellow House in Arles, so that he and Paul Gauguin could paint at night.<sup>1</sup> The first pictorial evidence of this modernization is *Gauguin's Chair* (1888), which juxtaposes the small flame of a candle on the eponymous chair with a wall-mounted gas fixture that casts a radiant halo of yellow light. Van Gogh also reports using gaslight to paint exteriors. *Starry Night on the Rhône River* (1888), a view of Arles seen from the banks of the Rhône, juxtaposes urban gaslights, their smeary glow reflected in rippled water, against the ancient stars overhead. City, water and sky, a boat at anchor and a tiny foreground couple—all are subsumed in swirls of blue-violet and bronze-green paint, pinpointed with dashes of yellow.

As subdued as van Gogh's palette may be in the pantheistic *Starry Night on the Rhône*, his color pulsates in comparison to the true Nocturnes of James McNeill Whistler (1834–1903). While Whistler's art was under-represented in the exhibition, the catalogue recognizes the importance of his atmospheric, nearly monochromatic views of riverside London. His new urban poetic is a complex phenomenon, encompassing the influence of Japanese prints and the new wave theory of light expounded by Hermann von Helmholtz, but there are dirty facts behind Whistler's dreamy effects. London's atmosphere had been thickened by pollutants from coal-burning gas plants and heating fires. Whistler blurs harsh lines and draws a veil over the messy details. Unified by color and tone, his softly silhouetted London floats above the water, as magical as Constantinople or Venice. His luminosity is the ambient light of the modern city, where smog dims the sun by day and artificial lights banish the stars at night. The fin-de-siècle poet W. E. Henley (1849–1903) dedicated a poem "To James McNeill Whistler" capturing the melancholy of "this floating world." Whistler provided a lithograph to use as an illustration. Henley's poem begins:

Under a stagnant sky,  
Gloom out of gloom uncoiling into gloom.  
The River, jaded and forlorn,  
Welters and wanders wearily—wretchedly—on....<sup>2</sup>

Anticipating T.S. Eliot's Thames scenes in *The Waste Land* (1922), Henley also reminds us that Whistler's refined riverscapes have something in common with Charles Dickens's sooty tenements and the treacherous streets frequented by the Baker Street Irregulars and Limehouse lowlifes.

The metropolis after dark spawned a new genre of fiction, the "under the gaslight" novel, and artists depicted streetwalkers and the homeless, denizens of urban darkness, loitering near gaslights or sheltering in the shadows. Sometimes the treatment emphasizes the sinister and risqué; sometimes a social conscience drives the artist. In his richly textured dissertation, "The City at Night," Joseph Ruzicka explores the British attitude. Despite Victorian prosperity, Londoners recognized that "the underside of the night was a newfound source for shame and desperation."<sup>3</sup> By 1853 Dickens had designated Waterloo Bridge the favorite haunt of suicides, a motif made famous in two films based on a play by Robert E. Sherwood. In the 1931 version of *Waterloo Bridge*, the heroine, a dancer turned prostitute, is killed by a World War I bomb; in the 1940 remake, she throws herself beneath

the wheels of a World War II army truck.

For a mythic view of modern metropolis as gaslit inferno, this exhibition offered John Martin's (1789–1854) *Pandemonium*. Based on Milton's *Paradise Lost*, the painting depicts a tiny Satan poised on the banks of a river of lava. The architectural backdrop is London's Pall Mall, the first gaslit street in the city. A strange mix of flamboyant mythographer and urban pragmatist, Martin devised a plan to modernize London with gaslights and sewers in 1832. He also influenced such disparate artists as J. M. W. Turner, Gustave Doré and Thomas Cole, whose *Course of Empire* (1836) owes something to Martin's hybrid genre of catastrophic landscape, architectural fantasy and history painting. Not surprisingly, Martin's spectacles were also plagiarized by makers of dioramas, Victorian precursors of cinemascope epics.

The visual culture of the nineteenth century was diverse and robust. People queued up to view great paintings, but they also crowded into the skeleton shows of phantasmagorias and the educational panoramas that depicted the Battle of Waterloo, the opening of the Thames Tunnel, Mount Etna (complete with sophisticated lighting effects and simulated spewing lava), and a view of London from the dome of St. Paul's (so successful that it ran continuously from 1829 to 1875).<sup>4</sup> The Victorians liked to look at, among other things, the evidence of their own unfolding progress. This taste contributed to the success of John Atkinson Grimshaw (1836–93), who specialized in industrial nocturnes showcasing Britain's thriving ports and manufacturing centers. Grimshaw, Ruzicka writes, was "the first artist to effectively and consistently capitalize on the commercial and mechanical city at night...the businesslike city with its mechanical heartbeat pulsing beneath."<sup>5</sup> *Liverpool Quay by Moonlight* (1887) is composed according to Grimshaw's signature formula: on one side, glowing commercial store-fronts and, on the other, massive working docks and ships, with a rain-slicked cobblestone street between them. The tiny figures go about their business, oblivious to the complex play of light from the shrouded moon, the carriage lamps and the golden display windows. There is no narrative interest in the usual Victorian way, no anecdotes or novelistic patches, but there is a story—the story of the city itself.

New forms of lighting quickly succeeded each other in the later nineteenth century—gaslight, kerosene lamps, arc lights and electric light bulbs. Often, various forms co-existed, depending on the situation, and artists explored the variations. Henri de Toulouse-Lautrec (1864–1901) exaggerated the lurid gaslight of theaters and brothels, populated by women with greenish skin. Edgar Degas (1834–1917) made a specialty of theatrical performances, as in *The Ballet of Robert le Diable* (1871), in which the dancers float in the footlights while the orchestra and audience members are compressed into a shadowy mass. Theaters, opera houses and public arenas quickly adopted electricity, which—unlike gas—was not prone to explode, smoke or throw off poisonous fumes. Emile Zola described the allure of electric light for consumers in his novel about a Parisian department store, *Au Bonheur des dames*. The 1878 Exposition Universelle in Paris was the last of the great world's fairs to close its doors at sundown, because of the prohibitive cost and difficulty of illuminating the grounds, but the stores along the Champs Elysées, lit by electric arc lights, were already staying open until midnight.

A variety of lighting types appear in domestic interiors; even when electricity was available, it was often considered too glaring. *Light!* juxtaposed two famous examples of the domestic lighting subject. Degas's *Interior* (1868–69) includes the traditional warm light of hearth and oil lamp, but the exaggerated perspective and menacing shadows make the alienation between the seated woman and standing man palpable. It's as if this cool-



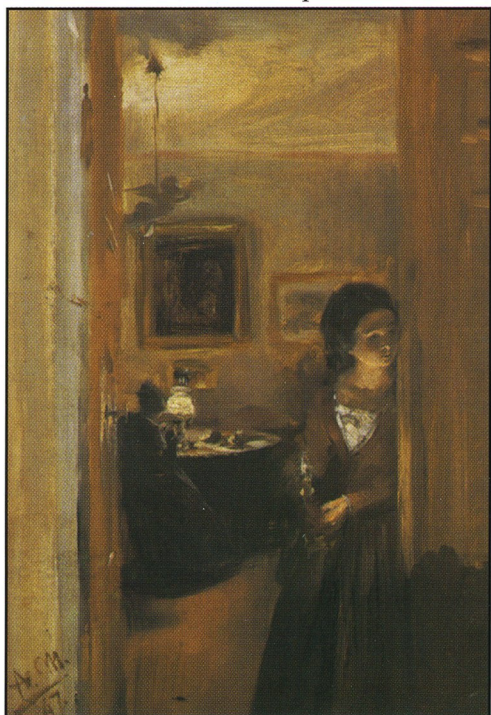
eyed modern classicist had wandered into a scene from an Ibsen play. In contrast, Adolph von Menzel (1815–1905) gives us a relaxed glimpse into private life in *Living Room with the Sister of the Artist* (1847), a loosely brushed exercise in multiple light sources. The candle held by the shyly welcoming young woman is played against the oil lamp on the table and a hanging fixture concealed by the angle of the door.

This exhibition placed unusual emphasis on the physical fixtures, from utilitarian to fantastic, that marked the modernization of everyday life. The American painter John Frederick Peto (1854–1907) provided an eloquent paean to rapid change and obsolescence in *Lights of Other Days* (1906), depicting a shelf full of old fixtures, candle stubs and smoky glass shades. The image is “not only...a painted encyclopedia of outmoded light sources,” the authors note, “it is also an allegory of the past.”<sup>6</sup> Among the physical objects shown in the exhibition were a crude, iron double crusie grease lamp (c. 1750), made by a local blacksmith; the stable, smokeless Argand oil lamp (c. 1785), a Swiss invention that surrounded the wick with air by placing it in a glass cylinder; an elaborate allegorical gas bracket (1880–1900); the arc lamp, its intense bluish-white light intended for public spaces (c. 1882), and the more domestic electric light, the incandescent bulb of the 1880s. But even the incandescent bulb was too bright for refined sensibilities. The American Louis Comfort Tiffany (1848–1933) and the Frenchman Emile Gallé (1846–1904) raised the light fixture to an art form with weedy, organic bronze mountings and glass shades that saturated light with colors reminiscent of jewels, exotic flowers and beetle wings.

Electricity could be a crowd-pleaser, as witnessed by the success of the Palais de l’Electricité at the Paris Exposition Universelle of 1900, a structure illuminated by 5,700 incandescent bulbs and topped by the figure

of *La Fée électricité*. Theodor-Josef Hoffbauer’s souvenir lithograph incorporated mica chips and tinfoil in an attempt to capture the glitter of the real thing. Nighttime spectacles were a longstanding tradition, although previously the emphasis had been less on progress and technical prowess than on ceremony. The Pre-Raphaelite William Holman Hunt (1827–1910) chronicles *London Bridge on the Night of the Marriage of the Prince and Princess of Wales* (1863–66), with its crush of onlookers, their faces red in the smoky red light of gas lamps and incense burners. He was documenting a transition, the catalogue authors suggest: “In London at least, gas lighting was transforming the traditional torch-lit royal procession and courtly firework display into a modern democratic brawl.”<sup>7</sup>

Fireworks displays are the most enduring light shows in the history of public spectacle. Over the centuries pyrotechnics have been staged to celebrate events ranging from coronations and royal births to the



Adolph von Menzel  
*Living Room with the Sister of the Artist*, 1847  
 Bayerische Staatsgemäldesammlungen,  
 Neue Pinakothek, Munich



opening of the Brooklyn Bridge and the American Bicentennial.<sup>8</sup> One of the most spectacular and longest-running pyrotechnic shows was the Girandola in Rome. Beginning in the fifteenth century and continuing well into the nineteenth, the display was set off annually at Easter and June 28 (the eve of the Feast of Saints Peter and Paul), as well as for the election and coronation of a new pope. Johann Wolfgang von Goethe and Charles Dickens rhapsodized about the rockets, color wheels and sheets of flame swirling around the cylindrical mass of Hadrian's mausoleum. But no verbal description could match the impact of *The Annual Girandola at the Castel Sant'Angelo, Rome* (1775–76), a painting by Joseph Wright of Derby (1734–97). The dark foreground is dominated by the graceful form of a tall pine; in the background St. Peter's dome is illuminated by vermilion billows of smoke, and magical squibs of fire dart through the night.

Wright was undoubtedly the star of the eighteenth-century portion of this exhibition, the visual poet of the Industrial Revolution. Practicing tenebrism with a twist, Wright specialized in night scenes illuminated by the fire of labor and science. *The Blacksmith Shop* (1771) is a typical tour de force. Workers and their families gather around a smoldering ingot being pounded out on an anvil, in a secular paraphrase of an Adoration of the Shepherds. Adding grandeur to the scene, the blacksmith shop occupies a classical ruin. A favored motif, the juxtaposition of natural and artificial light, appears as moonlight glimpsed through an arch contrasts with the Vulcanic glow of the forge.

Artists, too, worked at night, as Wright documents in *An Academy by Lamplight* (c. 1769), a scene of gentlemen-artists gathered around a classical statue of a nymph, sketching. Because lamplight was deemed inadequate for exercises in color, artists typically devoted night sessions to studying chiaroscuro and modeling, copying monochromatic sculpture or casts. Investigating how artists worked, *Light!* gathers together some remarkable images. In William Bendz's *The Life Class in the Academy of Fine Arts* (1826), a night class is underway at the Charlottenborg Academy. The center of the composition is occupied neither by the students nor by the nude model, but rather by a workman atop a ladder carefully adjusting the necessary lights. The first documented painting to have been executed under artificial light was Anne-Louis Girodet's (1767–1824) *Pygmalion*, presented at the Salon of 1819, after six years of work. (The Greek legend about the transformative magic of art seems an appropriate subject.) The artist's working method is depicted in the 1822 *Girodet Painting "Pygmalion and his Statue"* by Adèle Chavassieu d'Audebert, after François-Louis Dejuinne, which contrasts the moonlight coming through the skylight of the artist's studio with the sharp beam of light, probably from an Argand oil lamp with reflectors, trained on the canvas.

Of course, the ideal studio lighting was—and still is—natural light, but even natural light was no simple issue for painters. The most constant daylight comes from the north, which makes a northern exposure desirable. Direct sunlight could be softened by opaque curtains or oiled paper and adjusted by shutters. Lighting conditions affected not only how works of art were executed but also how they were viewed in galleries, museums and patrons' homes. Well into the nineteenth century daylight was the principal source of illumination, although that system limited viewing hours and there were debates about the relative benefits of side versus top lighting.

Night visits to galleries were not unheard of, however, even in the eighteenth century. Elite visitors to the Vatican made nocturnal tours by torchlight. The warmth and flicker of torchlight was prized for its animating effect on marble sculpture. Napoleon made an imperial torchlight visit to the *Laocoön*, newly looted from Rome and installed in the Louvre. As late as 1873 museum-goers were still admiring the Venus de Milo by



torchlight. Paintings were a different story. London's National Gallery and Royal Academy experimented with gaslight but abandoned it when the paintings became blackened by soot. In 1877 electric arc lamps appeared at the Paris Salon. While many disliked the glare and complained of color distortion, the use of electricity had a profound effect on the habits of art-viewers. Within a single year, the number of visitors to the Salon quadrupled.

All the detail about artificial lighting provided by this catalogue tends to outweigh what, for most people, is the crucial aspect of light in nineteenth-century art—the luminous skies of John Constable and J. M. W. Turner, and the plein-air experiments of the French Impressionists. Representative works by these artists were included, but Blühm and Lippincott emphasize the science behind the brushwork. Constable's cloud studies are tied to meteorological treatises based on observations of clouds, their behavior and classification. Turner's *Sun Setting Over a Lake* (c. 1840) elicits a review of the painter's library, which included copies of Joseph Priestley's *History and Present State of Knowledge Relating to Vision, Light and Colors*, Goethe's *Theory of Colours* and astronomer Mary Somerville's *Mechanism of the Heavens*. Nineteenth-century artists were very aware of the exciting developments in contemporary science. There is science at work in Turner's bold smear of fiery red, solar yellow and white, but it is subordinated to the primal drama and sheer painterliness of *Sun Setting*. Two of Claude Monet's Rouen Cathedral facades from 1893–94 radiate artistic power while raising broader issues. Used in this exhibition to illustrate the notion of changing light as a visual record of time, they hint at the modernist fragility of even ancient stone when filtered through the veil of human subjectivity.

Other less universally familiar painters are also important in this history of light. Pierre-Henri de Valenciennes (1750–1819), one of the stars of the groundbreaking “In the Light of Italy” exhibition a few years ago,<sup>9</sup> is represented here by a pair of plein-air sketches depicting a *View of Ara Coeli* in Rome, c. 1785. The sharp contours of the building and bushy mass of a luxuriant tree are lit differently in the morning and evening, and Valenciennes offers a lesson in the effects of light. In his influential primer *Elémens de perspective pratique à l'usage des artistes* (1800), Valenciennes combined direct observation with Newtonian perspective.

Ford Madox Brown (1821–93), a mentor to the Pre-Raphaelite Brotherhood, created a stir with *Pretty Baa-Lambs*, probably the first exhibition painting executed out of doors, not as an oil sketch intended for private pleasure or instruction but as a full-scale finished work. First exhibited in 1852, *Pretty Baa-Lambs* is often cited as anticipating the Impressionists. Yet, for all its colored shadows and brilliant colors laid over a dazzling white undercoat, Brown's sun-drenched garden scene has its own distinctive look. The French Impressionists tend to dissolve objects into light phenomena. Brown maintains a sense of three-dimensional space, a solid world where you can feel the heat of the day and smell the grass, and his figures do not flatten out. In 1865 he complained that the picture had been initially misunderstood, “the only intention being to render the effect of sunlight.”<sup>10</sup> Given the typological bent of mid-Victorian thought, it is easy to imagine critics seeing in the young lady with a rather solemn baby on her hip and a lamb grazing at her feet intimations of Christian iconography. But *Pretty Baa-Lambs* is as unpretentious in theme as it is arresting in composition and color. If this attractive modern woman falls for a moment into the posture of a Madonna, the gesture is a graceful accident of the domestic pastoral.

There were some nineteenth-century artists who turned away from brightness, whether natural or artificial, and sought deeper meanings in half-light and shadow. The German Romantic painter Caspar David Friedrich (1774–1840), represented here by *The Cross on*

*the Baltic* (1815), liked near-dusk, when details are obliterated and the luminous distance beckons. The American Frederic Church (1826–1900) finds a New World landscape transfigured by a more flamboyant red and gold light in *Twilight*, “*Short arbiter ’twixt day and night*” (1850). The Symbolists, under-represented in *Light!*, were intoxicated with ectoplasmic auras and the phantasmagorical light of dreams. I would have liked to see an example of ecclesiastical stained glass, part of the phenomenal nineteenth-century revival undertaken by William Morris and others.

Perhaps this subject is simply too vast and multifaceted for any single exhibition to explore thoroughly. What this handsome catalogue (awarded Second Prize in the 2001 Museum Publications Design Competition) does accomplish is to make us think about light in a new way, by juxtaposing works of art with the nuts and bolts of optical enterprises. Included in the array of objects featured was a camera obscura (c.1760–80) that once belonged to Sir Joshua Reynolds and a kaleidoscope (c. 1819), the invention of physicist David Brewster, quickly adopted by artists and designers as a tool for developing symmetrical abstract patterns and by writers Charles Baudelaire and Marcel Proust as a metaphor for human consciousness. We are shown the paraphrenalia of Louis-Jacques Mendé Daguerre (1787–1851) and William Henry Fox Talbot (1800–77), along with the beginnings of astronomical and microscopic photography and the X-ray. Although we think of it as a twentieth-century medium, photography had already come to prominence by the 1830s. The word *photography* means “writing with light,” reminding us—by its alchemical literalism—that art is always seeking to fix ephemeral images, to give permanence to our vision of the world. One delightful picture in this exhibition, Eduard Daege’s *The Invention of Painting* (1832), illustrates an antique legend, recounted in Pliny’s *Natural History*. A young woman, sad that her lover is going off to war, attempts to preserve his image by tracing his shadow on a wall. This first painting begins with a silhouette, a vestigial shadow, and shadows are the creation of light. Anne Hollander, in her fascinating study of cinema and the Northern European painting tradition, writes: “The universal dramatic relation between light and vision forced the metaphors for achieving redemption, for gaining understanding, for acquiring knowledge, for all transcendence.”<sup>11</sup> Pervasive yet tantalizingly incorporeal, light is the condition of everyday existence, the medium of sight, a symbol of both transience and eternity.

#### Notes

1. *Light! The Industrial Age 1750–1900*, pp. 202–03.
2. Cited, Denys Sutton, *Nocturne: The Art of James McNeill Whistler* (Philadelphia: J. B. Lippincott, 1964), p. 69.
3. Joseph Ruzicka, “The City at Night in Nineteenth-Century British Art,” Ph.D. dissertation, Institute of Fine Arts, New York University (2000), p. 77; see also chapter IV, “In Darkest London,” pp. 155–93.
4. Susan R. Horton, “Were They Having Fun Yet? Victorian Optical Gadgetry, Modernist Selves” in *Victorian Literature and the Victorian Visual Imagination*, ed. by Carol T. Christ and John O. Jordan (Berkeley: University of California Press, 1995), p. 11.
5. “The City at Night,” p. 272.
6. *Light!*, p. 234.
7. *Ibid.*, p. 148.
8. See Suzanne Boorsch, “Fireworks! Four Centuries of Pyrotechnics in Prints and Drawings,” *The Metropolitan Museum of Art Bulletin* (Summer 2000).
9. Philip Conisbee, Sarah Faunce, Jeremy Strick with Peter Galassi, *In the Light of Italy: Corot and Early Open-air Painting* (New Haven: Yale University Press; Washington, D.C.: National Gallery of Art, 1996).
10. Cited, *Light!*, p. 142.
11. Anne Hollander, *Moving Pictures* (New York: Alfred A. Knopf, 1989), p. 18.