

# 6.

## NEW TECHNOLOGY, NEW VISION, NEW USERS

*1875-1925*

*. . . photography, from being merely another way of procuring or making images of things already seen by our eyes, has become a means of ocular awareness of things that our eyes can never see directly. . . it has effected a very complete revolution in the ways we use our eyes and . . . in the kinds of things our minds permit our eyes to tell us.*

*—William M. Ivins, Jr., 1953<sup>1</sup>*

IN THE FIFTY YEARS that followed the announcement that pictures could be made with sunlight, processes and ideas were continuously tried and discarded as people involved with the medium sought answers to the technical problems created by the expanding aesthetic, commercial, and scientific demands upon photography. As these needs unfolded it became apparent that professional photographers were looking for more sensitive film and for stable, standardized products to document an ever-widening range of subjects; that the scientific community required refined and specialized equipment; that artistic photographers were seeking materials of long tonal range and permanence. Still another constituency was added to those who made and used camera images when at the end of the 1880s simplified apparatus and processing methods—"push button" photography—turned potentially everyone into a photographer. During the same period, the persistent struggle to produce images in color in the camera was won, even though the solution turned out to be one of limited application. This explosion of products, techniques, and processes (detailed in *A Short Technical History, Part II*) produced significant changes in the kinds of images made and how they were used, and as a consequence established new audiences for photographic images. In turn, the increasing numbers of images provided information that altered public attitudes and perceptions of reality.

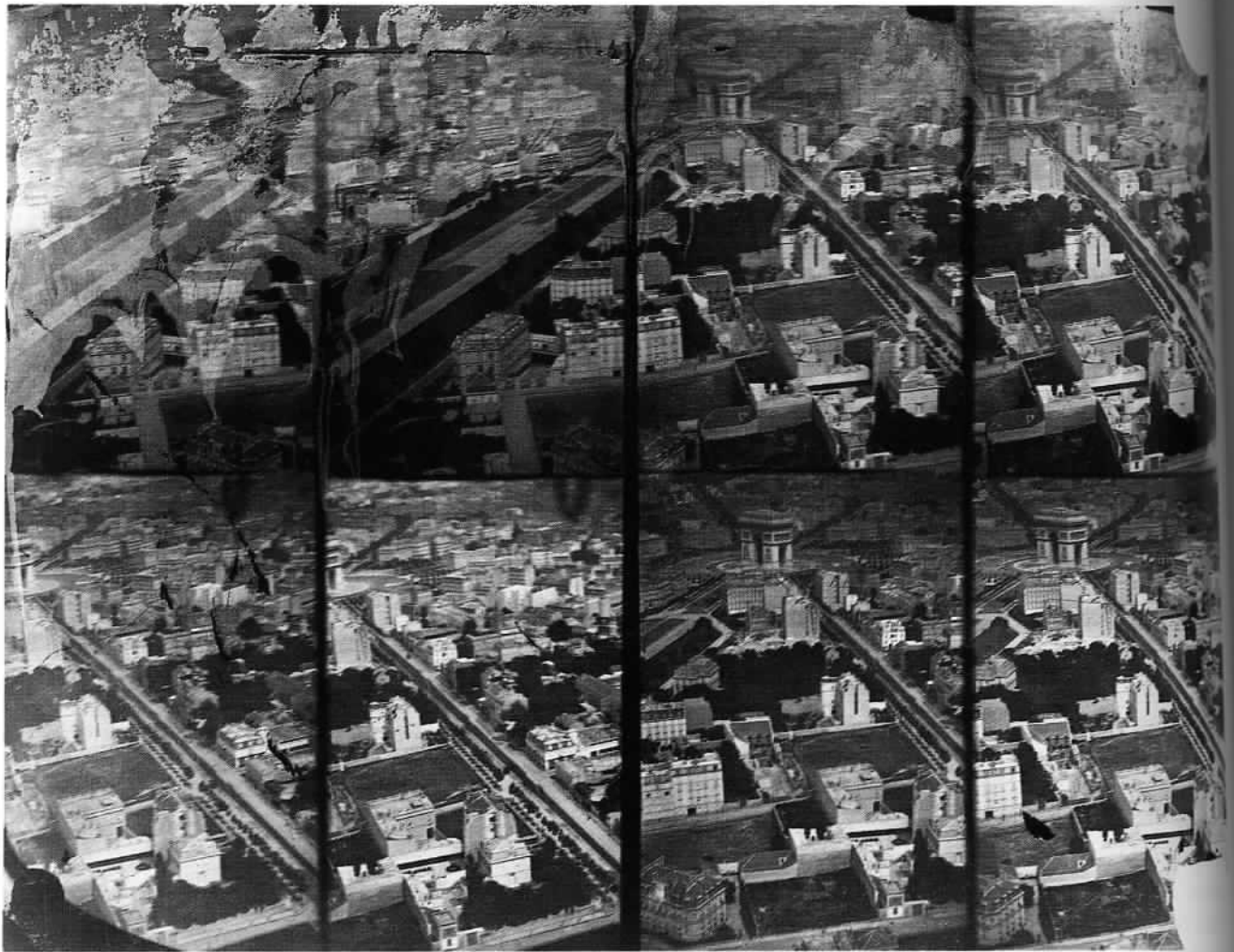
By 1890, photographic technology had taken wing. Wet collodion, in use for some 25 years before going the way of the daguerreotype, was supplanted by the dry plate—a silver-bromide gelatin emulsion available first on glass plates and later on lightweight, flexible celluloid film. This material was not only easier to use; it was more sensitive to light, thus shortening exposure time, and eventually it became orthochromatic—corrected for all colors of the spectrum except red (and blue, to which it was oversensitive). Camera design also flourished; during the final decades of the 19th century, photographers could choose from among a variety of instruments designed for different purposes. For professional work in the field there were view cameras in several sizes with extension bellows, swings, and tilts; for the serious amateur, hand-held reflex cameras. Stereographic and panoramic apparatus was available, as were tiny detective cameras—so named because they might be concealed in clothing or in other artifacts to make

picture-taking unobtrusive. Concurrently, manufacturers began to produce faster lenses, shutters, exposure meters, flash equipment—all of which gave the photographer greater control over capturing on the negative what was occurring in actuality. At the same time, printing papers that satisfied both artistic and commercial purposes appeared on the market.

Standardization—the rational production of photographic materials and processes—accelerated toward the end of the 19th century for a number of reasons. Basic among them was the continuing trend in Western capitalist countries toward the regularization of all manufactured goods and many services, with photography considered an intrinsic part of industrial capacity. Another stimulus was the growth of the chemical and dye industries, especially in Germany after its unification in 1871, which led to competition (in other countries, too) in the manufacture of new sensitizing materials and more refined apparatus. Possibly the most important stimulus was the realization that photography had shown itself to be more than a craft that reproduced what the eye could see, that its potential as a tool for revealing scientific, sociological, and physical phenomena never actually seen had transformed it into the most significant pictorial means in modern industrial society. And as printing technology progressed to make possible the direct transcription of photographic illustration in news and informational media (see *Chapter 10*), the pressure for more accurate equipment and flexible materials increased.

### *Photography from the Air*

The expanded roles that the medium would presently assume had been hinted at soon after mid-century as photographers attempted to depict the physical universe from unusual vantage points or under abnormal conditions using the unwieldy collodion wet plate. For example, in connection with the growing interest in "flying machines," efforts were begun in the late 1850s to photograph from the sky, to reaffirm scientifically the vision of artists who from the Renaissance on had imagined a "bird's-eye view" of the earth. In 1858, Nadar became the first to succeed, producing a somewhat murky image of Paris while stripped to the skin (for lightness) and concealed behind a dark curtain in



287. NADAR (GASPARD FÉLIX TOURNACHON). *The Arc de Triomphe and the Grand Boulevards, Paris, from a Balloon, 1868.* Modern gelatin silver print from the original negative. Caisse Nationale des Monuments Historiques et des Sites, Paris.

the basket of a captive balloon manned by the famous Goddard brothers. He spent the next two years promoting his own lighter-than-air creation (*see Profile*), but his greatest success in aerial photography stemmed from the views of the *Arc de Triomphe* (*pl. no. 287*) taken in 1868 with a multilens camera from the basket of another balloon, the Hippodrome.

Aside from the romance associated with the balloon—called the “ultimate engine of democracy” by the French—the practical nature of balloon transport was demonstrated when it turned out to be one of the two ways that mail could be delivered to and from the besieged city of Paris during the Franco-Prussian War (1870–71). The other way, by carrier pigeon, involved photography in that the written messages were reduced microphotographically and later enlarged for reading in a projection enlarger, foreshadowing the V-mail of the second World War.

At about the same time as Nadar’s experiments—1860—the Boston photographer James Wallace Black, a partner in the astrophotographic research conducted at Harvard by John Adams Whipple (*see Chapter 1*), ascended 1,200 feet in a balloon tethered over the Boston Common. Black used a Voigtländer camera and a shutter of his own contrivance to make the first aerial photographs in America, six of which are extant. Although the extraordinary feat of viewing the city “as the eagle and the wild goose saw it” (*pl. no. 288*) was praised by Oliver Wendell Holmes,<sup>2</sup> and the photographer himself suggested that reconnaissance photography by balloon be tried during the Civil War, no action was taken. Despite attempts by several other photographers to make topographical views from the air, at times with balloon and kite cameras, the airborne camera seems not to have evoked further interest until the 20th century.<sup>3</sup>



188. JAMES WALLACE BLACK. *Boston from the Air*, 1860. Albumen print. Boston Public Library, Boston.



289. NADAR (GASPARD FÉLIX TOURNACHON). *Workmen in the Paris Catacombs*, 1861. Albumen print. Bibliothèque Nationale, Paris.

### *Photography by Artificial Light*

Another group of experiments undertaken to extend the scope of the medium soon after its invention involved artificial illumination. Electric batteries made it possible for Talbot in 1851 to produce a legible image of a swiftly revolving piece of newsprint (*see below*) and also provided artificial light for Nadar's experiments in this realm. Using Bunsen batteries<sup>4</sup> and reflectors, Nadar first made portraits and then, in 1861, took the complicated apparatus below the streets to photograph in the sewers and catacombs (ancient burial grounds) of Paris. Some of the exposures took as long as 18 minutes, necessitating the substitution of manikins for humans (*pl. no. 289*), but despite having to cart lights, reflectors, rolls of wire, and camera and collodion equipment through narrow and humid corridors, Nadar produced about 100 underground scenes. Views of the pipes and drains, the walls of bones, and the tomb markers that constitute the nether regions of the city demonstrated the medium's potential to disclose visual information about a wide range of physical facts.

Commercial portraiture by electric light using Bunsen cells was attempted by Adolphe Ost in Vienna in 1864, but it was not until the end of the following decade that

the quality of portraits made by electric light became almost indistinguishable from those made with natural lighting. Because electric batteries initially were both weak and costly, photographers experimented with other chemical agents, including oxyhydrogen flame directed against lime (limelight) and magnesium wire. The latter substance was first put to the test in attempts to picture mine interiors in England in 1864; soon afterward it made possible images taken inside the Great Pyramid, and in 1866 the American Charles Waldack employed it for a series inside Mammoth Cave in Kentucky (*pl. no. 290*). This substance was also used for indoor portraiture; a group portrait, one of a series of early experiments with magnesium light made by John C. Browne in 1865, includes the editor of the *Philadelphia Photographer*, the journal most eager to promote new photographic technologies in the United States. In its most common form—flash-powder (used from the 1880s on)—magnesium emitted a cloud of acrid white smoke when ignited, and its intense light created harsh tonal contrasts, but until the flash bulb was invented in Germany in 1924 there was no practical alternative portable lighting agent.

Urban nighttime views presented another intriguing problem for photographers, but during most of the 19th century the gaslight used in street lamps was so weak in its illuminating power that exposures of from three to four hours were required to represent the tonalities of the night scene. In an early experiment by Whipple in 1863, photographs of the Boston Common, where the illumination had been boosted with the aid of electric light, still required exposures about 180 times as long as those taken in sunlight. Following the gradual electrification of cities from the 1880s on, there were more frequent attempts to capture people, carriages, and especially the street lighting itself at night. Works by Paul Martin in London and Alfred Stieglitz in New York in the 1890s are among the numbers of images testifying to the fact that both documentary and pictorialist photographers were fascinated by night scenery, especially the reflections of electric lights on glistening pavements and the tonal contrasts between virgin snow and velvety night sky.

The keen interest shown by Talbot and other photographers in objects and phenomena not ordinarily visible to the human eye (*see Chapter 1*), in conjunction with the increasing need on the part of the scientific community for precise information about microorganisms, prompted improvements in the design of equipment and methods that enabled scientists to study such matter as the structure of crystals and the forms of cells. At the same time, astrophotography gained ground with the capability of photographing, besides sun and moon, planetary bodies; by 1877 it was possible to contemplate a complete photographic mapping of the fixed star firmament. In the following decade,

Austrian and German photographers succeeded in making clear images of the phases of lightning in the night sky. Toward the end of the century, X-rays—spectral rays that penetrate opaque structures—were discovered by Conrad Wilhelm Roentgen (recipient of a Nobel prize in 1901) at the University of Würzburg, stimulating their immediate use in camera images for medical diagnoses; within a year more than a thousand publications about X-rays appeared.

### *The Photography of Movement*

The most dramatic developments in terms of popular acclaim occurred in the realm of motion study as the camera began to provide artists, scientists, and the lay person with visual evidence about ordinary matters that the unaided eye could not see, such as walking and running. Talbot's success in stopping action with the aid of an electric flash (mentioned earlier) was acclaimed because it pointed the way to photographing "with all the animation of full life . . . the most agile dancer during her rapid movements . . . the bird of swiftest flight during its passage,"<sup>5</sup> but these experiments were not followed up until the 1880s, when Austrian scientist Ernst Mach, working in Prague, made exposures of flying projectiles, sound waves, and air streams using electric flash as a lighting source. Incidentally, although concerned with providing scientific

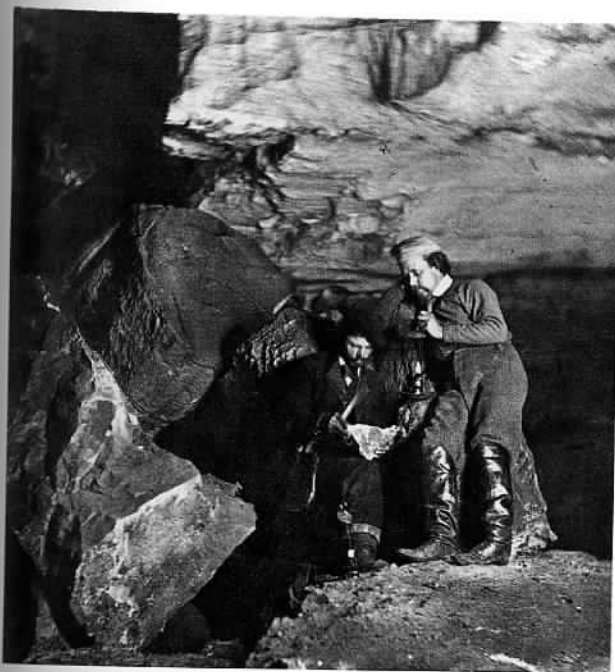
information, Mach also wished these images to be visually pleasing, arguing that aesthetic quality in no way detracts from usefulness. Simultaneously, experimentation in stop-action photography also took off in other directions—one based on the capacity of the short-focal-length lens used on stereograph cameras to freeze motion in street photography (*see below*) and the other on the ability of successive exposures to record the discrete stages of a movement.

Throughout the 19th century, the need to institute proper training programs for horses and the desire by painters of history pictures for greater accuracy in the depiction of battle scenes had led to efforts by scientists to graphically analyze motion; after its invention, photography became the favored instrument for this endeavor. Beginning in 1872, the analysis of motion by the camera was carried on for some 20 years by Eadweard Muybridge and Thomas Eakins in the United States, by Etienne Jules Marey in France, and by Ottomar Anschütz in Germany.

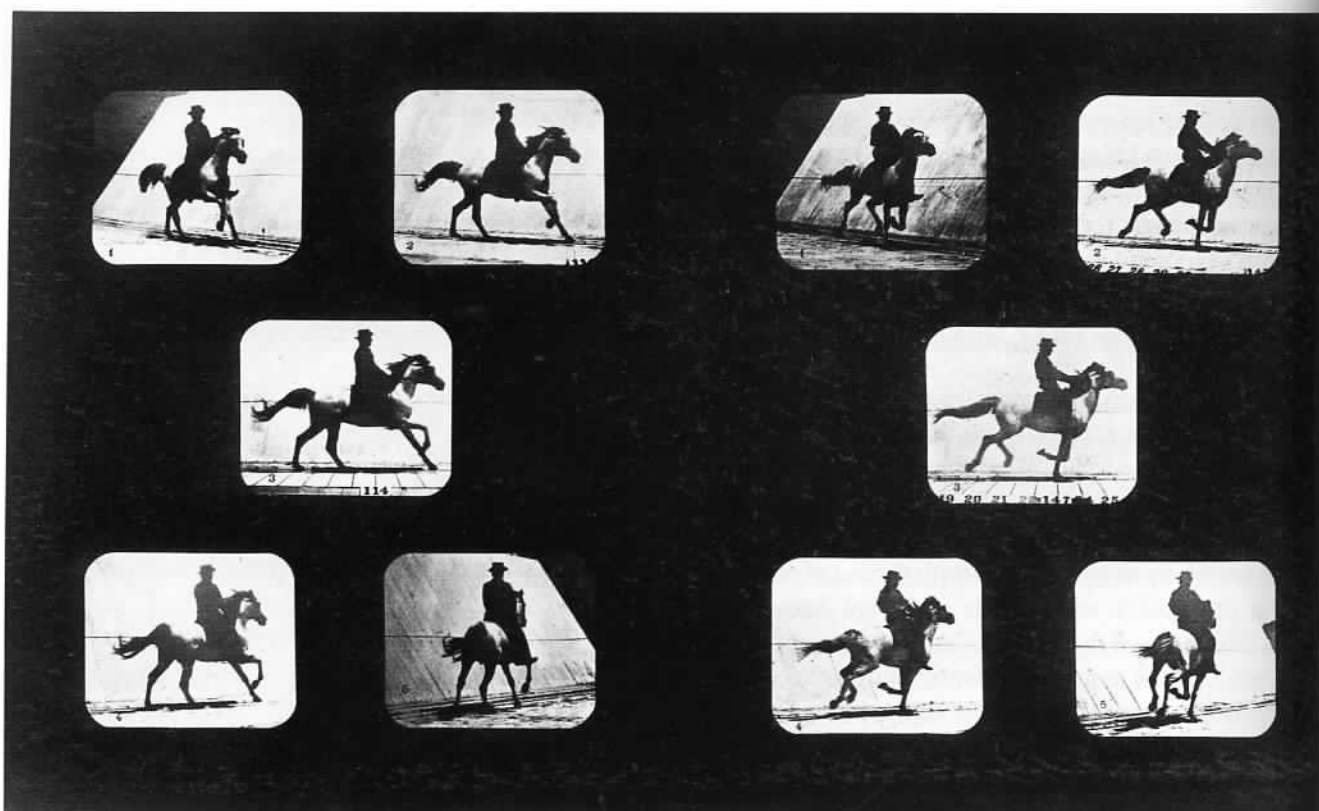
Muybridge's prominent role in this adventure was the result of what he called an "exceptionally felicitous alliance" with Leland Stanford, ex-governor of California, president of the Central Pacific Railroad, and owner of the Great Palo Alto Breeding Ranch (who nevertheless eventually disavowed the collaboration).<sup>6</sup> Curiosity among racing enthusiasts about the positions of the legs of a horse running at full gallop prompted Stanford to call upon Muybridge—by 1872 the most renowned cameraman in the American West—to photograph his trotter Occident in motion. Though not remarkably clear, the first images from Muybridge's camera established to Stanford's satisfaction that at one point all four of the animal's hooves left the ground (*pl. no. 292*)—although not, it should be added, in the position usually shown in painted representations.<sup>7</sup>

This experiment initiated a collaboration, beginning in 1877, between Stanford and Muybridge with the goal of providing visual information about animal movement useful in the training of horses and human athletes (*pl. no. 291*). This time, the animals were photographed as they moved in front of a calibrated backdrop, tripping specially designed, electrically operated shutters of 12 cameras equipped with Dallmeyer stereographic lenses at one-thousandth of a second. News of the sensational photographs that resulted—photographs that documented what the human eye had never registered—appeared in the California press in 1877, in the prestigious *Scientific American* the following year, and in journals in London, Paris, Berlin, and Vienna soon afterward. Having become an international celebrity, Muybridge lectured in the United States and Europe, where his work was acknowledged by the French physiologist Marey.

Late in 1883, as a result of the withdrawal of Stanford's patronage, Muybridge accepted an invitation to continue



290. CHARLES WALDACK. *Beyond the "Bridge of Sighs"* from *Mammoth Cave Views*, 1866. Albumen print. New-York Historical Society; George T. Bagoë Collection, gift of Mrs. Elihu Spicer.



291. EADWEARD MUYBRIDGE. *Studies of Foreshortenings; Mahomet Running*, 1879. Modern print from a wet-plate glass collodion negative. Stanford University Art Museum, Stanford, Cal.

his work at the University of Pennsylvania where he boldly extended the cast of characters and the range of movements. His human subjects were drawn from the teaching staff at the university, from professional models for the female nudes (about whose lack of grace he complained!), and from friends in the arts, among them Eakins, whose hand he photographed in various positions (*pl. no. 293*). In an elaboration of the California experiments, the movements generally were performed in front of a backdrop marked with a grid of vertical and horizontal lines and before a battery of 24 cameras about six inches apart in a line parallel with the grid, while smaller groups of cameras were maneuvered into position to capture frontal, rear, and foreshortened views, as in *Woman Emptying a Bucket on a Seated Companion* (*pl. no. 294*). By the time the Pennsylvania project began in 1884, advances in technology enabled Muybridge to use more sensitive dry plates instead of collodion, and to affix a roller shutter in front of each camera lens. These were operated by an electromagnetic system (designed by the photographer) that tripped the shutters in succession and at the same time operated a chronograph or timing device. In a year-and-a-half of work, Muybridge produced some 100,000 images analyzing the movements involved in walking, running, playing

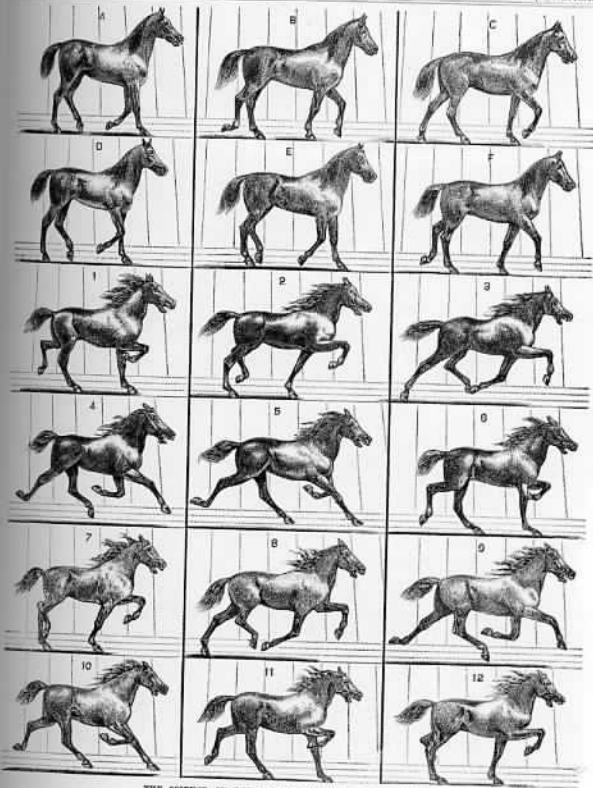
ball, pirouetting, curtsying, and laying bricks, among other activities. The university selected 781 plates for *Animal Locomotion*, an expensive publication, after which Muybridge issued smaller editions entitled *Animals in Motion* and *The Human Figure in Motion*.<sup>8</sup>

Eakins, the American painter whose long-standing interest in the accurate graphic representation of movement had prompted him to correspond with Muybridge and to purchase a set of studies of the horse in motion,<sup>9</sup> applied the knowledge he gained to the depiction of the horse's legs in his first Philadelphia commission—the oil painting, *The Fairman Rogers' Four in Hand* (*pl. no. 295*), in which ironically the carriage wheels are blurred as if moving while the horses' hooves are frozen in one phase of their movement. In his own studies of motion, Eakins, who started to make photographs as soon as dry plates became available (*see Chapter 5*) (*pl. no. 297*), preferred to work with apparatus that registered the successive phases of action on one plate, as can be seen in *History of a Jump* (*pl. no. 298*), a frequently reproduced work.

Marey's contribution to the photographic documentation of movement was made in conjunction with his primary vocation of physiology, for which he initially had devised graphic methods of recording skeletal and muscle

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 NEW YORK, OCTOBER 19, 1878.



THE SCIENCE OF THE HORSE'S MOTIONS (See page 741)

292. UNKNOWN. Cover of "Scientific American" with Muybridge's Series of Horses, October 19, 1878. Engraving. New York Public Library, Astor, Lenox, and Tilden Foundations.

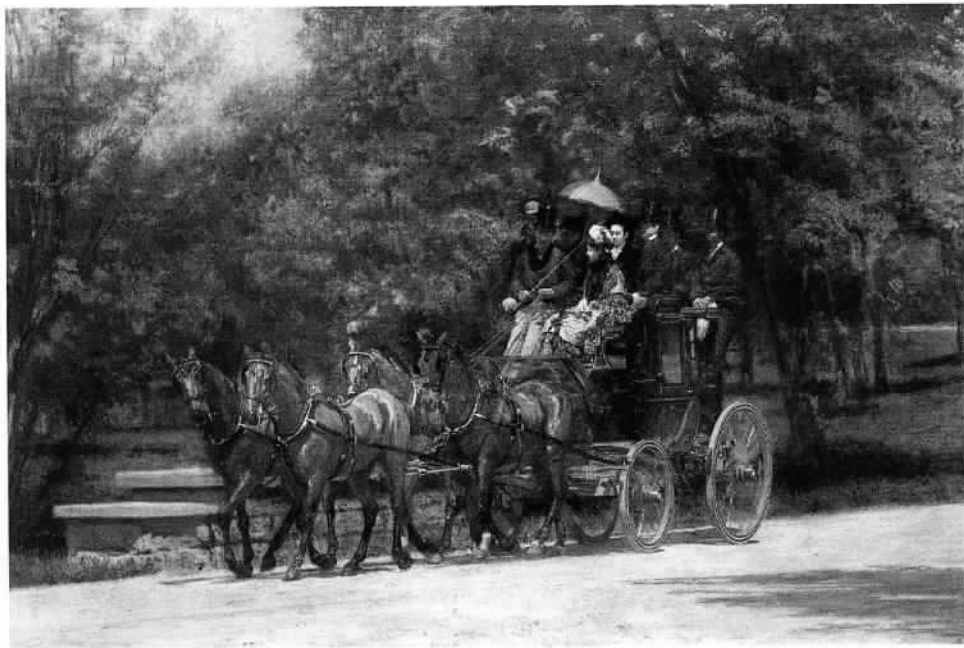
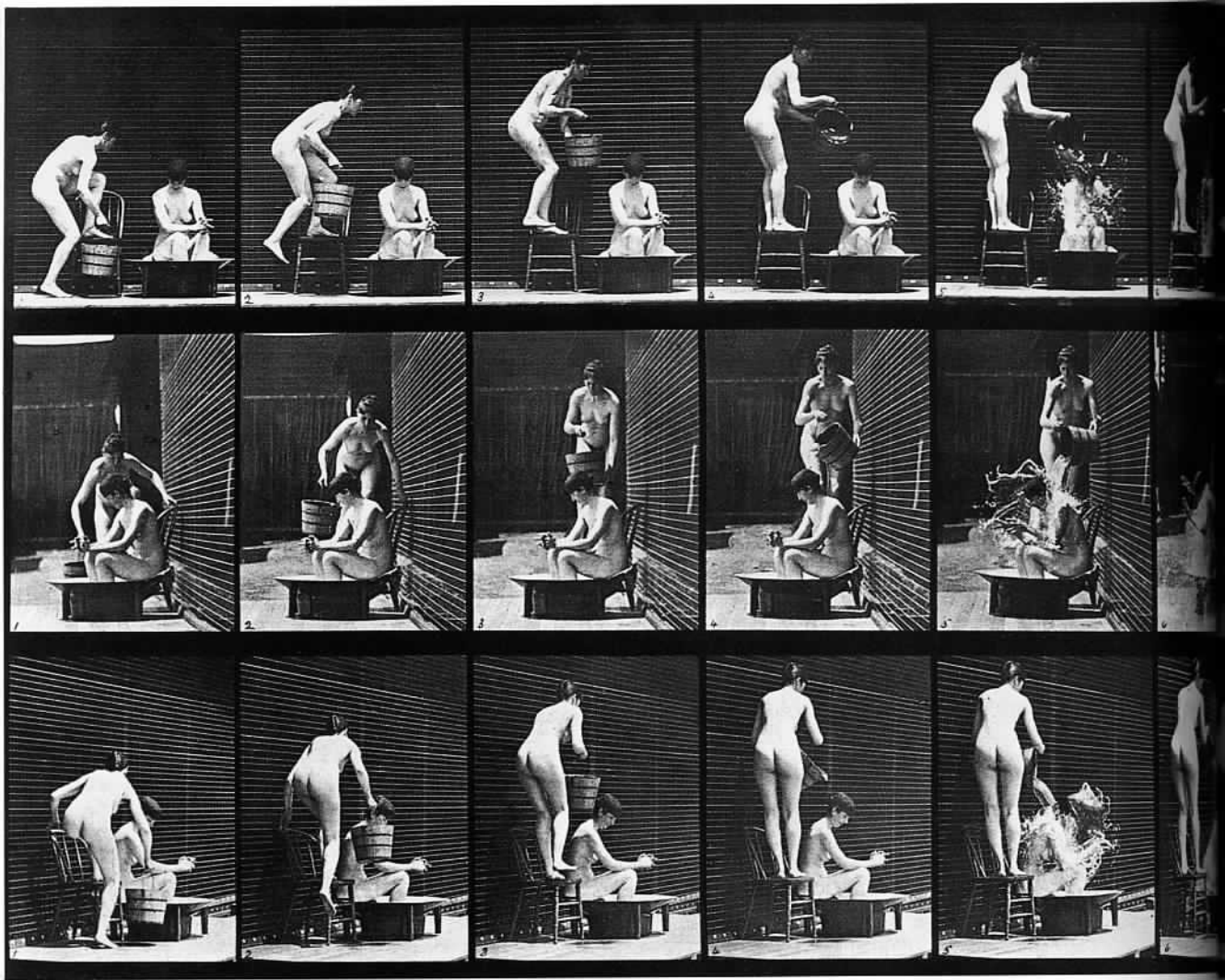
movements. After reading about Muybridge's experiments in *La Nature* in 1878 (and later through personal contact with him), Marey turned to the camera as a more accurate tool for such documentation. Because he was more interested in schematic diagrams of muscle movements than in random, if timed, depictions of moving figures, he adapted for his own use the *fusil photographique* (photographic gun)—a camera inspired by the rotating bullet cylinder of a revolver—which Eakins also used. Originally, Marey produced a series of separate images with this apparatus but soon realized that more precise information could be gained if the sequential movements appeared on the same plate. For these timed images—called chronophotographs (*pl. no. 299*)—Marey employed a rotating slit shutter and experimented with a variety of black and white garments on models who moved against similarly colored backdrops; eventually he settled on a figure clothed entirely in black with bright metal bands attached to the sides of the arms and legs, photographed against a black background. This yielded a "working geometric drawing"—a linear graph of 60 skeletal movements per second.<sup>10</sup> As was true of other kinds of instantaneous studies, these images were to have a telling effect on concepts and styles in art as well as on the scientific understanding of movement.

Similar experiments in arresting motion were made by Anschütz, who had studied photography in Berlin, in Munich with Franz Hanfstaengl, and in Vienna before returning to his native Prussia. Building on a series of stills of horses in motion that he had made with a shutter mounted in front of the plate, Anschütz embarked on a project to produce instantaneous photographs of animals



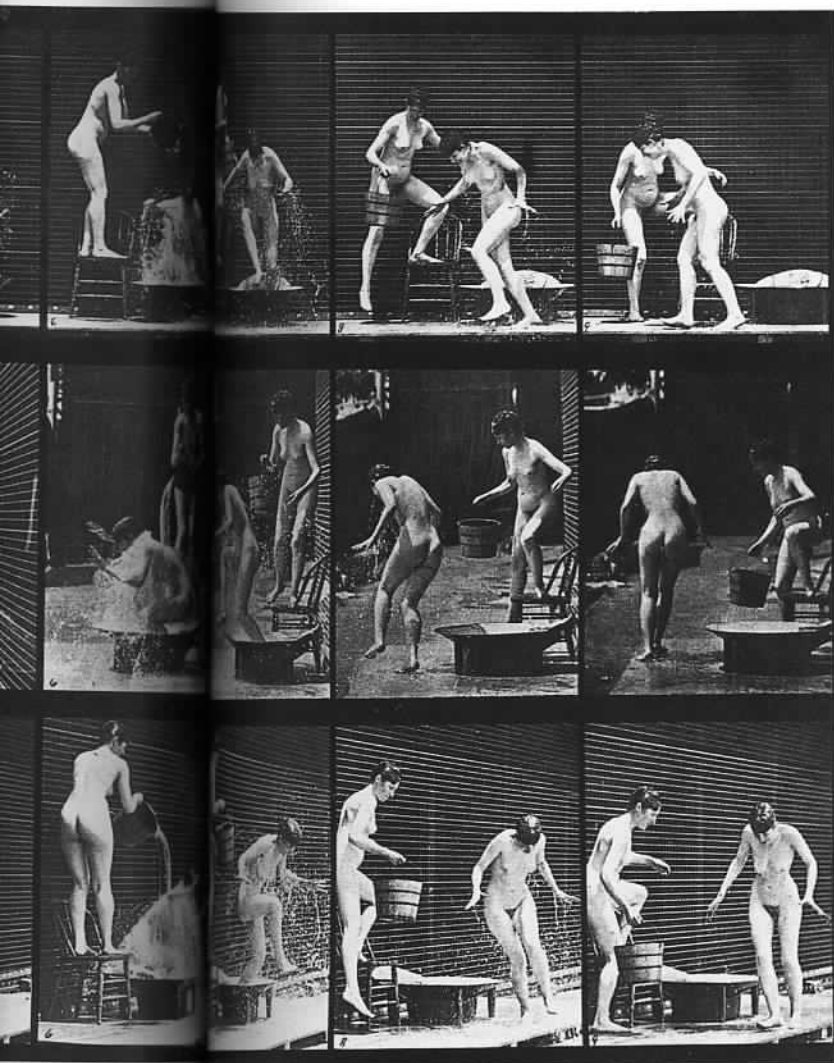
293. EADWEARD MUYBRIDGE. *Eakins's Hand*, from *Animal Locomotion*, 1887. Collotype. Museum of the Philadelphia Civic Center.





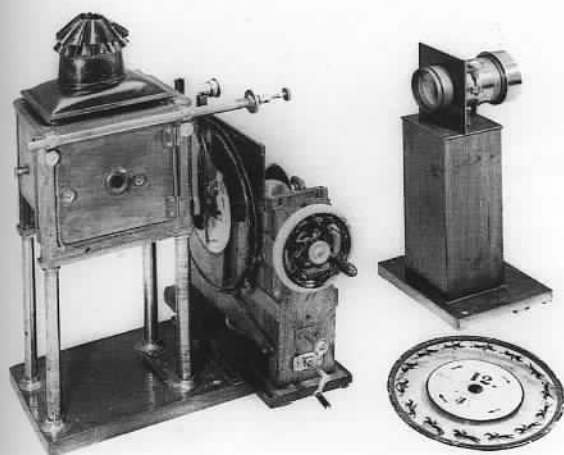
294. EADWEARD MUYBRIDGE. *Plate 408* from *Animal Locomotion*, 1887. Collotype. Photograph Collection, New York Public Library, Astor, Lenox, and Tilden Foundations.

295. THOMAS EAKINS. *The Fairman Rogers' Four-in-Hand*, 1879. Oil on canvas. Philadelphia Museum of Art; gift of William Alexander Dick.



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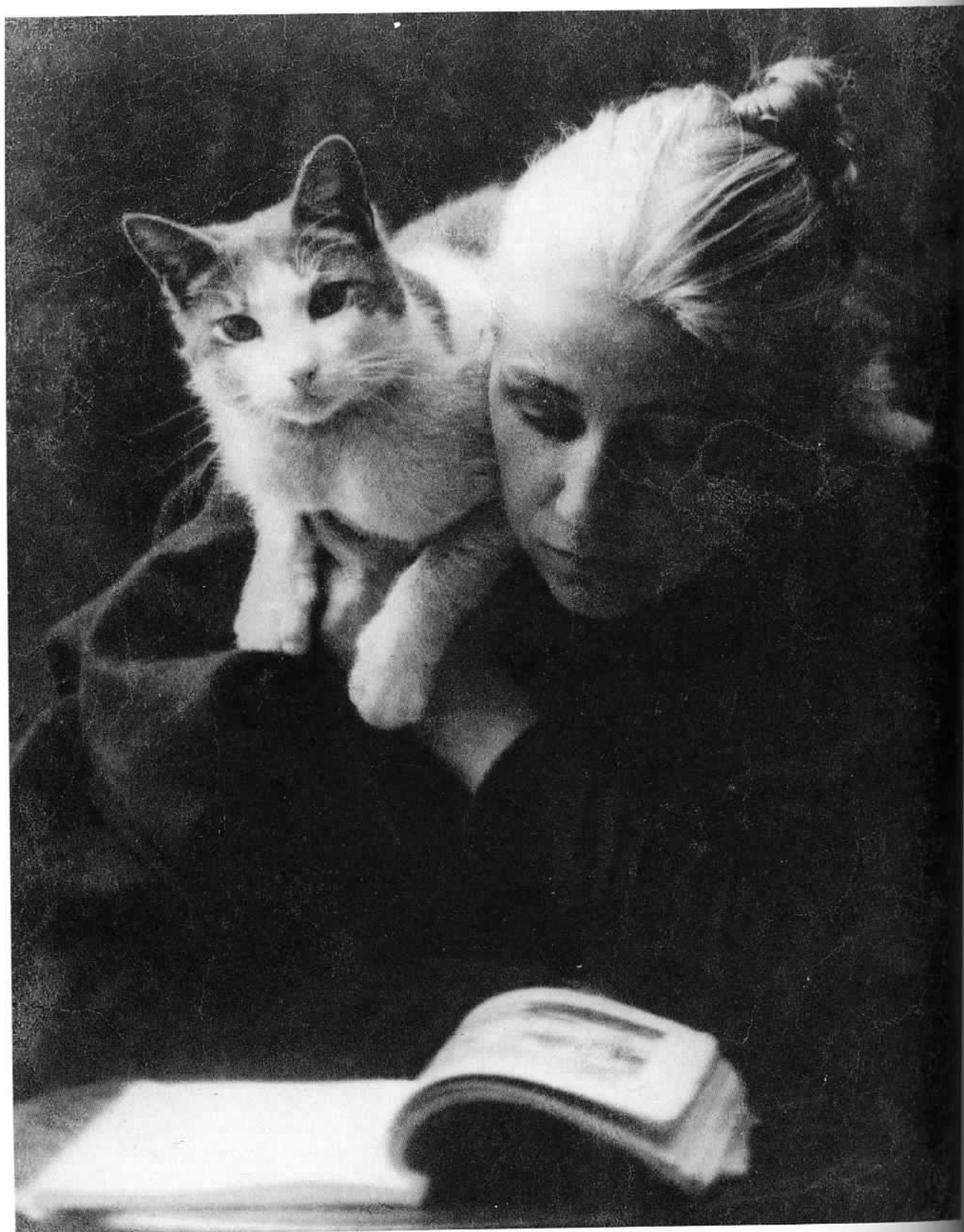


296. EADWEARD MUYBRIDGE. *Zoöpraxiscopes*, c. 1870.  
 Eadweard Muybridge Collection, Kingston Upon  
 Thames Museum, England.

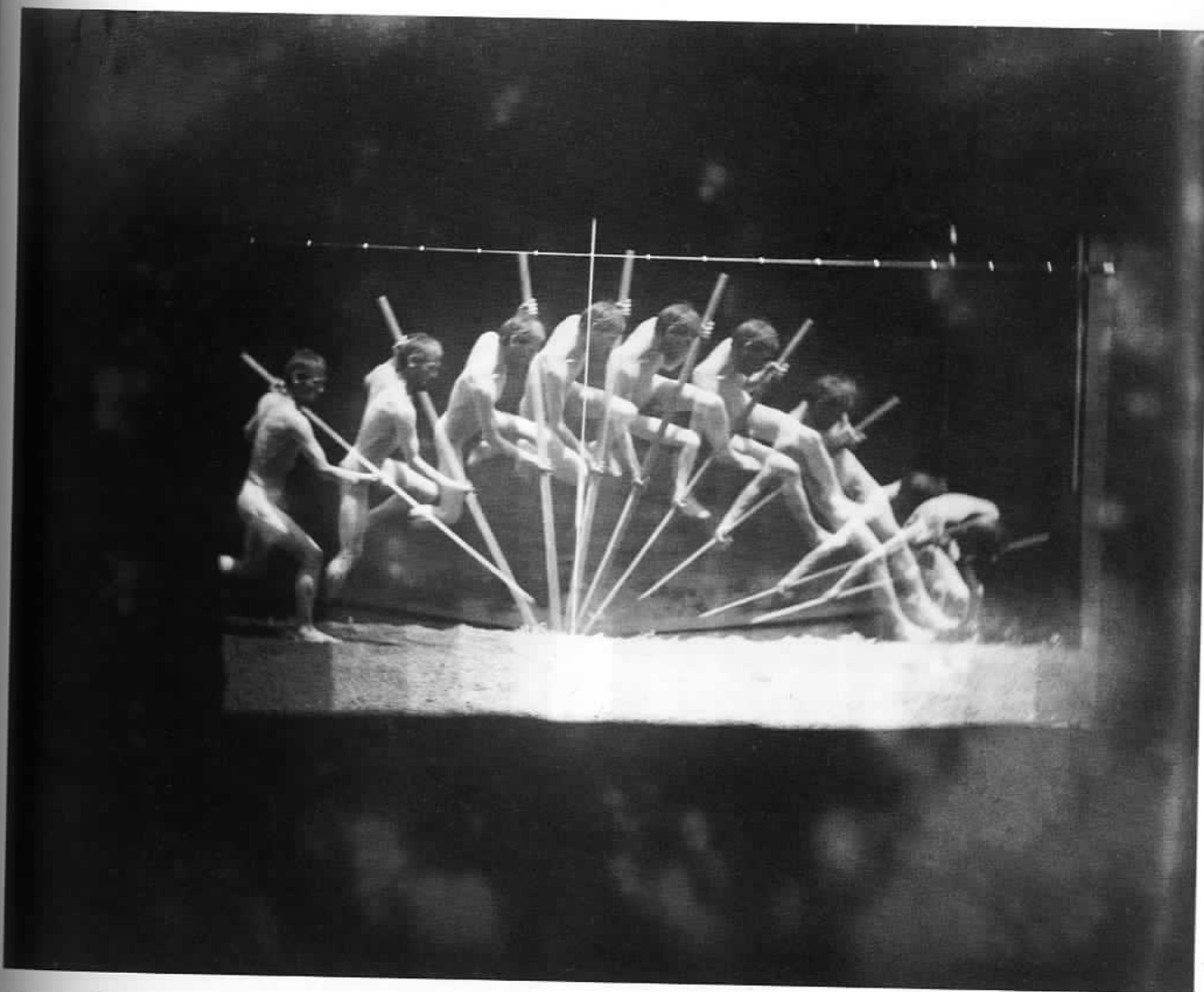
in the Breslau Zoo. Widely publicized, the most famous among these images are 120 exposures of the activities of a family of storks (*pl. no. 300*). By 1886 Anschütz had adapted Muybridge's system of using multiple cameras to the very small instruments with which he worked, and with the aid of the Prussian ministries of war and education he continued to photograph both animal movements and army maneuvers, using a specially designed "Anschütz" lens manufactured by the Goerz Company.

Three of the photographers involved in stop-motion experimentation envisaged the next logical step—the reconstitution of the appearance of movement by viewing the separate analytical images in rapid sequence. For this purpose Marey and Muybridge turned to a range of so-called philosophical toys, among them the Phenakistoscope (or zoetrope) and the Praxinoscope, both of which involved rotating cylinders or disks with a sequence of images on one moving element viewed through either counter-rotating or stationary slots on the other. This reconstitution of motion, suggested first by Sir John Herschel in 1867 and later by Marey in 1873," struck Stanford as a means to test the correctness of the photographic evidence seen in the stills; therefore Muybridge worked out the *Zoöpraxiscopes* (*pl. no. 296*), a device consisting of a glass disk on which images were arranged equidistantly in consecutive order, with a slotted counter-rotating viewer; its function, as stated by its designer, was "for synthetically demonstrating movements analytically photographed from life."<sup>12</sup> These first "motion pictures" were seen by the Stanford family in Palo Alto in 1879, and two years later during Muybridge's trip abroad they were projected for audiences of influential European artists and intellectuals. Anschütz's endeavor in 1887 to reconstruct movement employing an Electro-Tachyscope, a device in which enlarged diapositives (slides), illuminated by a spark, revolved in sequence on a disk, was limited in effect because the small-format images were not projected but had to be viewed directly.

Science and art became more profoundly intertwined when the camera began to supply evidence of animal movement beyond what even the most naturalistically inclined artist was capable of seeing. Stop-motion photography and the various publications attracted a wide spectrum of artists working in a variety of styles, among them the salon painters Adolphe William Bouguereau and Franz von Lenbach, the realist Edgar Degas, the Pre-Raphaelite John Everett Millais, the expressionist Auguste Rodin, and the symbolist James Abbott McNeill Whistler. As in the past, many painters used the newly revealed information to correct inaccurate representation and to make their work appear more naturalistic, as was true of Jean-Louis Meissonier, a French painter of prestigious historical battle



297. THOMAS EAKINS. *Amelia Van Buren with a Cat*, c. 1891. Platinum print. Metropolitan Museum of Art, New York; David Hunter McAlpin Fund, 1943.

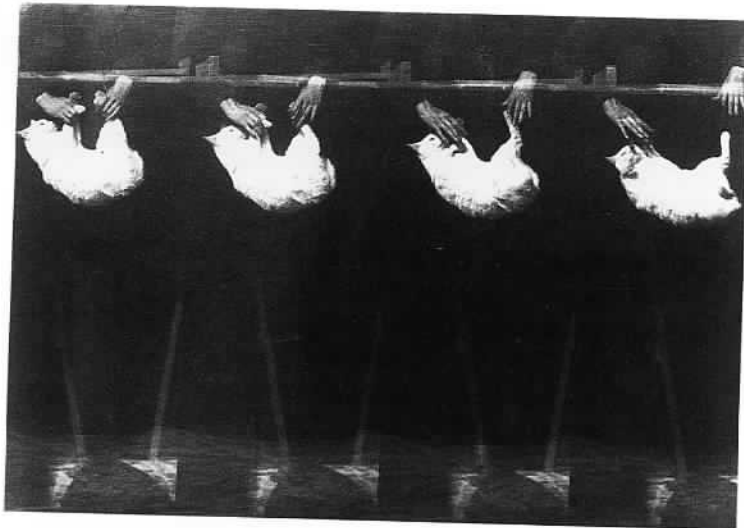


308. THOMAS EAKINS. *History of a Jump*, 1884–85. Gelatin silver print. Philadelphia Museum of Art; gift of George Bregler.

scenes, some of which he altered to conform to the new knowledge. Other artists became engrossed with the idea of movement and time, integrating various views of the same object seen in several positions as the theme of their paintings and creating images suggestive of the fluidity of situations and events. For example, Degas, an enthusiast who was himself a sensitive photographer, conveyed lively animation by painting on a single canvas the same seated dancer in a variety of positions (*pl. no. 301*).

Time, movement, and change exerted an even greater fascination on the early-20th-century European painters who sought a new language to express the shifting realities of their own era. Photography may have been blamed by a small group of these avant-garde artists for a “disgraceful alteration” in seeing, but, as Aaron Scharf has pointed out, “stop-motion camera imagery, in particular the geometric diagrams of Marey, with their emphasis on pattern and

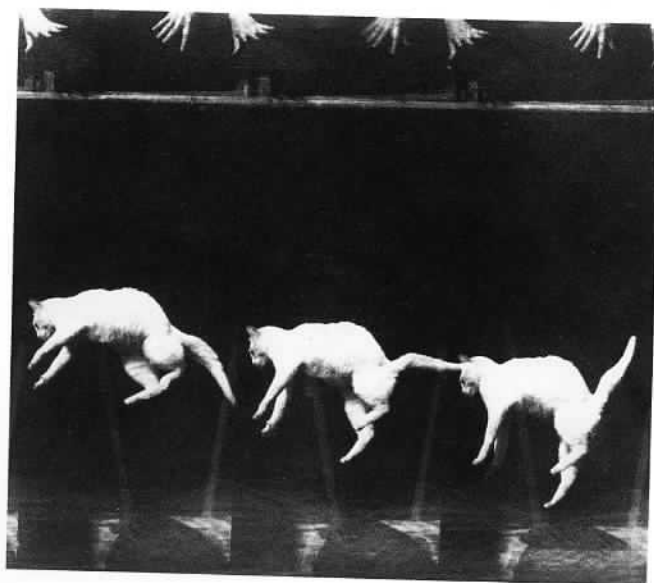
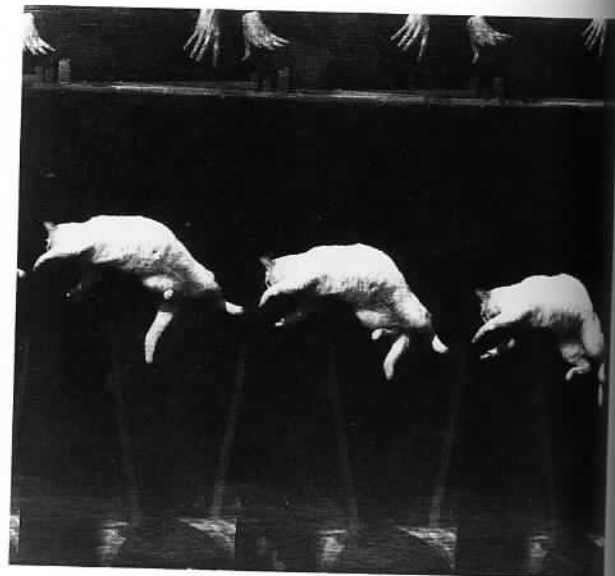
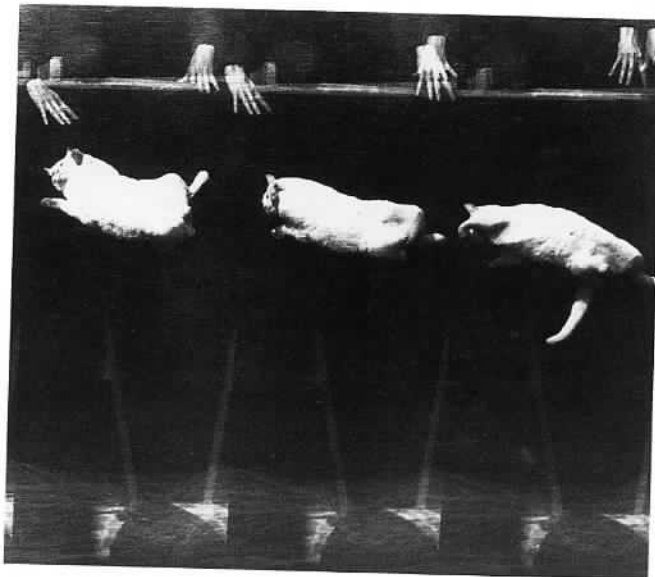
movement, offered Cubist, Vorticist, and Futurist painters a fresh vocabulary.”<sup>13</sup> In the most famous of a number of such examples, *Nude Descending a Staircase* (*pl. no. 302*), French artist Marcel Duchamp adapted Marey’s schema to transform the posed female nude—conventionally an expression of immobility—into a supremely energetic statement that proclaims its modernism while maintaining a tie to hallowed tradition. Of all those seeking to embody the vitality of their time in the painted image, Duchamp most clearly recognized that photography in all its ramifications had subverted the long-standing relationship between the artists and the conventions of painting. Interest in the graphic depiction of movement based on Marey’s studies reached a climax among European artists of the Cubist and Futurist movements between 1911 and 1914, but other kinds of stop-motion photographs have continued to inspire artists everywhere up to the present.

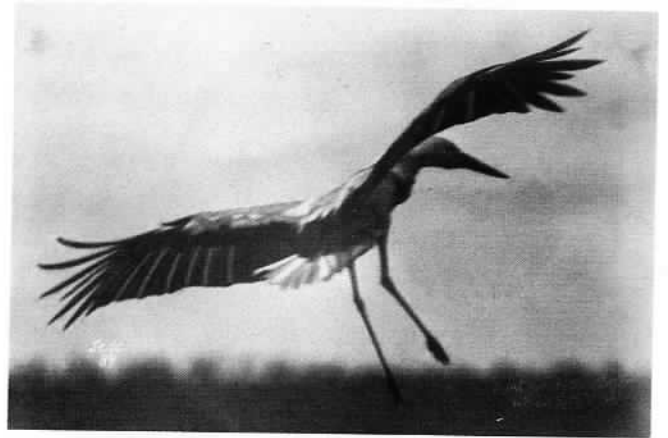


299. ETIENNE JULES MAREY. *Falling Cat Sequence*, c. 1880s. Gelatin silver prints. National Museum of American History, Smithsonian Institution, Washington, D.C.

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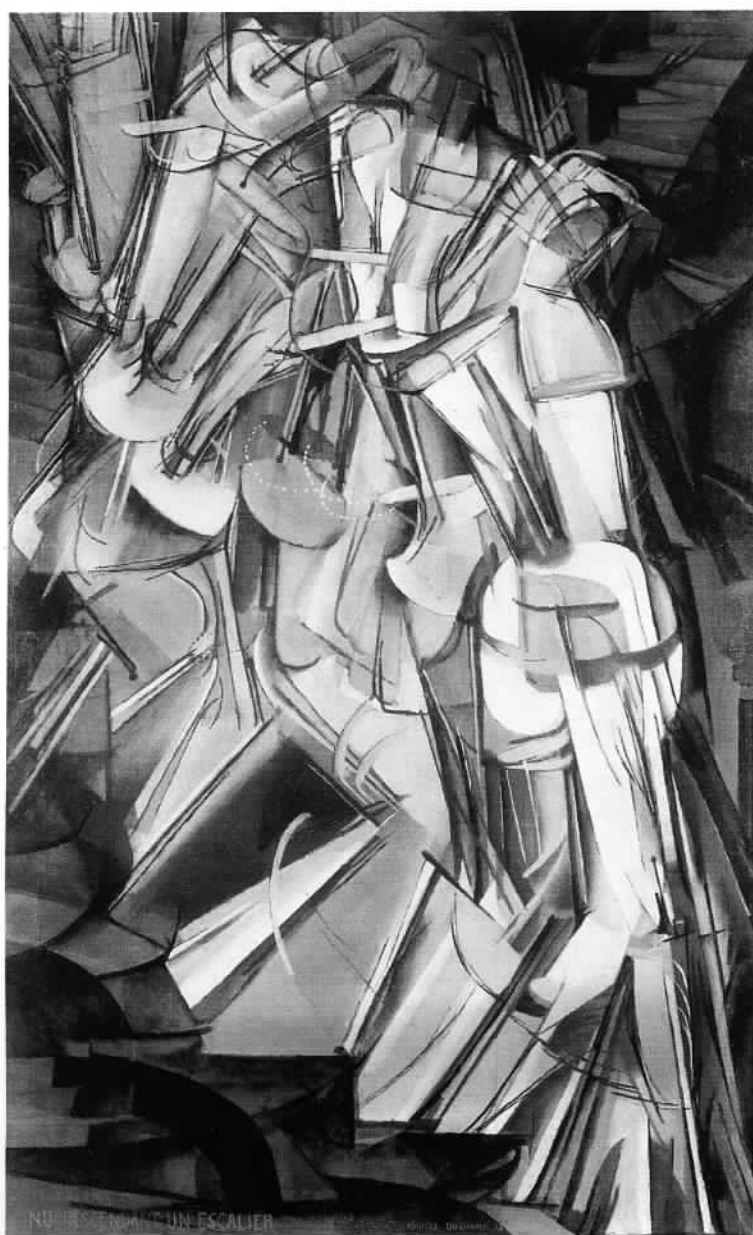
300. OTTOMAR ANSCHÜTZ. *Series of Storks in Flight*, 1884. Gelatin silver prints. Agfa-Gevaert Foto-Historama, Cologne, Germany.







301. EDGAR DEGAS. *Frieze of Dancers*, c. 1883. Oil on canvas. Cleveland Museum of Art; gift of the Hanna Fund.



302. MARCEL DUCHAMP. *Nude Descending a Staircase #2*, 1912. Oil on canvas, Philadelphia Museum of Art, Louise and Walter Arensberg Collection.

## Instantaneous Photographs of Everyday Life

Whether facing the natural landscape or the urban scene, many photographers other than those investigating motion for scientific reasons found that they, too, were eager to arrest the continuous flux of life, to scrutinize and savor discrete segments of time, and to capture them on glass plates and, later, film. As noted, this first became possible with the short-focal-length lenses on stereograph cameras. Roger Fenton, for example, was able to capture the forms of flowing water and fleeting clouds on the stereograph plate. By 1859, Edward Anthony in New York (*pl. no. 189*), George Washington Wilson in Edinburgh, and Adolphe Braun and Hippolyte Jouvin in Paris (*pl. no. 190*)—among others—had begun to make and publish stereograph views of the “fleeting effects” of crowds and traffic on the principal streets of urban centers and, in Jouvin’s case, in marketplaces, public gardens, and at festive events. Acclaimed because they seemed to embody “all . . . life and motion,”<sup>14</sup> these views also disclose the distinctiveness of different cultural environments. Stereographs of city streets reveal at a glance the profound dissimilarities between public life in New York and Paris, for example, while others make visible the contrast between social conditions in industrialized countries and in those being opened to colonization and exploitation (*see Chapter 8*).

That this interest in the flux of urban life engaged painters of the time as well as photographers is apparent in canvases by the French Impressionists that seem to capture as if by camera the moving forms of people and traffic in the streets and parks of Paris. Besides a preference for high horizons and blurred figures, similar to that seen in numbers of stereographs of city streets and exemplified in Claude Monet’s *Boulevard des Capucines* (*pl. no. 303*)—a view actually painted from Nadar’s studio—the Impressionists broke with tradition in their preference for accidental-looking arrangements of figures that appear to be sliced through by the edges of the canvas in the manner of the photographic plate. Certain canvases by these painters also mimic the optical distortions of figure and space visible in stereographs, suggesting that, as Scharf observed, “photography must be accorded consideration in any discussion of the character of Impressionist painting.”<sup>15</sup>

The appeal of the spontaneous and informal continued unabated during the last decade of the 19th century and resulted in the extraordinary popular interest in small, hand-held single-lens cameras that would simplify the taking of informal pictures (*see A Short Technical History, Part II*). Of all the apparatus developed to fulfill this need, the most sensational was the Kodak camera, first marketed in 1888 by its inventor George Eastman.



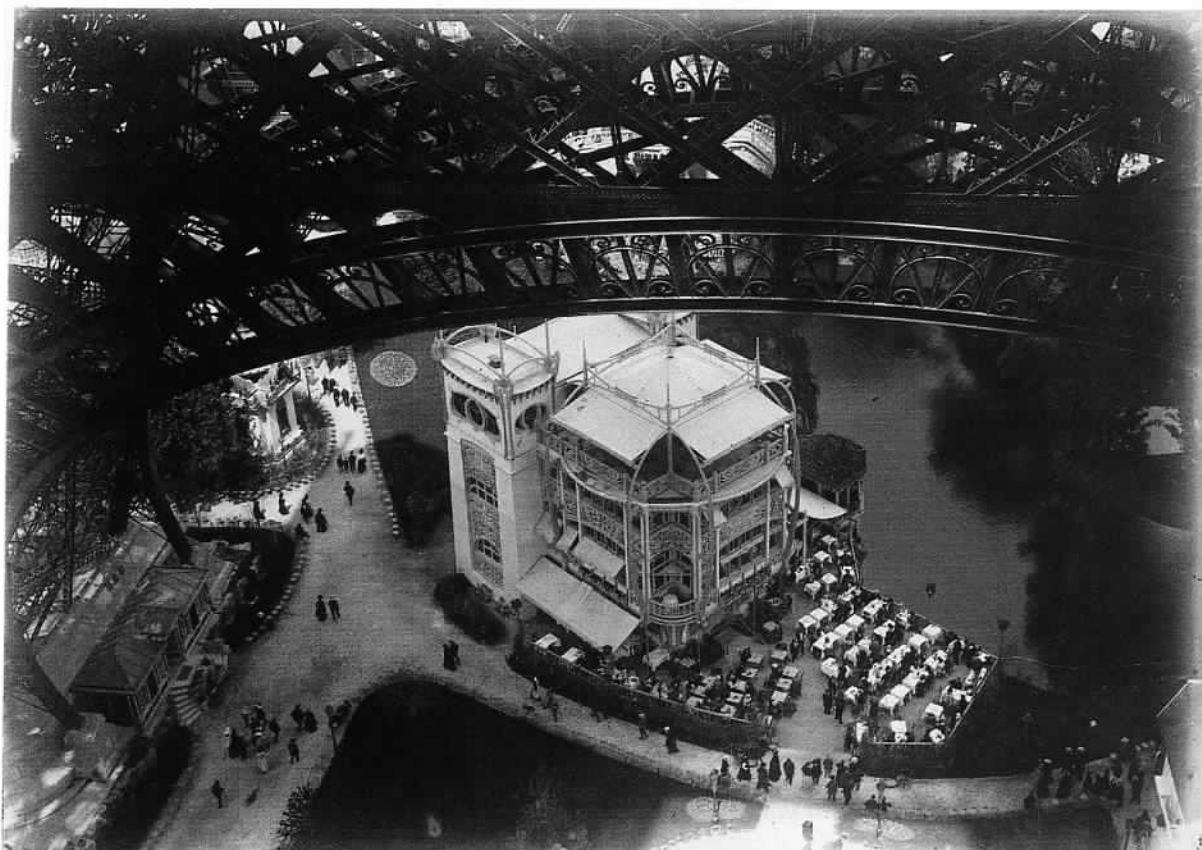
303. CLAUDE MONET. *Boulevard des Capucines, Paris (Les Grands Boulevards)*, 1873–74. Oil on canvas. Nelson-Atkins Museum of Art, Kansas City, Mo.; Kenneth A. and Helen F. Spencer Foundation Acquisitions Fund.

However, this fixed-focus box did more than make it easy for people to take pictures of everyday events; by making the developing and printing independent of the exposure it encouraged a new constituency to make photographs and inaugurated the photo-processing industry.

The Kodak and the snapshot (Herschel’s term to describe instantaneous exposures) were promoted through astute advertising campaigns that appealed to animal lovers, bicyclists, campers, women, sportsmen, travelers, and tourists. Freed from the tedium of darkroom work, large numbers of middle-class amateurs in Europe and the United States used the Kodak during leisure hours to depict family and friends at home and at recreation, to record the ordinary rather than the spectacular. Besides serving as sentimental mementos, these unpretentious images provided later cultural historians with descriptive information about everyday buildings, artifacts, and clothing—indisputable evidence of the popular taste of an era.

The convenience of merely pressing the button resulted in a deluge of largely unexceptional pictures. Despite the





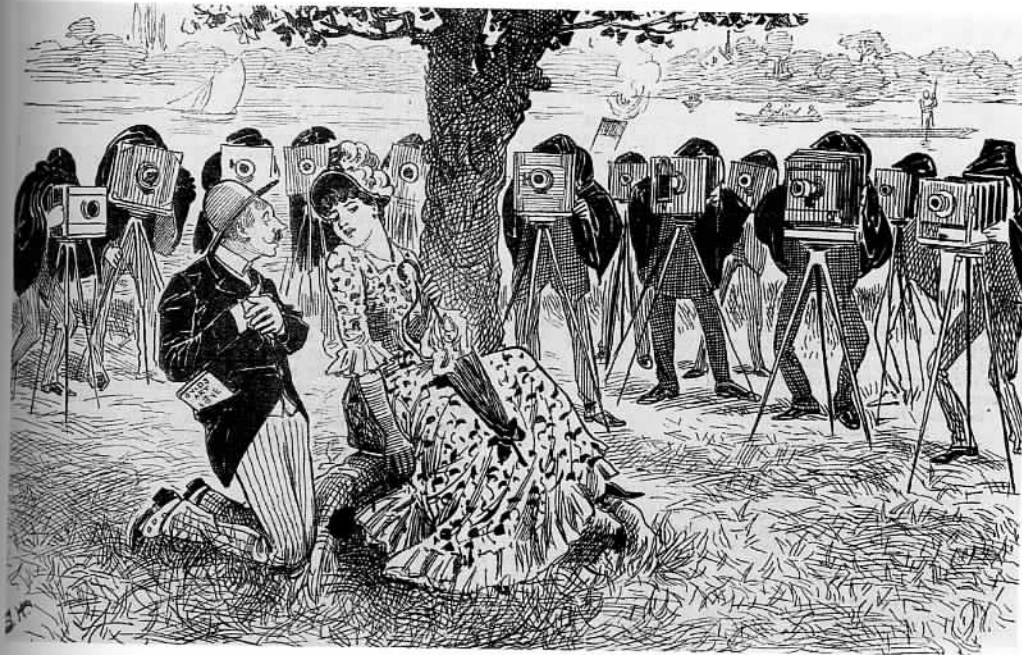
304. EMILE ZOLA. *A Restaurant, Taken from the First Floor or Staircase of the Eiffel Tower, Paris, 1900.* Gelatin silver print. Collection Dr. François Emile Zola, Gif-sur-Yvette, France.

suggestion today that the “aesthetic quality of the snapshot has received less attention than it deserves,”<sup>16</sup> most were made solely as personal records by individuals of modest visual ambitions. Untutored in either art or science, they tended to regard the image in terms of its subject rather than as a visual statement that required decisions about where to stand, what to include, how best to use the light. Further, since they were untroubled by questions of print size or quality, they mostly ignored the craft elements of photographic expression. This attitude, coupled with the fact that “every Tom, Dick and Harry could get something or other onto a sensitive plate,”<sup>17</sup> contributed to the emerging polarity between documentary images—assumed to be entirely artless—and artistic photographs conceived by their makers (and others) to embody aesthetic ideas and feelings.

Nevertheless, whether by accident or design, snapshots do on occasion portray with satisfying formal vigor moments that seem excised from the seamless flow of life. For one thing, the portability of the instrument enabled the user to view actuality from excitingly different vantage points, as in a 1900 image made by French novelist Émile



305. HORACE ENGLE. *Unknown Subject, Roanoke, Virginia, c. 1901.* Gelatin silver print from the original negative. Pennsylvania State University Press, University Park; courtesy Edward Leos.



306. UNKNOWN. "What an Exposure!" from *The Amateur Photographer*, Sept. 23, 1887. Engraving. Gernsheim Collection, Humanities Research Center, University of Texas, Austin.

Zola from the Eiffel Tower looking down (*pl. no. 304*). In its organization of space it presented an intriguing pattern of architectural members and human figures, foreshadowing the fascination with spatial enigmas that would be explored more fully by photographers in the 1910s and '20s. In a different vein, the small camera made possible the refreshing directness visible in images of small-town life by Horace Engle (*pl. no. 305*), an American engineer who used a Gray Stirn Concealed Vest camera before turning to the Kodak. Because the camera was so easy to use, a photographer stationed behind a window or door, as Engle sometimes was, might intuitively manage light and form to explore private gestures and expressions that almost certainly would be withheld were his presence known. This urge to ensnare ephemeral time, so to speak, also foreshadowed developments of the late 1920s when the sophisticated small Leica camera made "candid" street photography a serious pursuit among photojournalists. Viewed in sequence rather than singly, snapshots sometimes suggest an underlying theme or the emotional texture of an event in the manner of later photojournalistic picture stories and might be considered forerunners in this sense, too.

However, despite the claim that "the man with a box-camera has as many chances of preserving pleasure as those blessed (?) [*sic*] with the more expensive instruments,"<sup>18</sup> the Kodak in itself was limited in scope. But the spontaneity it emblemized appealed to many serious photographers, who armed themselves with a more sensitive apparatus of a similar nature—the hand camera. Individuals

of both sexes, from varying backgrounds and classes, of differing aesthetic persuasions, who usually processed their own work, produced the kind of imagery that for want of a better term has come to be called documentation. Turning to the quotidian life of cities and villages for inspiration, artists used the hand camera as a sketchbook, pictorialists tried to evoke the urban tempo, and still others found it a disarming device with which to conquer the anonymity of modern life. Serious workers rather than snapshooters, this new breed of image-maker sought to express a personal vision that embraced the special qualities of the time and place in which they lived.

The invasion of personal privacy that the small camera user could effect with ease became an issue in the late 19th century—one that still elicits discussion today. The question of propriety was raised when individuals and groups of amateurs, often organized into camera and bicycle clubs, began to photograph unwitting people in the streets and at play. Reaction ran the gamut from the gentle satire of an 1887 cartoon in Britain's *Amateur Photographer* (*pl. no. 306*) to more strident denunciations in which "hand-camera fiends" were admonished to refrain from photographing "ladies as they emerge from their morning dip, loving couples, private picnicking parties" under threat of having their cameras "forcibly emptied."<sup>19</sup> Indeed, it has been suggested that the many images of working-class people in the streets around the turn of the century may reflect the fact that they were less likely than middle-class folk to protest when they saw strangers approaching with a camera.<sup>20</sup>

Street life began to attract hand-camera enthusiasts

(and some using larger equipment, as well) partly because it offered an uncommon panorama of picturesque subjects. Previously, photographers in search of visual antidotes for the depressing uniformity of life in industrialized societies had either ventured abroad to exotic lands or had searched out quaint pastoral villages as yet untouched by industrial activity. They also had photographed the city's poor and ethnic minorities for their picturesqueness. As urbanization advanced, documentarians, Pictorialists, hand-camera enthusiasts, and even some who worked with large-format cameras were drawn by the animated and vigorous street life in the city to depict with less artifice the variety of peoples and experiences to be found in urban slum and working-class neighborhoods.

To some extent, the career of Paul Martin, working in London from about 1884 on, typifies the changes that occurred in the practice, usage, and character of photography everywhere. When Martin began an apprenticeship as an engraver, he first came in contact with photography

as a useful resource for the illustrator. He taught himself the craft from magazines that, along with amateur photography clubs, provided technical assistance and aesthetic guidelines to growing numbers of hand-camera enthusiasts. Some, like Martin, were working people from moderate backgrounds who were unable to afford expensive camera equipment or time-consuming processes that used the platinum and carbon materials favored by aesthetic photographers. Martin became an accomplished craftsman nevertheless, adept at making composites, vignetting, and solving technical problems connected with photographing out-of-doors at night. During the 1890s, a number of his straight silver prints were awarded prizes in competitions despite being judged at times as lacking in atmosphere and being too "map-like."<sup>20</sup>

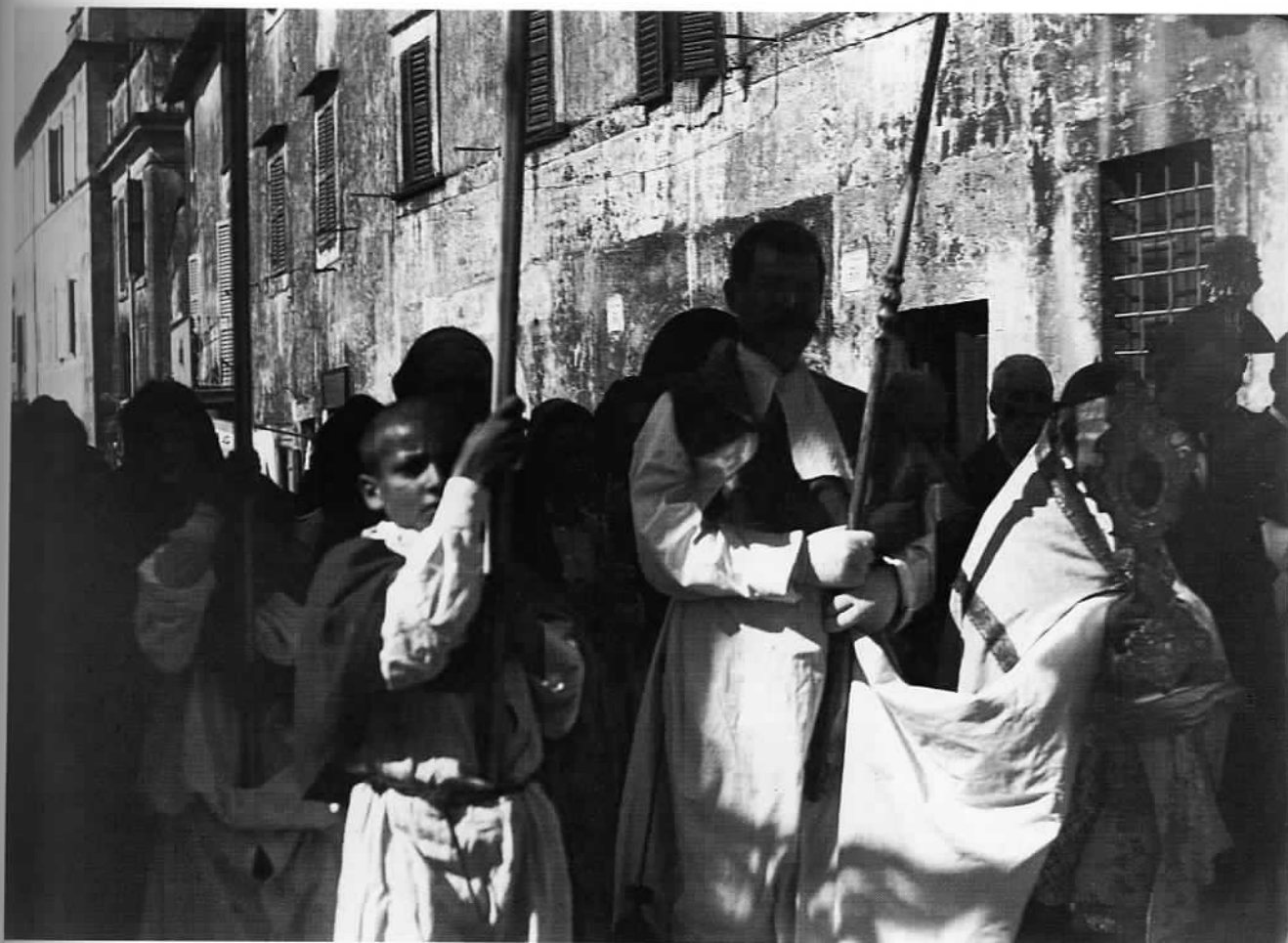
Recent investigations have turned up numbers of photographers of the quotidian scene, both in cities and in rural localities. In many cases the photographers remain unknown, despite the fact that such images frequently



307. PAUL MARTIN. *Entrance to Victoria Park*, c. 1893. Gelatin silver print. Gernsheim Collection, Humanities Research Center, University of Texas, Austin.

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308. GIUSEPPE PRIMOLI. *Procession, Ariccia*, c. 1895. Gelatin silver print. Fondazione Primoli, Rome.

were reproduced on postcards when this form of communication grew in popularity. Among those who supplied images for this purpose were Roll and Vert in France and Emil Mayer in Austria. Photographing daily life attracted women, who were beginning to become involved in photography in greater numbers. Amélie Galup and Jenny de Vasson in France, Christina Broom in England, and Alice Austen and Chansonetta Stanley Emmons in the United States (*see below*) were among the many who took cameras into streets and rural byways. Because the images are of scenes that take place in the home and workplace as well as on the street, at times they may seem similar to the social imagery by John Thomson in London and Jacob Riis in New York—social photographers who worked in the slums of their respective cities (*see Chapter 8*). However, the emotional tone in these works usually is lighthearted and the scenes casually composed.

Martin claimed that he became a street photographer because he lacked the financial means to become a Pictorialist,<sup>21</sup> but in fact, enthusiasm for “real life” cut

across class lines, appealing to a broad sector of the population that included wealthy individuals typified by Giuseppe Primoli and Jacques Henri Lartigue. Primoli, a Bonaparte descendant who numbered among his circle the intellectual and cultural elite of Italy and France, worked between 1889 and 1905 (at first with a brother) to document the doings of beggars, laborers, street vendors, and performers, as well as the carefree pursuits of his own social class. Mostly amiable in tone, with open space surrounding the figures that are the focus of attention, Primoli’s images could also be intense, as evidenced by the strong contrasts and spatial compression in a view of a religious procession in Ariccia (*pl. no. 308*).

The search for the unexpected in the tedium of daily occurrence was another aspect of hand-camera street photography of the time. As urbanization advanced, it swept away the distinctive physical and social characteristics of the culture of the past, substituting undifferentiated built environments and standardized patterns of dress and behavior. Hand-camera users endeavored to reaffirm individ-



309. JACQUES HENRI LARTIGUE. *Avenue du Bois de Boulogne*, January 15, 1911. Gelatin silver print. © Association Lartigue/SPADEM/VAGA

uality and arrest time in the face of the encroaching depersonalization of existence. The French photographer Lartigue was exceptional in that he was given a hand camera in 1901 at the age of seven and continued to use it throughout his lifetime to chronicle the unexpected. His early work portrayed the idiosyncratic behavior of his zany upper-class family whose wealth and quest for modernity impelled them to try out all the latest inventions and devices of the time, from electric razors to automobiles to flying machines. The young Lartigue's intuitive sensitivity to line, strong contrast, and spatial ambiguity, as seen in a view made in the Bois de Boulogne in 1911 (*pl. no. 309*), evokes the insouciance of affluent Europeans before the first World War, a quality that is visible also in many images by unnamed photographers who worked for the illustrated press at the time.

Other photographers sought out moments of extreme contrast of class and dress, as in *Fortune Teller* (*pl. no. 310*) by Horace W. Nicholls, a professional photojournalist who recorded the self-indulgent behavior of the British

upper class before World War I. Others celebrated moments of uncommon exhilaration, a mood that informs *Handstands* (*pl. no. 311*) by Heinrich Zille, a graphic artist who used photography in his portrayal of working-class life in Berlin around 1900. Still others, Stieglitz among them, looked for intimations of tenderness and compassion to contrast with the coldness and impersonality of the city, exemplified in *The Terminal* (*pl. no. 312*) and other works made soon after Stieglitz returned to New York from Germany in 1890.

Indeed, in the United States at the turn of the century, photographers were specifically urged to open their eyes to the "picturesqueness" of the city, to depict its bridges and structures, to leave the "main thoroughfares" and descend to the slums where an animated street life might be seen.<sup>27</sup> In part, this plea reflected the conviction held by Realist painters, illustrators, pictorial and documentary photographers, joined by social reformers, educators, and novelists, that the social life of the nation was nurtured in the cities, that cities held a promise of excitement in their free-

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310. HORACE W. NICHOLLS. *The Fortune Teller*, 1910. Gelatin silver print. Royal Photographic Society, Bath, England.



311. HEINRICH ZILLE. *Handstands*, c. 1900. Gelatin silver print. Schirmer/Mosel, Munich.



312. ALFRED STIEGLITZ. *The Terminal, New York, 1892*. Gravure print. From *Camera Work*, 1911, No. 36. Museum of Modern Art, New York; gift of Georgia O'Keeffe.



313. ROBERT L. BRACKLOW. *Statue of Virtue, New York, after 1909*. Gelatin silver print from the original negative. New-York Historical Society; Alexander Alland Collection.

dom from conformity and ignorance. Stieglitz, in whose magazine the article appeared, confessed in 1897 that after opposing the hand camera for years, he (and other Pictorialist photographers) had come to regard it as an important means of evoking the character of contemporary life. His suggestion that those using the hand camera study their surroundings and "await the moment when everything is in balance"<sup>23</sup> seems to have forecast a way of seeing that 30 years later became known as the "decisive moment." Whether undertaken consciously or not, the endeavor to assert the prodigal human spirit by capturing the fortuitous moment long remained one of the leitmotifs of 20th-century small-camera photography.

Nor was this development limited to New York. Soon after arriving in California from Germany in 1895, the young Arnold Genthe obeyed his "vagabond streak," as he called it,<sup>24</sup> to photograph with a concealed hand camera in the reputedly inhospitable Chinese quarter of San Francisco. Over the next ten years, he returned continually to the "Canton of the West" in search of tantalizing glimpses of an unusual culture. The images range from the Pictorial to the reportorial (*pl. no. 314*), a dichotomy that continued to characterize his work. As owner of a professional studio in San Francisco at the time of the 1906 earthquake, Genthe documented the aftermath of the disaster with fine dramatic clarity, but after relocating in New York he specialized in polished soft-focus portraits of dancers and theatrical figures.

Ethnic enclaves were not the only source nor was the small camera the only instrument for capturing the kinds of subjects now considered picturesque. Countless photographers began to document aspects of the life around them using large-plate view cameras to penetrate beyond surface appearances. That the city could be approached as a subject using a large-format camera and photographed with reserved grace rather than subjective urgency can be seen in the images made by Robert L. Bracklow, an amateur photographer of means, to document the physical structures, architectural details, and street activity in New York at the turn of the century (*pl. no. 313*). With a flair for well-organized composition, Bracklow's photographs of slums, shanties, and skyscrapers suggest that by the end of the 19th century both hand and view cameras had become a significant recreational resource. For instance, E. J. Bellocq, a little-known commercial photographer working in New Orleans during the 1910s, was able to pierce the facade of life in a Storyville brothel. Whether commissioned or, as is more likely, made for his own pleasure, these arrangements of figure and decor (*pl. no. 315*) project a melancholy languor that seems to emanate from both real compassion and a voyeuristic curiosity satisfied by the camera lens.<sup>25</sup>

The new photographic technologies had a signal



314. ARNOLD GENTHE. *Man and Girl in Chinatown*, c. 1896. Gelatin silver print. Sheldon Memorial Art Gallery, University of Nebraska, Lincoln; F.M. Hall Collection.

effect on the role of American women in photography.<sup>26</sup> Simplified processing enabled greater numbers of "genteel" women to consider photography a serious avocation and even a profession, because by the late 1880s they were able to take advantage also of the availability of domestic help and store-bought food, both of which provided some relief from household routines. At about the same time, writers in the popular and photographic press, suggesting that the medium was particularly suited to "the gentler sex," urged women to consider "an accomplishment which henceforth may combine the maximum of grace and fascination."<sup>27</sup> Encouragement came also from the Federation of Women Photographers and from competitions designed especially for female photographers. Unlike the older arts, photography did not require training in male-dominated academies, long periods of apprenticeship, or large commitments of time to practice, although greater involvement in the medium usually yielded more impressive results.





315. E. J. BELLOCQ. From *Storyville Portraits*, c. 1913. Silver print on printing-out paper, made by Lee Friedlander from the original plate. © Lee Friedlander, New City, N.Y.



316. CHANSONETTA  
STANLEY EMMONS.  
*Children at Well*, 1900.  
Gelatin silver print.  
Culver Pictures, New  
York.



317. ALICE AUSTEN.  
*Hester Street, Egg  
Stand*, 1895. Gelatin  
silver print. Staten  
Island Historical  
Society, Staten Island,  
N.Y.; Alice Austen  
Collection.

In addition to those who became prominent in photojournalism and Pictorialism (see *Chapters 8 and 9*), many women used both hand and view cameras to document family life and domestic customs, recreational and street activities. Chansonetta Stanley Emmons and Alice Austen were two such women. Images of small-town life, typified by a scene in the village of Marlborough, New Hampshire (*pl. no. 316*), were made in 1900 by the recently widowed Emmons, who had turned to photography as a solace and a means of augmenting a meager income. Nurtured on genre imagery, Emmons's domestic scenes often were sentimental and derivative, but she also could capture evanescent moments of childhood play with refreshing directness. Austen, originally from a well-to-do Staten Island family, was less typical in that she not only devoted some 25 years to a visual exploration of her own social milieu, but she also investigated the vibrant working-class neighborhoods of lower Manhattan (*pl. no. 317*) with an eye for expressive lighting and gesture. In Austen's case, as was undoubtedly true of other women, the camera provided a

means to overcome psychological and social barriers, enabling a shy and conventionally reared Victorian "lady" to participate in the excitement of urban street life.

In the decade before 1900, the possibility that camera views of the city might be a salable commodity began to interest individuals and commercial studios. Using view cameras and tripods as well as hand cameras, photographers working on their own or for photographic enterprises undertook to provide images for postcards and magazine reproduction, for antiquarian societies and libraries, and for artists and decorators, creating in the process a formidable number of such visual documentations. For instance, in New York between 1890 and 1910, Joseph Byron (descendant of a family of English photographers) was involved in a business with his wife and five children, including the well-known Percy; they exposed and processed almost 30,000 large-format views both on commission and on speculation. A similar pictorial record of Paris can be seen in the work of Paul Géniaux, Louis Vert, and the Seeberger brothers. These images comprise scenes of urban



318. JULES, HENRI, and LOUIS SEEBERGER (SEEBERGER FRÈRES). *Fishermen near Washerwoman's Boats*, c. 1905–10. Gelatin silver print. Caisse Nationale des Monuments Historiques et des Sites, Paris. © Arch. Phot. Paris/SPADEM.

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319. EUGÈNE ATGET.  
*Avenue des Gobelins*, 1925.  
Gold-toned printing-out  
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Art, New York; Abbott-  
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labors (*pl. no. 318*) as well as the activities of the bourgeoisie on their daily rounds. With exceptions, these competent if detached records of buildings, neighborhoods, sporting and theatrical events, people at play and at work are interesting mainly for their rich fund of sociological information.

The most extensive and in some judgments the most visually expressive document of the urban experience—also of Paris—was begun just before 1900 by Eugène Atget (*pl. no. 326*) (see *Profile*). Using a simple 18 x 24 centimeter camera mounted on a tripod, this former actor began to document the city and its environs for a varied clientele that included architects, decorators, painters, publishers, and

sculptors. Aside from their value and use as descriptive records of buildings, decor, statuary, storefronts (*pl. no. 319*), costumes, and gardens, these beautifully composed images resonate with an intense though not easily defined passion. Rich in detail but not fussy, affecting but not sentimental, this great body of work represents Atget's yearning to possess all of old Paris and in so doing to embrace the authentic culture of France that modern technology was destroying.

Other large-scale commercial documents often exhibited a patriotic character, reflecting the growing movements for national self-determination taking place in various parts of Europe. Forty thousand views of Irish life,



320. ROBERT FRENCH. *Claudy River, Gweedore, County Donegal*, c. 1890. Gelatin silver print. National Library of Ireland, Dublin.

which include scenes of work and play, of city thoroughfares and serene country landscape (*pl. no. 320*), were made by Robert French for the firm of William Lawrence in Dublin. And in view of the political agitation for independence among groups inhabiting the vast reaches of Russia, it is not surprising to find the tradition of ethnographic images, mentioned earlier, continuing into the dry-plate era, with photographers from many sections documenting places and customs in order to bolster feelings of national identity. Just as ethnographers in Eastern Europe were determined to collect evidence of a distinctive literature and folk music, photographers in Latvia, Bulgaria, Croatia, and Poland contributed to this surge of nationalism with images of national costume, typical environments, and regional customs. Since in these less industrialized regions the medium received less financial support from the urban populace than in Western Europe and the United States, distinctions between professional and amateur, between

documentary and artistic were not as codified; the same individual might fulfill all these roles, might at the same time make commercial post cards and other documentations and submit works to the local camera club exhibitions.

A similar ethnic consciousness emerged among black photographers in the United States in the early 20th century. The demand for portraits and other kinds of pictorial records, coupled with easier access to equipment, materials, and processing resulted in an increase in the number of commercially successful studios run by black entrepreneurs in their own communities. From the early days of the medium, daguerreotypes and other camera portraits had been made by unheralded black photographers, but these later enterprises produced images that depicted, in addition, the social activities of upwardly mobile urban dwellers and life in rural communities, made both for commerce and as expressions of black pride. Addison N. Scurlock started a portrait studio in Washington in 1904 and soon began



321. ADDISON N. SCURLOCK. *Waterfront*, 1915. Gelatin silver print. © Scurlock Studio, Washington, D.C.



322. JAMES VAN DER ZEE. *Couple in Raccoon Coats*, 1932. Gelatin silver print. James Van Der Zee Estate, New York; © 1969 James Van Der Zee.

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323. UNKNOWN PHOTOGRAPHER (American). *Untitled*, c. 1900-10. Gelatin silver post card. Private Collection.

to document activities at Howard University where he was official photographer; *Waterfront*, 1915, (*pl. no. 321*) is suggestive of his feeling for mood and texture when not confined to portraiture or straight documentation. James Van Der Zee, probably the best-known black studio photographer in the United States, began a professional career in 1915, opening an establishment in Harlem a year later to which the well-to-do and famous came for portraits (*pl. no. 322*). He also documented social activities for the community and made genre images for his own pleasure. Had these photographers not faced the necessity of earning a living in studio work, both might have produced such images more frequently, a situation that obviously was true also for the majority of commercial photographers everywhere who were able to make affecting documents of their social milieu only in the time spared from studio work. Unlike white Americans, however, black photographers



324. UNKNOWN PHOTOGRAPHER (American). *In Memory of Ida Brayman*, 1913. Gelatin silver post card. Gotham Book Mart, New York.

could not afford the leisure and financial freedom to indulge in personal expression nor were they able to find a niche in photojournalism, advertising photography, or social documentation until after the second World War.

Anyone who has poked around attics, antique shops, and secondhand bookstores is aware of the formidable quantities of photographic post cards that have accumulated since camera techniques were simplified in the late 19th century. The post card format—approximately  $3\frac{1}{4} \times 5\frac{1}{2}$  inches—appeared in Europe in 1869 and shortly after in the United States, but it was not until after the happy conjunction of new rural postal regulations, hand cameras, and special printing papers that occurred shortly after the turn of the century that the picture card became immensely popular with Americans—individuals and commercial studios alike. Artless yet captivating, post card images (even when turned out in studios) display a kind of irreverent

good humor in their depictions of work, play, children, and pets (*pl. no. 323*), although they also could deal with grimmer realities (*pl. no. 324*). In the absence of telephones, glossy picture magazines, and television, the photographic postcard was not merely a way to keep in touch but a form of education and entertainment as well.

### *Photographs in Color*

Of all the technological innovations occurring in photography between 1870 and 1920, none was more tantalizing or possessed greater potential for commercial exploitation than the discovery of how to make images in color. This search, which had begun with the daguerreotype, entailed much dead-end experimentation before a practicable if temporary solution was found in the positive glass Autochrome plate, marketed in 1907 by its inventors the Lumière brothers (*pl. no. 325*) (*see A Short Technical History, Part II*). Though easy to use, the process required long exposures, was expensive, and though the colors were subtle they were not faultless. Because a simple, efficient method of turning the transparencies into satisfactory pho-



325. UNKNOWN PHOTOGRAPHER (French). *Lumière Brothers*, n.d. Gelatin silver print. La Fondation Nationale de la Photographie, Lyon, France.

tographic color prints was not available, the images had to be viewed in a diascope (single) or stereograph viewer; as late as the 1920s commercial portraitists still were being advised to send black and white work out to be hand-painted when a color image was desired. Nevertheless, Autochrome from the start attracted amateurs with leisure and money, photographers of flowers and nature, and in the United States, especially, individuals and studios involved in producing commercial images for publication. It also appealed briefly to aesthetic photographers who recognized at the time that rather than augmenting reality, color was best treated as another facet of artistic expressiveness (*see Chapter 7*).

French "*autochromistes*" followed the example of the Lumières (*pl. nos. 342 and 343*) in documenting family activities at home, at play, and in their professions. Among professionals, Jules Gervais-Courtellemont photographed in the Near and Far East (*pl. no. 344*) and documented aspects of World War II; views of military life (*pl. no. 345*) by Jean Tournassoud (later director of photography for the French Army) are other examples of interest in this theme. Autochrome appealed to Lartigue; convinced that "life and color cannot be separated from each other,"<sup>28</sup> he took elegant if somewhat mannered snapshots exemplified by *Bibi in Nice* (*pl. no. 351*), and for a brief while this color process was used in a similar fashion throughout Europe.

Not surprisingly, amateurs who liked to photograph flowers were delighted by Autochrome, but it also attracted a serious nature photographer, Henry Irving, who was quick to recognize the value of even a flawed system for botanical studies (*pl. no. 348*). While employed less frequently by documentary photographers, Autochrome was used by William Rau, the Philadelphia commercial photographer of railroad images who by the turn of the century had become interested in artistic camera expression; *Produce* (*pl. no. 347*) is an example of a subject and treatment unusual in the color work of the time.

While Autochrome (and its commercial variants) was based on the theory of adding primary colors together on one plate to effect the full range of spectral hues, experiments that led to the production of three different color negatives that subsequently were superimposed and either projected or made into color prints were also in progress (*see A Short Technical History, Part II*). Around 1904, this procedure was used for an extensive documentation of Russian life conceived by Sergei Mikhailovich Prokudin-Gorskii, a well-educated member of the Russian Imperial Technological Society. An educational and ethnographic project made with the tsar's patronage, it involved the production of three color-separation negatives on each plate by using a camera with a spring-operated mechanism that changed filters and repeated the exposures three times. After development, these were projected in an apparatus





326. BERENICE ABBOTT. *Portrait of Eugène Atget*, c. 1927. Gelatin silver print. Witkin Gallery, Inc., New York.

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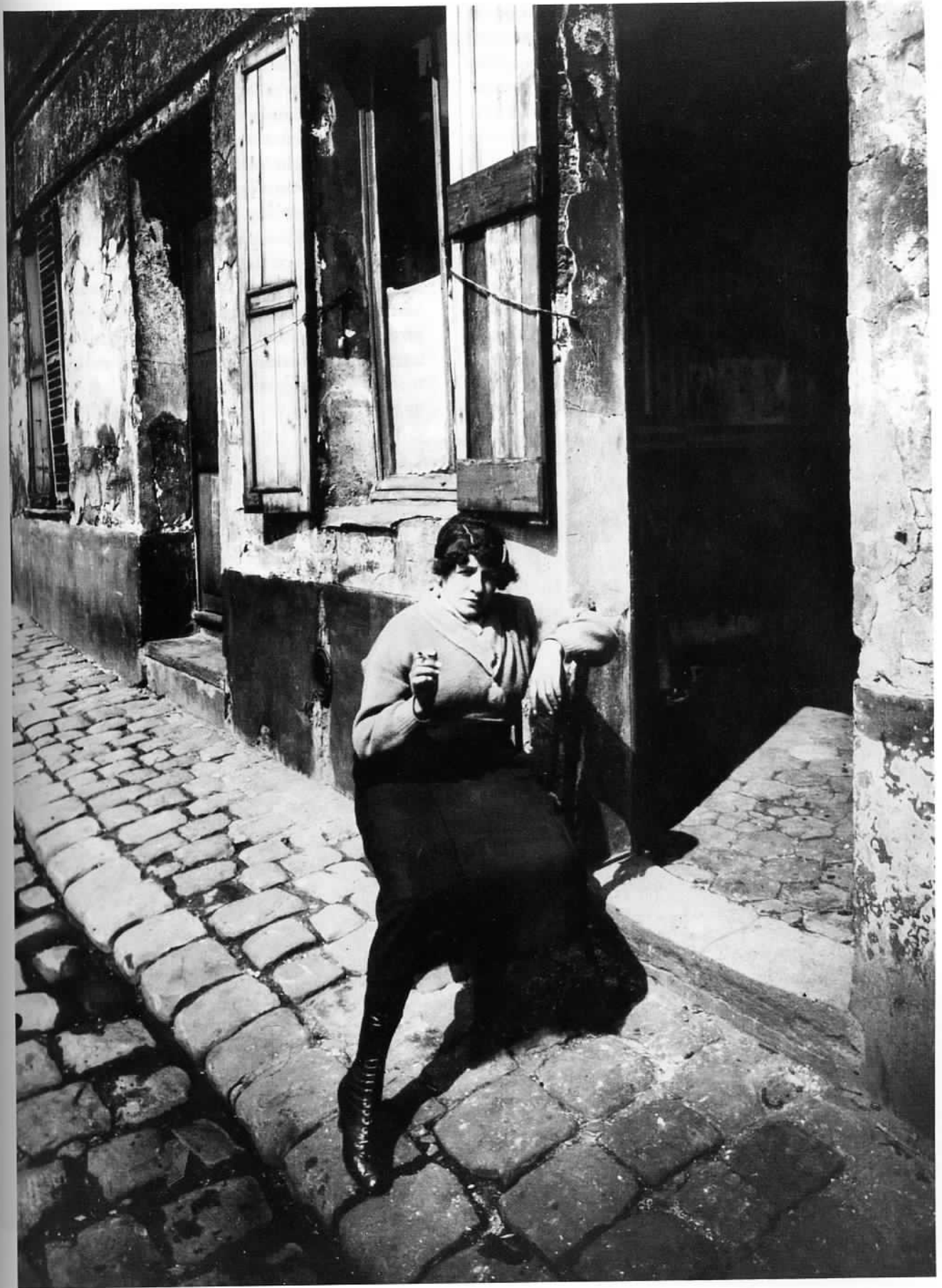
327. EUGÈNE ATGET. *Prostitute, Paris*, 1920s. Gold-toned printing-out paper. Private Collection.

that used a prism to bring the three color plates into one sharply focused image. Because of the cumbersomeness of tripling the exposure, the subjects, taken throughout Russia, had to be more or less immobile, but despite the technical and logistical difficulties of this complicated undertaking, Prokudin-Gorskii produced what surely must be the most ambitious color documentation of the time.

In its early stages, it was hoped that color would add an element of naturalness to the image—the missing ingredient in verisimilitude—since actuality obviously was many-hued rather than monochromatic as shown in photographs. However, as photographers began to work with the materials they realized that rather than making camera images more real, color dyes comprised another element

that had to be considered in terms of its expressive potential. The recognition that the seductiveness of color—its capacity to make ordinary objects singularly attractive—would have a powerful effect on the fields of advertising and publicity was the paramount stimulus in efforts that led to another breakthrough in color technology in the 1930s.

By 1890, photography no longer was an arcane craft practiced by initiates for whom artistic, informational, and social purposes were conjoined in the same image. Transformed and compartmentalized as a result of changes in materials, processes, techniques, and equipment, photographs became at once highly specialized and everybody's



business (and for some, big business). In the face of the medium's capacity to provide information and entertainment on such a broad scale, a small group of photographers struggled to assert the medium's artistic potential, to lend weight to an observation made some 40 years earlier that photography had "two distinct paths"—art and science—"to choose from."<sup>29</sup>

### *Profile: Eugène Atget*

Eugène Atget (*pl. no. 326*), the photographer whose extraordinary documentation of Paris in the first quarter of the 20th century was for many years uncelebrated, was born in Libourne, near Bordeaux, in 1857. Orphaned at an early age, he was employed as cabin boy and seaman after

completing his schooling. During the 1880s, Atget took up acting, playing in provincial theaters, but having settled permanently in Paris in 1890 he realized the impossibility of a stage career in the capital. Instead, he turned to the visual arts, deciding on photography because of his limited art training and also because he expected that it was a profession that might yield income from the sale of camera images to his artist-neighbors in Montparnasse.

Between 1898 and 1914, Atget received commissions from and sold photographs to various city bureaus, including the archive of the national registry, *Les Monuments historiques*, and the recently established Musée Carnavalet, which had been set up to preserve a record of the history of Paris. He also supplied documents to a clientele of architects, decorators, and publishers as well as artists,



328. EUGÈNE ATGET. *La Marne à la Varenne*, 1925-27. Gold-toned printing-out paper. Museum of Modern Art, New York; Abbott-Levy Collection; partial gift of Shirley C. Burden.

keeping records of both subjects and patrons. One project, for a book on brothels planned but never realized by André Dignimont in 1921, is said to have annoyed the photographer, but the images for this work (*pl. no. 327*) have the same sense of immutable presence as those of other working people photographed by Atget in the streets or shops of Paris. Often self-motivated rather than directly commissioned, Atget nevertheless followed in the tradition marked out by the photographers of the 1850s *Monuments historiques* project and by Charles Marville, who had photographed the neighborhoods about to be replaced by Baron Haussmann's urban renewal projects. In common with these photographers, Atget did not find documentation and art antithetical but attempted to invest even the most mundane subject with photographic form. He showed no interest in the art photography movement that already was well established when he began to work in the medium, seeking instead to make the expressive power of light and shadow as defined by the silver salts evoke resonances beyond the merely descriptive.

Beyond supplying images to clients, Atget seems to have had an overall design or intention for many of his projects. A voracious reader of 19th-century French literature, he sought to re-create the Paris of the past, photographing buildings and areas marked for demolition in the hope of preserving the ineffable imprint of time and usage on stone, iron, and vegetation. A series of tree and park images (*pl. no. 328*) that Atget made in the outlying sections around Paris suggest a compulsion to preserve natural environments from the destruction already visible in the industrialized northern districts of the city. In the same

way, his images of working individuals may have been made to record distinctive trades before they were swept away by the changes in social and economic relationships already taking place.

In the manner of a film director, Atget made close-ups, long shots, details, views from different angles, in different lights, at different times, almost as though he were challenging time by creating an immutable world in two dimensions. The vast number of his images—perhaps 10,000—of storefronts (*pl. no. 319*), doorways, arcades, vistas, public spaces, and private gardens, of crowds in the street and workers pursuing daily activities—of just about everything but upper-class life—evoke a Paris that appears as part legend, part dream, yet profoundly real.

During the 1920s, the extent and expressive qualities of Atget's work were unknown to all but a small group of friends and avant-garde artists, among them Man Ray, who arranged for several works to be reproduced in the magazine *La Révolution Surréaliste* in 1926. Atget's final year, made especially difficult by the death of a longtime companion as well as by his insecure financial situation, brought him into contact with Berenice Abbott, who at the time was Man Ray's technical assistant. After Atget's death in August 1927, Abbott was able to raise funds to purchase the photographer's negatives and prints and thus bring his work to the attention of American photographers and collectors when she returned to the United States in 1929. In 1968 this vast but still uncataloged collection was acquired by the Museum of Modern Art in New York, which has since displayed and published Atget's exceptional images.<sup>30</sup>

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WORLD



HISTORY



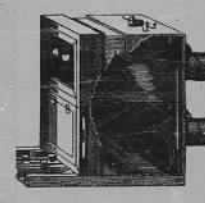
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