

Prestige, Professionalism, and the Paradox of Eadweard Muybridge's Animal Locomotion Nudes

IN 1878, EADWEARD MUYBRIDGE'S serial photographs of trotting and galloping horses stunned artists, scientists, and critics in the United States and Europe (fig. 1). Muybridge's camera revealed equine bodies frozen mid-leap in positions never before detected by the human eye or captured on film. When viewed in quick succession, the serial photographs reanimated motion and the subjects sprang to life. Nine years later, the culmination of Muybridge's motion studies was published in Philadelphia under the auspices of the University of Pennsylvania. *Animal Locomotion: An Electro-photographic Investigation of Consecutive Phases of Animal Movements, 1872-1885*, comprised 781 nineteen-by-twenty-four-inch collotype plates, each of which contained between twelve and thirty-six frames, resulting in a total of approximately twenty thousand images.¹ Of the 781 plates, 514 depicted adult men and women in motion; 5 focused on the movement of an adult male hand; 27 captured abnormal male and female movement; 16 represented children; and 219 depicted animals, including horses, birds, and various other wild and domestic animals. Notably, approximately 340 of the series featured fully nude men and women performing daily activities before a gridded backdrop. Populating the first four volumes and part of volume eight of the eleven-volume publication, the male nudes ran, jumped, rowed, and swung bats (fig. 2) while the females swept, served tea, made beds, and danced, among other activities (fig. 3).

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¹ The collotype process uses glass plates and results in an image printed on paper that can be reproduced and bound in book form.

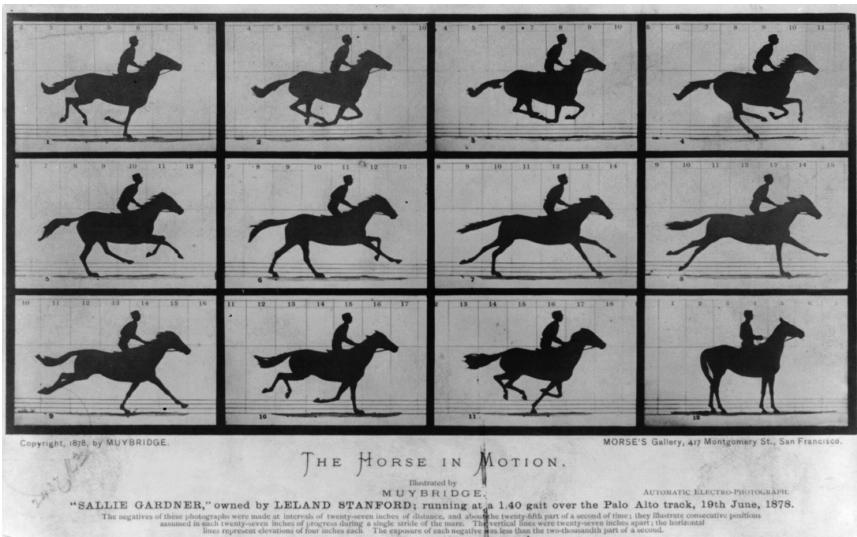


Fig. 1. *The Horse in Motion*, photograph by Eadweard Muybridge. "Sallie Gardner," owned by Leland Stanford; running at a 1:40 gait over the Palo Alto track, 19th June 1878. Library of Congress, Prints & Photographs Division [LC-USZ62-45683].

Astounded by the innovation and magnitude of Muybridge's Philadelphia photographs, critics and viewers appear to have been blinded to the unusual, potentially scandalous subject matter of the nudes.² This public acceptance seems surprising, considering the atmosphere in which the photographs were produced and distributed. In 1880s Philadelphia, antivice crusaders condemned nudity in all forms. Reformers such as Josiah W. Leeds, spurred on by the activities of Anthony Comstock in New York, censored nude images and obscene literature, often imprisoning the producers of such materials.³ However, Muybridge's thousands of

² Subsequent scholarship has also largely focused on the technical aspects of Muybridge's motion studies. See Robert Bartlett Haas, *Muybridge: Man in Motion* (Berkeley, CA, 1976); Gordon Hendricks, *Eadweard Muybridge: The Father of the Motion Picture* (London, 1975); Kevin MacDonnell, *Eadweard Muybridge, the Man Who Invented the Moving Picture* (Boston, 1972); Hollis Frampton, "Eadweard Muybridge: Fragments of a Tesseract," *Artforum* 11 (Mar. 1973): 43–52. Recently, scholars including Marta Braun, Janine Mileaf, Jayne Morgan, and Linda Williams have begun to look more closely at the *Animal Locomotion* photographs. This article is indebted to their work and strives to build upon it.

³ Leeds attempted to halt the sale of indecent advertisements and newspapers in Philadelphia and he protested the display of provocative nudes in all forms. In 1878 he argued for the burning of bound reproductions of the 1878 Paris art exhibition; in 1887 he urged the adoption of a law prohibiting representations of "human form in nude or semi-nude condition"; and in 1891 he campaigned against

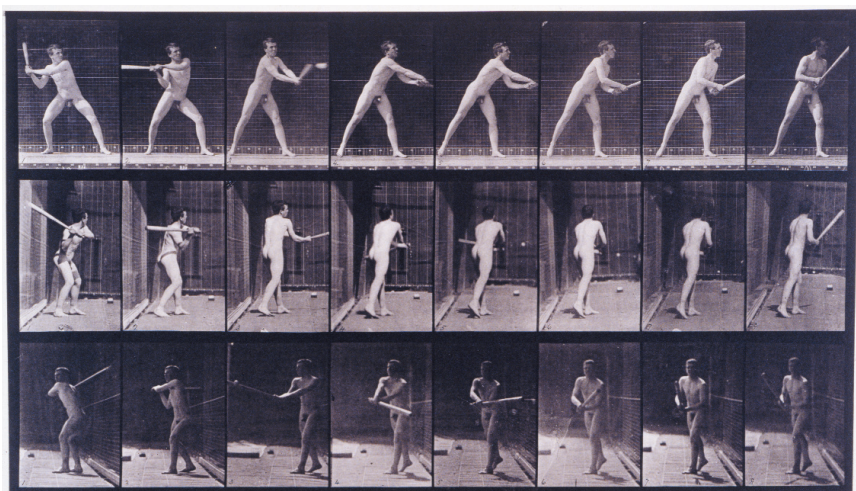


Fig. 2. Man batting. Eadweard Muybridge, *Animal Locomotion: An Electro-photographic Investigation of Consecutive Phases of Animal Movements*, 1872–1885 (Philadelphia, 1887), plate 277. Library Company of Philadelphia.

nude photographs escaped censure by such individuals and in fact were met with resounding praise from journalists and critics in Philadelphia and beyond. For example, in a January 1888 review, the *Nation* praised *Animal Locomotion* as a “magnificent work” and described the photographs as “beautiful, free, noble.”⁴

In this article, I will begin to address the paradoxical reception of the *Animal Locomotion* nudes. The great success of Muybridge’s photographs, despite their disregard for Victorian rules of propriety, resulted from the production and distribution of *Animal Locomotion* as a product of the University of Pennsylvania. Provost William Pepper approved and directed the project, appointed a supervisory committee comprised largely of university faculty, and managed the distribution of the volumes. The elevated social status of Pepper and the other university faculty sanctioned

the hanging of French painted nudes at the Pennsylvania Academy for the Fine Arts. For more on Leeds’s antive activities, see Anne McCauley, “‘The Most Beautiful of Nature’s Works’: Thomas Eakins’s Photographic Nudes in Their French and American Contexts,” in *Eakins and the Photograph: Works by Thomas Eakins and His Circle in the Collection of the Pennsylvania Academy of the Fine Arts*, ed. Susan Danly and Cheryl Leibold (Washington, DC, 1994), 54–55; Nicola Beisel, “Class, Culture and Campaigns against Vice in Three American Cities, 1872–1892,” *American Sociological Review* 55 (1990): 53; and Josiah W. Leeds Scrapbooks, 1872–1907, MS Coll. 1102, Special Collections, Haverford College Library, Haverford, PA.

⁴ *Nation*, Jan. 19, 1888, 55.



Fig. 3. Woman sweeping. Muybridge, *Animal Locomotion*, plate 58. Library Company of Philadelphia.

the release of thousands of photographic nudes, and the publication in turn reinforced the social status of its backers. Likewise, the emergent prestige of the university and the professionalism of its faculty assured the public acceptance of the *Animal Locomotion* nudes, while the university's reputation was reinforced by the impressive size and photographic innovation of *Animal Locomotion*.⁵

Rather than analyzing Muybridge's *Animal Locomotion* photographs as the work of a single artist and focusing on their technological innovation, this article considers the publication as a collaborative project and stresses the social, historical, and intellectual circumstances of its production. In doing so, this investigation strives to shed light on the relationship between social class and nude imagery in Victorian America and to examine the cultural significance of the university's expansion in late nineteenth-century urban society.

Muybridge and the Road to Penn

Eadweard Muybridge, the technological and photographic mind

⁵ This thesis elaborates on Janine Mileaf's argument that the *Animal Locomotion* nudes succeeded despite their impropriety by blurring the boundaries between the disciplines of art and science. See Janine Mileaf, "Poses for the Camera: Eadweard Muybridge's Studies of the Human Figure," *American Art* 16 (fall 2002): 30–54.

behind the *Animal Locomotion* photographs, did not land in Philadelphia by chance. Rather, a combination of his own professional ambition and the interests of several men associated with the University of Pennsylvania and the Pennsylvania Academy of the Fine Arts drew him to the city. Muybridge was born in Kingston-on-Thames, England, in 1830. After immigrating to California at age twenty-five, he became one of the foremost landscape photographers of the American West. During the 1860s, before commencing his motion studies, Muybridge photographically surveyed the ports and harbors of Alaska, created dramatic pictures of the Yosemite Valley and the coast of California, documented the Modoc War, and created a photographic panorama of San Francisco. For a brief period in 1875, conveniently scheduled to avoid publicity resulting from his acquittal for murdering his wife's lover four months earlier, Muybridge accepted a commission in South America. There, he photographed the indigenous populations and lush landscape of Panama, Guatemala, and Mexico.⁶ Throughout this period, Muybridge attracted and relied on influential patrons. In Alaska he worked for the United States Army; he took his coastal pictures for the United States Lighthouse Board; he documented the Modoc War for the United States War Department; and the Pacific Mail Steamship Company sponsored his South America work.

In 1872 Muybridge accepted what would become the challenge of a lifetime from yet another powerful patron, Leland Stanford, former governor of California and president of the Central Pacific Railroad.⁷ Stanford requested that Muybridge photograph a trotting horse in motion in order to determine whether all four hooves were ever simultaneously off the ground. At this time, no photographer had yet devised a shutter quick enough to capture such a phenomenon.⁸ From this request

⁶ For studies of Muybridge's California and South America work, see Robert Bartlett Haas and Joel Snyder, *Yosemite Photographs, 1872* (Chicago, 1977); David Harris and Eric Sandweiss, *Eadweard Muybridge and the Photographic Panorama of San Francisco, 1850–1880* (Montreal, 1993); Anita Ventura Mozley, *Eadweard Muybridge: The Stanford Years, 1872–1882* (Stanford, CA, 1973); E. Bradford Burns, *Eadweard Muybridge in Guatemala, 1875: The Photographer as Social Recorder* (Berkeley, CA, 1986).

⁷ Leland Stanford may also have been involved with the Central America project, as he was formerly in charge of the company. Jonathan Crary writes that Jay Gould had just bought the Pacific Mail Steamship Company when the project began. See Crary, *Suspensions of Perception: Attention, Spectacle, and Modern Culture* (Cambridge, MA, 1999), 144.

⁸ The possible exception is William Henry Fox Talbot, who in 1851 reportedly devised a flash that provided a 1/100,000th of a second exposure. However, this experiment was never followed up. See Anita Ventura Mozley, "Introduction to the Dover Edition," in *Muybridge's Complete Human*

grew the famed horse in motion studies for which Muybridge is most widely known. When his work with Stanford concluded in 1881 and he had assembled his 1878–79 photographs into a volume entitled *The Attitudes of Animals in Motion*, Muybridge found himself in possession of a fascinating set of photographs and in need of further patronage to continue his work.

Muybridge launched a lecture tour throughout the United States and Europe, the purpose of which was two-fold: first, to prove the visual accuracy of his unfamiliar photographs of bodies in motion through re-animation via the zoöpraxiscope; and second, to attract wealthy benefactors who might contribute to the furthering of his photographic research into human and animal motion.⁹ “I shall shortly visit England for the purpose of inducing some wealthy gentleman (to whom I have letters of introduction),” Muybridge wrote to Stanford’s secretary, Frank Shay, “to provide the necessary funds for pursuing and indeed *completing* the investigations of animal motion.” Muybridge asked Shay to recount the total costs of his Palo Alto work, including the price of the apparatus and materials, cash paid to him, wages of his assistants, and the cost of building the studio and track, so that he could estimate future costs.¹⁰

Muybridge’s widest exposure came in the fall of 1881 when, after a brief visit to his native England, he traveled to France. On September 26, Muybridge held an exhibition at the home of physiologist and fellow motion photographer Étienne-Jules Marey, and exactly two months later he presented his work at the Paris studio of painter Jean Louis Ernest Meissonier. Of this event Muybridge wrote, “Many of the most eminent men in art and science and letters in Europe were present at the exhibi-

and *Animal Locomotion: All 781 Plates from the 1887 Animal Locomotion* (New York, 1979), xxviii3. In the 1850s and 1860s several photographers claimed to take instantaneous photographs, including Gustave Le Gray, who shot crashing waves in 1857, and William England, who produced street views in 1861. The term instantaneous is very difficult to define in terms of early photography, but Muybridge’s photographs are distinguished for being the first to use an electrically stimulated shutter to capture an action “beyond the realm of ordinary human vision” without blurring or indistinctness. See Phillip Prodger, *Time Stands Still: Muybridge and the Instantaneous Photography Movement* (New York, 2003), 135. The shutter speed of Muybridge’s California sequential horse images was reported to be 1/2,000th of a second.

⁹ Prodger argues that Muybridge’s lectures were designed to testify to the accuracy of his images. “Comparing Muybridge to . . . Muybridge” (paper presented at conference “Eadweard Muybridge: Pioneer, But of What?” The Iris & B. Gerald Cantor Center for Visual Arts, Stanford University, May 3, 2003). This point is also argued in Prodger, *Time Stands Still*.

¹⁰ Muybridge to Frank Shay, Nov. 28, 1881, in *Eadweard Muybridge*, by Anita Ventura Mozley (Stuttgart, Ger., 1976), 115–16. The italics appear in the Mozley transcription.

tion. . . . Happily I have strong nerves or I should have blushed with the lavishness of their praises."¹¹ Muybridge made quite a name for himself in Paris, with both supporters and detractors responding strongly to his work and reviews of the event published in the Parisian press. Returning to London in the spring of 1882, Muybridge triumphed on the lecture circuit there as well, presenting his work at the Royal Institution, the Royal Academy of Arts, the Savage Club, the Royal Society of Arts, and the South Kensington Museum.¹²

Just when Muybridge began making arrangements to pursue a collaborative project with Meissonier and Marey that would take place either in Paris or England, his success and confidence in Europe ground to a halt.¹³ During his 1882 stay in London, the book *The Horse in Motion* appeared, authored by J. D. B. Stillman and published under the auspices of Leland Stanford. Muybridge's name was not included on the title page, despite the fact that the illustrations were based on his photographs. The repercussions of Muybridge's exclusion from this publication were profound. Muybridge claimed that "The doors of the Royal Society were . . . closed against me, and in consequence of this action, the invitations which had been extended to me were immediately cancelled, and my promising career in London was thus brought to a disastrous close."¹⁴ To redress the losses he suffered as a result of the omission of his name from the credits of *The Horse in Motion*, Muybridge filed a lawsuit against Stanford. His lawsuit, in combination with the toll that the incident took on his standing in Europe, sent Muybridge back to the United States with no funding.

¹¹ Muybridge to Frank Shay, Nov. 28, 1881, *ibid.* The gathering at Meissonier's studio is described in *Scientific American Supplement* no. 317 (Jan. 28, 1882): 5058–59. Those present at Marey's home included Nadar, the famed Paris photographer; Gaston Tissandier, the journalist who first published Muybridge's work in Europe and praised it highly (*La Nature*, Sept. 28, 1878); and Emile Duhousset, who followed with an article on Muybridge's work in *L'Illustration* (Jan. 25, 1879). See Hendricks, *Eadweard Muybridge*, 135. Also in attendance were École des Beaux-Arts faculty Jean Léon Gérôme and Eugène Guillaume; French Academic painters Alexandre Cabanel, Léon Bonnat, and Edouard Detaille; writers Jules Claretie and Alexandre Dumas fils; and foe of Impressionism Albert Wolff. See Marc Gotlieb, *The Plight of Emulation: Ernest Meissonier and French Salon Painting* (Princeton, NJ, 1996), 179.

¹² There his audience included the Duke of Edinburgh, Alfred Tennyson, Sir Frederick Leighton, Thomas Huxley, William Gladstone, John Tyndall, and Sir Lawrence Alma-Tadema. Hendricks, *Eadweard Muybridge*, 141.

¹³ Arrangements with Meissonier and Marey were described in a letter from Muybridge to Frank Shay dated Dec. 23, 1881, in *Eadweard Muybridge*, by Hendricks, 137–39.

¹⁴ Hendricks, *Eadweard Muybridge*, 141–44. (Transcription of manuscript dated May 2, 1892, in Bancroft Library, University of California, Berkeley, CA).

Upon returning to America in June 1882, however, Muybridge embarked upon another lecture tour, this one on the East Coast. He was able to maintain his celebrity status and soon found the support he sought at the University of Pennsylvania. In the summer of that year, Muybridge presented his work in New York, Boston, and Newport, Rhode Island. Fairman Rogers, the prominent Philadelphia horseman, civil engineer, scholar, former University of Pennsylvania trustee, philanthropist, and amateur photographer, attended the lecture in Newport on August 22. Rogers and his artist friend Thomas Eakins, who had been hired as an instructor at the Pennsylvania Academy when Rogers served as chairman of the Committee on Instruction in 1876, had been aware of Muybridge's work since the late 1870s. Muybridge and Eakins corresponded in the spring of 1879 and in a July 9, 1879, article in *Art Exchange*, Rogers had praised Muybridge's Palo Alto work. He claimed that Muybridge's photographic investigation of motion was better than that of Marey, who was working simultaneously in France, and wrote, "Mr. Muybridge deserves the thanks of all artists for the valuable addition that he has made to the general fund of knowledge." Rogers also noted that "Mr. Muybridge intends to continue his experiments, and will accumulate a mass of information which will be of the utmost value."¹⁵ Little did Rogers know at the time that he would be the individual to enable the expansion and culmination of Muybridge's work in Philadelphia.

Rogers facilitated Muybridge's February 1883 series of lectures at the Pennsylvania Academy of the Fine Arts, the Franklin Institute, and the Academy of Music. He put Muybridge in touch with individuals at the Pennsylvania Academy who would prepare the space for Muybridge's lecture, and he split the bill with the Pennsylvania Academy for the cost of Muybridge's two lectures there.¹⁶ Through these lectures, influential

¹⁵ A letter from Muybridge to Eakins in the summer of 1879 reveals that Muybridge had invited Rogers to visit California to witness his work in Palo Alto. Muybridge's letter to Eakins also suggests that Eakins had been in touch with Muybridge to tell him how useful the California motion studies had been for his work and to suggest an adjustment to Muybridge's technique to account for distortions in the background of the photographs. Muybridge wrote: "I am much pleased to hear the few experimental photos we made last year, have afforded you so much pleasure, and notwithstanding their imperfections have been so serviceable." Muybridge went on to describe the changes he planned to make to his photographic system. See Hendricks, *Eadweard Muybridge*, 113–14. For further discussion see McCauley, "Most Beautiful of Nature's Works," 37 and 60n51. Rogers's letter to the *Art Interchange* was published on July 9, 1879, and is transcribed in *Eadweard Muybridge* (1976), by Mozley, 109.

¹⁶ Hendricks, *Eadweard Muybridge*, 152.

Philadelphians such as Edward Coates, president of the Pennsylvania Academy of the Fine Arts, and J. B. Lippincott, distinguished Philadelphia publisher, were exposed to Muybridge's work. Subsequently, interest spread to prominent faculty members and administrators at the university. In this way, Rogers's interest in Muybridge's photographs made possible Muybridge's ensuing work. As the *Philadelphia Ledger and Transcript* reported, "Through Mr. Fairman Rogers . . . Mr. Muybridge was brought into relations with the University of Pennsylvania, which had just established its Department of Veterinary Surgery, and a number of gentlemen interested in that and other departments united in securing a repetition of the [earlier California motion] experiments at the University on far larger scale and with greatly improved appliances. The authorities of the Academy of the Fine Arts and of the Zoological Garden gave their hearty co-operation to the plan."¹⁷

Thus having courted several other American institutions for their support, Muybridge was ultimately offered the financial backing, studio space, and human resources that he needed to pursue his photographic work at the University of Pennsylvania.¹⁸ The man responsible for approving the project and assembling the supervisory body dubbed the "Muybridge Commission" was William Pepper, the influential and ambitious provost of the university. The formalization of the sponsorship occurred during an August 7, 1883, meeting in the provost's office and was announced to Muybridge the following day. In March 1884, Pepper appointed the commission, which included several science faculty members from the University of Pennsylvania, as well as Coates and Eakins of the Pennsylvania Academy of the Fine Arts. The commission met for the first and only recorded time in April 1884, and several members later published articles on the results of the project, both independently and in *Animal Locomotion: The Muybridge Work at the University of Pennsylvania. The Method and the Result*, published by J. B. Lippincott

¹⁷ *Philadelphia Ledger and Transcript*, Sept. 6, 1884.

¹⁸ As Muybridge himself recalled in a letter to Leland Stanford in 1892, "in consequence of this publication of 'The Horse in Motion' by J. D. B. Stillman MD I for two years vainly sought assistance to pursue my researches until at last through the influence of Dr. William Pepper, and other gentlemen (who had made due enquiries as to my position in the matter) I was instructed by the University of Pennsylvania to make a comprehensive investigation of the subject of Animal Locomotion." See Muybridge to Stanford, May 2, 1892, in *Eadweard Muybridge* (1976), by Mozley, 121. By "other gentleman," Muybridge may refer to Rogers, Eakins, or perhaps the other university men who landed positions on his oversight committee.

the year after the *Animal Locomotion* photographs.¹⁹ Through less official routes, additional representatives of Philadelphia society and the University of Pennsylvania participated in the Muybridge project by contributing money, recruiting models, offering medical patients to be photographed, and suggesting new avenues of investigation.²⁰ The *Animal Locomotion* collaboration was a mutually beneficial endeavor. The men at the University of Pennsylvania offered Muybridge not only the means to expand his work and further his career but also the respectability that allowed the publication of thousands upon thousands of nude photographs. In turn, upon publication the *Animal Locomotion* volumes brought prestige to the university and its faculty.

Prestige in Philadelphia

The status of Provost Pepper, the other Muybridge commissioners, and participating faculty members largely assured the positive reception of the *Animal Locomotion* volumes, a phenomenon that can only be understood by examining the social and professional standing of these men in Philadelphia society. Intellectuals, particularly medical doctors, held esteemed positions in Philadelphia society in the 1880s. In the early part of the nineteenth century, the city built a reputation as a manufacturing center, relying on diverse and specialized operations. A thriving garment and textile industry coexisted with the nation's top manufacturers of custom-made heavy machinery, such as steam engines and locomotive parts, and small family-owned workshops flourished alongside large factories.²¹ But while manufacturing prospered in Philadelphia, the rapid

¹⁹ Work on the project began in summer 1884 when the weather became warm. The record does not indicate why the commission met only once.

²⁰ Most notably, Charles Harrison, who followed Pepper as provost of the University of Pennsylvania, and Samuel Dickson, a university trustee, acted as guarantors for expenses of the work (in addition to Coates, who also served on the oversight committee); J. B. Lippincott, perhaps the most well-established publisher in Philadelphia, advanced money for preliminary expenses and published the project; Dr. Francis X. Dercum, instructor in nervous diseases at the University of Pennsylvania, volunteered his own time and that of his and Dr. Silas Weir Mitchell's medical patients to the investigation, suggested photographing individuals with neurological disorders and induced seizures, and published studies on its outcome.

²¹ For characterizations of Philadelphia as an industrial town in the nineteenth century, see Walter Licht, *Getting Work: Philadelphia 1840–1950* (Cambridge, MA, 1992), 3–16. On the importance of specialization and flexibility in the Philadelphia garment industry, see Philip Scranton, *Figured Tapestry: Production, Markets, and Power in Philadelphia Textiles, 1885–1941* (New York, 1989); “Flexibility and Specialization: Philadelphia as the ‘Paradise of the Skilled Workman,’

cultural transformations and explosive population growth of industrialization brought increasing instability and social unrest. By the end of the 1830s, Philadelphia suffered through a cholera epidemic and a financial crisis. Beginning mid-century, labor strikes, class divisions, race riots, and other civic violence further disrupted the city.²²

During and after the Civil War, though, Philadelphia prospered. In 1876 Philadelphia easily prevailed over Boston, New York, and Washington, DC, to host the Centennial Exhibition. As described by cultural historian Alan Trachtenberg, this momentous event represented an optimistic celebration of modern American machinery tempered by a healthy dose of apprehension. Trachtenberg regarded the exhibition as a Janus-faced enterprise that reflected the contradictions of the industrial age. Its display of ingenuity and abundance inspired both confidence in and fear of technology capable of producing poverty as well as wealth.²³ However, Philadelphia reaped economic benefits from hosting the exhibition, and experienced a boost in confidence. In the late nineteenth century, Philadelphia's industrial class became politically powerful, allied with a group referred to by historian Andrew Dawson as their "academic . . . consorts."²⁴

Throughout Philadelphia's tumultuous period of industrialization, this network of intellectuals, grounded by accomplished men of science, exercised a strong and stabilizing influence on the city. In the first quarter of the century, Philadelphia became a center of the sciences, a distinction that it would retain for decades. The American Philosophical Society, presided over at the turn of the nineteenth century by Thomas Jefferson, was the leading scientific institution in North America.²⁵ During the first quarter of the nineteenth century, its members founded other prominent Philadelphia cultural institutions, including the Pennsylvania Academy of the Fine Arts (1805), the Academy of Natural Sciences

1870–1885," in *Proprietary Capitalism* (Cambridge, 1983), 314–52; and Philip Scranton and Walter Licht, *Work Sights: Industrial Philadelphia, 1890–1950* (Philadelphia, 1986), 3–7.

²² The cholera epidemic was a worldwide one. It began in India on the banks of the Ganges River in 1817 and spread across the continents, arriving in Canada and then the East Coast of the United States in 1832.

²³ Alan Trachtenberg, *The Incorporation of America: Culture and Society in the Gilded Age* (New York, 1982), 38.

²⁴ Andrew Dawson, *Lives of the Philadelphia Engineers: Capital, Class and Revolution, 1830–1890* (Burlington, VT, 2004), 186.

²⁵ Edgar P. Richardson, "The Athens of America, 1800–1825," in *Philadelphia: a 300-Year History*, ed. Russell F. Weigley (New York, 1982), 241.

(1812), The Athenæum of Philadelphia (1814), and the Franklin Institute and The Historical Society of Pennsylvania (1824). By mid-century a number of medical institutions also were founded, and the city became the most advanced medical center in the country.

In the 1880s, the city continued to lead as a medical center, with anatomists Joseph Leidy, Hayes Agnew, and Samuel Gross at the helm.²⁶ While the varied industrial scene may have formed the financial backbone of post-Civil War Philadelphia, men of science remained a respected force in society and a keystone of the city's identity and civic pride. The confluence of scientific institutions in Philadelphia, including numerous scientific departments at the University of Pennsylvania, Jefferson Medical College, and the Academy of Natural Sciences, made Philadelphia in the 1880s the premier location for medical training in the country. Although the University of Pennsylvania had experienced a financial crisis and trouble with its provost in the early part of the century, it emerged as the top medical training ground in Philadelphia by the 1880s.²⁷

Many of the most revered names in science practiced and/or taught at the University of Pennsylvania and several of these men became involved with Muybridge's work. Pepper appointed Joseph Leidy, professor of anatomy and member of the Muybridge Commission, director of the School of Biology when it opened in 1884. That same year, after J. B. Lippincott had contributed half of the money to establish it, the Veterinary School opened with Muybridge commissioner Rush Shippen Huidekoper as professor of veterinary anatomy and internal pathology. Silas Weir Mitchell, expert in the treatment of nervous diseases whose

²⁶ Dorothy Gondos Beers, "The Centennial City, 1865–1876," in *Philadelphia*, ed. Weigley, 447. Leidy has been hailed as "the greatest naturalist that this country, perhaps that any country, ever produced" and "universally recognized as the leading teacher of human anatomy in this country." Henry C. Chapman, *The Life and Work of Joseph Leidy*, 1, pamphlet reprinted from *Science* n.s., xxvi no. 676 (Dec. 23, 1907): 812–15. Leonard Warren emphasizes Leidy's stature as a man of science in his book, *Joseph Leidy: The Last Man Who Knew Everything* (New Haven, CT, 1998). Leidy taught anatomy at the University of Pennsylvania for nearly forty years, was a longtime member and then president of the Academy of Natural Sciences, and held many other honors and memberships, both national and international. Dr. D. Hayes Agnew, a world-renowned surgeon, led a revival at the Philadelphia School of Anatomy beginning in 1852. See Elizabeth M. Geffen, "Industrial Development and Social Crisis, 1841–1854," in *Philadelphia*, ed. Weigley, 321. Agnew was also professor of anatomy and clinical surgery at the University of Pennsylvania. Samuel Gross held the position of professor of surgery at Jefferson Medical College, was a surgical innovator, and contributor to scholarly publications.

²⁷ On the troubles experienced by the university early in the century, see Edward Potts Cheyney, *History of the University of Pennsylvania, 1740–1940* (Philadelphia, 1940), 186, 192–94.

medical patients Muybridge photographed, worked in the physiological lab and was a trustee at the university. Dr. Francis X. Dercum, whose patients were also photographed and who published studies on the outcome of Muybridge's work, was instructor in nervous diseases. Fairman Rogers was chair of civil engineering. The four other Muybridge Commission members who hailed from various scientific departments at the University of Pennsylvania were: George F. Barker, professor of physics; William D. Marks, professor of dynamical engineering; Lewis M. Haupt, professor of civil engineering; and Harrison Allen, professor of physiology.

Philadelphia also boasted a long history of abundant and intelligent journalism, and in the late nineteenth century book, newspaper, and magazine publishing thrived. Families such as the Leas, Careys, Petersons, and Lippincotts, and individuals like George Childs, Talcott Williams, and Walt Whitman graced the city. Several of these Philadelphia players contributed to the inception and dissemination of Muybridge's photographs. Joshua Bellinger Lippincott, who had established his own firm in 1836 originally focused on Bibles and other religious works, turned to medical publications in the 1850s and the literary periodical *Lippincott's Magazine* in 1868. At the outset of the Muybridge project, he advanced money to pay preliminary expenses and agreed to publish *Animal Locomotion*.²⁸ Talcott Williams, journalist and friend of Walt Whitman, penned a review of *Animal Locomotion* printed in the *Century* in July 1887, which provided publicity for the new publication.²⁹

The men involved with Muybridge's project were not only successful as individuals, but they formed a powerful network throughout the city. The sphere of influence of each individual extended beyond his particular field of training, and many of them were acquainted with one another. Leidy, who sat on the Muybridge Commission, was active at the university, the Academy of Natural Sciences, and the College of Physicians, and he won numerous honors from American and European institutions of higher learning. In addition, he was known as an accomplished draftsman, often illustrating his own reports. He lived near the Pennsylvania Academy of the Fine Arts and, although there is no evidence of a relationship between him and fellow Muybridge commissioner Thomas

²⁸ When J. B. Lippincott died on January 5, 1886, his sons, Craige and J. Bertram, inherited ownership of the business, with Craige serving as president.

²⁹ Williams may also have written unsigned reviews of the *Animal Locomotion* photographs in the *Public Ledger* and *Daily Transcript* and/or the *Nation*.

Eakins, Eakins knew Leidy's nephew, a doctor who specialized in public hygiene. Eakins pictured the nephew, Joseph Leidy II, in two of his paintings. Leidy II first sat for the artist when he composed *The Gross Clinic* (1875), in which Eakins immortalized Samuel Gross.³⁰

Eakins's portrait of Gross was part of an oeuvre that centered on Philadelphia's modern heroes, which initially included rowers and wrestlers and later surgeons, scientists, writers, and singers, men who belonged to the same network of intellectual and social elites that constituted the Muybridge Commission.³¹ In 1889, Eakins painted his close personal friend, writer Talcott Williams. Two years later, he painted Williams's wife, Sophia Wells Royce Williams. In the spring of 1885 Talcott Williams introduced Eakins to poet Walt Whitman, who at the time lived just outside Philadelphia. The friendship between Eakins and Whitman resulted in the 1887–88 portrait of the legendary white-haired poet. Eakins also painted three fellow Muybridge Commission members: William Marks, George Barker, and friend and associate Fairman Rogers. Eakins depicted Rogers driving his four-in-hand, emphasizing Rogers's renown as a rider, driver, and founder of the Philadelphia Coaching Club.

Eakins's portraits and genre paintings of writers and men of science illustrate both the artist's social connections and the network of interests and relationships shared by the men on the Muybridge Commission. Eakins himself, beyond his expertise in painting and sculpture, undertook studies in anatomy and participated in athletic activities such as rowing.³² Rogers, professor of civil engineering and a close friend of Eakins, served as chairman of the Committee on Instruction at the Pennsylvania Academy of the Fine Arts before Coates took over the position. He also wrote a horse-coaching manual published by Lippincott.³³ Harrison Allen likewise extended his interest in anatomy to author a book, titled

³⁰ The second time Leidy II sat for Eakins was in 1890, when Eakins painted a seated portrait of Leidy II, and at which time he likely presented him with an autographed presentation copy of *The Gross Clinic*, now residing at the National Library of Medicine. See Elizabeth Johns, *Thomas Eakins: The Heroism of Modern Life* (Princeton, NJ, 1983), 76n60, 78n68. Eakins also celebrated the accomplishments of Hayes Agnew in *The Agnew Clinic* (1889).

³¹ According to Johns, in the mid- to late nineteenth century Voltaire, Samuel Johnson, and Benjamin Franklin showed that heroic action resulted from reason, morality, and self-discipline. Johns, *Thomas Eakins*, 4. In Philadelphia in the 1870s and 1880s, those qualities revealed themselves in professionals like the ones painted by Eakins.

³² Eakins began his study of anatomy with lectures at the Pennsylvania Academy of the Fine Arts in 1862, and continued with life-drawing classes at the academy in 1863 and anatomy classes with Dr. Joseph Pancoast at the Jefferson Medical College in 1873.

³³ Fairman Rogers, *A Manual of Coaching* (Philadelphia, 1899).

An Analysis of the Life-Forms in Art.³⁴ Pepper, supplementing his roles as doctor, professor, and provost at the university, in 1875 chaired a committee to organize an art museum in Philadelphia, which led to the establishment of the School of Industrial Arts.³⁵ Rogers, Mitchell, and Lippincott all served as trustees of the university in the mid-1880s, and Lippincott also included the Social Art Club on his long list of trustee-ships. Additionally, several members of the Muybridge Commission maintained professional associations through the socially exclusive and intellectually elite American Philosophical Society and Academy of Natural Sciences, as well as the Franklin Institute and the College of Physicians.³⁶

The network to which the Muybridge commissioners belonged coincided with the “inner circle” of citizens who remained in Philadelphia after the Civil War and formed the social, cultural, intellectual, and economic core of the city.³⁷ Only a few of the Muybridge men, including Pepper, were born into what historian and sociologist E. Digby Baltzell terms the “aristocratic” or “ascribed” elite or what author Nathaniel Burt describes as Philadelphia’s “hereditary oligarchy”—families whose names indicated longevity, wealth, and the top of the social class hierarchy.³⁸ All of the Muybridge commissioners and associates, however, with the possible exceptions of Thomas Eakins and Muybridge himself, were in the process of working their way into Baltzell’s “democratic” or “achieved” elite. This group, which correlates with historian Burton Bledstein’s “professional class,” held a special position in society that was enabled by middle-class ideals yet ultimately presided over the middle class itself.

³⁴ Harrison Allen, *An Analysis of the Life-Form in Art* (Philadelphia, 1875).

³⁵ Francis Newton Thorpe, *William Pepper M.D., LL.D. (1843–1898) Provost of the University of Pennsylvania* (Philadelphia, 1904), 70.

³⁶ This characterization of the American Philosophical Society and the Academy of Natural Sciences comes from Warren, *Joseph Leidy*, 39. Allen belonged to the Academy of Natural Sciences, other local and national professional associations, and the American Philosophical Society; Pepper was director of the biological section of the Academy of Natural Sciences in 1870, and he belonged to other local and national professional associations; Haupt lectured at the Franklin Institute; Huidekoper was a fellow at the College of Physicians; and Leidy served as president of both the Academy of Natural Sciences and the American Philosophical Society.

³⁷ Beers, “Centennial City,” 458.

³⁸ See E. Digby Baltzell, *Philadelphia Gentlemen: The Making of a National Upper Class* (New Brunswick, NJ, 1989), 6, 32–34; Nathaniel Burt, *The Perennial Philadelphians. The Anatomy of an American Aristocracy* (Boston, 1963), 12. In Philadelphia, the family name was an especially potent formula for achieving social standing. As Burt writes, “Birth is still the criterion and Family, in the somewhat broad Philadelphia sense, is still the center of the Philadelphia cosmology.” See Burt, *Perennial Philadelphians*, 40.

As Bledstein emphasizes, the definition of the American middle class has remained elusive. The most salient characteristics of this group are fluidity and dynamism, expressed in the upward mobility of its members.³⁹ In Bledstein's formulation, class in America is achieved, not inherited, and the individuals who reached the top of the class hierarchy in the nineteenth century did so by taking advantage of opportunities that would provide both wealth and knowledge. The men on the Muybridge Commission, in other words, could not take their distinguished position in Philadelphia society for granted, but on the contrary were required to work to establish and maintain an intellectual hold on the city.

One way they did so was to release a set of photographs that, had they been distributed by anyone else, would have been skewered by antivice activists. Despite the myriad ambiguities and subjective interpretations surrounding charges of obscenity in Victorian America, it is clear that the social class of both the producers and consumers of a particular image could determine its moral interpretation. This phenomenon is illustrated by the example of two court cases in the years bookending the production of *Animal Locomotion*. In the fall of 1884 a cache of photographs was seized from August Muller, a young clerk in Edmund F. Bonaventure's New York City book and picture store. On October 7 of that year the New York Supreme Court found Muller guilty of selling indecent and obscene photographs "representing nude females in lewd, obscene, indecent, scandalous, and lascivious attitudes and postures."⁴⁰ Three years later, 117 photographs and engravings were seized from the gallery of distinguished art dealer Roland Knoedler. Public outrage ensued, including the submission of a letter of protest by the Society of American Artists, signed by William Merritt Chase, Augustus St. Gaudens, Kenyon Cox, J. Alden Weir, Edwin Blashfield, and Eastman Johnson. On March 23, 1888, Justice Kilbreth, in a New York City court, found that only two of the pictures seized were in fact lewd and immoral.⁴¹

³⁹ See Burton J. Bledstein, *The Culture of Professionalism: The Middle Class and the Development of Higher Education in America* (New York, 1976), 5, 20. On the American middle class, see also Burton J. Bledstein and Robert D. Johnston, *The Middling Sorts: Explorations in the History of the American Middle Class* (New York, 2001).

⁴⁰ The images in question were photographs of nine original paintings, eight of which had been exhibited at the Paris Salon and one at the Centennial Art Exhibition in Philadelphia. See Jane Clapp, *Art Censorship; A Chronology of Proscribed and Prescribed Art* (Metuchen, NJ, 1972), 157.

⁴¹ Roland is the name used by Nicola Beisel, "Morals versus Art: Censorship, the Politics of Interpretation, and the Victorian Nude," *American Sociological Review* 58 (1993): 145. Jane Clapp uses both Herman and Edward. See *Art Censorship*, 160–61.

The difference between these two cases lies in both the public reaction and the final verdict. When Muller was raided, the public remained silent, yet the Knoedler raid was met with public outcry. The judges' rulings mirrored the public sentiment, with Muller found guilty of all charges and Knoedler acquitted of nearly all. The reason for this difference lies in the social class of the producers and consumers of each group of images. Muller is described by sociologist Nicola Beisel as "a store clerk from a poor neighborhood," and his clientele were drawn from the surrounding area.⁴² Knoedler, on the other hand, was an established high-end dealer who worked with upper-class patrons.⁴³

The men behind the publication of the *Animal Locomotion* volumes were aware of the social dynamic that allowed upper-class citizens privileges with the nude that were denied to individuals of the lower classes, and they used that to their advantage. Pepper ignored a warning from Edward Coates that the nudes in the Muybridge publication might be found objectionable.⁴⁴ Rather than self-censoring the material, Pepper forged ahead with the project, but took measures to shield the photographs from the scrutiny of moral crusaders. The title of the publication provided a technical description of the investigation and the name of the university was emphasized on the title page (fig. 4). While the names of the commission members were not listed on the publication, articles by Marks, Allen, and fellow University of Pennsylvania professor Dercum followed in the 1888 *Animal Locomotion: The Muybridge Work at the University of Pennsylvania. The Method and the Result*. Additionally, Pepper and his colleagues effectively selected the initial audience for the photographs by producing a product that demanded a high price. The plates were sold in sets of 100 each for one hundred dollars, with a full set of 781 plates available at a rate of six hundred dollars. This prohibitively

⁴² Beisel, "Morals versus Art," 152.

⁴³ The *New York Times* described Knoedler's gallery as "a respectable house that has furnished respectable citizens with good pictures for more than a generation." Quoted in Beisel, "Morals versus Art," 150.

⁴⁴ In September 1886, as the *Animal Locomotion* proofs were being prepared, Edward Coates advised Pepper: "The human figure series should I think be carefully examined and considered. If the work is to be published at all the usual question as to the nude in art and science must be answered Yes. Otherwise the greater number of the 561 series would be excluded. At the same time there are probably some lines to be drawn with regard to some of the plates. That there will be objection in some quarter to the publication would seem to be most likely if not inevitable." Coates to Pepper, Sept. 27, 1886, William Pepper Papers, 2:425, University of Pennsylvania Rare Books and Manuscript Library. Perhaps as a result of this warning, the volumes described the photographs according to the model's state of dress (nude, seminude, pelvis cloth, transparent drapery, draped).

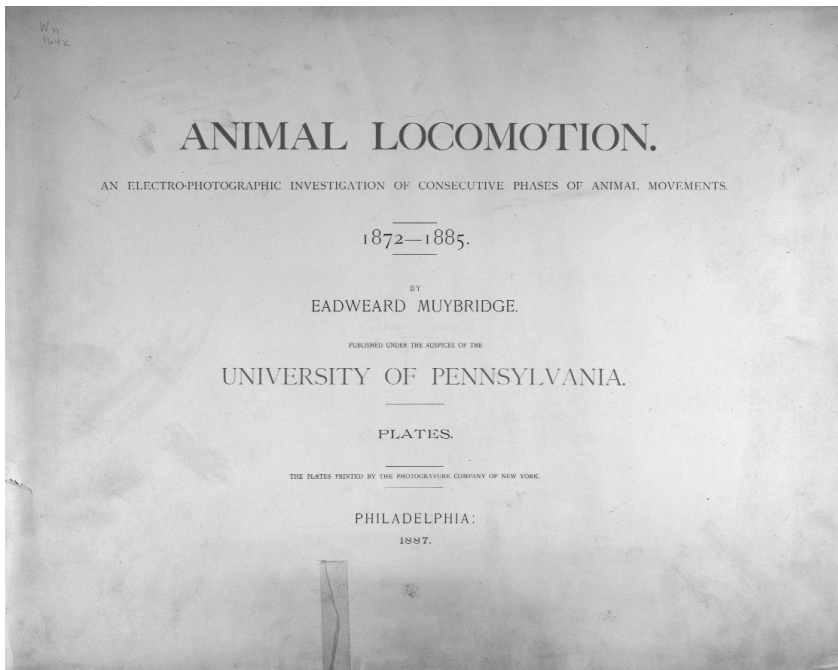


Fig. 4. Title page of Eadweard Muybridge's *Animal Locomotion*. Historical Society of Pennsylvania.

high price ensured that only wealthy, upper-class individuals and members of institutions would have immediate access to the photographs.⁴⁵ The original subscriber list, published in a June 1887 announcement, already numbered 236 individuals and 52 institutions and United States government offices. The individual subscribers included such luminaries as ex-president of the United States Rutherford B. Hayes, biologist and intellectual Thomas H. Huxley, inventor Thomas Edison, artist Pierre Puvis de Chavannes, writer and critic John Ruskin, designer Louis Comfort Tiffany, and industrialist and financier Cornelius Vanderbilt, some of whom had been exposed to Muybridge and his work during his European tour. Subscribing institutions included the National Academy of Design and Corcoran Gallery of Art, Harvard, Yale, and Johns Hopkins Universities, the Library of Congress, and the Smithsonian Institution.

⁴⁵ Also, the *New York Times* reported that "Care is taken that the nude series cannot be bought by those who do not intend to use such work for serious study" (Mar. 5, 1888).

The social standing of the majority of Muybridge Commission members and others involved with the project, including initial subscribers, compensated for the problematic reputation and status that Muybridge and Eakins brought to the project. Photographic historian Marta Braun suggests that the formation of the commission was necessary due to the “eccentric” character of Muybridge, who was known to act recklessly and peculiarly during his stay in Philadelphia, and to his “unsalubrious personal history,” referring to the 1875 murder of his wife’s lover. Braun argues that the formation of the commission seven months after the project’s approval indicates some hesitation or doubt about Muybridge on the part of the university.⁴⁶ There is also evidence that in the later stages of the project Pepper questioned the inclusion of Muybridge’s name on *Animal Locomotion*’s title page. Pepper was counseled to retain the photographer’s name by Edward Coates, who suggested that because Muybridge had by that date achieved a wide reputation as a photographer, his name would bring positive rather than negative attention to the publication.⁴⁷ Pepper acquiesced, either out of fear of the same reprisal Stanford experienced for dropping Muybridge’s name from a publication, or from a desire to take advantage of Muybridge’s fame to promote the publication. However, the name of the University of Pennsylvania equaled Muybridge’s in prominence.

Eakins, too, had a problematic reputation. While creating painted portraits of many of Philadelphia’s finest citizens, he did not strive to attain the high social standing of his subjects. He was born of modest means and, while eventually gaining great success as a painter, maintained a lifestyle described as “bohemian” by his brother-in-law William Crowell.⁴⁸ Eakins rejected Victorian rules of decorum to produce nude imagery, but unlike the *Animal Locomotion* photographs, his nudes, including *The Gross Clinic* (1875), *The Swimming Hole* (1883), and *The Agnew Clinic* (1891), repeatedly met with criticism and rejection. Edward Coates hid away Eakins’s nude photographs from public view, including those of the Naked Series (1883), the Arcadia photographs (1883), and Eakins’s own motion studies produced in 1884–85 alongside

⁴⁶ Marta Braun, “Muybridge’s Scientific Fictions,” *Studies in Visual Communication* 10 (summer 1984): 4, 20n12. Craig Zabel seconds this argument in “Capturing Time: Muybridge and the 19th Century,” in *The Art and Science of Eadweard Muybridge*, comp. David Robertson (Carlisle, PA, 1985), 10.

⁴⁷ Coates to Pepper, June 6, 1888, William Pepper Papers, 3:504.

⁴⁸ See McCauley, ““Most Beautiful of Nature’s Works,”” 55.

Muybridge's work at the University of Pennsylvania.⁴⁹ Finally, in February 1886 Eakins lost his position as director of the schools and professor of painting at the Pennsylvania Academy of the Fine Arts, in part due to his unacceptable interaction with nude models.⁵⁰ While he was slated to pen an article for *Animal Locomotion: The Muybridge Work at the University of Pennsylvania. The Method and the Result*, his work was ultimately replaced with an article by Muybridge Commission member William D. Marks. Among other proposed explanations for Eakins's absence from the final publication, art historian Janine Mileaf offers the possibility that Eakins's own reputation was so tarnished by 1888 that an article authored by him would have sullied the publication as a whole.⁵¹

Despite the involvement of such questionable characters as Muybridge and Eakins, the *Animal Locomotion* photographs escaped the censored fate of almost all other nude images in Victorian Philadelphia. Their unquestioned success can be attributed in part to the status of the other men involved with the project, from Provost Pepper to publisher Lippincott, and to the class of individuals and institutions who viewed and reviewed the photographs. Additionally, the pictures benefited from having been produced on the grounds and under the auspices of the University of Pennsylvania.

Professionalism and the University of Pennsylvania

The social status of the *Animal Locomotion* producers was bolstered by their association with the University of Pennsylvania and by their professionalism, which in the 1880s became a crucible of elite status in urban America. Securing the status of "professional" entailed specific

⁴⁹ As Elizabeth Johns recounts, Coates was "so unnerved by the photographs of nudes that Eakins had made at the Academy that he put eighty-five (presumably all he could find) in his safe-deposit box after the artist was fired." See "An Avowal of Artistic Community: Nudity and Fantasy in Thomas Eakins's Photographs," in *Eakins and the Photograph*, ed. Danly and Leibold, 93n51.

⁵⁰ His dismissal was ostensibly a response to the indiscreet removal of a male model's loincloth in the presence of female art students a month earlier, and it was surrounded by a bevy of other complaints regarding Eakins's dealing with nude models. Johns argues, however, that Eakins's dismissal was a result not only of his use of the nude but also of his teaching methods. See "Thomas Eakins and 'Pure Art Education,'" *Archives of American Art Journal* 23 (1983): 2–5. Foster and Leibold also note that the directors of the academy may have been pleased to let him go after he had requested a doubling of his salary. Additionally, a number of students expressed displeasure with his curriculum. Kathleen A. Foster and Cheryl Leibold, *Writing about Eakins: The Manuscripts in Charles Bregler's Thomas Eakins Collection* (Philadelphia, 1989), 70.

⁵¹ Mileaf, "Poses for the Camera," 10.

academic training, determined by institutions of higher learning and upheld through professional associations and learned societies. In Philadelphia, the major determinant of professional status was the University of Pennsylvania, which underwent a revival beginning in 1868. Under Provost Charles J. Stillé, who headed the university from 1868 to 1880, the university reorganized its departments, expanded its land as it relocated to West Philadelphia, and renewed its commitment to the sciences.⁵² When William Pepper assumed the provostship in 1880, the transformation of the university accelerated and became fully realized. Provost Pepper drove the University of Pennsylvania's expansion and rise in status, and his sponsorship of the *Animal Locomotion* project both capitalized on and enhanced this ascent.

Son of a University of Pennsylvania graduate and professor and himself a graduate of the university in 1862 and of its medical school in 1864, Pepper guided perhaps the most significant period in the development of the university. As a condition of his acceptance of the provostship in 1880, Pepper negotiated a shift in the role of the provost, from a figurehead at the mercy of the trustees to chief administrator of the university. As such, Pepper would abandon all teaching responsibilities in order to preside over the board of trustees, act as an ex officio member of all committees, and serve as president of each faculty. The new role of the provost offered administrative clout and authority over nearly every aspect of the expanding university.

Pepper took advantage of this new power. He raised and appropriated funds for the land expansion that, over the course of his provostship, increased the property of the university from fifteen to fifty-two acres; he oversaw the construction of such buildings as the library and dormitories; he secured an endowment of one hundred thousand dollars for the Wharton School of Finance and Economy in 1881; he established the departments of philosophy, physical education, physical culture, and architecture; and he opened the Veterinary School and School of Biology in 1884. Not only did Pepper have the intellectual foresight to establish new departments and schools at the university, but he had the charm and connections to raise the necessary money. One early biographer went so

⁵² See Gen. Joshua L. Chamberlain, Edward Potts Cheyney, and Ellis Paxson Oberholtzer, eds., *University of Pennsylvania: Its History, Influences, Equipment and Characteristics: With Biographical Sketches* (Boston, 1902), 47–120; Martin Meyerson and Dilys Pegler Winegrad, *Gladly Learn and Gladly Teach: Franklin and His Heirs at the University of Pennsylvania, 1740–1976* (Philadelphia, 1978), 101–15.

far as to dub Pepper a “money-making machine,” and Shakespearean scholar Horace H. Furness wrote of his skill at identifying “the exact location in every rich man’s body of the *pocket-book* nerve . . . so as to excite the largest reflex action.”⁵³

In addition to physically expanding the university, Pepper worked to extend its intellectual influence throughout the globe. Contemporaneous with the university’s support for Muybridge’s work was its seventy thousand-dollar sponsorship of the 1888 Babylonian expedition, a project that resulted in the 1890 opening of the Museum of American Archaeology at the university and continued with four campaigns to Nippur through 1900.⁵⁴ Pepper chaired the Babylonian Exploration Fund beginning in 1888 and applied his fund-raising skills vigorously to this endeavor. He saw clearly the connection between providing money to such an expedition and increasing one’s own reputation, writing of a potential donor, “He is of ripe age and needs some dignified opportunity of reaching a broader fame.”⁵⁵ Pepper himself acted on such an impulse, using the Babylonian expedition as a tool to increase the university’s name recognition. As John Punnett Peters stated in an 1898 report on the explorations, “the University of Pennsylvania ha[s] won a noble and unique reputation for princely liberality in the support of scientific explorations, wherever scholarship is honored and admired, both in this country and abroad.”⁵⁶

Lastly, Pepper guided the University of Pennsylvania’s transition from a primarily educational institution to one that focused on specialized research. He developed and expanded the graduate curriculum and encouraged the advanced research of its faculty.⁵⁷ As he wrote in 1888 regarding the Muybridge project: “The function of a university is not

⁵³ The first quote comes from Bruce Kuklick, *Puritans in Babylon: The Ancient Near East and American Intellectual Life, 1880–1930* (Princeton, NJ, 1996), 27. The second comes from Meyerson and Winegrad, *Gladly Learn*, 107 (italics are theirs). Meyerson and Winegrad go on to note that Pepper also was quite generous himself, donating to the university out of his own pocket and refusing remuneration for his services as professor and provost.

⁵⁴ For an extensive discussion of the Babylon Exploration and Pepper’s involvement see Kuklick, *Puritans in Babylon*.

⁵⁵ Quoted in Kuklick, *Puritans in Babylon*, 28.

⁵⁶ John Punnett Peters, *Nippur; or, Explorations and Adventures on the Euphrates, the Narratives of the University of Pennsylvania Expedition to Babylonia in the Years 1888–1890* (New York, 1897–98) Peters was a clergyman, Old Testament scholar, and professor of semitics at the University of Pennsylvania. He was the first director of the American exploration in Mesopotamia.

⁵⁷ Meyerson and Winegrad write that “the most important change which took place during Pepper’s administration was in the area of graduate education.” Meyerson and Winegrad, *Gladly Learn*, 111.

limited to the mere instruction of students. Researches and original investigations conducted by the mature scholars composing its faculties are an important part of its work, and in a larger conception of its duty should be included the aid which it can extend to investigators engaged in researches too costly or elaborate to be accomplished by private means.”⁵⁸ Pepper’s efforts at expanding the physical and intellectual reach of the university through building projects and archaeological expeditions, establishing new departments and schools, and emphasizing the importance of specialized research enhanced the culture of professionalism as it developed in the 1880s.

Throughout this period the significance of degree-granting institutions grew: the number of institutions and their enrollment rose substantially between 1870 and 1900; in the 1870s and 1880s, the number of bachelor’s degrees awarded in the United States increased 28 percent; and 1880 was the first year in which American institutions awarded more than one hundred academic doctorates.⁵⁹ A widespread phenomenon during the later nineteenth century in fields as varied as education, journalism, architecture, and social work, professionalization was especially profound in Philadelphia in the arenas of law and medicine, and with professionalism came prestige.

As Bledstein observes, the expansion of the numbers of highly educated individuals bred a mid-Victorian American society in which “the citizen became a client whose obligation was to trust the professional. Legitimate authority now resided in special places, like the courtroom, the classroom, and the hospital; and it resided in special words shared only by experts.” The culture of professionalism bred public submission and passivity, the acquiescence of middle-class America to professional authority.⁶⁰ As

⁵⁸ William Pepper, “Notes,” in *Animal Locomotion. The Muybridge Work at the University of Pennsylvania. The Method and the Result* (Philadelphia, 1888), 5.

⁵⁹ Bledstein, *Culture of Professionalism*, 277, 297. The developments at the University of Pennsylvania were part of a trend among universities at the time. In Bledstein’s discussion of these events, he credits several university presidents, but no provosts. He does not discuss the University of Pennsylvania at any length, but focuses on the following institutions: Princeton, where President James McCosh (1868–88) built numerous campus buildings, liberalized the curriculum, and introduced graduate studies; Harvard, where President Charles William Eliot (1869–1909) also introduced a graduate school, formalized entry requirements, courses of study and exams, and oversaw the opening of Radcliffe College; and the University of Michigan, where President James Burrill Angell (1871–1909) created the first professorship in education and the first course of instruction in forestry, organized graduate studies into its own school, and established exam and admissions requirements. New universities formed during this time of expansion include Cornell, Johns Hopkins, and the University of Minnesota. See Bledstein, *Culture of Professionalism*, 129–41.

⁶⁰ *Ibid.*, 78, 104, 331.

knowledge became less attainable by middle-class citizens outside the university, nonprofessionals were forced to rely on highly trained experts. Faith in their work rested on their status, which in turn rested on esteem for the university as an institution and on belief in the rationality of science.

Pepper and his colleagues on the Muybridge project relied both on their social status and on the public's uncritical trust in professionals to shield images of the nude body from moral scrutiny. The prime example of a nude that was accepted and even embraced by the American public during the Victorian era is Hiram Powers's *Greek Slave* (1846). Powers offered a narrative through which to understand the sculpture: the carved figure was a young Greek maiden captured and abducted by the Turks and sold into slavery. He included in the sculpture the chains of her bondage, the locket of her love, and the cross of her faith. It was, as art historian Joy Kasson writes, a successful combination of nudity with "modesty, constraint, and Christian resignation."⁶¹ The sculpture was accepted by the American public as a symbol of religious faith rather than a marble nude. Just as the *Greek Slave* was shrouded in the vestments of piety, the naked bodies photographed by Muybridge were cloaked in the robes of university authority, which during these years gained the unquestioning faith of the middle class.

Animal Locomotion, in turn, enhanced the professionalism of its producers by bolstering the reputation of the University of Pennsylvania. Although *Animal Locomotion* was not a financial success for the university, it did serve as a gambit in the game of public relations that was crucial to increasing the prestige of the American university. In his "Notes" to *Animal Locomotion*, Pepper wrote that the sole object of the endeavor was to contribute to scientific study of animal locomotion. However, nine years after its publication, Pepper confessed to his lawyer: "I undertook patronage of Muybridge, believing that it would promote the general recognition of the University . . . I feel that it may help the University to be able to send presentation copies of these plates to important people from whom we seek concession."⁶² The provost's goals for the Muybridge project went well beyond the purely scientific or even educational.

⁶¹ Joy S. Kasson, *Marble Queens and Captives: Women in Nineteenth-Century American Sculptures* (New Haven, CT, 1990), 50.

⁶² William Pepper to H. Galbraith Ward, June 15, 1896, William Pepper Papers, 7:1438–40.

Like the far-reaching Babylonian expedition, Pepper treated the Muybridge project as a promotional undertaking and a public relations endeavor, one that would emphasize the prominence of the university through the dissemination of a massive, high quality, visually appealing, and technologically innovative publication. The complete publication was voluminous and lavish in its production. The title page and the photographic plates were printed on fine linen steel-plate paper weighing one hundred pounds to the ream and the plates were often bound in Russia leather. The resulting books are huge, heavy, and burdensome, qualities that impaired use but emphasized importance through sheer size.⁶³

Pepper doled out copies of these extravagant complete editions of *Animal Locomotion*, rather than the smaller one hundred-plate sets, in the hopes of reaping material benefits. Notably, in 1888 the trustees sent a set of Muybridge's photographs to His Majesty the Sultan of Turkey. According to the *Pennsylvanian*, the gift was intended to "soften his heart toward the University and incline him to give her scholars permission to carry away with them what may be left at Babylon and the surrounding country," thus proving a practical, in addition to ideological, relationship between the Muybridge project and the Babylonian expedition.⁶⁴ Even in 1901, while Muybridge and others continued to work to fill subscriptions to repay production expenses, Pepper attended to the university's public relations, donating copies of *Animal Locomotion* to various institutions of science, art, and education.⁶⁵ As a result, Muybridge's pictures landed mainly in the hands of important individuals and institutions—just the people and places whose recognition would benefit the University of Pennsylvania. Ownership by these individuals and institutions assured that the name of the university would be on the tongues of influential men throughout the world.

Beyond spreading the name of the University of Pennsylvania as a benefactor of innovative research, Pepper intended that the *Animal Locomotion* volumes take advantage of the developing public esteem for

⁶³ The size of *Animal Locomotion* can be compared to John James Audubon's *Birds of America* (London, 1827–38). This four-volume publication contained 435 life-sized prints, each on twenty-five-by-thirty-eight-inch paper. When bound, each volume weighs approximately sixty pounds.

⁶⁴ This gifting of the Muybridge volumes was in the context of intensive negotiations with Constantinople during the summer of 1888, with the goal of gaining permission from the Turks, who governed Mesopotamia, to excavate and export the findings. See Kuklick, *Puritans in Babylon*, 35–37.

⁶⁵ Muybridge to Erwin F. Faber, Mar. 11, 1901, box 1, folder 37, Eadweard Muybridge Collection, University Archives and Records Center, University of Pennsylvania.

the university as an authoritative institution. Following his statement on the importance of the university supporting researchers, he added, "When ample provision is made in these several directions, we shall have the University adequately equipped and prepared to exert fully her great function as a discoverer and teacher of truth."⁶⁶ Pepper's vision for the role of the university in society was grand. He wrote sweepingly in 1881 of the "future power of a great University like ours, deeply rooted in the fertile soil of a peaceful and thoughtful people; growing with their growth, and strengthening with their strength; increasing its Faculties and its facilities as the mass of knowledge multiplies; and diffusing its illuminating and purifying influence, through ever widening circles, until, like the sweet light of Sirius, it reaches the furthest confines of humanity."⁶⁷ In a great paradox, Muybridge's photographs delivered this "purifying influence," this "sweet light," in the form of hundreds of images of naked men and women performing their daily activities before the camera's quick eye.

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⁶⁶ Quoted in E. Ray Lankester, "The Muybridge Photographs," *Nature* 40 (May 23, 1889): 78.

⁶⁷ William Pepper, *Addresses at the Inauguration of William Pepper, MD as Provost of the University of Pennsylvania: February 22, 1881* (Philadelphia, 1881), 62.