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Darwin's Camera: Art and Photography in the Theory of Evolution, by Phillip Prodger. Oxford: Oxford University Press, 2009. Pp. 320. 7 color illustrations, 106 b & w illustrations. $39.95 cloth.

In October 1843, predating William Henry Fox Talbot's celebrated *The Pencil of Nature,* which began to appear in installments in June of the following year, Anna Atkins (1799–1871) published *Part I of Photographs of British Algae: Cyanotype Impressions.* It was the first photographically illustrated book in Britain. The only daughter of the scientist John George Children, Atkins used the cyanotype process, developed by John Herschel, to document specimens of algae she had collected. She was motivated to do so by a desire to record botanical minutiae that might be missed by other media. Atkins's methods of generating cyanotypes, which involved washing, drying, and arranging hundreds of delicate specimens of seaweed and preparing sheets of cyanotype paper, were in their own ways as painstaking as Herschel's chemical researches. The delicate photograms lent an incomparable transparency to the tender plant life reproduced. Facilitating a sort of seeing through the object, somewhat like the revelatory eye of a microscope, the cyanotype medium bestowed upon the observer's visual capacity a type of extra dimension. Scientific rationalization and faithful reproduction were at the heart of Atkins's project. When twenty-nine years later, in 1872, Charles Darwin published his photographically illustrated *On the Expression*

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of the Emotion in Man and Animals, photography was an established medium, having undergone huge developments. The albumen prints of facial expression in Darwin's text seem a far cry from Herschel's haunting blue process that would achieve long-term cultural relevance in the form of the architectural blueprint. Indeed, while the latter records unique originals that stress the fragile substance of its objects, the former presents an infinitely reproducible medium that generates by the 1870s a more familiar monochromatic schema of browns. Yet in the historical and material distance between these two moments, and two very distinct photographic processes, a number of conceptual and philosophical debates had come to determine the ontological status of the photographic medium. At the same time, the ability of a photograph to uniquely make present an object, to render it with an unprecedented degree of veracity, remained a source of fascination for Darwin as he embraced it in 1872, as it had been for Atkins in 1843.

Phillip Prodger's fascinating, intricately researched, and beautifully produced book *Darwin's Camera* inhabits vital aspects of these four decades of photography. Indeed, the somewhat happy coincidence of Darwin's publication of *Voyage of the Beagle* in 1839 with the patenting of the daguerreotype in Paris, along with Talbot's announcement of photography in England, marks the beginning of what would become a developing correspondence between Darwin's scientific career and the photographic medium. While *The Expression* was Darwin's first and only photographically illustrated book, Prodger demonstrates that its content evolved over a considerable period of time. Darwin drew heavily on his notebooks labeled "M" and "N" that record his ideas about emotional expression. the first of which he began in 1838 and the second in 1856, three years before the publication of *The Origin of Species.* Darwin also collected visual images, both as a means of cataloging examples of facial expressions (as data) and also with a view to using them as illustrations in his work. *The Expression* culminated in thirty photographs and a number of wood engravings. Some of the photographs were produced specifically for the project, while others Darwin sourced from a range of places, including the London Stereoscopic Company, English regional firms, and French, Italian, and American firms. Many of these images, including forty-one that Prodger believes were "bought specifically for their expressive content" (9), are collected in the Cambridge University Library and, along with thousands of letters, manuscripts, edited proofs, and newspaper clippings, provide the rich archive for

Darwin's Camera. The Darwin Correspondence Project that has so far only dealt with written material has also enabled Prodger to situate the fascinating project of *The Expression* within the context of the range of Darwin's work.

Divided into eleven chapters, each holding some compelling central preoccupation such as eyes and ears, crying infants, eugenics and the spirit world, Prodger's book at once orbits around *The Expression*—tracing its origins and those texts that came after it—while periodically introducing readers to the minutiae of its production, those ways in which decisions on illustration were carefully orchestrated and subject to so many contingent factors that have largely remained invisible to us. For example, Darwin's significant relationship with the artist and photographer Oscar Rejlander, fascinating for its displays of shared interests and affection, is anchored in a discussion of the role of theatricality in a photographically illustrated scientific book. Prodger addresses head-on the apparent paradox of Darwin's decision to use photographed theatrical gestures in a book dedicated to the analysis and understanding of spontaneous emotion. Indeed, Prodger demonstrates the flexibility of the terms "evidence" and "illustration" in a period in which there did not yet exist a strict protocol for "scientific" photography. In an appendix, Prodger includes Rejlander's hitherto unpublished "Odd Odds and Ends," a transcription of notes cataloging varieties of expression that he sent to Darwin in 1871 and that Darwin marked up in red pencil, a text that conveys both the intensity of the two men's conversations about photography and also the playful engagement of their working relationship. In unpacking the nuances of Rejlander's relationship to Darwin, this brief aphoristic text reveals some of those larger contradictions at the heart of the photographic process in the nineteenth century.

The first chapter of *Darwin's Camera* provides new information on Darwin's knowledge of painting and illustration that reminds us of the extent to which his experience of visual culture began very much as a prephotographic one. The chapter also identifies his reliance on literary references. In analyzing Sebastiano del Piombo's *The Raising of Lazarus* (1517–19), Prodger connects to Edmund Burke's influential *Philosophical Enquiry into the Origin of Our Ideas of the Sublime and the Beautiful* (1757) Darwin's interest in the painting's "sublimity." Although Prodger does not go on to analyze in detail Darwin's assimilation of a particularly Burkeian, as opposed to a Kantian, account of the sublime with its roots in "terror," the connection that Prodger makes is

enabling. It allows readers to further consider those ways in which Burke's relentless interest in physiological effects of the sublime and the beautiful on the human subject drove Darwin's own conceptual approaches in *The Expression*. Darwin's interest in blushing, for example, is one that had preoccupied Burke in the *Philosophical Enquiry,* especially the question of whether blushing required an audience or whether it was possible to blush in private. Thus, setting Darwin's *The Expression* within the larger context of nineteenth-century philosophical, literary, and artistic inquiry allows Prodger throughout *Darwin's Camera* to historicize those complex concerns that came together in Darwin's text. For example, chapter 4, dealing with the passions, discusses the interdisciplinary sphere in which Darwin sought to situate his understanding of the expression of the emotions. There were diverse publications for Darwin to consider: physiognomic treatises, passion manuals, and anatomical studies. In this context, Prodger shows how Charles Bell's *The Anatomy and Philosophy of Expression as Connected with the Fine Arts* (1806) provided for Darwin not only evolutionary implications in its arguments but also a method in which scientific and artistic discourse worked symbiotically. Those passages from Bell that Darwin annotates are frequently ones in which Bell identifies precedents in the fine arts of painting and sculpture of depicting fine gradations of emotion.

At the same time, of course, postphotography, Darwin's relationship to the visual arts invariably must differ from that of Bell, and *Darwin's Camera* demonstrates in its later chapters some of the myriad ways in which photography makes its particular presence felt. While not all readers will agree with Prodger's claim in his introduction that Darwin "forever changed the way that pictures are seen and made" (xxiv), it is undoubtedly the case that Darwin's use of photographs in *The Expression* raises key theoretical questions pertaining to the medium more generally. Some of these concern the translation of the modernity of photographs into the older medium of wood engravings. Chapter 6, on nineteenth-century photographs of "the insane," addresses material perhaps most familiar to readers in the form of Guillaume-Benjamin Duchenne de Bologne's albumen prints from *The Mechanism of Human Facial Expression, or an Electro-physiological Analysis of the Expression of the Passions Applicable to the Practice of the Fine Arts* (1862). Duchenne used electrical currents applied to the faces of patients in La Salpêtrière hospital in the suburbs of Paris to stimulate muscles and record simulated expressions. But what is new in

Prodger's account is his examination of the choices that Darwin made in including engravings of some of Duchenne's photographs in his own project. Prodger demonstrates how Darwin, in deciding to include eight images from Duchenne, chose six of the same subject: an old man suffering from an almost complete facial anesthesia. When discussing Darwin's use of Duchenne's photographs that include the electrical probes used to stimulate the facial muscles of their subjects, Prodger concludes that the "electrical experiments gave the human face the status of an appliance" (90). He thereby suggests that since the photographs appeared too technical and scientific, Darwin altered them in the engravings to make them more about "expression." Thus, for Prodger, with the instruments removed, James Cooper's engraved version of "Terror" (plate 6-5) attains "new strength. . . . There is a revelatory quality about [it]" (87). Arguably, though, in asking the engraver to remove "'galvanic instruments and hands of operator'" (87), Darwin seeks to eliminate a profound sense of the subjection of the individual as pictured in the unedited picture.

In the manner of his engraving of the photograph of 1870 "Insane Woman Showing the Condition of Her Hair" (plate 6-16) by a photographer in the circle of James Crichton-Browne, Cooper's engraving "Terror" is notably very different from the photograph (plate 6-15). Cooper introduces more wrinkles into the face of the old man than appear in the photograph. In both cases in the transformation of photograph into engraving, the engraver stylizes the images. The faces become more heavily lined, and in the woman with erect hair the engraver exaggerates the lines of her face to the extent that the subtlety of expression in the photograph is lost. Similarly absent from the original in the cropped duplicate is the fact that the subject's arms are not visible; her whole body except the face is obscured by the rough plaid shawl or blanket into which she is pinned at the neck specimen-like for our viewing. Both photographs point up the vulnerability of their subjects in a way that the hand-generated engravings do not. Prodger claims that released from the photographic context, the old man in the engraving "Terror" communicates "unmitigated terror" (87). But for me the more deliberately aestheticized hand-generated medium is visually less shocking than its photographic counterpart, for it returns the image to a history of engraving and thereby detaches it from an actual referent. There remains the possibility that it may be an invention.

Similarly, in Duchenne's "Horror and Agony" (plate 6-6) of chapter 6 of *Darwin's Camera,*

two medical figures apply electrodes—one at the top and one at the bottom of the image—and in both cases their heads are cropped. Most prominent though is the contrast between their dark suit jackets and clean shirt cuffs and the soiled fabric of the old man's open shirt. The difference in social status and the sense of subjection is especially tangible. The medical subject's body is exposed as he undergoes intervention by two anonymous figures, and it is in such a sense that the photographic image has been likened to a scene of torture. This is not to say that Darwin was insensitive to the treatment of Duchenne's subjects but instead that there remains an indelibly troubling quality burned into the photographic plate in the form of the open shirt front of Duchenne's, and subsequently Darwin's, "toothless old man."

What is not acknowledged in Prodger's interesting discussion of Duchenne but is crucial to the transformation of photograph into engraving is the insistence of the photographic medium, its ability to capture stray detail, or what the photographer or viewer may consider extraneous detail. These are qualities peculiar to photography and at the time of *The Expression* still relatively new to photographic methods of reproducing the visible world. Early photography, even when subject to the highly selective cropping and framing devices of a photographer, cannot avoid capturing certain elements in the visual field. That is to say, although seemingly truthful in those very ways that Darwin wanted them to be, photographs (as part and parcel of that "truth") are indiscriminate and give us things we do not want (here galvanic instruments); in its causal connection to a referent, a photograph does not discriminate in its reproduction of what was "there" at the time it was taken.

Although Prodger claims that Duchenne "did not attempt to explain the origins of expression as Darwin did" (90), arguably Darwin took from Duchenne a legitimization of theatricality as a means of generating desired examples of expression. One difference, however, is that Darwin's frequent use of Rejlander as a model prevents the potentially exploitative quality of what we encounter in Duchenne's images, especially those of powerless subjects such as the old man and a young woman. The third section of Duchenne's work on human physiognomy was devoted to aesthetics, and employing literary narratives, his aim, as claimed in the preface, was to "demonstrate the art of correctly portraying the expressive lines of the human face," which he termed "the orthography of facial expression in

movement."[1] One of his photographs depicts a young woman patient from La Salpêtrière, nearly blind from progressive optic nerve degeneration, in the role of Lady Macbeth. Duchenne includes long extracts from Shakespeare's play and sets up his "model" in a theatrical pose with dagger while having the "procerus" muscle in her forehead manipulated to show the expression of "aggression."[2] Prodger does not include this particular image, but it has fascinating implications for his argument in the way that it portrays a medical simulation of a theatrical setup—pose, costumes, and props—in which the patient/actress "looks" directly at the observer with an electrode held in the center of her forehead by a "medical" man standing visible to her right. The viewer is very much aware of witnessing a double simulation here: the one aesthetically set up, the other electrically induced. Duchenne simulates an expression that is itself exemplified by the artificial creation of aggression in Lady Macbeth. The set up of the spectacle is present for all to witness: there is no attempt to hide it. Indeed, in this example we have a strange historically specific hybrid: the overt and up-front simulation of a state of emotion depicted with the indiscriminate accuracy of a photographic lens.

Such accuracy resonates rather differently when, after looking far and wide for an appropriate photograph of an authentic crying baby, Darwin chose Rejlander's image that became known as "Ginx's Baby." The image became incredibly popular, as Prodger indicates, selling thousands of copies in both its nine- by twelve-inch print and its carte-de-visite form. In many ways, as *Darwin's Camera* so convincingly demonstrates, Rejlander is for Darwin a far cry from Duchenne. However, in publishing "Ginx's Baby," Darwin nonetheless settled for a simulation of a photograph, albeit a different sort of simulation from those of Duchenne and one that brings to the fore the vexed question of photographic "truth." Rejlander's albumen photograph "Ginx's Baby" proved too small and difficult to reproduce by heliotype process in *The Expression,* so as Prodger outlines, Rejlander created a larger chalk drawing to look like a photograph and take the place of the original in Darwin's book. And it passed as a photograph.

Darwin's Camera dramatizes those ways in which, as evidenced by Rejlander's simulated photographic "baby," the "look" of a photograph—its appearance—overrides its methods of production. Like Rejlander, Darwin recognized the limitations of regarding photography as a purely mechanical medium. And Prodger's

book vividly brings to the fore Darwin's investment in photography in all its material and conceptual complexity.

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NOTES

1. Cited in Andre Parent, "Duchenne De Boulogne: A Pioneer in Neurology and Medical Photography," *Canadian Journal of Neurological Science* 32 (2005): 369–77; quotations on 374.
2. Ibid., 373.