SIX EXPOSURES

Essays in Celebration of the Opening of the Harrison D. Horblit Collection of Early Photography

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"Splendid Calotypes" Henry Talbot, Amelia Guppy, Sir Thomas Phillipps, and Photographs on Paper

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On entering Sir Thomas Phillipps's house at Middle Hill in 1845, Lady Pauline Trevelyan found it

> piled [from] floor to ceiling right & left with books in cases & out of cases & in boxes & packages—the walls of the stair case the same. The passage at the top is in the same plight, with the addition of a bookcase down the middle. The principal room is so full of MSS that only a thin person can wriggle themselves along the passages left between the solid walls of paper. The dining room is deluged. Drawing room and billiard room given over to the books.

A correspondent of Ruskin, Pauline visited Phillipps with her husband, Sir Walter Calverley Trevelyan, a childhood friend of William Henry Fox Talbot. She recorded their welcome at Middle Hill:

> the dining room table & some chairs were cleared today in honour of our arrival—at considerable trouble I fear. They received us very kindly and showed us many most beautiful and curious books. Lovely MSS with illuminations—Gospels, old histories & classics—Virgil . . . illuminated MSS seem quite common things here.

Yet amid so many ancient volumes of "such exuberance of riches in that way I never saw or imagined," a very modern book stood out in Pauline Trevelyan's memory: Sir Thomas "showed me a Number of Talbots Pencil of Nature. Splendid calotypes."[1]

"Splendid calotypes"! Although less than five years old at the time of this visit, William Henry Fox Talbot's invention of a practical photographic process on paper was already beginning to assert itself among the more traditional methods of printing and reproduction. Talbot had expressed the hope that his process would make "every man his own printer & publisher" and enable "authors to make facsimiles of their works in their own handwriting;" for Sir Thomas, photography's potential precisely to copy his manuscripts and to create other forms of facsimile was irresistible.[2]

If Harrison Horblit's Connecticut home was not nearly so densely packed as had been Middle Hill, it had nonetheless absorbed a goodly part of the latter's riches. And in impulsively acquiring Sir Thomas's collection of photography, Harrison Horblit had likewise absorbed much of his hero's fascination with the youthful medium. I still remember my first visit to Horblit's house. In short order I was holding Sir Thomas's copy of *The Pencil of Nature*, likely the very one that had so impressed Lady Trevelyan a century and a half before. The occasion was to lay the groundwork for what would become the limited edition 1989 *Anniversary Facsimile* of Talbot's seminal publication.[3] The eclectic nature of Horblit's collection, shaped in no small way by the voracious appetite of Sir Thomas Phillipps himself, was critical to elucidating the structure of Talbot's pioneering work. Harrison Horblit's own detailed knowledge, both of his own collection and of book practices generally, led to some challenging questions. His enthusiasm was an important underpinning for the project in its earliest days. I only regret that he never saw the final product, one greatly influenced by the early role he played in shaping its form.

William Henry Fox Talbot's invention of photography was in fact the result of an embarrassing deficiency. A man of attainments in many fields, and a member of the Reform Parliament, he was entering the prime of his professional and personal life by the 1830s.[4] He married during Parliament's Christmas break in 1832, and in the course of the following summer began touring the continent with his new wife, Constance. By autumn, they found themselves on the Italian shores of Lake Como, where they met up with Talbot's half-sister Caroline and other family members. In October 1833, at Villa Melzi outside the village of Bellagio, Talbot's manifold skills failed him: everyone around him was happily sketching away, but Talbot himself could not draw. Turning to science, he attempted once again to employ the aid of the *camera lucida*, a prismatic aid for draughtsmen, which imparted a verisimilitude that was of great value to scientists (and, it must be said, to more artists than was generally admitted). Despite the realistic image offered by the camera, Talbot unfortunately still lacked the visual skills of the draughtsman. The image presented to his eye by the camera did little to help him reduce the complex and colorful three-dimensional world to pencil lines on paper.[5] As Talbot himself later recalled in the introduction to *The Pencil of Nature*, his camera drawings were "melancholy to behold." But he was a man of science, and it was to science that he turned for help. Realizing that the optical image produced in a related instrument, the *camera obscura*, was nothing more than a succession of stronger and weaker areas of light, Talbot wondered if he might employ the well-known powers of sunlight to affect a coating on a sheet of paper placed in the camera.

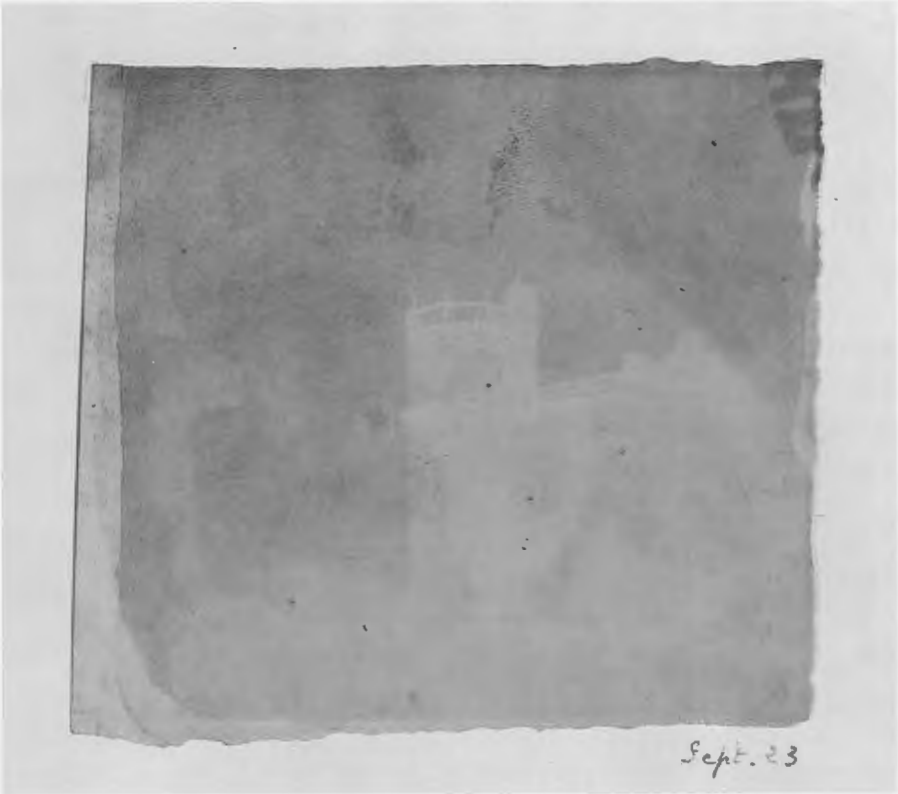
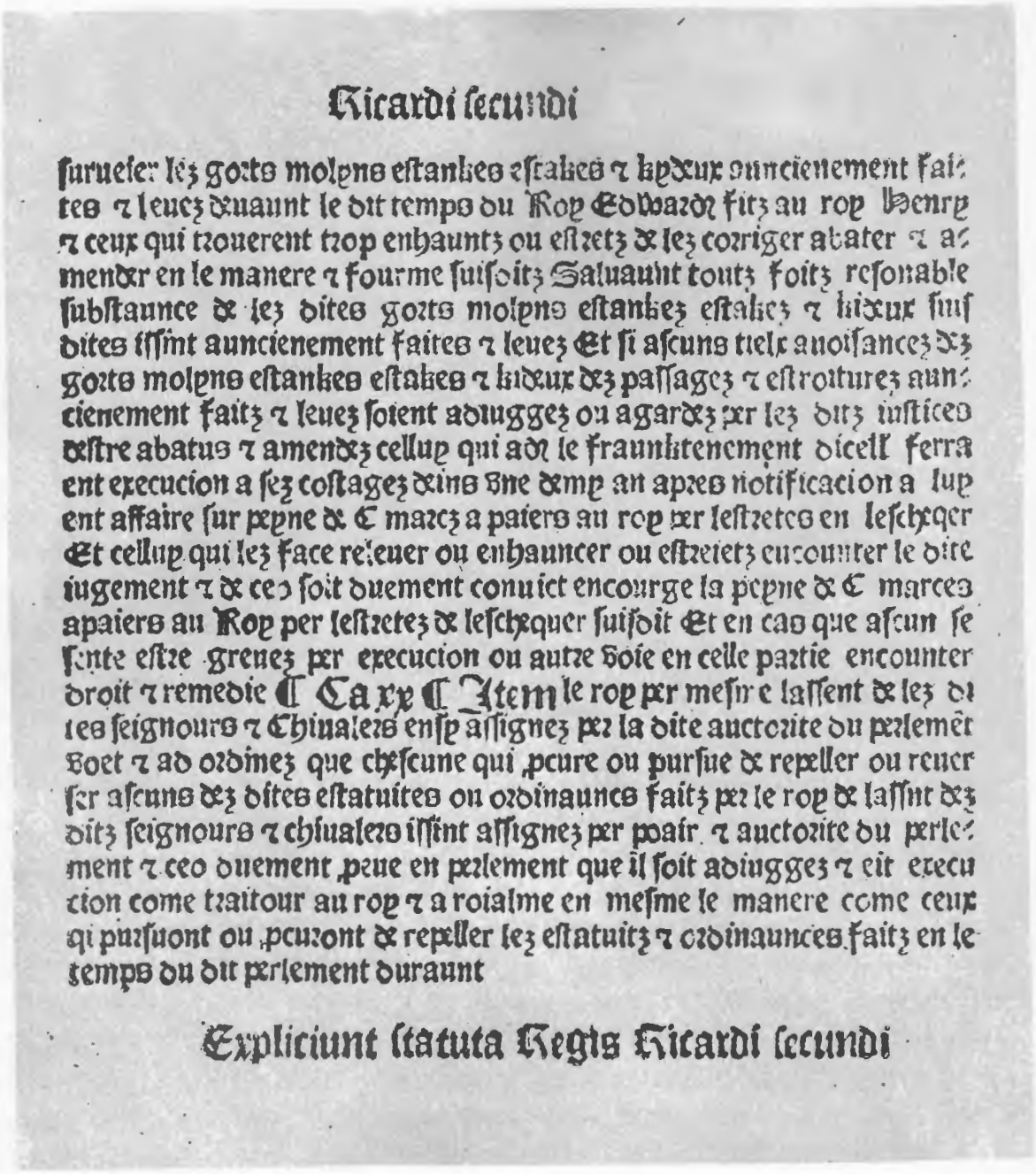


FIGURE 7. William Henry Fox Talbot. *Sharington's Tower, Lacock Abbey, from the Southeast*, September 23 [1839?] Photogenic drawing negative; image: 9.1 x 9.8 cm.

Thus was the idea of photography born. Talbot could do nothing to put it into effect while traveling, and then on his return to England faced demanding Parliamentary and mathematical duties. Sometime during the spring of 1834, however, as the sunlight began to regain its power, he began his experiments. Although he did not consider chemistry to be his strong point, Talbot was highly educated and possessed of a good library at Lacock Abbey. His previous readings led him to investigate the light-sensitive properties of silver chloride. By soaking writing paper in a solution of common table salt, drying it, and then flowing over it a coating of silver nitrate, he set up a chemical reaction, entrapping the resultant light-sensitive silver chloride within the fibers of the paper. Once dry, this paper could be positioned under an opaque object (such as a leaf or a feather) and exposed to the sun. The silver chloride was reduced to metallic silver wherever the light struck, creating a colored image. Where the object blocked the light, the paper remained



Ricardi secundi

surueier les gorts molyns estankes estakes & kydeux auncienement faites & leuez deuaunt le dit temps du Roy Edward fitz au roy Henry & ceux qui trouerent troy enhauntz ou estretz de lez corriger abater & amender en le manere & fourme suisoitz Saluaunt toutz foitz resonable substaunce de lez dites gorts molyns estankez estakez & kideux sus dites issint auncienement faites & leuez Et si ascuns tiels auoisancez dez gorts molyns estankes estakes & kideux dez passagez & estroiturez auncienement faitz & leuez soient adiuggez ou agardez per lez dits iustices destre abatus & amendez cellui qui ad le fraunktenement dicell ferra ent execucion a sez costagez deins vne demy an apres notificacion a luy ent affaire sur peyne de C marcz a paiers au roy per lestretes en leschequer Et cellui qui lez face releuer ou enhauncer ou estretez encounter le dite iugement & de ceo soit duement conuiet encourge la peyne de C marces apaiers au Roy per lestretez de leschequer suisoit Et en cas que ascun se sente estre greuez per execucion ou autre voie en celle partie encounter droit & remedie ¶ Caxy ¶ Item le roy per mesme lassent de lez dites seignours & chiualers ensy assignez per la dite auctorite du parlement voet & ad ordinez que chescune qui pcure ou pursue de repeller ou reuerser ascuns dez dites estatuites ou ordinaunces faitz per le roy de lassent dez ditz seignours & chiualers issint assignez per poair & auctorite du parlement & ceo duement peue en parlement que il soit adiuggez & eit execucion come traitour au roy & a roialme en mesme le manere come ceux qi pursuont ou pcuront de repeller lez estatuitz & ordinaunces faitz en le temps du dit parlement duraunt

Expliciunt statuta Regis Ricardi secundi

FIGURE 8. William Henry Fox Talbot. *Fac-simile of an Old Printed Page*, November 12, 1839. Salted paper print from a photogenic drawing negative; image: 18.6 x 16.7 cm., paper: 22.9 x 18.6 cm.

unaffected, and thus a negative image of the object was formed. In this, Talbot had advanced no further than his predecessors, for the light-sensitive salts remained in the paper.[6] If the image thus formed was viewed under ordinary light, it soon began to darken all over.

Talbot continued his experiments throughout 1834, first at Lacock, and then in the autumn in Geneva. He finally noticed an anomaly: the edges of his coated papers sometimes displayed a different sensitivity than did the centers. Contemplating this, he realized that the ratio of salt to silver affected the sensitivity. Contrary to what might have been expected, a weak solution of salt produced the greatest effect, and a strong solution almost none at all. Talbot then sensitized his paper with a weak solution of salt, made his exposure, and flooded the paper with a strong salt solution. This process converted the remaining light-sensitive silver to a state where it was relatively inert, allowing his pictures to be viewed under normal light. Photography on paper had become a reality.

Talbot privately named this initial process *sciagraphy*—the depiction of objects through their shadows. His first attempts at using this paper in a camera were failures. This initial process would now be classed as a print-out paper, where all of the energy for the reduction of the silver had to come directly from the sunlight. An enormous exposure (as was possible by placing the paper under an object in the sun) made the image visible after some minutes. By the summer of 1835, he had refined this process, attaining a nicety of proportions that allowed him to use it in very small cameras—"mousetraps," as his wife once called them. Exposure times were still very long—about an hour—but the potential had been realized (figure 7).

This process remained private to Talbot and to close family members. He was extraordinarily active in other areas of study during this period. By the time photography was announced to the public in 1839, Talbot had published four books and twenty-seven scientific papers, and had received the Royal Medal from the Royal Society for his work in mathematics. How he rued the day in January 1839 when he learned that a Parisian artist, Louis Jacques Mandé Daguerre, had been the first to publicly announce a photographic process! Talbot hastily displayed his leftover examples from 1835, now calling them photogenic drawings, but Daguerre had taken the day. In the end, it would turn out that their methods were wholly different. The Daguerreotype resulted in a beautiful and highly detailed, unique image on a silver-plated sheet of copper. Talbot's process could produce only shadows on a coarse sheet of paper. He had long realized that this "negative" (a term soon to be applied by Sir John Herschel) could be printed on another sheet of sensitive paper, reversing the tones once again back to their original values. However, he initially viewed this extra step as a disadvantage. It was a tricky procedure, and one that confused the fine details even further.[7]

Throughout 1839 Talbot continued to struggle with his photogenic drawings. While the process remained best suited to contact printing, he began to recognize the value of the negative in enabling multiple prints.[8] The ability to make an exacting *Fac-simile of an Old Printed Page* (figure 8) so excited Talbot that he later included a copy of it as plate IX in his *Pencil of Nature*. Selecting a 1484 black letter treatise on taxes from his own library, Talbot cleverly picked from this volume a sheet printed on the recto only. By shining sunlight through it, he was able to print it by contact onto a sheet of sensitive paper. The resulting negative could then be used to make multiple prints.[9] During the summer of 1840, Talbot's visual sensibilities began to improve under the tutelage of the art he had invented, as the ability to see almost immediately on paper the camera's interpretation of the scene in front of it finally taught him how to observe. During the summer of 1840, by carefully honing his practice of the photogenic drawing process, Talbot was to produce some of his finest negatives.[10] The main drawback was that the exposure times remained long—a minute or two in favorable sunlight was the best that could be hoped for. In interiors, on cloudy days, or in areas deep in shade, the possibilities for adequate exposures were distinctly limited.

In October 1840, during photography's second public year, Talbot made a breakthrough that was almost magical in its character. Within a series of experiments, he found that a solution of gallic acid and silver nitrate would strengthen underexposed negatives to the point where they could be seen. A very brief exposure to light, sometimes just a second or two, would produce no visible effect on the sensitive paper. However, when the sheet was bathed in the developing solution, the invisible latent image triggered by the light was chemically amplified. Within a few seconds, an image of full density could be achieved. This discovery paved the way for most photographs that have been done ever since. Unlike Talbot's original photogenic drawings, print-out processes in which the image emerged from the camera fully formed, the new process produced an apparently blank sheet of paper during its brief exposure. This was then amplified by the chemical developer to reveal the full tones of the image. Called, appropriately, a developed-out process, this approach made Talbot's paper negatives competitive in speed with the rival Daguerreotype. When he patented and publicly announced the new negative process in the spring of 1841, Talbot named it calotype photogenic drawing—soon shortened to simply calotype (or, as his mother and close friends encouraged, the Talbotype).[11] It was this negative process enabling exposures to be made in the range of seconds rather than minutes or hours that finally rendered Talbot's system practical.

Henry Talbot supported his loyal valet, Nicolaas Henneman, in leaving his direct employ to set up the first commercial photographic printing establishment. Located in the town of Reading, it was opened in 1843 specifically to exploit the possibilities of photo-

FIGURE 9. William Henry Fox Talbot. *Westminster from the Hungerford Market, London across the Thames*, June 1841. Salted paper print; image: 13.3 x 18.3 cm., paper: 18.6 x 22.7 cm.

graphic publishing within the domain traditionally commanded by engravers and lithographers. The plates for Talbot's grand promotional statement, *The Pencil of Nature*, were printed at the Reading Establishment. Each was an original photographic print, hand-coated and exposed to the sun under a negative. Each fascicle of the *Pencil* had several original silver photographic prints mounted in with text, but the whole idea was so new that Talbot found he had to insert an explanatory "Notice to the Reader," explaining that "the plates of the present work are impressed by the agency of Light alone, without any aid whatever from the artist's pencil. They are the sun-pictures themselves, and not, as some persons have imagined, engravings in imitation." The fascicles were sold freely through booksellers, but were produced in steadily diminishing numbers as production difficulties overtook Henneman.[12] Around the time of the first fascicle of *The Pencil of Nature*, Henneman also took on the production of a photographic frontispiece for the privately

FIGURE 10. Amelia Elizabeth Guppy. *Utrecht Seals*, 1853? from Phillipps album no. 20976, leaf 14. Salted paper print; image: 20.7 x 16.1 cm., volume: 25.2 x 20.2 cm.

published *Record of the Death-Bed of C.M.W.*[13] During the autumn of 1844, Talbot photographed for a new publication, this one to be sold by subscription, following Sir Walter Scott and titled *Sun Pictures in Scotland.*[14] The prints for all of these were made at Henneman's establishment in Reading. At the end of 1846, Henneman abandoned that location and moved to the larger potential market of London. He carried on the tradition of producing photographic prints for book illustration, making by hand more than 1,650 original prints for William Stirling's 1848 *Annals of the Artists of Spain*, the first book of art history to be illustrated by photography.[15] All of these rare and marvelous publications are represented in the Horblit collection.

With all this activity in publishing, it was almost inevitable that Talbot would sooner or later come to the attention of Sir Thomas Phillipps. Just when and how the two men initially came into contact is not known. Munby claims that they first met in London on May 3, 1843, and that may well have been the first time they came face to face, but an item in the Horblit collection implies a much earlier contact.[16] Arguably the most engaging Talbot image in the collection is a view of London, looking over the busy traffic on the River Thames (figure 9). Dated June 1841 in Talbot's hand, it belongs to a series of views that Talbot took over a two-day period and that is thought to be the earliest surviving paper photographs of London.[17] The view shows Westminster Abbey on the right and a gap before Westminster Hall on the left; the expected Westminster Palace is missing between these, having burnt in 1834 and not having yet been rebuilt at the time of the photograph. Talbot had taken up temporary residence in lodgings in Cecil Street, just behind Kings College (where his friend and colleague Sir Charles Wheatstone had his laboratory) and convenient to the Royal Society's rooms in Somerset House. His mother, Lady Elisabeth Feilding, recorded on June 15, 1841, that she had gone "to see Henry make Calotypes in his new domicile in Cecil Street."[18] Talbot wrote to his wife, Constance, that same day that "my windows in Cecil S^t^ command a good view of the river but unfortunately I find that the London atmosphere prevents a good result, even when the fog is hardly visible to the eye."[19] This difficulty, caused by the excessive sensitivity of Talbot's negative paper to blue light, is evident in the final image. Although no correspondence about this print has been traced, it is entirely possible that Talbot sent Phillipps this image almost immediately: an envelope survives—frustratingly empty—of just the right size, addressed in Talbot's hand to "Sir T. Phillips [sic] Bar^t^ with Mr Talbot's Comp^ts^." Phillipps added the note, "autograph of . . . Talbot Esq discoverer of ~~the~~ Photography ~~drawing~~ — July 1841."[20] It seems quite likely that the London image was conveyed in this envelope. Obviously, neither man knew the other well at this point, but there was every reason for them to become better acquainted in the future.

Given their mutual interests in reproduction and in ancient languages, it is not surprising that Talbot and Phillipps should have maintained a correspondence. On July 30, 1846, Phillipps wrote to Talbot,

> Some time since you were so good as to give me a fac-simile of a deed produced by your Photograph which was so exact that I could have almost believed it to be a *real* Deed—I have often reflected on the important uses to which this may be turned & among others of the preservation of remarkable writing. I have a MS of the 7th Century written in so remarkable a character that it would be well worth the trouble to make a fac-simile of it by means of your discovery & I should be extremely glad if you would come here & look at it & give me your opinion of it—I have lately bought many of your published Views &c by your Pencil of Nature & I begin to think it is almost useless to be at the expense of Line Engraving, when the Picture is given so exactly in two Minutes exhibition to the light.[21]

Talbot replied on August 16, 1846,

> I regret that I am unable to avail myself at present of your kind invitation to Middle Hill to inspect your MSS; but I shall have great pleasure in doing so at another time. Would you like me to send one of my assistants to Middle Hill to copy the MS of the 7th century for you, if it be found copyable, and at the same time he could make views of your house and the surrounding scenery or of any other interesting objects.[22]

Talbot was then staying at nearby Cheltenham, and on August 29, 1846, Phillipps replied,

> I shall be extremely glad if you would send over one of your assistants & as the weather I think is now likely to clear up we shall have more Sun. . . . I should be glad to buy one of your Apparatus, if any are to be sold, & if so, the Assistant could bring it with him.[23]

The assistant Talbot referred to was, in fact, his former valet, Nicolaas Henneman.[24]

Some of the most intriguing and challenging photographs in the Phillipps/Horblit collection were produced by one of the most intriguing people to be inspired by Talbot's invention. They are absolutely perfect reminders of how little we know about the early history of photography and how dependent we are on what at first glance might appear to be some of the less glamorous of the artifacts that might have been preserved. Two albums in the collection are titled *Mrs. Guppy's Photographs at Middle Hill*.[25] In these albums, Sir Thomas treated both paper calotype negatives and salted paper prints as he might have done miscellaneous manuscript leaves, having them sewn in by an edge, naked and unmounted. They are mostly what photographers of the time would have termed whole-plate size (that is, around two-thirds the size of a standard sheet of typing paper). All

FIGURE 11. Amelia Elizabeth Guppy. *Map of China, Held in a Frame*, 1853? from Phillipps album no. 19044, leaf 8. Calotype negative; image: 22.8 x 18.4 cm., volume: 25 x 20 cm.

taken in a camera, the subjects encompass various ingenious ways by which diverse cultures attempted to record their day-to-day life and to communicate this to posterity (see figures 10, 11, and 12). On looking at the copies of seals, maps, and inscribed urns, one is forcefully struck by how difficult it would have been to bring these to the printed page without the use of photography. Mrs. Guppy was providing Sir Thomas with a means of preserving his collection. This is underscored by some of the most poignant views in the volumes. Showing a disintegrating manuscript, these cautionary images are simply titled *Dust*.

In many ways, Amelia Elizabeth Guppy (1808–1886) was typical of the sort of person whose imagination was captured by photography in its earliest days, but that was perhaps the only way in which she was typical.[26] Born Amelia Parkinson, little is known of her childhood, except that she was raised in an atmosphere of comfortable privilege at Kinnersley Castle in Herefordshire.[27] Amelia was neatly summed up by a granddaughter as a "noted beauty and a toast," a description easily believable from the surviving portraits of her. A more complex picture is available in a description of her granddaughter Ruth, who is said to have closely resembled Amelia:

> Slender and long-legged, quick with life and intelligence, she had a mercurial temperament, at one moment charged with a brittle gaiety, and the next capricious, petulant or withdrawn; but in all moods and at all moments lovely to behold.[28]

The most direct assessment was from the granddaughter who said Amelia "was a lady of wildly independent mould and adventurous spirit, as well as of considerable talent as an artist."[29]

At least some of the artistic influences on this young woman of "considerable talent" are clearly implied. Her mother, Lucy Lechmere Parkinson, was an accomplished artist who erected a kiln on their property in order to fire the windows she painted for the nearby Church of Saint James. Amelia was a pupil of the famous painter and instruction-book writer David Cox. Family tradition has it that he stayed at Kinnersley Castle when he first moved to Herefordshire in 1814. Whether this direct connection is true or not, Cox was soon teaching at Miss Croucher's Girls School in nearby Hereford. Several David Cox paintings remained in the family until well into this century, said to be ones given to his young pupil. Extremely talented in her youth, Amelia may even have been the Miss Parkinson admitted in the unusual capacity of "Honorary Exhibitor" in the Royal Academy exhibitions from 1815 to 1828.[30]

Three threads that would soon be tied together emerged in the year 1834: Henry Talbot achieved his first successes in sciagraphy, slavery was abolished in the British

Empire, and Amelia eloped and got married. It is this latter event that possibly provides a clue to her connection with Sir Thomas Phillipps. Although her family approved of her attachment to Robert Guppy, a promising and energetic lawyer, for some reason the two decided to elope. Their immediate destination was Bitterly Court, the Shropshire home of her cousins the Walcots. Just a decade later, in 1844, the Reverend John Walcot would marry Maria Sophia, Sir Thomas's second daughter.

By all outward appearances, Robert Guppy was the most conservative member of his family, with the rest of the Guppys' seemingly more closely attuned to Amelia's inventive and mercurial temperament. Her husband's parents had made their fortune by inventing the special nail used to attach copper sheathing to the bottoms of British warships. This seemingly trivial invention, which kept the British ships free of barnacles, was a secret weapon decisive in the Napoleonic Wars. It enabled the British ships to sail faster and to stay at sea longer than the French ones, and this contribution made the Guppy family quite wealthy. Although Samuel Guppy held the patent for the nails, it is likely that his wife, Sarah Maria Beach, was at least the co-inventor. She took out other patents, in her own name, for such devices as a special mechanical bed, an attachment that allowed one to cook an egg in the top of a tea urn, and a method for constructing chain suspension bridges.

One of Amelia's new brothers-in-law was Thomas Richard Guppy, an engineer and partner with Isambard Kingdom Brunel. Brunel was to apply Sarah Guppy's method of bridge making to the spectacular Hungerford Bridge in London. Four years after Talbot took his view of *Westminster from the Hungerford Market, London across the Thames* (figure 9), he would return to the same area to record the newly built Hungerford Bridge in one of his most striking images.[31] Guppy was a founder of the Great Western Railway and a builder of Atlantic steamships, including the Great Western. His foundry in Naples fabricated the delightful market in Florence that is still in use today.

Another of Amelia's new brothers-in-law, Samuel, had perhaps the greatest influence on her. A sugar manufacturer, he married Georgina Protheroe, the daughter of a plantation owner in Trinidad. Colonel Philip Protheroe hired Amelia's husband to handle matters arising from the abolition of slavery, and on his visits there, Robert Guppy fell in love with Trinidad. His description to Amelia of two estates of

> luxuriant fertility, of the hills that enfolded them . . . of the rare orchids that grew there . . . made such an instant appeal to his wife's impulsive enthusiasm and love of beauty and adventure that they lost no time in . . . making known their resolve to settle in Trinidad.[32]

FIGURE 12. Amelia Elizabeth Guppy. *Babylonian Urn and Fragment of a Stone Figure on Pile of Books from Sir Thomas Phillipps' Library*, 1853, from Phillipps album no. 20976, leaf 25. Calotype negative; image: 21.8 x 17.6 cm., volume: 25.2 x 20.2 cm.

In 1839, the year in which the invention of photography was announced to the public, Robert gave up his promising London practice, Amelia placed their three small children in the care of relatives in England, and they moved away from the society in which Amelia had flourished. At first, their new life was idyllic. Amelia

> bought a white mule and a chestnut pony: the former for herself to ride, the latter for Thorpe, then a young man, whom she engaged as her personal attendant, and followed by whom, weighted down with her artistic paraphernalia, she explored the surrounding countryside. Where she elected to sketch he would set up her easel, and stand behind the stool on which she sat, holding a vast green-lined parasol over her head.[33]

In time,

> for miles around San Fernando she became a familiar figure, mounted on her white mule, clad in her riding-habit with its tight-fitting jacket and long flowing skirt, a wide-brimmed hat upon her head, a floating veil about her face, a jabot of lace at her throat and yellow gauntlets upon her hands; attended always by the faithful Thorpe astride the pony, carrying the painting equipment and the green-lined parasol. There was something remote and exotic in her appearance, yet everything also of the *grande dame*.[34]

Soon this all began to sour. Robert Guppy was an idealist who had personally invested in the future of a Trinidad without slavery and he defended that position throughout his legal career. What he could not defend against, however, was the enormous economic disruption brought about by the change from a slave to a laborer economy. Profits vanished, and once-grand plans had to be scaled back. Amelia might well have adapted to this parsimony if other things had remained equal, but they did not.

> At San Fernando . . . apart from her painting, there was little to capture her mind or imagination. She missed the intellectual and artistic stimulus of the circles in which she had moved in England, and found her society restricted to that of people whose interests and outlook were severely limited. Their narrow preoccupations were as wearisome to her as the scope of her intelligence was intimidating to them. She found them boring and tedious, and they found her incomprehensible and alarming.[35]

It was at some point during this period of only partial accommodation to life in Trinidad that Amelia took up the new art of photography. It had been introduced to the public in 1839, the same year she had moved to the island, but where and exactly when she acquired her interest in photography is not known. The earliest known photograph ascribed to her is a calotype portrait of her son, Robert Lechmere Guppy (within a few years, Lechmere, as he was universally known, was to be the first to describe Trinidad's "millions

fish." The popular aquarium fish is named in his honor). The portrait was done in 1847, while Lechmere was still being raised in England, so it must have been during a visit by Amelia to her original home. The choice of a portrait as subject was perhaps more significant than simply being a family snapshot. Theodora Walter remembered that "Grandma Guppy . . . was quite a well known artist in her day, especially as a portrait painter," so the genre would have been familiar to her, even if the medium was new. No other portraits by her have been located.

There was nothing to keep an independent spirit like Amelia from being self-taught in photography, but it would have been not uncommon for someone like her to receive some initial help from an adept already familiar with the vagaries of the art. Family lore records that Amelia was a personal friend of Talbot's. This may be true, but the extensive archives of Lacock Abbey (not yet fully processed) have yielded no mention of her thus far.[36] Until at least the late eighteenth century, there were Guppys in Melksham, the village adjacent to Lacock, and it is possible that Amelia's in-laws maintained ties there, however distant that branch of the family had become.[37] Another possible connection is a slight hint in the visitors' book kept by Talbot's mother, Lady Elisabeth Feilding. She recorded the 1829 visit of a Mr. Protheroe, perhaps someone from the family of Amelia's brother-in-law Samuel.[38] It may even have been Samuel himself who taught Amelia photography. Although none of his own photographs has been traced with certainty,[39] when he died in 1876, the editor of the *British Journal of Photography* honored him as "one of the oldest of amateurs."[40] Samuel's life was as colorful as that of any of the Guppys. His 1863 book, *Mary Jane; or Spiritualism Chemically Explained*, is filled with scenes of wonder. It is based on experiences with his first wife, Georgina Protheroe, whose "control" was named Mary Jane.[41] The book's direct references to photography are various. Although Guppy's linking of the efforts of Jacob in the Book of Genesis with the accomplishments of Louis Jacques Mandé Daguerre might seem obscure to the modern mind, the author clearly had both practical experience in photography and a greater than usual knowledge of its early history.[42] Georgina died shortly after this, and Samuel's reputation was assured by his second marriage, to the famous medium Agnes Nichol. She was the only major spiritualist of her day never detected to be a fraud. Samuel Guppy must have come into contact with another English spiritualist, Henry Collen, a miniature painter and friend of Talbot's who took out the very first license to practice photographic portraiture in London.[43] It might even have been Collen who taught Amelia Guppy. Another possible connection to the art is indicated by her son Lechmere Guppy, the subject of her earliest known photograph. He was later to publish with Jabez Hogg, an eye surgeon who was also an early advocate of photography (and a bitter opponent of Talbot's patents).[44] Finally, there is a remote possi-

bility that Amelia Guppy came under the same artistic influences as Lady Clementina Hawarden, a noted early photographic artist.[45]

Amelia Guppy is acknowledged only twice in the published records of the organized photographic circles. The 1859 list of members of London's Photographic Society includes "Guppy. Mrs. Amelia Elizabeth. *San Fernando, Trinidad.*"[46] The only exhibition records traced of her work are from 1854, when she submitted four landscape calotypes to the first annual exhibition of the Photographic Society in London. Her chosen subjects were *Stoke Bay Castle*, a *Garden House*, *Druid's Oak*, and *Ludlow Castle Entrance*.[47] Many of her paper negatives survived into this century, but only one has been found recently in the family collections. However, these collections retain numerous salt prints made from calotype negatives, the subjects of which are similar to those that she exhibited in 1854. Although undated, they are entirely consistent with photography of this period. One previously unidentified salt print in the collection of the Royal Photographic Society in Bath matches one of the family-owned prints. Curiously, no photographs made by her in Trinidad are known. It is possible, although counterintuitive, that she restricted this activity to her frequent visits to England.

We do not know why Phillipps chose Amelia Guppy in particular to photograph some items in his collection. Whatever the reason, whether it was simply a matter of opportunity or a carefully planned selection, she was a good choice. Her surviving architectural views demonstrate an excellent mastery of detail and an intelligent use of natural light (for all practical purposes, all that was available to photography at the time). The large and irregular Map of China (figure 11), executed on silk (?), had to be stretched on a crude frame and taken outdoors in order to be properly lit. Once there, it could be treated by her in the same manner as an ancient doorway or a section of a wall. But, rather than being forced to wait for the sun to achieve the best position, the map could have been rotated until the light favored its reproduction. What was required was a uniform light, emphasizing content of what was on the map's surface rather than its texture. The exposure time in the camera was perhaps a minute or two if the light was cooperating. While fine for a portrait of a stone building, a time this long would have demanded that careful attention be paid to the wind, lest the delicately stretched map flutter during the exposure, ruining the precise detail so necessary to the task at hand.

The collections of Utrecht Seals (figure 10) posed a different set of photographic challenges. These were small enough to have been photographed indoors on a library table and the extended exposure time needed would have posed little problem. The light had to be severely raking in order to create the shadows that would define the intaglio impressions. However, these very shadows would have confounded the effect if not carefully con-

trolled. The tray of seals was probably rotated to achieve the most favorable angle of light, and it is likely that Amelia Guppy also reflected some additional light back onto them to bring them within range. Talbot had counseled doing this in the text to plate five of his *Pencil of Nature*. Describing a copy of his plaster *Bust of Patroclus*, Talbot wrote,

> These delineations are susceptible of an almost unlimited variety, . . . the directness or obliquity of the illumination causing of course an immense difference in the effect . . . a better effect is obtained by delineating them in cloudy weather than in sunshine. For, the sunshine causes such strong shadows as sometimes to confuse the subject. To prevent this, it is a good plan to hold a white cloth on one side of the statue at a little distance to reflect back the sun's rays and cause a faint illumination of the parts which would otherwise be lost in shadow.

From both pictorial and cultural points of view, the most extraordinary images in these two volumes are the series depicting Babylonian urns and modern books (figure 12). The setting is transparently clear. A simple wooden chair has been brought out into the garden and positioned to catch the best angle of light. A heavily inscribed Babylonian urn displays its incisions in three-dimensional relief. A fragment of a sculpted hand raised above other incised writing brings in another culture's form of writing. The striped cushion of the chair poses two problems: it is visually distracting and would have formed a poor support for the heavy and irregularly shaped objects. Both of these objections are overcome by the simple strategy of placing the objects on top of two large leather-bound books brought out from the library, isolating the stripes and giving a level foundation. Or is it all that neat and simple? I don't think so. The juxtaposition of the ancient forms of recording —marks made in wet clay or stone—with printed books is in itself suggestive. It is all the more evocative when one considers that both of these stages are being contrasted with the very medium that is recording them. Mrs. Guppy's photograph absorbs these earlier cultural expressions, captures them, transforms them, and thus extends their life through its own magic.

All in all, the images Mrs. Guppy executed for Sir Thomas Phillipps are extraordinary documents of photography, demonstrating its virtues in precise reproduction. We do not know how long she continued working in the medium of photography. In 1871, at the age of sixty-three, Amelia Guppy set off on her own to explore the upper reaches of Venezuela's Orinoco River, with the goal of painting and collecting orchids. By one account, "its rapids were phenomenally dangerous, its jungles dense, forbidding and fever ridden, and its native Indians were notoriously savage and unpredictable in their behaviour."[48] No exaggeration, surely, for the source of this river remained undiscovered until

FIGURE 13. William Henry Fox Talbot. *Assyrian Cuneiform Writing with Translations*, 1874? Photoglyphic engraving; plate: 6.5 x 9.7 cm., paper: 12.6 x 16.1 cm.

1951, eight decades after Amelia's solitary journey. She was gone for more than a year, so alarming her family that her son Francis went looking for her. Tragically, he died of fever on the trip without ever finding his mother, who returned safely on her own. The collection of orchids that she brought back lasted into the twentieth century. The marvelous series of watercolors she created on this pioneering journey, mostly of flowers, survived until 1945. They were burnt by a descendant who felt their paper had deteriorated through insect attack beyond value, much to the chagrin of other family members. More of her work was lost when it was put in storage on Trinidad during the Second World War (not through enemy action; the family's effects simply disappeared from the warehouse).

Amelia Elizabeth Guppy died on July 27, 1886, at Belmont, Port of Spain, Trinidad. Sadly, she died alone, for her family was all visiting England at the time. She died as she had lived, a spirit displaced, poignantly described as an "old woman burned out by her own flame."[49]

In a sense, many of the early paper photographs that Phillipps preserved and Horblit later collected were likewise burnt out by their own flame. Many of them are heavily faded, ghostly reminders of once-glorious tones. The causes of this deterioration are both external and internal. The image is composed of a delicate deposit of fine silver trapped in the surface fibers of the paper, unprotected by any sort of overcoating. The same sulfurous fumes that cause silverware to tarnish also attack the silver photographic image, but whereas the slight layer of tarnish on a fork does no sensible damage to the mass of solid silver, it is relatively more destructive to the microscopically thin silver image. The salted paper prints (more natural for the human eye to translate than the negatives) are actually generally more susceptible to this destructive chemical process than are the negatives. The printed-out silver clusters deposited on the positives are extremely fine in their division and very vulnerable. In contrast, the chemically developed negatives have larger silver clusters, giving some natural protection against the outside world. Moreover, negatives were rarely trimmed and mounted down on board (a practice that necessarily would end their utilitarian if not their visual life). The use of wood-pulp papers and boards was on the rise at the time when photography was introduced. Many of these were highly acidic. When the paste from a dubious pot was slathered on the back of a print to be mounted, it brought its own chemical soup to the table, as well as furnishing a convenient solvent (water) that could leech additional chemicals from the mounting board. On the whole, therefore, prints and negatives kept loose in portfolios enjoyed a better and longer life.

But it was the internal environment of these early photographs that was often the more damaging factor. Talbot's initial approaches to making his photographs permanent were what would now be termed stabilization processes. They neutralized much of the light-sensitivity of the silver salts but did not remove the salts themselves. Each of these photographs that survives, in whatever state of readability, is a miracle of historic preservation.[50] The hypo fixer that Talbot adopted from his friend Sir John Herschel's practice was a great improvement in that it removed the remaining light-sensitive salts entirely from the paper. Most of the surviving photographs from Talbot's era certainly most of those produced from 1840 onward were fixed in hypo. Yet this elixir was a finicky and demanding mistress. Properly compounded, properly applied, and fully washed out in copious amounts of water, it did its work well. However, chemical purity was hardly a given in

Talbot's day. Adequate supplies of clean water were often difficult to come by, and then expensive fuel had to be burnt to heat the water to the temperature required for it to be effective in its solvent action.[51]

By the time of the Great Exhibition in 1851, Henry Talbot had come to recognize that his art was cursed by original sin. Rather than being discouraged by this, however, he conceived a new way to get nature to make his drawings for him. Building on a series of experiments dating back to 1838, Talbot took out a patent in 1852 for a process that he called photographic engraving. This is the direct predecessor of the photogravure process used to this day. When a sensitized layer of gelatin was spread on a conventional steel plate, exposure to light under a photographic positive created a physical mask in the pattern of the original image. When etched by conventional means, an intaglio plate could be printed in a conventional press, using good paper and time-tested carbon-based inks. In 1858, Talbot patented another, greatly improved process for making the printing plates and called it photoglyphic engraving. This new approach incorporated a resin aquatint ground that did a much better job of retaining middle tones. Perhaps more important, Talbot devised the system of using various concentrations of ferric chloride as etchants, an innovation universally adopted in the printing industry, not only for photogravure but for all forms of gravure printing. It is employed to this day, largely by practitioners who have no idea that the inventor of this critical working tool was also the inventor of photography. Around 1866, Talbot incorporated further refinements in a process he called photosculpsit.[52] Only his death, in 1877, put an end to Talbot's enormous contributions to this promising new technology. He had finally merged his world of the sun with the domain of the printing press. Sir Thomas Phillipps recognized the value of these efforts and began collecting Talbot's photogravures. The copy of a printed translation of Assyrian Cuneiform (figure 13) furnishes yet another example of one medium being used to extend another.[53]

On April 29, 1861, Phillipps wrote to Talbot, thanking him

> for the really, (without flattery,) beautiful specimen of Photographic Engraving which you have sent to me. The lines are so distinct & clear without blotting, that it looks as if laid on by Electrotype. If your process is perfected without being very costly it will supersede all other modes of multiplying copies . . . for it appears to me that the strokes in your Engraving are much finer than anastatic printing could make them.[54]

Sir Thomas was not far off the mark. Shortly after his lifetime, Talbot was proven correct in the direction of his quest, when other photogravure processes based on his emerged as powerful companions of type. Within the twentieth century, even the printed word yield-

ed to the lure of photography, as cold type replaced the traditional hot lead, and both pictures and words came to be reproduced using Talbot's invention. The famous bibliophile would have liked that, as would the inventor himself.

In preserving and building on the fine collection of photography started by Sir Thomas Phillipps, Harrison Horblit ensured that the legacy of the young medium would be preserved for future study, in much the same style as was done by Phillipps himself for the manuscript. Sometimes pale on the surface in their old age, these "splendid calotypes" possess an unequivocal inner beauty. They are eloquent testimony to the earliest harnessing of the sun to make images. In reviewing the first number of Talbot's *Pencil of Nature*, the *Athenaeum* astutely observed that photography had "enabled us to hand down to future ages a picture of the sunshine of yesterday."[55] Sir Thomas Phillipps and Harrison Horblit both did their part to keep that light alive.

Notes

1. Pauline Trevelyan's diary entry for April 9, 1845. MS C133 v. 25. Kenneth Spencer Research Library, University of Kansas at Lawrence.

2. Talbot, letter to Sir John Herschel, March 21, 1839. Herschel Collection, The Royal Society, London.

3. Larry J. Schaaf, *H. Fox Talbot's The Pencil of Nature: Anniversary Facsimile* (New York: Hans P. Kraus, Jr., Inc., 1989).

4. There are two excellent biographies of Talbot, different in their emphasis but complementary in their character. The standard work is H. J. P. Arnold, *William Henry Fox Talbot: Pioneer of Photography and Man of Science* (London: Hutchinson Benham, 1977). The other, which places more emphasis on Talbot's visual productions, is Gail Buckland, *Fox Talbot and the Invention of Photography* (Boston: David R. Godine, 1980).

5. See Larry J. Schaaf, *Tracings of Light: Sir John Herschel & the Camera Lucida* (San Francisco: The Friends of Photography, 1989). For more on artistic attainments within Talbot's family, see Martin Kemp, "Talbot and the Picturesque View: Henry, Caroline and Constance," *History of Photography* 21, no. 4 (Winter 1997): 270–82.

6. There is a long history of attempts by various people to accomplish much the same thing. Most of these were never made public in a timely fashion, but some undoubtedly took place. See Larry J. Schaaf, "The First Fifty Years of British Photography: 1794–1844," in Michael Pritchard, ed., *Technology and Art: The Birth and Early Years of Photography* (Bath: The Royal Photographic Society, 1990), 9–18.

7. The struggles Talbot went through to win public recognition of his accomplishments are detailed in Larry J. Schaaf, *Out of the Shadows: Herschel, Talbot & the Invention of Photography* (New Haven and London: Yale University Press, 1992).

8. A brief summary of the stages of Talbot's experimentation can be found in Larry J. Schaaf, "'A Wonderful Illustration of Modern Necromancy': Significant Talbot Experimental Prints in the J. Paul Getty Museum," in *Photography, Discovery and Invention* (Malibu: The J. Paul Getty Museum, 1990), 31–46.

9. A portfolio once owned by Phillipps (no. 21009) and now in the Horblit collection contains a number of paper negatives made by contact from a manuscript. Because the original was written on both sides, a reversed shadow of the writing on the verso was recorded when the sunlight was transmitted through the sheet. In a brave but futile attempt to compensate for this effect, the anonymous photographer who produced these (was it Phillipps himself?) struggled to retouch in ink all the spurious information.

10. For examples of this brief but fruitful period, see Larry J. Schaaf, *Sun Pictures Catalogue Seven: Photogenic Drawings by William Henry Fox Talbot* (New York: Hans P. Kraus, Jr., Inc., 1995).

11. Talbot's research thinking can be examined in the facsimile of his notebooks by Larry J. Schaaf, *Records of the Dawn of Photography: Talbot's Notebooks P & Q* (Cambridge: Cambridge University Press, 1996).

12. A surprising number of the originals survive. See Larry J. Schaaf, "Henry Fox Talbot's *The Pencil of Nature*: A Revised Census of Original Copies," *History of Photography* 17, no. 4 (Winter 1993): 388–96.

13. This thirty-three-page, privately published volume, dedicated to Catherine Mary Walter (1819–1844), was written by her brother, John Walter, Jr., who was later to become editor of the *Times*. The text was printed in London by Gilbert & Rivington, undoubtedly in very small numbers. Walter dated his personal statement January 24, 1844, and this date has led to some confusion. The idea has taken hold that this privately printed work predated *The Pencil of Nature*. Although Talbot certainly would not have minded if it had—the real purpose for producing *The Pencil of Nature* was precisely to encourage such publications—it is highly unlikely that the smaller volume was truly so early. Vernon Snow, in "The First Photographically Illustrated Book," *Times Literary Supplement*, December 23, 1965, took this date to be the date of publication. This assumption was repeated in Arthur Gill's otherwise excellent "Record of C.M.W.," *The Photographic Journal*, (October 1975): 490–91. No records of this publication have been traced. The Walters' home of Bear Wood was near Nicolaas Henneman's

establishment in Reading, and it is likely that arrangements for this special production were made in person. On May 31, 1844, just three weeks before the first fascicle of *The Pencil of Nature* was actually issued, Henneman wrote to Talbot, that "I went to Mr. Walter the other day but owing to the weather I did not get such good results as I expected w^hl there I took another Negative of the Bust and Mr. Walter is very much pleased with the result. Mr. Lovejoy advised me not to accept anything if they offer it to mee [sic] thinking it will be more to the advantage for the Calotype" (LA42-32, Fox Talbot Museum, Lacock). If Henneman heeded the advice of the well-known bookseller George Lovejoy, and he probably did, it would explain why no dated invoice has been traced. The prints for *C.M.W.* would not have been made much before this letter, and most likely later than it. By the time they were sent to London and mounted in the printed books, the first fascicle of *The Pencil* would almost certainly have been available to the public. The original bust that Henneman copied was displayed for many years in the lobby of the Times Building, and more recently has been deposited in the Church of Saint Catherine in Bear Wood (built by John Walter in memory of his daughter and consecrated in 1846).

14. The best analysis of this publication is Graham Smith's "William Henry Fox Talbot's Views of Loch Katrine," *Bulletin of the Museums of Art and Archaeology, The University of Michigan* 7 (1984–85): 48–77.

15. The context for this is well covered in Anthony Hamber's pioneering "A Higher Branch of the Art": *Photographing the Fine Arts in England, 1839–1880* (Amsterdam: Gordon and Breach, 1996), 74–76; 143–44.

16. A. N. L. Munby, *The Formation of the Phillipps Library from 1841 to 1872* (Cambridge: Cambridge University Press, 1956), 39.

17. Gavin Stamp analyzes this image in his *The Changing Metropolis: Earliest Photographs of London, 1839–1879* (London: Viking Books, 1984), 28. Stamp illustrates the NMPFT (Science Museum) copy. A second copy is in the Fox Talbot Museum, Lacock, and a third in a private collection. All are terribly faded. *Schaaf no. 3705.*

18. Lady Elisabeth Feilding, *Diary 1841.* Lacock Abbey Collections.

19. Letter, Henry Talbot to Constance Talbot, June 15, 1841. LA41-39, Fox Talbot Museum, Lacock.

20. Gen 1952/3, Special Collections, Edinburgh University Library.

21. Quoted in Munby, *The Formation of the Phillipps Library*, 39–40.

22. Letter, Talbot to Phillipps, August 16, 1846, marked "Answd 19 Aug." C. 496, ff. 163–64, MS Phillipps-Robinson, Bodleian Library, Oxford.

23. Letter, Phillipps to Talbot, August 29, 1846. Fox Talbot Museum, Lacock.

24. In his reply of September 2, Talbot said of his assistant that "he resides at Reading." On December 15, he noted, "My photographer is about to open an establishment on Regent Street." Both of these references clearly describe Nicolaas Henneman. C 496, ff. 165–71, MS Phillipps-Robinson, Bodleian Library, Oxford.

25. The Robinson typescript inventory lists three albums in one lot: "Phillipps MSS. 19044, 20976 and 21009. These three volumes (two of them inscribed by Sir Thomas Phillipps 'Mrs. Guppy's Photographs at Middle Hill' and 'Mrs. Guppy's Photographs of Middle Hill MSS. etc.') comprise a total of about 120 calotype (i.e., Talbotype) photographs *both* positive and negative, and consisting of pictures of manuscripts, charters, seals, specimens of ancient calligraphy, etc. Numbered throughout by Sir Thomas Phillipps and with, in many cases, explanatory titles in his hand. Where the paper is watermarked the date is 1850. An extraordinary collection and possibly THE EARLIEST COLLECTION OF BIBLIOGRAPHICAL PHOTOGRAPHS. This 'Mrs. Guppy' is possibly the assistant of Fox Talbot who Sir Thomas asked Fox Talbot for in a letter of July, 1846 and to whom Fox Talbot referred in a reply dated December the same year (see *Phillipps Studies* IV, pp. 39–40)." It is clear from this description that only two of the albums were marked by Phillipps as being by Mrs. Guppy; these are currently *album no. 12* (Phillipps no. 19044) and *album no. 13* (Phillipps no. 20976). The third album in this grouping, *album no. 11* (Phillipps no. 21009), was clearly not identified in this list as having been associated with Mrs. Guppy. Robinson's speculation about the possible identity of Henry Talbot's assistant is incorrect; see note 24 above.

26. Most of the information on Amelia Guppy is derived from archives held by her descendants. The content of these unpublished sources is largely summarized in Yseult Bridges, edited and completed by Nicholas Guppy, *Child of the Tropics: Victorian Memoirs* (London: Collins and Harvill Press, 1980), a copy of which may be found in the Harvard University Library. This was later reissued in a slightly corrected edition (Port of Spain, Trinidad: Aquarela Galleries, 1988). Unattributed quotations that follow are from the family manuscript sources used for Bridges's volume. I am indebted to Nicholas and Anna Guppy, Geoffrey MacLean, and Constantine Guppy for their assistance and cooperation.

27. She was born on November 21, 1808, at Bullingham Court, Herefordshire, the daughter of Richard Parkinson (d. 1851) and Lucy Lechmere (d. 1834). Her maternal grandparents were the Admiral William Lechmere (1752–1815) and Elizabeth, the daughter of Sir John Dashwood King of West Wycombe. She had one brother, John (1810–1859), who inherited Kinnersley Castle but sold it in 1858.

28. Bridges/Guppy, *Child of the Tropics*, 36.

29. Ibid., 71.

30. Algernon Graves lists various views done by Miss Parkinson, a painter, in most years in this range. Graves, *The Royal Academy of Arts: A Complete Dictionary of Contributors and Their Work from Its Foundation in 1769 to 1904* (London: Henry Graves and Co., Ltd, 1905), 5:58–59.

31. Talbot's view of the Hungerford Suspension Bridge is illustrated in Larry Schaaf, *Sun Pictures Catalogue Three: The Harold White Collection of Works by William Henry Fox Talbot* (New York: Hans P. Kraus, Jr., Inc., 1987), pl. 48. When the bridge was taken down, in the 1860s, the chains were recycled and used to complete the Clifton Suspension Bridge, adjacent to Sarah Guppy's hometown of Bristol, where their splendor can be enjoyed to this day.

32. Bridges/Guppy, *Child of the Tropics*, 73.

33. Ibid.

34. Ibid., 75–76.

35. Ibid., 75.

36. A good indication of the range of potential Talbot sources can be gleaned from Mike Weaver's *Henry Fox Talbot: Selected Texts and Bibliography* (Oxford: Clio Press, 1992). The extent of Talbot's surviving correspondence can be seen in the more than ten thousand letters listed in Larry J. Schaaf's *The Correspondence of William Henry Fox Talbot: A Draft Calendar* (Glasgow: Glasgow University Library Studies, 1995).

37. See Henry Brougham Guppy, *Homes of Family Names in Great Britain* (London: Harrison & Sons, 1890), 397.

38. Elisabeth Feilding, "Visitors at Laycock Abbey," 1827–1846. Lacock Abbey Collections.

39. There is one salt print of Ludlow in the Mowbray-Green Collection in the Bath Reference Library, Bath, England. It was removed from an album in recent times and is labeled in a modern hand as being by a "Mr. Guppy." It seems to be very much in the style of work accomplished by Mrs. Guppy, but no way could be found to confirm the accuracy of the transcription.

40. J. Traill Taylor, *The British Journal Photographic Almanac 1876*, 22. Samuel Guppy was born on November 25, 1795 and died on January 18, 1875. Obituaries also appeared in *The Times* and in the *Spiritual Magazine*.

41. The full title is *Mary Jane; or, Spiritualism Chemically Explained with Spirit Drawings. Also Essays by, and Ideas (Perhaps Erroneous) of, "a Child at School"* (London: printed by John King & Co., 1863). The Harvard University Library has an inscribed copy of this volume.

42. The reference to Genesis 30, verses 37 to 41, appears on page 96. There are frequent other references to photography, including, on page 5, "Photography has opened a new volume in nature;" on page 9, "Suppose a circular room, paper[ed] with photographic sensitive paper;" on page 95, "Another important matter is that (as every photographer knows) . . .;" and on page 98, "When Niepce began the study of photography it was based on the discoloration of bitumen by light."

43. Collen was quite active in promoting Talbot's process in the early years. See Larry J. Schaaf, "Henry Collen and the Treaty of Nanking," *History of Photography* 6, no. 4 (October 1982): 353–66; and "Addenda to 'Henry Collen and the Treaty of Nanking,'" *History of Photography* 7, no. 2 (April–June 1983): 163–65.

44. Possibly the son met Hogg through a connection already established by his mother. Robert Lechmere Guppy and Jabez Hogg, "On the Lingual Dentition of Some West Indian Gasteropoda," *Transactions of the Linnean Society*, 1867. For more on Hogg, see Helmut and Alison Gernsheim, *The History of Photography* (New York: McGraw-Hill, 1969), 145, 543.

45. Some years later, Amelia's first cousin Caroline Anna Murray Ogle would marry the Fifth Viscount Hawarden, whose older brother, the Fourth Viscount, was the husband of Lady Clementina Hawarden. Although this was likely just a coincidence, it is possible that the families knew each other prior to that, or moved in similar social circles. For more on Hawarden, see Virginia Dodier, "Clementina, Viscountess Hawarden: Studies from Life," in Mike Weaver, ed., *British Photography in the Nineteenth Century: The Fine Art Tradition* (Cambridge: Cambridge University Press, 1989), 141–50.

46. *List of Members of The Photographic Society* (London: printed by Taylor & Francis, 1859), 9.

47. John Dillwyn Llewelyn (who married Talbot's favorite cousin, Emma) annotated his copy of the printed catalogue and seemed to be familiar with Mrs. Guppy's work. He corrected the entry for 163. *Stoke Bay Castle*, listed as being from a collodion negative, to a Talbotype negative, and inserted the missing information for 204. *Garden House, calotype, Mrs. Guppy*, in *Photographic Society, Exhibition of Photographs and Daguerreotypes* (London: printed by Taylor and Francis, 1854). Llewelyn's annotated copy is now in the collection of the National Museum of Wales, Cardiff.

48. Bridges/Guppy, *Child of the Tropics*, 76.

49. Ibid., 77.

50. An excellent discussion of this is Mike Ware's *Mechanisms of Image Deterioration in Early Photographs: The Sensitivity to Light of W. H. F. Talbot's Halide-Fixed Images, 1834–1844* (London: The Science Museum, 1994).

51. The problems that Nicolaas Henneman faced in producing prints at his Reading Establishment are detailed in Larry J. Schaaf's introductory volume to the facsimile *Pencil of Nature*; especially pp. 38–42.

52. The available literature on this is poor. The best from a technical point of view is Eugene Ostroff's pair of articles, "Etching, Engraving & Photography: History of Photomechanical Reproduction," *The Journal of Photographic Science* 17, no. 1 (1969): 65–80; "Photography and Photogravure: History of Photomechanical Reproduction," *The Journal of Photographic Science* 17, no. 4 (1969): 101–115.

53. Based solely on its appearance and level of technical accomplishment, this photoglyphic engraving would most reasonably be dated to the late 1850s. However, John Huehnergard, Professor of Semitic Philology at Harvard University, has kindly pointed out that four of the signs first appear in Talbot's "Four New Syllabaries and a Bilingual Tablet," *Transactions of the Society of Biblical Archaeology* 3 (1874): 496–529. Talbot's article was based on a fragment of a tablet brought from Nineveh to England in the summer of 1874 by Talbot's friend George Smith. Thus, this photoglyphic engraving must have been made in 1874 or later, near the end of Talbot's life.

54. Letter, Phillipps to Talbot, April 29, 1846. LA61-86, Fox Talbot Museum, Lacock.

55. *Athenaeum*, February 22, 1845, 202.