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Revealing early photography in Birmingham through the practice of Jo Gane and George Shaw (1818 – 1904).

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Abstract

This PhD uses my art practice to understand and articulate photographic history. My research creates contemporary artwork made with photographic materials and processes; the calotype, daguerreotype and wet plate collodion, that are congruent with those used during the historical period under investigation (1839 – 1857). This making process brings life to new knowledge about the early development of photography in Birmingham.

The aim of my research is to articulate my understanding of the work of George Shaw (1818 – 1904) through the making of new photographs and generate knowledge of its continued importance to photographic practice today. The catalysts for my research are material image objects by Shaw made between c.1842 – 1855 in a private collection, in the National Science and Media Museum and in the Musée D’Orsay. These collections contain 30 daguerreotypes and 26 calotype photographs along with related images, correspondence, notebooks and ephemera. Shaw’s labour with photographic materials is important to photographic history and art practice today but is under-represented. My approach to photography as a material process highlights stories of industrial manufacturing in the Midlands and develops an understanding of the importance of place and material to both contemporary and historical practice.

This work sits across photographic history, science and contemporary art practice, offering contributions to the fields of history and art practice. In this study, re-creative practice operates as a starting point for an imaginative exploration of process activated by tactile and sensory experience. I write this as re-creation, rather than recreation to separate the repetition of making with congruent historical photographic materials and foreground the creative act. This creative practice-led approach generates an understanding of photography as both a historical collaborative practice and of its role in contemporary socially engaged photographic practices.

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Frontispiece: (l) Plate 1 and Figure 1. *George Shaw and Jo Gane*. Cropped and combined.

Chapter 1. Introduction

This research is a conversation between the practice of George Shaw in nineteenth century Birmingham and my practice as a visual artist today as illustrated in the frontispiece above. George Shaw (1818 – 1904) was a chemistry lecturer, patent agent, artist and photographer who was active at the dawn of photography. Shaw was a networked individual with a reach beyond the industrial city. He worked closely with wide circles of artists, educators and industrialists in the nineteenth century. I am a visual artist working with historical photographic processes in the midlands during the twenty-first century. I collaborate with a broad range of people, often in a socially engaged context. I work in the landscape to make photographs as a means of sensing historical stories. My practice operates within an expanded concept of reenactment, as articulated by Catherine Grant in her book on feminist art history, as a ‘form of embodied quotation that takes archival material as a script to be taken up, re-performed, rehearsed, and revised.’¹

Shaw is underrepresented in photographic history. To understand why and how his work remains important today is the driving force of this study. I address the following fundamental research questions throughout.

- Why is Shaw’s work important?
- How does re-creative practice generate knowledge about the role of photography both historically and today?

From these initial research questions, this study asks how photography operates as a collaborative, interdisciplinary activity that is shaped by the place in which it is made. It unpicks the social and environmental conditions and networks of people and institutions that were crucial to the flourishing of photography in nineteenth century Birmingham and more recently. New knowledge is generated by making new photographs with historical processes that render historical information into a contemporary and relevant visual and sensory form. This makes Shaw’s story

¹ Catherine Grant, *A Time of One’s Own*. (Durham and London: Duke University Press, 2022), 4.

comprehensible to a contemporary public audience who experience photography being made now with historical photographic processes in my practice.

This research is formed of three elements, the exhibition, 'Floating on the Confines of Sense' held at Birmingham School of Art in September 2025, the artist publication with the same title and this written thesis.² The exhibition showed new material visual artworks that are the result of making processes. The artist publication documents the processes of my new making and thinking with historical photographic processes through experiential site-writing, photographs that document processes and performances (listed at the rear of the publication as illustrations and inset into the pages) and visual artwork (full bleed images listed as figures in the publication). This written thesis operates across contemporary and historical practices to understand the importance of Shaw's work to contemporary photography and to understand his significance in the nineteenth century. The thesis draws on research in archives that document Shaw's work and that of his colleagues such as John Percy and Frederick Henry Henshaw in the nineteenth century. The nature of these archives is that Shaw's work is often seen second-hand through newspaper reports and the eyes and hands of his colleagues. I bring his work as a maker to attention drawing attention to his handling of materials and footsteps in Birmingham through re-tracing historical stories in my contemporary practice.

There are three types of image in this written thesis. Images of practice in progress are labelled as illustrations to demonstrate the making process whilst my own finished artworks are labelled as figures and historic visual materials are listed as plates. These images offer anchoring points in this thesis that carry equal or more weight than the words.

This written thesis is structured with this chapter 1 offering a concise introduction and statement of my positionality. Chapter 2 focuses on the context and methodology of this study by including a framework of the ideas that underpin the study. Chapter 2

²Title of exhibition and publication paraphrased from; Robert Hunt, *The Poetry of Science. Or, Studies of the Physical Phenomena of Nature*. (1848) 3rd Edition available at <https://www.gutenberg.org/files/51897/51897-h/51897-h.htm>. Accessed Tue 22nd August 2023.

includes a concise literature review of relevant work in the fields of recreative practices, performance, and social practice by locating photographs as a material objects.

In chapter 3 I begin to tell George Shaw's story in Birmingham by locating experimental photographic practices in the city during the 1840s. I place Shaw's family background in manufacturing alongside articulating Shaw's civic contributions to the city. I offer a narrative of my activities in experimental photographic practices in the city more recently and the links between my work and archives at Library of Birmingham to position my role as an artist in the city and how this shapes my understanding. In this chapter, I argue that Birmingham as a place is central to both the practices of George Shaw and to my own practice. This Birmingham framing of my study decentres photography from established upper-class photo-history narratives around centres in London, Paris and Wiltshire towards the importance of regional centres of expertise.

In chapter 4 I look more closely at Shaw's work on electro-metallurgy. By collaboratively testing silver plate with the daguerreotype process I offer an understanding of the nuances of historic photographic materials and begin to explore photography as a material performance. I focus on the materials of early photography to highlight the material knowledge that Shaw and his colleagues, such as John Percy and Francis Marrian in Birmingham brought to early photography articulating important collaborative links between science, industry and art practice. Both silver and glass are central to the photographic act and to Shaw's family history and career. It is a tactile understanding of the working qualities of silver coming from a place in the city that forms the basis of one of Shaw's major contributions to the daguerreotype that I argue for in this chapter. I share this material knowledge in the gallery space at Compton Verney through a performance with AV specialist Leon Trimble.

I then turn to look at the role of photographic portraiture and networks of people and artists in chapter 5 by exploring the archive of Shaw's portraits and the making of new portraits. Portraiture as a material practice is important in this chapter as a focus on the material viewing of a photographic portrait in person reconnects the viewer to

the making process when seeing the photograph as a three dimensional object. This is an experience I communicate in the installation of my ambrotype portraits at Compton Verney. This chapter addresses the power structures within photography that often prioritize the photographer over the sitter. I argue that the role of materials to mediate power collaboratively is essential in the making and reading of an image. An emphasis on the photographer at the expense of the sitter has led to many portraits of unknown people where the story of the photographer is prioritised, such as in George Shaw's ongoing collaboration that I've identified with early photographer John Jabez Edwin Mayall. My argument here is about the importance of portraiture as a collaborative activity from making to viewing.³ I argue that my process of collaboration in material photographic portraiture offers potential in participatory practice as a more equitable exchange than contemporary photographic methods. Material portraiture can share power between the photographer and the person in the photograph when handled with care. This shared process and material knowledge allows the person in the photograph to take an active part of the making of their portrait where the material becomes a mediator for their experiences.

In this chapter my identification of two of the portraits from Shaw's archive as landscape painters Thomas Creswick (1811 – 1869) and James Poole (1804 – 1886) allows me to discuss the importance of understanding the knowledge that the person in the portrait brings to the photograph. The artistic professions of Poole and Creswick allow me to introduce the differences between photographic portraiture, painting and etching. Their work as landscape painters leads to my argument in chapter 6 that articulates the importance of place in the landscape at Packington Park.

Finally, my study concludes in the landscape at Packington Park in chapter 6. Pre-photographic activities of the botanist and mineralogist Louisa Finch (1760 – 1832), her husband, landscape painter Heneage Finch (1751 - 1812) and her associate, doctor William Withering (1741- 1799) prepared the ground for photography in the

³ Ariella Asha Azoulay "Photography, The Ontological Question" *Mafte'akh*, 2e (2011): 65-80. Margaret Olin *Touching Photographs* (Chicago: Chicago University Press, 2012).

parkland as a location for photographic and artistic experimentation. The relationship between early photography, painting and scientific drawing practices is discussed in this chapter. In chapter 6 I make use of Jan Hogan's notion of 'surfacing' to articulate how the multiple elements and histories of this place make Packington Park an important location for photographic practice.⁴ This idea of 'surfacing' extends beyond the human to a material collaboration within the environment and conditions that borrows from new materialist thought and pays attention to social and industrial histories of place in a similar way to the concept of psychogeography.

Alongside making a body of 51 new calotype negatives at Packington I experiment with collaborative making on a large scale with colleagues in a similar landscape at Compton Verney. In the lake I make a performance with photographic materials in collaboration with the environment and people. My performance of photographic processes in the lake articulates the sensory experience of making photographs with historical processes in the landscape and the role of people in supporting and developing photography as a practice.

To conclude this introductory chapter that sketches an overview of my research I present an argument in this thesis that is understood through material knowledge generated as a practitioner that Birmingham and George Shaw are important to photography. My research allows us to see photographs as an interdisciplinary material collaboration between art, science and business. This understanding of the place of Shaw and Birmingham in photographic history carries forward implications for photography as a material and environmental practice today.

⁴Jan Hogan, "Surfacing" *Lo Squaderno, Explorations in Space and Society* 48 (June 2018) 36 – 41.
Karen Barad *Meeting the Universe Halfway* (Duke University Press, 2007)
Bennett, *Vibrant Matter*.

Chapter 2. Context and Methodology

I am a visual artist working with historical photographic materials and processes to develop new understandings of photographic history through what I can see, touch, hear and smell in the act of making photographs. This hands-on practice drives the discovery of new knowledge about Shaw's role in photographic history. The self-portrait below that I made with my friend, photographer Jason Scott Tilley sums up my collaborative approach and the materials I use in my practice. It was made by both my hands and Jason's in a process of sharing skills, materials and stories.



Figure 1: Jo Gane and Jason Scott Tilley, *Self Portrait*, April 2022, clear glass ambrotype, 38 x 38 x .2 cm, artist's own collection.

My practice draws upon a long history of embodied knowledge that can be understood through connected interdisciplinary frameworks. It is possible to draw from diverse academic fields of philosophy, anthropology, history and geography to articulate and reflect upon my contribution within established frameworks. Embodied knowledge has become increasingly important in the social sciences, anthropology, ethnography and the humanities more widely since the 'material turn' of the 1960s,

when theorists began to focus increasingly on physical, embodied and technological aspects of culture. This turn towards material culture in the social sciences and humanities was partly shaped by Michael Polyani's work on tacit thinking and Pierre Bourdieu's discussion of our ability to generate knowledge through contact with objects.⁵ This thinking has moved forward with several generations of scholars to arrive at a contemporary understanding of the importance of materials articulated by new materialist texts, such as Karen Barad's theories of agential realism that bind together matter and meaning and Jane Bennett's study in *Vibrant Matter* that highlights the resistant power of things.⁶ My work is tied to new materialism in that it pays attention to the material properties of photographs and I acknowledge that specific materials have qualities that shape their handling and use. However, my study resists the disassociation between people and objects that is problematic in new materialist thinking instead understanding that objects, specifically photographic materials and image-objects are constructed and reflexively communicate through their manipulation by networks of active people.⁷

In this chapter I articulate a conceptual framework of theoretical ideas that are relevant to my study and demonstrate how they are related to my practice. My artistic practice sits alongside and borrows from many areas as is common in the work of visual artists. Throughout this study I have made new artworks and exhibitions at the Old Grammar School, Coventry, Compton Verney gallery in Warwickshire, Nuneaton Library and the Bodleian Library, Oxford with organisations such as Photo Miners and Coventry Biennial that have developed and tested my practice as a visual artist. I will discuss theoretical ideas that have shaped my thinking and knowledge relating these to aspects of my practice such as walking, material engagement with historical processes and materials and collaboration with people. I will discuss how public engagement with my study through performance, exhibitions, and socially engaged practice is a productive form of engagement and

⁵ Michael Polyani, *The Tacit Dimension* (New York: Doubleday, 1966), xi.

Pierre Bourdieu, *Outline of a Theory of Practice* (Cambridge: University Press, 1977), 1.

⁶ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007), 3.

Jane Bennett *Vibrant Matter* (Duke University Press, 2010), 1.

⁷ Bruno Latour, *Reassembling the social : an introduction to actor-network theory* (Cambridge: Polity Press, 2018), 16-17.

operates beyond this as a means of generating new knowledge and understanding of photography.

Conceptual and academic frameworks drawn from disciplines of philosophy, geography and anthropology that shape my expanded photographic practice include phenomenology, psychogeography and autoethnography. Phenomenology offers a conceptual framework that, like my practice, involves being in a place with materials, observing changes during the making process. I understand phenomenology as a means of understanding material scientific developments in a rational and grounded way as articulated by Merleau-Ponty's *Phenomenology of Perception*, where being and doing is a means of entering into dialogue with the world.⁸ This concept of phenomenology derives from the philosophical writings of Husserl and Heidegger who respectively studied consciousness as it appears to us and latterly, how things reveal themselves.⁹ Yet phenomenological thinking could be seen to take its root in the seventeenth century rationalist philosophy of Descartes who turned philosophy towards the study of the subject itself.¹⁰ In my practice phenomenology involves handling materials and making in places that resonate with the historical stories I'm thinking about.

A phenomenological perspective offers a framework in this study to reflect upon the importance of the senses when experiencing things in the world. This phenomenological approach places my work in a location with material at a certain point in time connected to other points in time, as a means of understanding history by my contemporary experience with materials. This is important in my practice during this study because being based in the midlands in locations where Shaw worked with congruent materials allows me to develop a phenomenological understanding of Shaw's role in early photography and his place in the city connected to my contemporary practice by place and materials. Philosopher and theologian Professor Michael Moriarty describes Descartes' approach to philosophy

⁸ Maurice Merleau Ponty, *Phenomenology of Perception* (London: Routledge, 1996), 4.

⁹ Martin Heidegger, "The Thing" in *Poetry, Language, Thought* (New York: Harper Perennial, 1975), 165.

Edmund Husserl, *Cartesian Mediations An Introduction to Phenomenology* (The Hague: Martinus Nijhoff Publishers, 1960), 8.

¹⁰ Rene Descartes, *Mediations on First Philosophy with Selections from the Objections and Replies*. (Oxford: University Press, 2008), xvii.

as ‘an individual search, conducted along the correct methodical lines,’ quoting Descartes’ statement that ‘I should have to begin again from the bottom up if I wished to construct something lasting and unshakable.’¹¹ In a similar vein, my study begins from the bottom, the materials and making in a place rather than from philosophical assumptions and hegemonic views about photography.

A more contemporary approach to phenomenology draws out the importance of intentionality. My practice intentionally works with historic materials and processes as a means of understanding history. John J. Drummond points out the importance of intentionality when adopting a phenomenological perspective, articulating how intentionality is the ‘mind’s directedness upon something.’¹² During my practice, my mind is directed upon the historical photographic narratives I’m researching that are understood through the processes I’m making with and the environments I’m working in. My practice is a means of inhabiting historical stories to re-arrange them in the present, a form of anachronism that resists antiquarianism to place historical practices firmly in the present day.¹³

Contemporary phenomenological philosophers such as Sara Heinamaa point out the embodied approach as an important element of phenomenology and the impact of gendered bodies upon this.¹⁴ Photographic theorist Liz Wells has written about difficulties women have experienced when photographing in the landscape.¹⁵ My gender as a woman sometimes will impact upon my phenomenological sensing of the landscape because when working alone as I am socially conditioned to be sensitive to potential dangers.¹⁶ This can make me more likely to hear noises in the distance and sense movement making my senses sharp in perceiving and noticing what is happening around me in the landscape. Heinamaa’s work contributes to ‘the

¹¹ *ibid.*

¹² John J Drummond, “Intentionality without Representationalism” in Dan Zahavi (ed) *The Oxford Handbook of Contemporary Phenomenology* (Oxford: University Press, 2012), 115.

¹³ Grant, *A Time... 4.*

¹⁴ Sara Heinamaa, “Sex, Gender, and Embodiment” in Dan Zahavi (ed) *The Oxford Handbook of Contemporary Phenomenology* (Oxford: University Press, 2012), 217.

¹⁵ Liz Wells, "Mr Andrew's place: picturing the land is hard for women. Liz Wells deconstructs the English landscape." *Women's Art Magazine* 52 (May-June 1993) *ale Academic OneFile* (accessed June 19, 2025). <https://link-gale-com.bcu.idm.oclc.org/apps/doc/A262786511/AONE?u=uce&sid=bookmark-AONE&xid=e48ec28a>.

¹⁶ Aleksandra Lis et al, ‘Perceived danger and landscape preferences of walking paths with trees and shrubs by women.’ *Sustainability* 11 (August 2019) doi:10.3390/su11174565

phenomenological understanding of human beings as bodily-expressive wholes in contrast to dualistic discourses on gendered roles and sexed bodies'. My bodily understanding of photographic materials is shaped by my experiences when making photographs as a woman in the landscape as a 'bodily expressive whole' rather than as explicit comment on gender.

Psychogeography is conceptually related to phenomenology as they both offer a reflexive conceptual framework based on thought about actions in a place that relates to my practice in the landscape. Merlin Coverley articulates the difficulty in defining the meaning of psychogeography as it has become a widely used term whilst grounding it in practice, concluding that psychogeography is "a shifting series of interwoven themes [...] constantly being reshaped by its practitioners."¹⁷ The origins of psychogeography are in practices relating to place and the urban landscape as practiced by Guy Debord and the situationists in 1960s Paris. I am interested in how specific landscapes such as the place at Packington Park inspire artists, resulting in powerful places for artistic practice and the ability to draw out connections between place and process in Birmingham and photography. The power and sense of historical activities that remain visible or active in the landscape that is touched upon by psychogeography is articulated clearly by artist Jan Hogan in her term 'surfacing' that describes places where history is tactile and visible in a landscape.¹⁸ Specifically in this study I look at the way places shape photographs and photographic materials respond to place as influenced by factors such as the topography of the landscape and environmental conditions of light, heat and weather that might shift depending on when the landscape is experienced. The methods of contemporary psychogeographers who walk in the landscape whilst writing and thinking about topography and history, such as Robert Macfarlane and Will Self are relevant to my practice of finding Shaw's photographs in the landscape at Packington Park.¹⁹ In accordance with the thinking of these contemporary psychogeographers, I use walking in the landscape as a means of accessing

¹⁷ Merlin Coverley, *Psychogeography* (Chicago: Oldcastle Books, 2018), 10.

¹⁸ Jan Hogan, "Surfacing" *Lo Squaderno, Explorations in Space and Society* 48 (June 2018) 36 – 41.

¹⁹ Will Self, *Psychogeography* (London: Bloomsbury, 2007).

Robert Macfarlane, *The Old Ways: A Journey on Foot* (London: Penguin, 2013).

imaginative thought about the histories of places, as articulated in the accompanying artist publication.

In a similar vein to contemporary psychogeographers such as Macfarlane, Self and Francis, I walk in the landscape whilst thinking about and seeking evidence of its history and making photographs.²⁰ In Packington my walking practice generated an understanding of the position of trees in the topography of the landscape and in Shaw's photographs. Making new photographs allowed me to understand the way calotype photographic materials responded to the specific qualities of bleached dead trees that are preserved at Packington as they were historically in the 1840s. I sought out and found pieces of Victorian infrastructure such as the remains of a bridge that was photographed by Shaw.²¹ I made new calotypes of the post that remains of the bridge which disappeared and reappeared in the flow of the River Blythe depending on the weather conditions, specifically linking the act of photography with my experience and the environmental conditions. When made with calotype materials, the resulting images revealed the historical bridge through my handling of them in the environment as discussed in chapter 6.

My practice can be seen to be aligned with a long history of philosophers, artists and writers who have explored walking and the sense of place in the landscape as a catalyst to thought, beginning with Bordieu's understanding of the habitus, to Mauss' focus on the body as a somatic instrument to Maxine Sheets-Johnston's notions of 'thinking in movement.'²² Recent examples of thinking and writing about history through walking and experiencing the bodily sensations of landscape topography are Corinne Fowler and Rebecca Solnit.²³ A lineage of walking as art practice exists from works of Richard Long and Hamish Fulton in the 1960s and 70s to contemporary activities by artists such as Simon Pope and Andy Howlett.²⁴ Walking in

²⁰Rob Francis, *The Wrenna*. (Wolverhampton: self published, 2021).

²¹ George Shaw, *Pont à travers un ruisseau*, 1852, calotype paper negative, 24 x 31.2 (cm) Musée D'Orsay. Accession no. PHO 1981 68.

²² Pierre Bordieu, *Outline of a Theory of Practice* (Cambridge: University Press, 1977)

Marcel Mauss, *Sociology and Psychology: Essays*. (London: Routledge, 1979).

Maxine Sheets-Johnstone, *The Primacy of Movement* (Amsterdam: John Benjamins, 1999)

²³ Rebecca Solnit, *Wanderlust: A History of Walking* (London: Penguin, 2000)

Corrine Fowler *Our Island Stories* (Allen Lane, 2024)

²⁴ Richard Long, *A Line Made by Walking*, 1967, gelatin silver print, 840 x 1139 x 41 (mm), Tate, London.

contemporary art practices forges connections between and in-between people and places alongside historically creating sculptural interventions in the landscape. In my practice, walking allows me to connect historical photographs made by Shaw and his colleagues with the landscapes in which they were made, aligning the topography of places and sensing historical practices in a site. By making new photographs in these places whilst walking, I understand the behaviour of early photographic materials in relation to environmental factors that are shaped by a place, light, heat, distance, time and temperature. These factors impact on how a photograph looks. My re-creative processes that involve walking offer an informed understanding of the making process that brought historical images into the world.

In academic discourse, walking has become an increasingly accepted methodology for ethnographic and historical research, as outlined by Tim Ingold and Jo Lee Vergunst who state in the introduction to their edited anthology, *Ways of Walking* that walking is, 'itself a way of thinking and of feeling, through which, in the practice of pedestrian movement, these cultural forms are continually generated.'²⁵ Walking in Packington Park allows me to visualise and sense Shaw, Percy and Henshaw's collaboration in the landscape and to understand how calotype photographic material behaved in response to the topography of the site. I've made new photographs whilst walking which uncover monuments to Shaw's photographs in the River Blythe and allow me to understand why he made certain images. Ingold's approach to anthropology acknowledges psychogeography through walking.²⁶ More broadly Ingold's work looks at the world from a phenomenological perspective that pays attention to the relationship between the material and the social. I aim to similarly connect experiences of the material and social in my practice.

My artist publication includes experiential site-writing about my experiences of photographic materials, people and places during the making process. The term I am

Hamish Fulton, *The Pilgrim's Way*, 1971, gelatin silver print, 570 x 625 (mm), Tate, London.
Simon Pope, *Between Where we are and where we want to be*, 2005, walking, Birmingham, England.
Andy Howlett, *Video Strolls*, 2014-2020, film.
Walkspace, WM walking-art collective. <https://walkspace.uk/>

²⁵ Tim Ingold and Jo Lee Vergunst, *Ways of Walking Ethnography and Practice on Foot* (Farnham: Ashgate, 2008), 2.

²⁶ Tim Ingold, "Culture on the Ground: The World Perceived Through the Feet" *Journal of Material Culture* 9:3, 315-40.

using to describe these, 'experiential' writing is defined as autoethnography within Heewon Chang's book *Autoethnography as method*.²⁷ My experiential site-writing included in the accompanying artist publication aims to articulate my experience of places and people when part of the photographic process. It articulates how materials behave and how photographs are made and seen. My work diverges from an autoethnographic approach in that my focus is narrower. I'm interested in how photographic materials behave during my performance of a photographic process and how the materials direct the way that people behave along with the relationship between materials, places and people. This is visible in my practice when I make portraits at Nuneaton library and my historical camera become a means of mediating personal stories about places. These stories belong to individuals I meet and places I visit and as such are not auto-ethnographic. However, to an extent they are shaped by my encounter, as Chang states, 'Every piece of writing reflects the disposition of its author.'²⁸ My disposition at any given time affects the way I handle photographic materials and how they behave and in turn my disposition in a given place and time is shaped by my previous experience of places and people and the current environmental conditions I'm working in. My experiences are articulated where relevant to the photographic processes, places I'm working in, objects I'm working with and to the reception of them by others within the artist publication.

The benefits of autoethnographic writing as explained by Tony E. Adams, Stacy Holman Jones and Carolyn Ellis, offer a qualitative framework of 'nuanced, complex and specific knowledge about particular lives, experiences and relationships.'²⁹ My work articulates specific and nuanced knowledge about photography as a material practice through my making practice. Chang perceptively argues that autoethnographic writing is 'reader-friendly in that the personally engaging writing style tends to appeal to readers more than conventional scholarly writing.'³⁰ Throughout my study, I aim to make my writing as reader-friendly and personally engaging as possible, avoiding the use of abstruse academic language whenever

²⁷ Heewon Chang, *Autoethnography as Method* (Walnut Creek: Left Coast Press, 2008), 48.

²⁸ *ibid*, 10.

²⁹ Tony E. Adams, Stacy Holman Jones and Carolyn Ellis, *Autoethnography: Understanding Qualitative Research* (Oxford: University Press, 2015), 21.

³⁰ Chang, *Autoethnography*, 52.

possible because I know through my lived experience of teaching in many settings that this is often a barrier to the sharing of knowledge.

The framework of phenomenology, psychogeography and autoethnography outlined above establishes the broader context of my practice. I will now turn to explain how activities of material engagement with historical processes and collaboration with people operates as the practice-base of my study between re-creative practice, performance and social practice.

Material Engagement

Many of the canonical photographic theorists taught in contemporary photographic education focus on the visual content of the image surface rather than the materials and making process.³¹ These photographic theorists often focus on the viewing of a photograph rather than its making, utilising post-structuralist thinking based on Foucault's conception of the Panopticon as articulated in *Discipline and Punish*.³² Recent academic recognition of the importance of material engagement offers a counterbalance to this thinking that is outlined here to articulate the importance of developing tacit knowledge of gestures in the handling and processing of photographic materials. I believe a lack of engagement with photography as a material process stems from contemporary image making being de-materialised by digital technologies that black-box the making process.³³

The root of this study in the making process is important because making processes are often overlooked in photographic theory which privileges the reading of images from their surface. Kelley Wilder explains how the 'material layers and the layers of

³¹ Roland Barthes, 'Rhetoric of the Image' *Image, Music, Text*, (London: Fontana Press, 1977), 32 – 51.

John Berger, *Ways of Seeing*, (London: Penguin, 1972).

Susan Sontag, *On Photography*, (London: Penguin, 1978).

³² Michael Foucault, *Discipline and Punish: The Birth of the Prison*. (London: Penguin, 1991), 195 – 228.

³³ Bruno Latour Pandora's hope: essays on the reality of science studies.(Cambridge, Massachusetts: Harvard University Press, 1999), 304.

Henning, *Photography*.

James Bridle "Episode 1: Cybernetic Forests" Wednesday 8 May 2019, in *b New Ways of Seeing*, produced by BBC radio 4, podcast.

meaning in the image are inextricably linked' when discussing the work of artist and photographer Hans Danuser. Danuser makes images that make it 'impossible to consider the images without considering the materials'.³⁴ My work extends this focus on materials guiding meaning to generate understanding of how the process, performance and environment that photographs are made in shapes their reading.

The performance or re-performance of photographic processes relies on three main features that all contribute to the photograph's meaning in my re-creative practice. These are the material, people and places involved in its production. It is not just the tacit and tactile actions taken during the process of making that creates meaning. Meaning in a photograph is shaped by people, places and materials. Looking at photography as a material process through re-creation with historical processes allows us to see the impact of materials in chapter 4, people in chapter 5 and place in chapters 3 and 6 on the work of George Shaw and brings a rich, nuanced understanding of the place of his work both in photographic history and in the future. Duncan Wooldridge explains this clearly, building on the earlier work of earlier scholars, when he states;

To reassemble a coherent conception of the photographic image, it needs to be reattached to the processes, intentions and consequences involved in its creation. [...] we must first bring photographic production back into contact with the reception of images to see their potential extend beyond a limited conception of time.³⁵

My research methodology aims to reattach Shaw's historic images to the 'processes, intentions and consequences' of their making.³⁶ My contemporary works frame Shaw's historic activities with a sensory understanding of his processes. This is communicated in this research through my collaborative practice to remake daguerreotype portraits using electroplate material, through making calotype photographs in the landscape at Packington Park and by large scale wet plate collodion portraits in Nuneaton and documented installations and performances that

³⁴ Kelley Wilder "Through the Looking-Glass: Hans Danuser's Last Analog Photograph" in *Hans Danuser, Darkrooms of Photography*. (Bündner Kunstmuseum: Steidl, 2020) 46-55.

³⁵ Duncan Wooldridge, *To be Determined. Photography and the Future* (London: SPBH 2021) 28-29

³⁶ *ibid.*

took place at Compton Verney gallery alongside portraits made both in my studio and at the Old Grammar School, Coventry.

Working with congruent materials and processes as a recreative practice is a method frequently used by conservators as a best-practice way of understanding the qualities of a museum object, however this differs to the way I use re-creative practice to understand photography as a sensory material process.³⁷ In the term 'congruent' materials I mean similar materials and processes to those that were used historically by Shaw and his colleagues such as the Daguerreotype, Calotype, Salt Prints and Wet Plate Collodion. I recognise in the term 'congruent' that the materials and processes I use will never be precisely historical. They match closely to the processes and materials Shaw and his colleagues were familiar with but I use them differently as a contemporary practitioner. I am using chemicals that are manufactured with modern techniques and equipment which post-dates that used by Shaw and his colleagues. My cameras date from the 1870s-1890s and my tripod from the 1990s, for practical, conservation and economic reasons. I value the process artifacts that occur when these processes reveal the circumstances of their making. Process artifacts are a site of knowledge where the behaviour of the material is revealed.³⁸

The use of re-creative making to gain tacit knowledge about the production of historic art objects has been accessed by Pamela Smith's 'Ways of Making and Knowing' project. In Smith's project hands-on making with congruent material processes informed by historic text creates tacit knowledge. Knowledge about touch and process that affects the handling and behaviour of worked materials. Tacit knowledge further generates an understanding of the skills and apparatus needed to work with materials. In Smith's study tacit knowledge goes beyond hand skills and touch or tactile knowledge when knowledge generated by her recreations is central to generating further understanding about the historical accounts of artisans and the

³⁷ Klaus Staubermann ed. *Reconstructions: recreating science and technology of the past..* (Edinburgh: National Museum of Scotland 2011).

³⁸ Mark Osterman, "Mid-nineteenth-century photographic studio technique. Why recreate nineteenth-century photographic technology?" in Staubermann ed. *Reconstructions*, 251 – 270

role of making practices in society.³⁹ Other uses of a recreative approach to access tacit knowledge operate across the fields of history of science such as in H. Otto Sibum's recreations of James Joules' nineteenth century experimental equipment.⁴⁰ Sibum highlights the importance of 'gestural knowledge' that is understood through recreative practice. This gestural knowledge is demonstrated in his recreation by the understanding that emerges through practice of the difficulty of gaining accurate temperatures using nineteenth century equipment. Sibum's recreative practice leads to understanding the important tacit knowledge Joule's background as a brewer brought to his experiments. A further example of recreative practice in a similar interdisciplinary mode to my study is the Hockney-Falco thesis that operated across art history and physics to argue for the use of optical devices for accurate painting.⁴¹ In this study, David Hockney's tacit knowledge as a painter fuelled his understanding of optical developments for accurate painting. In photography, recreative practices have been used extensively by many dedicated contemporary practitioners of historical photographic processes, such as Mark and France Scully-Osterman, Mike Robinson, Robert Douglas and Joaquín Paredes Piris.⁴² These practitioners are currently at the forefront of recreating historical photographic practices and have done much to make practice (including my practice) with congruent antique photographic processes possible.

I'm separating the term recreative to re-creative to tease out the act of repetition from the sensory creative act of re-making. This allows an understanding of how photographic processes translate into the social value of the making act as a form of communication. My contemporary practice reveals often colloquially expressed feelings of photographing and being photographed with materials and reveals the

³⁹ Pamela Smith ed. *Ways of Making and Knowing, The Material Culture of Empirical Knowledge*. (New York: Bard Graduate Center 2017).

⁴⁰ H. Otto Sibum "Working Experiments: A History of Gestural Knowledge" *Cambridge Review* 116, no. 2325 (1 January 1995): 27, 30.

⁴¹ David Hockney *Secret Knowledge, Rediscovering the lost techniques of the Old Masters*. (London: Thames and Hudson 2001).

⁴² 38

Michael A Robinson, "The Techniques and Material Aesthetics of the Daguerreotype" (PhD Thesis, De Montfort University, 2017).

Robert Douglas, *John Adamson's Calotype process by Robert Douglas, 21st Century Calotypist*. (Surrey: Self Published, 2022).

Joaquín Paredes Piris, Ambrotos exhibition, (Madrid: Revela't festival, September 2022).

experiences below the image surface and behind the camera for photographer, subject and viewer.

During this research, I have regularly met and worked collaboratively with a small group of PhD researchers who are all using recreative practices as key elements of our methodology. Informally titled the 'Replicants' group, collaborating with fellow researchers Martin Jürgens, Carolin Lange and Peter Domankiewicz has been a supporting structure and an opportunity to establish the remit of our recreative methodologies. Our collaborative conversations resulted in the PHRC Framework for Recreative Practice.⁴³ Led by conservator Martin Jürgens, we collaboratively developed a form based upon conservation standard documents to record recreative experiments in a standardised formal way. This framework, included in the appendix, has helped to understand and articulate our diverse range of aims and objectives.

Re-creative practice allows me to expose the function of time during the photographic process. As a material and chemical process photography is marked by time whilst socially and visually, photographic images are markers of time. The time when a photograph is produced, the time it takes to produce and the time when it is viewed are condensed as a photographic image, flattening time onto the photographic substrate. Using re-creative practices to disrupt linear time through the photographic ability to time travel is a key part of the process of my practice-led study, bringing the early development of photography in the 1840s closer to practice today. This flattening of time allows for a sensory and experiential consideration of Shaw's photographs in the context of the 'developmental' time in which they were made, when photography as a process was developing as well as Shaw's image practice.

Re-creative art practice plays a part in many successful artists practices that offer a sense and experience of history and materials, such as in artwork by established contemporary artists Cornelia Parker, Jeremy Deller and Mat Collishaw.⁴⁴ Parker,

⁴³ see appendix 1.3 and 1.4

⁴⁴ Jeremy Deller, *The Battle of Orgreave*, (Artangel: 2001)
Cornelia Parker, *Shared fate (Oliver)*, (1998)
Mat Collishaw, *Thresholds*, (2017)

Deller and Collishaw all re-create historical events and re-stage historical activities to generate sensory understandings of their impact in their artwork today. In 'Shared Fate', Parker uses the historical artifact of a guillotine to re-perform the event of Marie Antionette's beheading linking historical events to more recent cultural artifacts. Deller's re-staging of the events following the clash of police and picket lines at the miner's strike at Orgreave similarly brings back to life historical actions. Collishaw's work in *Thresholds* generated a sense of the technological shift of early photography shared with a sensation of the new in augmented reality technology which was in its infancy at the time of his exhibition. In *Thresholds*, Collishaw linked sensations about new technology experienced by the public when viewing his artwork with the first exhibition of Talbot's photogenic drawings. This sensory articulation of time through art practice including re-creative elements is a central component of my practice that is articulated by making with historical processes and performance.

Re-performing photographs from the archives alongside performing lectures and public readings of historic text is a method I use in throughout this research. This re-performance is discussed further in chapters 4 and 6 and articulated in the artist publication when I use performance to share photography as a material process with an audience at Compton Verney, both in the lake and in the gallery space. The role of performance in my practice-research is in part articulation, consolidation of knowledge and knowledge development. I view performance throughout this study as an extension of my participatory and collaborative practice. Performance is a sensory and embodied way of sharing a process. Claire Bishop states that 'participatory engagement tends to be expressed most forcefully in the live encounter'.⁴⁵ The making of a new photograph with a historical process can be conceptualised as a live encounter in my practice. I use photographic processes and materials as a live encounter and in the gallery space at Compton Verney, through a performance in collaboration with contemporary Birmingham-based audio-visual artist, Leon Trimble that is discussed in chapter 4 and a performance in the lake, pictured below in illustration 1 and further articulated in the accompanying artist publication.

⁴⁵ Claire Bishop, *Artificial Hells. Participatory Art and the Politics of Spectatorship* (London: Verso, 2012), 3.



Illustration 1: Shiam Wilcox, *Documentation of 'Raft, After James Poole,'* July 2023, Digital photograph, Performance in the lake at Compton Verney. For full performance see <https://vimeo.com/900533900>

In performance studies, Shanks and Pearson have articulated that performative figures;

'enable the interconnectedness that is the experience of material place, incorporating information, the factual and the fictive. Running through this nexus are the forms of archaeological time and ruin, memory, sensuous knowing and the creativity of a cultural poetics.'⁴⁶

My performances made throughout this study, such as 'Raft' pictured above in illustration 1, offer an experience of place in the historical, slower time of making a photograph, through sharing process, material, sensory experiences of the darkroom and studio in ways that activate memories and ultimately aim to create a sense of

⁴⁶ Mike Pearson and Michael Shanks, "Performing a visit: Archaeologies of the Contemporary Past" *Performance Research* 2 (1997): 41, accessed 10th January 2021. DOI:10.1080/13528165.1997.10871550

the ‘cultural poetics’ of early photography.⁴⁷ I aim to guide the viewer towards a sensory experience of photography as a historical process. This mode of performative, embodied understanding forms a key part of this study and enables it to move between time from the 1840s to today. Philosopher Vilem Flusser’s conception of images as having a ‘circular relationship’ to time that is ‘structurally different to the linear world of history’ begins to articulate the role of my performance-practice to create imaginative time-travel within this study.⁴⁸ My practice connects the linear text-based structure of history with the present and articulates knowledge through the visual ‘magic’ of the making of images producing images through a performance that makes the historical text comprehensible.

My study situates photographs as material objects. The ‘magic’ of making images that operates through the performance of my practice relies upon the experience of chemical and optical materials. However, the conception of photographs as self-drawing devices persists in contemporary discourse around photography. Autopoiesis is a concept that pre-dates photography used in the autopoietic description of photography by Talbot as a ‘natural magic’ as a means to subsume human technical skill beneath that of the mechanical machine. However, I argue through practice, re-creation and performance that it is the human, tactile knowledge of chemistry and the act of handling materials that enabled historic photographers to bring images into being. According to seminal photographic theorist, Roland Barthes in *Camera Lucida*, the essential ‘cause’ of photography was the ‘chemical discovery’, making the role played by chemists like Shaw crucial.⁴⁹ Since the material turn of the 1960s tacit, tactile knowledge held in making processes has become increasingly important to historians and the social sciences, including in photographic history.⁵⁰ Knowledge of making processes is important in photography because the process shapes the interaction when the image is made and as such directs the way the image looks. Tacit movement and gestures can be articulated through performance

⁴⁷ *ibid.*

⁴⁸ Vilem Flusser *Towards a Philosophy of Photography* (London: Reaktion books, 2000), 9.

⁴⁹ Roland Barthes, *Camera Lucida* (London: Random House, 1980) 31.

James R Ryan “Placing Early Photography: The Work of Robert Hunt in Mid-Nineteenth-Century Britain” *History of Photography* 41, no.4 (2017): 343-361 DOI: 10.1080/03087298.2017.1357268

⁵⁰ Michael Polyani, *The Tacit Knowledge Dimension* (London: Routledge, 1967).
Omar Nasim, *Observing by Hand*, (Chicago: University Press, 2014).

and spectacle, such as in the work of contemporary photographic artist Tom Lovelace whose works explore the relationship between photographic materials and gestures.⁵¹

Work by photographic historians such as Elizabeth Edwards, Kelley Wilder and Michelle Henning pays attention to materials when addressing the photographs status as an object.⁵² Recent work by photographic historians Sara Dominici and Siobhan Angus are continuing to look at the tactile and changeable nature of photographic materials and their handling studying materials and extraction to emphasise the importance of the physical materials in understanding history.⁵³ My approach builds on the material turn in history and on the work of these photo-historians and scholars alongside interdisciplinary sources such as such as anthropologist and writer Tim Ingold. Ingold rejected ‘materiality’ as a ‘magical mind dust’ instead focusing on the changes in materials brought by their environment and handling.⁵⁴ His approach to anthropology emphasises the reciprocal relationship between materials, people and their environments. This offers a similar interdisciplinary connectedness that exists in my research on the axis of history and practice. Ingold’s work connects materials with their place and use to unite fields of material culture and ecological anthropology placing materials as ‘the stuff of time itself’.⁵⁵ In my practice materials articulate the time and process that Shaw used connecting the place and processes across time.

I am interested in the behaviour of materials. New materialist thinking such as Jane Bennett’s book, *Vibrant Matter*, offers a useful understanding of the interaction and entanglement of non-human and human elements that comprise photographic

⁵¹ Tom Lovelace, *Doing and Undoing Islands*, 2023, Performance, Yorkshire Sculpture Park.

⁵² Elizabeth Edwards, Janice Hart eds. *Photographs, Objects, Histories: On the Materiality of Images*, (New York: Routledge 2004).

Kelley Wilder, “The Two Cultures of Word and Image: On Materiality and the Photographic Catalog” in Julia Bärnighausen, Constanza Caraffa, Stefanie Klamm, Fanka Schneider, and Petra Wodtke (eds.) *Photo-Objects. On the Materiality of Photographs and Photo archives in the Humanities and Sciences*. Studies 12. (Berlin. Max Planck Institute 2019): 263-273.

Michelle Henning *Photography the Unfettered Image* (London: Routledge 2018).

⁵³ Sara Dominici (ed) “The Darkroom” *PhotoResearcher* 41, (2024).

Siobhan Angus, *Camera Geologica* (Duke University Press, 2024).

⁵⁴ Tim Ingold, ‘Materials against materiality’ *Archaeological Dialogues* 14, no.1 (2007) 11. doi:10.1017/S1380203807002127.

Tim Ingold, *The Life of Lines* (Abingdon: Routledge, 2015).

⁵⁵ Tim Ingold, ‘Toward an Ecology of Materials’ *Annual Review of Anthropology*, Vol. 41 (2012), 439.

practices with materials.⁵⁶ However, a new materialist approach stops short of approaching historical narratives of manufacturing and the social use of images that is central to my discussion of photographic history.

The human and social nature of photography is addressed in Ariella Aïsha Azoulay's writing about photographic futurity. Azoulay extends the act of photography to include the situation during the viewing of an image as an important means of constructing meaning. This more fully addresses the shifting nature of photographic meaning, however it is important to understand through the making process in my study how early photographs operate in a different way than those Azoulay analyses. Azoulay looks at later photographs when she discusses the violence of the shutter. This misses out in fully considering the early photograph as a slow, experimental making process instead referring more simply to the shutter as an act of mechanical control rather than the materials and human processes that operate before and after this mechanical moment.⁵⁷ Azoulay points out that photographic meaning can shift according to the conditions of the photographs viewing. My study extends this understanding to add that meaning is constructed through the interaction of the photographer, materials and subject during the making process and that an understanding of the making process as it is in flux can better inform our reading of photographs as historical objects. My adoption of a material approach to photographs takes Azoulay's thinking about photographic futurity back in time to consider photographic history and the historical interaction between materials, subject matter and photographer as a reflexive action that shapes meaning.

Participatory Practices

My research in this study is about photography and the role of portraiture and materials through techniques and technologies than being solely social art practice, however it must be acknowledged that my practice when working with people during this study is 'socially engaged' or 'participatory'. Social practice, including socially

⁵⁶ Graham Harman *Object-Oriented Ontology* (Pelican, 2018).

Jane Bennett *Vibrant Matter* (Duke University Press, 2010).

⁵⁷ Ariella Asha Azoulay "Photography, The Ontological Question" *Mafte'akh*, 2e (2011): 65-80.

engaged or participatory practice forms an increasingly large part of contemporary photography. Organisations, projects and networks such as Open Eye Gallery, The Portland Inn Project and the Socially Engaged Photography Network are currently doing much to build on a history of art and photography as social practice.⁵⁸

Prior to the emergence of social practice as an important strand of contemporary photography, curator Nicholas Bourriaud's focus on art during the late 1990s that was 'learning to inhabit the world in a better way' within his conception of 'relational aesthetics' galvanised writing and thinking around social practice.⁵⁹ However, the important distinction between relational aesthetics and social practice is that relational aesthetics focussed instead on the aesthetics of practice within the artworld, rather than social change in society more broadly. Rirkrit Tiravanija's installations of the early 1990s illustrate this focus on transforming artworld aesthetics by exposing gallery structures and bringing people together through eating. Tiravanija turned the gallery structure inside-out, inviting audiences to eat Pad Thai in the gallery space to break down barriers to behaviour in the white cube gallery. In relational aesthetics, particularly the work of Tiravanija, exploring the social role of the artist offers a pre-cursor to social art practice as a form which uses methods of conviviality, care, co-authorship and sharing to make artwork that challenges social norms and includes people in the processes of making artwork. In my work I use photographic processes and collaboration to bring together a social network in the making of a photograph whilst taking care to operate in an inclusive and convivial way as seen when making portraits at Nuneaton Library and in my collaborative performances at Compton Verney. I strive to include a diverse range of people in a comfortable and welcoming environment in my practice.

Social reform has long been linked to artwork. In nineteenth century Birmingham the formation of the art gallery itself was part of a larger policy of social reform to make art available to all in the city. Amy Woodson-Boulton articulates how aesthetic ideology and social practice combined in Victorian art museums with a specific aim in the case of Birmingham museum to create an environment that makes 'nature,

⁵⁸ Open Eye Gallery, Liverpool. <https://openeye.org.uk/>.

Portland Inn Project, Stoke on Trent. <https://www.theportlandinnproject.com/>.

⁵⁹ Nicholas Bourriaud, *Relational Aesthetics*, (Dijon: Presses du Reel, 2002), 13-14.

beauty, and the morality of expressive labor available in the industrial city.⁶⁰ This reforming capacity of art in the industrial city during Shaw's time in Birmingham places accessibility and social practice more widely as establishing principles of the cities art gallery and museum.

Social art practice today builds on the history of relational aesthetics with aims of making meaningful changes in society beyond the gallery. Many artists adopt social practices within community-based art that operates beyond the gallery space using methods of collaboration and participation to co-author artwork that directly involves people, using art as a means for communication and activism that strives for social change. Groups such as Assemble, Superflex, Cooking Sections and Project Art Works to name but a few create artwork as activism that strives to change practices in varied fields such as housing, urban design, environmental and educational systems.⁶¹ This can be criticised on two fronts; firstly from the perspective of Hegel's aesthetics that sees art instead as sensuous expression and secondly from the contemporary perspectives of Grant Kester and Claire Bishop as a symptom of the need for art to fill gaps in other underfunded services.⁶² However, despite this criticism, a new generation of my contemporaries such as Kyla Craig at Art Riot and Roo Dhissou alongside organisations such as Hospital Rooms are using methods of care and conviviality to work in a meaningful way with communities creating spaces for social relationships within art practice that drive broader changes in society.⁶³

In photography, social practice has a long history. A common conception is that a focus on social practice in photography can be said to have begun with community workshops and activism in the work of Four Corners and the Half Moon photography

⁶⁰ Amy Woodson-Boulton, "Industry without Art Is Brutality': Aesthetic Ideology and Social Practice in Victorian Art Museums." *Journal of British Studies* 46, no. 1 (2007): 47–71. 48. <https://doi-org.bcu.idm.oclc.org/10.1086/508398>.

⁶¹ Assemble. London. <https://assemblestudio.co.uk/>

Superflex. Copenhagen. <https://superflex.net/>

Cooking Sections. London. <https://www.cooking-sections.com/>

Project Art Works. Hastings. <https://projectartworks.org/>

⁶² George Hegel, *Introductory Lectures on Aesthetics*, (London: Penguin, 2004).

Grant Kester, *Conversation Pieces : Community and Communication in Modern Art* (Berkeley: University of California Press, 2004).

Bishop, *Artificial Hells*.

⁶³ Kyla Craig, Art Riot Collective. <https://www.arriotcollective.com/>

Roo Dhissou. <https://rookaurdhissou.com/>

Hospital Rooms. <https://hospital-rooms.com/>.

workshops in the 1960s and 70s.⁶⁴ In the 1970s, collectives such as the Hackney Flashers used photography and collage as a form of community-based activism to tackle issues around childcare from a socialist, feminist perspective.⁶⁵ Photographic artists such as Jo Spence and Rosy Martin devised photographic processes as photo-therapy and re-enactment phototherapy during the 1980s as a methodology that can ‘make visible process, change and transformation’ during counselling sessions.⁶⁶ This work can be seen to interpret the aims of social practice as art work that creates meaningful change, creating images that speak to the ‘social and cultural formations of subjectivities.’⁶⁷

However, I argue that social practice in photography begins before the term was coined at the invention of photography. Daniel Palmer posits that early photography is a collaboration with the sun to set out the collaborative nature of photography.⁶⁸ I’d like to extend his argument. I argue in this thesis that photography exists because of collaboration and co-authorship amongst scientists, manufacturers and artists as illustrated in the work of George Shaw and his colleagues. Photography as a material practice is fundamentally collaborative. Collaboration is fundamental to the very existence of photography. Photographic practices hold a long and meaningful history in the use of photographs to drive personal and social change. A pre-cursor to Rosy Martin and Jo Spence’s photo-therapy existed in the nineteenth century work of Dr Hugh Welch Diamond (1808-1886) who made portraits of his patients in the 1850s.⁶⁹ Diamond’s work cannot be held to the ethical standards of photographic practices today and issues of consent and the later sharing of these pictures beyond

⁶⁴ Four Corners. <https://www.fourcornersfilm.co.uk/>.

Mathilde Bertrand. “The Half Moon photography workshop and Camerawork: Catalysts in the British Photographic Landscape (1972 -1985).” *Photography and Culture* 11, May 2018, 239–259. <https://doi.org/10.1080/17514517.2018.1465649>

⁶⁵ Na’ama Klorman-Eraqi. “The Hackney Flashers: Photography as a Socialist Feminist Endeavour.” *Photography and Culture* 10, April 2017, 53–71. <https://doi.org/10.1080/17514517.2017.1295710>

⁶⁶ Rosy Martin, ‘Inhabiting the image.’ in *Phototherapy and therapeutic photography in a digital age*. (Oxon: Routledge, 2013).100.

⁶⁷ Bishop, *Artificial Hells*. 109.

⁶⁸ Daniel Palmer, *Photography and Collaboration: From Conceptual Art to Crowdsourcing* (Abingdon: Routledge, 2017). 20.

⁶⁹ Dr H.W. Diamond, “On the Application of Photography to the Physiognomic and Mental Phenomenon of Insanity,” *Philosophical Transactions of the Royal Society of London*, 1856

Adrienne Burrows and Iwan Schumacher, *Portraits of the Insane: The Case of Dr Diamond*, (London: Quartet Books 1990).

Sander L. Gilman, *The Face of Madness: Hugh W. Diamond and the Origin of Psychiatric Photography*. (New York: Brunner/Mazel, 1976).

the treatment of patients limit their contemporary perception as therapeutic photographs. However, the images were used in his treatment of mental illness within the institutions he was based to align perceptions of patients minds with their physical appearance. In a similar vein in contemporary practice Martin and Spence use photography and portraiture to create visual images that allow patients to articulate and resolve trauma. My portraits made with historical photographic processes allow the people involved to see themselves in an unfamiliar medium transformed into a precious and fragile material object that holds value and significance as a means of sharing their stories.

Contemporary academic Anthony Luvera positions his photographic practice as socially engaged and participatory through sharing technologies and techniques with participants, thus using photography as an empowering experience. Luvera makes use of an 'assisted self portrait' methodology in which he teaches people to photograph themselves using large format and medium format cameras with flash, cable shutter release and laptop.⁷⁰ This goes some way towards de-mystifying the process of photography and shifting the power balance from photographer to subject. In a similar way, I explain materials and processes as I work operating in a way which the person participating in the photograph collaborates and understands what the materials are doing thus empowering them to be part of a making process that ultimately aims to level the power imbalance between photographer and participant. Working with photography as a material process in socially engaged context allows for a shift in power between photographer and people involved in the project that is mediated by materials and process. The resulting physical experience of photography is rendered visible and transparent. This develops an understanding of photographic materials that is shared and informs the behaviour of the participant and ultimately the look of the photograph. Articulating process to a participant explains a contemporary trend for the use of cyanotype as a visible, tactile process in recent socially engaged projects by artists such as Leeming, Nixon, Robinson and myself.⁷¹

⁷⁰ Anthony Luvera, *Construct*, (Birmingham: Grain projects, 2024).

Luvera, Anthony (ed) *Photography for Whom?* Coventry: Grain Projects and Multistory, 2019
Palmer, *Photography and Collaboration*.

⁷¹ Ciara Leeming, Cheshire Young Carers, 2025.

Ruby Nixon, Culturapedia, Blackburn and Darwin Indoor markets, 2003.

Whilst Luvera is positioned as a leading exponent of social practice in photography today, a focus on broader social change and issues in society can be seen throughout photographic history from photographers such as Jacob Riis (1849 – 1914) who used photography in the 1890s to expose squalid conditions of tenement housing with the aim of creating social reform.⁷² Riis' photographs draw comparisons with contemporary social documentary work by Jim Mortram which exposes the impact of austerity politics on people's lives through long-form collaborative photographic practices to share stories of people in his community.⁷³ It can therefore be seen that social practice as a collaborative, co-authored approach to photography has a long history tied to individual and broader social changes in society. My practice sits within this as a collaboratively produced way of sharing underrepresented stories.

Claire Bishop uses the term 'participatory' in her book *Artificial Hells* to describe artwork made during the 2000s as part of the social turn, work that values the expertise and experiences of others and seeks to make connections with specific communities that have an impact beyond the gallery.⁷⁴ Bishop focusses her text on the experience of participatory live art. Bishop's term, 'participatory' places a focus on the involvement of the audience in creating and shaping the meaning of live art. If we view the photographic act during the making process as a live performance 'participatory' practice offers a useful framework to articulate the making of new photographs as an activity that 'reinvents the exhibition as a site of production rather than display.'⁷⁵ The site and process of production is where meaning is created in a photograph in my practice and in the actions and making of photographer such as Mortram and Luvera.

Fiona Robinson. Therapeutic Gardening Sessions. RHS Garden Bridgewater, 2025
Jo Gane, Blue is the Colour of Memory, Nuneaton Library 2023.

⁷² Jacob A Riis, *How the Other Half Lives: Studies among the Tenements of New York* (New York: Charles Scribner, 1890).

⁷³ Jim A Mortram, *Small Town Inertia* (Liverpool: Bluecoat Press 2017).

⁷⁴ Pablo Helguera, *Education for Socially Engaged Art. A Materials and Techniques Handbook* (New York: Jorge Pinto books, 2011).

Bishop, *Artificial Hells*.

⁷⁵ Bishop, *Artificial Hells*, 246.

I prefer to use the term participatory to describe my work rather than socially engaged or social practice as this foregrounds the role of the individual being photographed in the creative act. Better still, I'd rather categorise my practice of working with people as 'involved'. Simply involving people who are interested in collaboratively making a portrait and telling stories at the level they are comfortable with sharing in public. Making photographic portraits should always be primarily about the desires and needs of person being photographed. It should be a fair exchange where both the photographer and the person in the photograph are happy with the image and its use. The term 'socially engaged', for me, carries an uncomfortable sense of the importance of the photographer's motivation along with detachment and extraction.

My practice of working with people meets the description of social practice provided by artist Pablo Helguera. Helguera's definition in *Education for Socially Engaged Art* takes into account the sensitive nature of this practice from the perspective of an artist working in this way when describes social practice as follows;

a social interaction that proclaims itself as art [...] dependent on the involvement of others besides the instigator of the artwork [and operating] in collaborative projects with democratic ideals [that] redefine the notion of authorship,⁷⁶

Further to this, throughout his book Helguera describes social practice as operating fundamentally 'through the tools of education'.⁷⁷ During my photographic practice I am often a teacher working in my community in a social way through educational pedagogy. I share the technical details of historical photographic processes when making portraits with people who tell me their stories. This makes the act of creating a portrait a social interaction and an exchange of knowledge. The act of co-creation is inherent during the making of a portrait photograph through collaboration and co-operation as seen in my explaining and sharing of processes and in the teaching/making pedagogy operated by Anthony Luvera discussed previously.

⁷⁶ Helguera, *Education for Socially Engaged Art*, 1 - 5

⁷⁷ *ibid.* x

Photographs in Shaw's collection along with correspondence and lecture notes tell us that Shaw didn't make photographs or artwork in isolation, he was similarly engaged in his community through lecturing and making activities with colleagues, students and the wider industrial community in Birmingham. Both Shaw and I have worked collaboratively and we are often dependent on others in our communities to make photographs.

Photographic portraits made with historical processes complicate questions of authorship if we consider the collaboration of the person in the photograph as being involved in a participatory performance. This collaborative co-authorship might be a physical involvement in the making of the plate through the photographic processing, or simply by the way they choose to sit in front of the camera. My self-portrait in the frontispiece of this study was made in collaboration with photographer Jason Scott Tilley. Tilley asked me to sit and removed the lens cap but I coated the plate and developed it. We are co-authors because both actions shape the look of the resulting image. In Shaw's practice similar collaborative self-portraiture is discussed in relation to portraits of Francis Marrian in chapter 4. In this study I question individual authorship of material images because early photographs are made with experimental materials so authorship partly belongs to the materials. Materials shape the qualities of the image along with the environment that they are made in and the people who make them. Photography is an extended collaboration.

In my contemporary practice I am continuing to collaborate with Shaw by exploring the knowledge, materials and sensory experiences of making photographs with historic processes whilst thinking about the implications of his work. As Daniel Palmer argues in his book *Photography and Collaboration*, photography is essentially a collaborative process of co-production making it impossible to separate from social practice as defined above.⁷⁸ I extend this argument across time between Shaw's moment in Victorian Birmingham to my practice today. Collaboration across time allows for new connections to be made that may otherwise remain invisible and highlights why an understanding of photographic history and photography as a material practice is important for contemporary art practice.

⁷⁸ Palmer, *Photography and Collaboration*, 1

Chapter 3. George Shaw and Birmingham

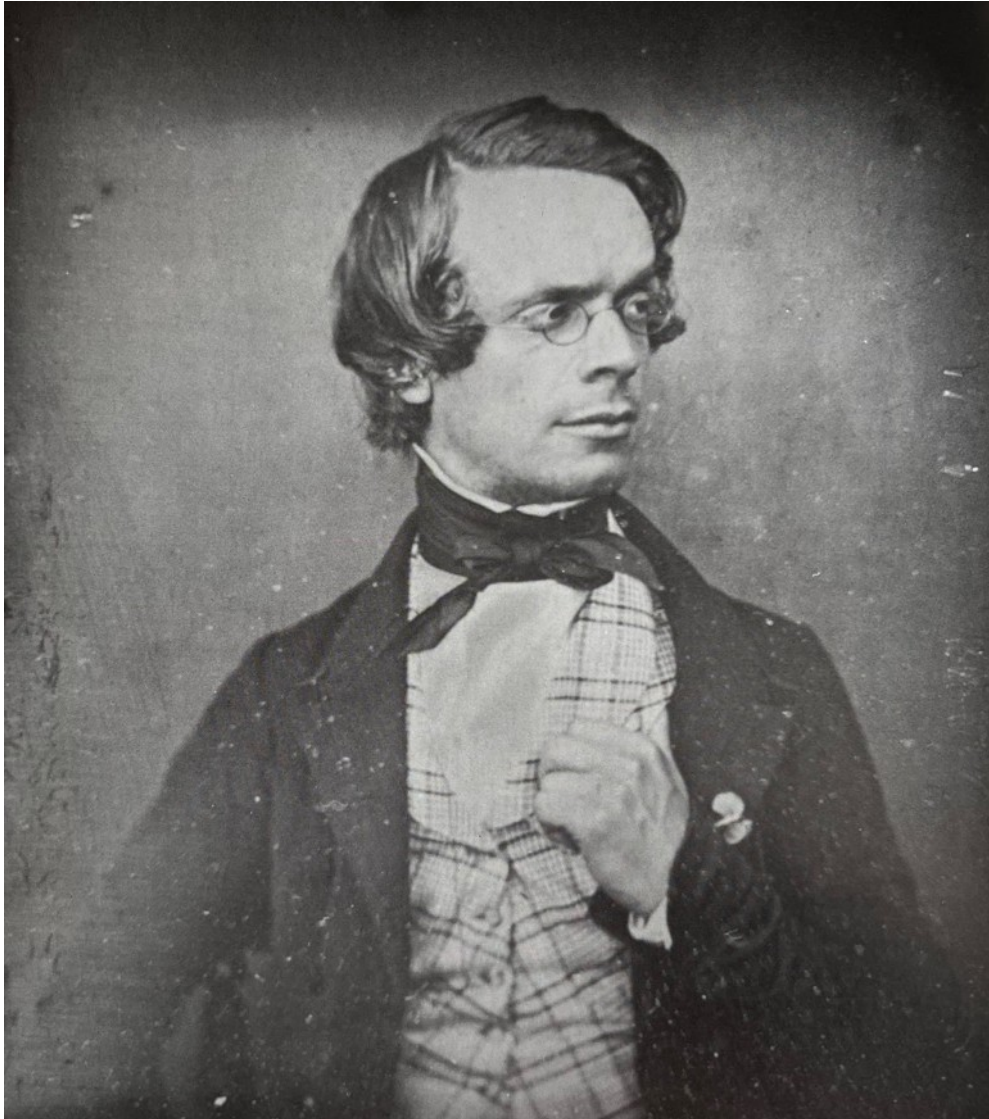


Plate 1: George Shaw, *Self-portrait*, c.1851, daguerreotype reproduced in "Mr George Shaw" *The Photographic Collector* 1, (No. 2, Autumn 1980): 36.

George Shaw, pictured suave and sophisticated at the height of his success in plate 1 above arrived in the world at around 10pm on Friday 13th February 1818 as the fourth child (there would eventually be five) to his mother, Elizabeth Shaw (née Silver, 1791 – 1864) in 1818. The family were based at Holly Hall, Dudley. It is important to note here that Holly Hall is a parish, rather than a Hall as an upper-class residence because Shaw was not born a member of the upper classes. He was the son of a glassmaker, also George Shaw (1788 -1864).⁷⁹ George Shaw Jnr was

⁷⁹ Baptism records for the parish of Dudley, Prudence Shaw and Rebecca Shaw (1814) 130
Baptism records for the parish of Dudley, Thomas Silver Shaw (1816) 284

geographically and socially positioned in the middle of the country, as a member of the emerging middle class at the heart of the industrial revolution during a period when the way of life in the industrial midlands was shaped by industrial advances in manufacturing.⁸⁰

George Shaw Snr's business interests in glass lead him from Dudley in the Black Country into the city of Birmingham, moving to Aston where he set up in business with Charles Leonard Thompson. In Aston he leased the flint glass section of Aston Glass works from established glass manufacturers and Quaker businessmen, Gibbins brothers from 1835.⁸¹

George Shaw Jnr became established in the industrial city of Birmingham throughout the 1840s, lecturing widely in chemistry at public institutions such as the Mechanics Institute, the Philosophical Society and the Polytechnic Institution.⁸² At the

All three baptism records include 'Glass Maker' for 'Quality, Trade or Profession'. Thanks Nettie Edwards for finding these records.

⁸⁰ Samuel Timmis *The Resources, Products and Industrial History of Birmingham and the Midland Hardware District in 1865* (London: Legare St Press, 2022).

Richard Prosser *Birmingham Inventors and Inventions* (Southampton: S.R. Publishers, 1970).

Asa Briggs, *A History of Birmingham* (London: Oxford University Press, 1952).

Eric Hopkins, *The Rise of the Manufacturing Town: Birmingham and the Industrial Revolution* (Stroud: Sutton Publishing, 1998).

Peter M. Jones, *Industrial Enlightenment. Science, technology and culture in Birmingham and the West Midlands, 1760 – 1820* (Manchester: Manchester University Press 2008).

Vinen, *Second City*.

James Frederick Chance, *A History of the firm of Chance Brothers and Co. Glass and Alkali Manufacturers* (Sheffield: Society of Glass Technology, 2018).

Alistair Grant, "Elkington and Co. and the Art of Electro-Metallurgy, circa 1840-1900. (PhD thesis, University of Sussex, 2014).

⁸¹ "Flint Glass Manufactory." *Birmingham Daily Post*, December 1835.

"Flint Glass Manufactory." *Aris's Birmingham Gazette*, Monday 4th January 1836. 3

⁸² Charles Josiah Woodward "Newspaper Cuttings Relating to the Birmingham Philosophical Institution and the Birmingham and Midland Institute" (Birmingham Central Library. Ref. LF50.6 / 285640, 1856)

Reports and advertisements for 48 lectures by Shaw at the Philosophical institution during the 1840s, specifically in 1843 (6 lectures), 1846 (40 lectures) and 1848 (two lectures).

British Newspaper archive (online) contains advertisements for lecture series including Shaw in syllabus lists for Birmingham Institutions throughout the 1840s for example;

"Birmingham Philosophical Institution" *Aris's Birmingham Gazette* Monday January 23, 1843

"Birmingham Philosophical Institution. Mr George Shaw commences a series of six lectures on Electricity and Chemistry at the Philosophical Institution," *Aris's Birmingham Gazette* Monday November 6, 1843

"Birmingham Philosophical Institution, Department of Practical Chemistry. Mr George Shaw will deliver a lecture" *Aris's Birmingham Gazette* Monday 24th February 1845

"Mechanics Institute. Report of the Committee," *Birmingham Journal* January 16th 1841.

A lecture on water and on the atmosphere by Shaw, alongside lectures on the History of Music by J P Marrian and Electrical Forces by Dr Melson.

Mechanics Institute, he was honorary secretary and a committee member in 1840, becoming vice president and chairman in 1841.⁸³ He had what we would now term a portfolio career in the arts, science and industry. Making early photographs and experimenting with chemical photographic materials was part of this. The interdisciplinary nature of photography connected his varied interests in art, science and business. Shaw reportedly made the earliest daguerreotype in Birmingham, in 1839, within two days of Daguerre's publication of the process.⁸⁴

He was a Professor of Chemistry at Queens College, Birmingham, according to his obituary achieving the position of professor at this institution from the age of 20.⁸⁵ However, obituary sources are often aggrandising and information in his obituary does not align precisely with the archive sources I have found. Annual reports from Queens College list George Shaw as Professor of Chemistry and in charge of Practical Chemistry from a slightly later date. He was recorded in 1858 as leaving the chair of chemistry, having been in that position for 10 years putting his starting date as professor to 1848, age 30.⁸⁶ However, it is likely that his position began before this date in an assisting or lecturing role which was not publicised, perhaps from the age of 20. Evidence for an earlier assisting role at Queens College when it is still the Birmingham Royal School of Medicine and Surgery appears in his

⁸³ William Scholefield, esq. "Report of the fourteenth anniversary meeting of the Birmingham Mechanics Institution," (Birmingham: January 2nd 1840), and "Report of the fifteenth anniversary meeting of the Birmingham Mechanics Institution," (Birmingham: January 7th 1841), Library of Birmingham ref. LS 11 / B'ham Institutions / C1.

⁸⁴ Harold Baker, "Birmingham Photographic Society, Paper prepared by Mr Harold Baker read by Mr P Bale Rider at the house exhibition by the Birmingham Photographic Society at the Head Quarters of the Royal Photographic society" 30th April 1906. Birmingham Central library collection ref L/acc./661167.

Peter James, "George Shaw: Birmingham's first photographer" *History of photography* no.181 (2018): 33.

⁸⁵ Queens College was an Anglican, theological medical school founded in 1825 by William Sands Cox (1802 – 1875) as the Birmingham Medical School, becoming the Birmingham Royal School of Medicine and Surgery in 1836. In 1843 the school received a royal charter from Queen Victoria and began to operate from a large gothic building on Paradise Street as Queens College.

Claims of Shaw teaching at Queens College from the age of 20 and being self-educated come from his obituaries.

"Obituary of Mr George Shaw," *Birmingham Daily Post*, August 13th 1904.

"Death of Mr. George Shaw," *Birmingham Daily Mail*, Monday August 15th 1904

James, George Shaw, 33 - 36.

Rev. Vaughan Thomas, *The Educational and Subsidiary Provisions of the Birmingham Royal School of Medicine and Surgery, set forth in a letter to the Rev. Dr. Samuel Wilson Warneford, LLD.* (Oxford: W. Baxter 1843) <https://hdl.handle.net/2027/ien.35558005338070>

⁸⁶ *The Twenty-Fifth Report of the Queen's College, Birmingham* (Birmingham: M Billing's Steam Press, 1850) Library of Birmingham L./48/93

networks amongst the staff. In 1841 Shaw was vice president at the Mechanics Institute where John Barritt Melson (1811 – 1898), one of the founding physicians of Queen’s College was lecturing.⁸⁷ Shaw was a member and lecturer alongside Melson at the Philosophical Institution from 1840 at the age of 22.⁸⁸ In 1844, Shaw assisted metallurgist John Percy 1817-1889, (who was Professor of Organic Chemistry at Queens College from 1840) with experiments on light sensitivity of chloride.⁸⁹ This evidence makes it clear he was a key part of the network of staff from Queens College from the early 1840s.

From 1842, he took over the patent agency of Luke Hebert, on Temple Row West, which he ran until his death.⁹⁰ His multiple roles during this time included working for periods as Assistant Assayer at Birmingham Assay office from January – October 1852,⁹¹ secretary for the British Association for the Advancement of Science in 1849⁹² and as a juror at the Great Exhibition of 1851⁹³ and the International Exhibition of 1862.⁹⁴ He was the first president of Birmingham Photographic Society in 1857⁹⁵ and a founder member of the Photographic Society.⁹⁶ He researched the revolutionary manufacturing technology of electroplating, publishing a *Manual of Electro-Metallurgy* in two volumes in 1842 and 1844.⁹⁷

He was a capable watercolourist and artist, socialising in circles with leading landscape painters in the city at the time, such as landscape painter Frederick Henry Henshaw (1807-1891).⁹⁸

⁸⁷ “Mechanics Institute” *Birmingham Journal*, January 16 1841, 5

⁸⁸ Woodward, Newspaper Cuttings.

⁸⁹ John Percy ‘Light. Oct: 1844’ Science Museum collection MS 0716.

⁹⁰ “Office for Patents” *Birmingham Journal*, Saturday 30th April 1842. No 882.

“Office for Patents and the Registration of Designs” *Birmingham Journal*, Saturday 6th March 1847. 4.

⁹¹ Jennifer Tann, *Birmingham Assay Office, 1773-1993*, (Birmingham: Assay Office, 1993) 86.

⁹² *Catalogue of the Articles in the Exhibition of Manufactures and Art in connection with the Meeting of the British Association for the Advancement of Science*. (Birmingham Central Library collection ref. L./50/61; 129458. 1849).

⁹³ Letter from Prince Albert to George Shaw, October 31st 1851. Researcher’s own collection.

⁹⁴ Juror’s pass, 1862 International Exhibition. Private collection.

⁹⁵ Baker, Birmingham Photographic Society.

⁹⁶ “First Ordinary Meeting.” *Journal of the Photographic Society* 1 (1853) 4.

⁹⁷ George Shaw *A Manual of Electro-Metallurgy Vol I and II*. (London: R. Groombridge, 1842 and London: Simpkin, Marshall and Co 1844).

⁹⁸ Frederick Henry Henshaw, Correspondence from Small Heath, Stratford and Stafford (private collection, 1863, 1869 and 1866).

Frederick Henry Henshaw, Letter from Llangollen to John Spiller, (Wellcome Collection, 5151/B 1857).

The broad scope of Shaw's activities in Birmingham and the nature of his work in lecturing in chemistry and advising as a patent officer brought him into contact with a wide range of manufacturers and industrialists. He was a highly networked figure in sharing knowledge and developing innovative methods in manufacture in the city during this period. His knowledge of innovative processes impacts upon his work with photography. As a chemist he knew about the material properties of chemicals needed to make photographs with early processes and he knew the manufacturers of equipment needed to make photographs making him ideally placed to make high quality images. Photography was important in Shaw's network. Photographic materials were developed and photographs were made and shared by the scientists and artists he knew such as metallurgist John Percy (1817 – 1889), and landscape painter Frederick Henry Henshaw (1807 – 1891).

Shaw left a collection of 29 daguerreotype photographs that remain in private ownership, introduced to me by the late Pete James in 2014 and 26 calotype photographic negatives that are in the Musee D'Orsay that form the root of this study.⁹⁹ Photographs by other photographers, ephemera and correspondence are drawn upon in my research, significantly a large-scale portrait I've identified as being of Shaw by JJE Mayall in the collection at National Science and Media Museum, Bradford.¹⁰⁰

⁹⁹ Peter James (1958 – 2018) was an instrumental figure in British photography, a supporter of local photographers and a friend. He established a collection of photographs that is of national importance at the library of Birmingham, sharing knowledge and supporting generations of local photographers.

¹⁰⁰ JJE Mayall, *Outsize daguerreotype portrait*. MS 1934-649.

New Street, Birmingham

In 2010, I was commissioned by Pete James at Birmingham Central Library and photographed New Street using the wet plate collodion process from 1851 to make small glass negatives that were printed on silver gelatin paper. I made these by mixing dirt from the cracks in the pavement with my developer. I was attempting to make my new photographs look old whilst connecting photographic materials to place. These ideas about disrupting linear time within a photograph remain in my practice today, but it is old photographs that look new that hold my thoughts throughout this research.

Pete James placed my photographs in the collection at Birmingham Central Library and in an exhibition at Birmingham Museum.¹⁰¹ In this collection my photographs sit in conversation with the historical collection of survey photographs produced in the city from the 1880s by photographer Harold Baker (1860-1942) that I studied at the library before making my new collodion negatives.¹⁰² Baker had innovated with photographic developer, creating a more successful photographic solution than my disruptive mixing of dirt. He went into business with C.S.Baynton selling 'Harold Baker's developer'. During the making of his developer he discovered a solution to preserve wood and make it fire-proof. This story connects photographic innovation to wider manufacturing demonstrating the essential and tangential links that connect photographic innovation to other manufacturing industries in a networked manufacturing city such as Birmingham. Stories echo throughout photographic history in Birmingham and in Baker's story we can see echoes of George Shaw's earlier innovation as we can see echoes of earlier photographic work in the city within my experimental art practices that make use of historical photographic materials and processes. I'm using these examples to name but two of many photographic innovations that come from the city as they are familiar to me and have impacted upon my practice. There are many more historic innovations in

¹⁰¹ "Birmingham Seen" (exhibition) Gas Hall, Birmingham Museum, 2010.

¹⁰² Peter James "About Harold Baker" accessed 2nd March 2025
https://www.birmingham.gov.uk/info/50140/photography/1429/harold_baker

photography in Birmingham that sit outside this study and connect with the contemporary practices of other artists.¹⁰³

In 2016 I worked on an exhibition to introduce Shaw's historical story in Birmingham at Birmingham Open Media alongside Pete James. As part of this collaborating with audio visual artist Leon Trimble I performed a walk on New Street, Birmingham with a hacked, modern replica of an 1840s Wolcott camera that is in the collection of Birmingham Museums Trust. Our replica camera, pictured in figure 2 was produced collaboratively partly based on the historical knowledge of curator and photographic historian Pete James who had found a Wolcott camera in the collections centre at Birmingham Museums Trust alongside the technical expertise of audio-visual artist Leon Trimble, cabinet-making skills of master craftsman Jamie Hubbard and my visual storytelling. Our experimental Wolcott camera illustrates the technological development of photography in the city of Birmingham as a collaborative, experimental process supported by industry. The hacked, replica camera sits between manufacturing, science and art, coming out of educational institutions and libraries.¹⁰⁴ The historical story of Shaw's work with photography in Birmingham can be seen the same way.

¹⁰³ Harold Baker, "Birmingham Photographic Society, Paper. Birmingham Central library collection ref L/acc./661167

Yung Fifty, "Birmingham Then and Now, Some Random Recollections," *Birmingham Magazine of Arts and Industries*, 1897 Vol 1: 10

¹⁰⁴ The Wolcott camera at Birmingham Museum Trust is one of only two that exist in the world, discovered by Pete James. The camera sped up exposures for the Daguerreotype process by operating with a mirror. Roger Watson wrote about this camera 'Hidden in Plain Sight' (2017), paper remains unpublished.

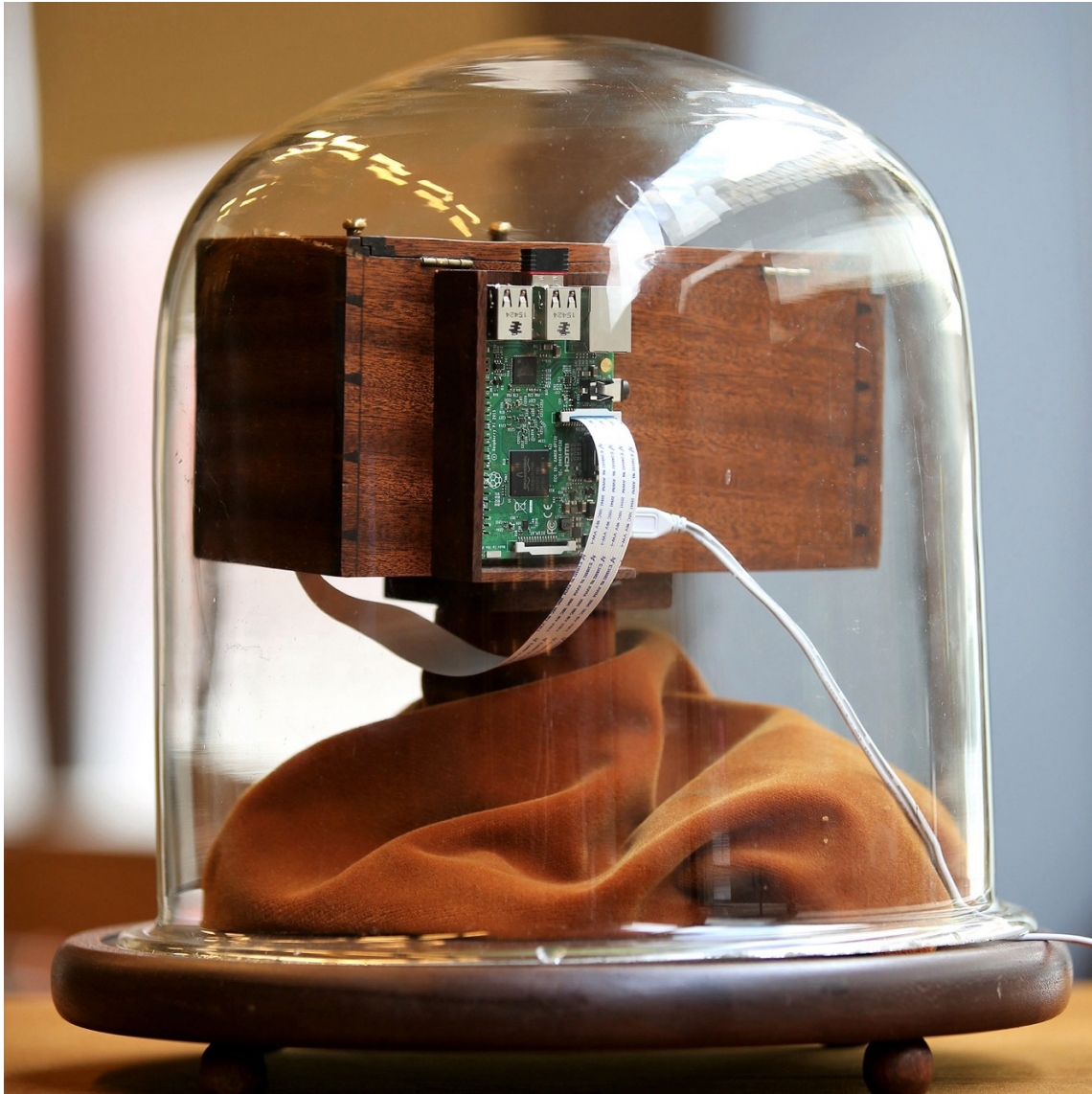


Figure 2: Jo Gane, Replica Hacked Wolcott Camera, 2017, mahogany, glass, mirror and electronics. 38 x 30 x 30cm. Birmingham Open Media. Photograph by Nick Hynan

These connections between art, science and manufacturing exist in Birmingham across time, through technically improving materials and photographic processes to create a sense of place. To sense that Birmingham is a place for photography. My practice in this thesis aims to unpick this in a tactile form, connecting historical practices of Shaw and his colleagues to my work and to Birmingham today with an understanding of their importance to contemporary art practice. I want to understand the nuances of what came before in the same place. The history of photography in Birmingham is not easily visible and is in danger of being forgotten. Historical material about the city in public and private collections is layered over and built upon by later photographers including myself. This thesis aims to make connections to

photographic history in the city through my practice. My re-creative art practice allows us to access tacit knowledge about photographic materials and forms connections to local photographic history. This local photographic history is nationally and internationally significant and can inform our daily experience of the city, along with art and photographic practices in the future.

Early photography in the city was developed through connections made between Shaw and his colleagues at Queens College on Paradise st, just across the road from the Brutalist library I photographed and developed in the dirt in figure 3 below. Since I photographed the Brutalist library building it has been demolished and the nationally designated photographic collections that it held are precariously frozen in time in the new library building.¹⁰⁵ This study centres Birmingham as a place for photography to highlight its importance to photographic history and ensure it remains part of narratives around the subject.

¹⁰⁵ Rachel Segal Hamilton “The Library of Birmingham hosts a world class photo collection. Unfortunately, most of it is sitting in boxes.” *Despatch* 22nd June 2024
Lynsey Hanley “I love the new Birmingham Library – and I hate what’s happening to it.” *Guardian* Friday 14th August 2015.



Figure 3. Jo Gane, Birmingham Central Library, 2009, inverted scan from a wet plate collodion negative. 7.62 x 10.16 x 0.2cm. Birmingham.
Note the contamination in the sky is caused by dirt taken from cracks in the pavement deliberately mixed with the developing solution.

The Pantechnetheca

These daguerreotypes, plates 2 and 3 below, are the earliest photographic views which exist of New Street, Birmingham and were made by George Shaw in the 1840s. It is likely that these daguerreotypes of New Street and the Pantechnetheca building were made during the early part of the 1840s when Shaw was experimenting with daguerreotype materials in the city.¹⁰⁶ These daguerreotypes of New St join the canon of early photographs which were taken from a window.¹⁰⁷

¹⁰⁶ George Shaw, letter to William Henry Fox Talbot, 29 Jan 1844. Manuscripts – Fox Talbot Collection, LA44-2, British Library, London. <https://foxtalbot.dmu.ac.uk/>
John Percy, “Light” 1844 (notebook) Science Museum Collection ref.MS0716

George Shaw “*Francis Marrian*” c.1844 private collection,

¹⁰⁷ Joseph Nicéphore Niépce, *Untitled ‘point de vue’*, 1827, Heliograph on pewter, 16.7 x 20.3 x .15 cm. Harry Ransom Center, Austin, Texas.

William Henry Fox Talbot [*The Oriel Window, South Gallery, Lacock Abbey*] 1835, Paper Negative, 8.5 x 11.6cm. Met Museum, New York

Louis Daguerre *View of the Boulevard du Temple* 1838, Daguerreotype, Bavarian Museum, Munich.

Martin Jürgens, “Redefining the origins of photomechanical printing: etching, electrotyping and multiplying daguerreotypes in Europe from 1839 to 1860.” (PhD thesis, De Montfort University, TBC).



Plate 2: George Shaw, *New Street Birmingham*, early 1840s, daguerreotype, 2 x 2.5 inches. private collection. (left)
Plate 3: George Shaw, *New Street Birmingham*, early 1840s, daguerreotype, 2 x 2.5 inches. private collection. (right)

The columned building in the centre of plate 2 and towards the right on plate 3 was known as the Pantechnetheca inscribed in text which was ostentatiously delineated in Grecian script on the outside of the building as seen below in illustration 2. It was built in 1823 for jeweller and retailer Charles Jones as a grand showroom for the best of Birmingham’s manufactured wares.¹⁰⁸ Next door to the Pantechnetheca was the cutler’s shop of Thomas Creswick Snr, father of the landscape painter, Thomas Creswick RA (1811 – 1869) who is discussed further in chapter five.¹⁰⁹ After operating as luxury retailer for almost 10 years, Jones declared bankruptcy in 1832 and the Pantechnetheca building was auctioned then subsequently let to tailor Samuel Hyam and several businesses.¹¹⁰ In 1833, the household effects and stock of Creswick’s cutler’s shop next door is auctioned, suggesting this closes at a similar time to Jones business. This may be indicative of a more general downturn in demand for household wares. In 1839 the building was sold again and taken over by tailor and clothing retailer Samuel Hyam who extended the facade and removed the Grecian statues as the building is seen in Shaw’s daguerreotypes.¹¹¹



Illustration 2: Anon (detail from larger drawing of the Pantechnetheca), *Grecian script and statues on Charles Jones Pantechnetheca* c.1823. Image courtesy Birmingham Museums Trust

We don’t know if the statues were pulled down or became unstable, but the removal of the statues of Greek gods for the Arts seen above in illustration 2 signified the building change from an art gallery showcase for the manufacturers of Birmingham

¹⁰⁸Birmingham Mail, “Birmingham Centenarian’s Death. Father of the Gun Trade.” 21 August 1914

¹⁰⁹ Aris Birmingham Gazette. “Next door to the Pantechnetheca” Monday 6th May 1833

¹¹⁰ Aris Birmingham Gazette. “Notice. The Creditors” Monday 19th November 1832

Jennifer Dixon, “Welcome to the Pantechnetheca” *Iron Room* (blog) 12 August 2024.

<https://theironroom.wordpress.com/2024/08/12/welcome-to-the-pantechnetheca/>

¹¹¹ Aris Birmingham gazette, “Pantechnetheca, New Street, Birmingham.” Monday 11th March, 1839.

into a chain 'leviathan' clothing store.¹¹² In the receipt document shown below in plate 4 the statues are no longer on the front of the building. The earliest receipt that exists in the archive at Birmingham Central Library has an extended shop front with no statues from 1845. It appears the changes to the front of the building were made shortly after Hyam's acquisition, making it possible that Shaw's photograph was made at any point after Hyam's acquisition of the building in 1839 until its demise in 1857.

The receipt lists items 'bought of' S.Hyam' a historical colloquialism that has fallen out of use in favour of the more formal 'purchased from'. However, where I live in twenty-first century Bedworth, I've noticed things are often bought, or 'brought of' or 'off've' in a layered, colloquial accent that comes miners migrating to my small town in the mid-nineteenth century from coalfields in Newcastle and Scotland. Of and 'ov', of a place, belonging to the place. Materials that are made in places belong to the place, they are 'of' it; coal of Bedworth, silver and glass of Birmingham in Charles Jones Pantechnecca. Materials shape the identity of a place and the experiences of people who live there.

Hyam's store may have originated in Birmingham, but by the 1850s its 'of' at least 8 major cities, losing the specifics of place as it expands to become a chain store. Hyam operates outfitting stores in London, Liverpool, Manchester, Glasgow, Bristol, Hull, Leeds and Dublin. As such, he can't maintain a Birmingham accent in his stores and they do not carry the identity of a place. A local accent and materials that come from a place are important in this study.

By 1857, the Pantechnecca building was demolished to make way for a larger premises which was built in conflict with the neighbouring retailer.¹¹³ This demonstrates how the cityscape of Birmingham begins to lose its sense of place through replication of large-scale retail in other major urban centres.

¹¹² *Aris Birmingham Gazette*, "Cities and Towns!" Monday 27th October 1845
Samuel Hyam's advertising from 1845 – 1847 states stores are 'Leivathan Establishments'. Hyam advertises discounts and stores operating in London, Birmingham, Liverpool, Manchester, Glasgow, Bristol, Hull and Leeds.

¹¹³ "Warwickshire Lent Assises. Nisi Prius Court Monday March 22 Holliday v. Hyam" *Aris Birmingham Gazette*. Monday March 29.1858.



Plate 4: Samuel Hyam, *Pantechnetheca* letterhead, 1846. Birmingham Central Library archive ref MS1342/186.

Note; the building frontage is extended and there are no statues on the columns.

By 1853, according to advertisements in the *Birmingham Journal*, photographic portraiture was booming in central Birmingham, as shown in plate 5.¹¹⁴ Shaw's images of New St are in portrait format and use the daguerreotype process which was more commonly used for portraiture.¹¹⁵ It is possible that Shaw was testing the daguerreotype process when he made these images, perhaps to help new businesses prepare for making portraits in the city. In his capacity as a patent agent he was involved in making new processes commercially viable such as the new processes advertised by the portrait studios operating in the city.¹¹⁶ He was aware of the legal implications and restrictions of existing photographic patents and licenses

¹¹⁴ *Birmingham Journal*, Saturday May 14th 1853, 4.

¹¹⁵ Most of Shaw's daguerreotypes are portraits (24), excluding 4 views of buildings 'landscape' (cityscape or architecture) 3 of which are in portrait format. Shaw makes Calotype views which operate within the ordinary conventions of 'landscape' that sit in the collection at Musee D'Orsay

¹¹⁶ *Birmingham Journal*, "Office for Patents" advertisement. Saturday 30th April 1842.

Birmingham Journal, "Office for Patents and the registration of designs" advertisement. Saturday 6th March 1847. 4

Birmingham Journal, "Death of Mr George Shaw. A Remarkable Career" Monday 15th August 1904.

and how these were challenged by the invention of wet plate collodion by photographer Frederick Scott Archer.¹¹⁷ Shaw's position as a patent agent and knowledge of the material practice of photography would have put him in an ideal position to help photographers in the city navigate these challenges. I consider these daguerreotype plates to be experimental tests of the daguerreotype process because the two plates are 'bracketed' to use a photographic term – they have a variation in exposure, which based on my experience of making photographs would be needed to understand the limits of the process in these environmental conditions and judge exposure times. The exposure times appear to have been fast enough for portraiture as they freeze the movement of a carriage in the foreground of plate 2. This fast exposure time would allow for the high-quality informal portraiture which I argue is key to Shaw's contribution to photography in chapter four. With this technical framing as tests for portraits and their physical orientation the Pantechnecca daguerreotypes are a portrait of the city.

¹¹⁷ R.Derek Wood "The calotype patent lawsuit of Talbot v. Laroche, 1854." (Bromley: 1975)
Frederick Scott Archer, "The use of Collodion in Photography," *Chemist* 2, (March 1851).
Journal of the Photographic Society, Vol 3 p.270-272.
Photographic Notes "Birmingham Photographic Society. Scott Archer Fund". August 1st 1857. 282

SATURDAY, MAY 14, 1853.

Addresses, &c.

PHOTOGRAPHIC PORTRAITS,
BY BEARD'S PATENT.

MR. WHITLOCK, SOLE LICENSEE of the Patent Process for producing a **MINIATURE PORTRAIT** with all the fidelity of life, and with the exquisite tone and finish of the most expensive Miniatures on Ivory, begs to announce that he continues to execute the highest class of coloured enamelled **DAGUERREOTYPES**, at a **MODERATE CHARGE**.

STEREOSCOPIC PORTRAITS TAKEN AS USUAL.

As **MR. WHITLOCK** is the ONLY LICENSED ARTIST, he requests that the Address may be accurately noted,

120, **NEW STREET, BIRMINGHAM**,
OPPOSITE WARWICK HOUSE. 8258

PORTRAITS! PORTRAITS!!

THE TOWN HALL DAGUERRIAN GALLERY

is the only Establishment in Birmingham where really first-class **ENAMELLED DAGUERREOTYPE PORTRAITS** can be obtained at the cheapest rate.

COMPLETE IN FRAME, from 3s. 6d.

ARTIST, **MR. J. W. PICKERING**.

Specimens of **Mr. Pickering's NEW PROCESS** for producing Photographic Portraits on Glass, acknowledged by Scientific Men to surpass anything yet seen, are on View at the Gallery.

TOWN HALL ROOMS, 16, CONGREVE STREET. 8256

PHOTOGRAPHY! PHOTOGRAPHY!

BY THE FRENCH, AMERICAN, AND GERMAN PROCESSES.

A PHOTOGRAPHIC PORTRAIT, executed in the very best style, for 3s. 6d., with frame complete, at Messrs. **T. MARTIN and W. PRICE'S PHOTOGRAPHIC PORTRAIT ROOMS**, 31, **NEW STREET**, next door to Warwick House, and at **WATERLOO HOUSE, CONSTITUTION HILL**, corner of Bond Street, Birmingham.

Mr. Price, who has joined this Establishment, is a highly talented Photographer; and having been for twenty years an Artist of high standing, is able to give arrangement to groups, position to single figures, and a high finish in the colouring of these gems of art, combining at once the picture and portrait, in a style which hitherto has been surpassed by none. The further extensive alterations on the Premises, with the addition of valuable and powerful Lenses, procured from Messrs. **Volztlacnder and Co.**, of Vienna, will facilitate Messrs. **M. and P.** to meet the overwhelming demand for their truly valuable productions, with no loss of time to any who may honour the Establishment with their patronage.

STEREOSCOPIC PORTRAITS in a very superior style.

Invalids waited on at their own residence.

Photographers supplied with Specimens.

Ici on parle Français. Hier spricht man Deutsch.

8297

PATENT OFFICE,

CANNON STREET, BIRMINGHAM.

PARTIES about to **SECURE** their **INVENTIONS** by **PATENT**, or their **DESIGNS** by **REGISTRATION**, may obtain the **PRINTED INSTRUCTIONS GRATIS** by applying personally, or by letter, to

MR. GEORGE SHAW,
PATENT OFFICE,

CANNON STREET, BIRMINGHAM. 8254

CHEMICAL LABORATORY.

ESTABLISHED 1817.

PURE CHEMICALS, Prepared and Sold Wholesale and Retail, for the Use of the Artist, Student, and Manufacturer, for Scientific Pursuits, Experimental Research, and Analytical Purposes.

SOLUTIONS of **GOLD** and **SILVER**, for Electrotyping.

Every **PREPARATION** for the **DAGUERREOTYPE, CALOTYPE, &c.**

CHEMICAL APPARATUS of every description.

RETORTS, AIR JARS, PNEUMATIC TROUGHS, PORTABLE STILLS, with a large assortment of Berlin and Meissen Porcelain, for **EVAPORATING PANS, &c.**

ELECTRO GALVANIC MACHINES for Medical Galvanism, on Dr. Golden Bird's, and other principles.

GALVANIC BATTERIES for Electrotyping Processes, on Smee's, Daniel's, and Grove's principles.

TOXOLOGICAL CHESTS, for the Use of the Medical Practitioner.
CHESTS of **CHEMICAL APPARATUS** for Agricultural Chemistry, to accompany "Mitchell's Agricultural Analysis."

METALS.—Antimony, Arsenic, Bismuth, Cadmium, Iridium, Mercury, Nickel, Palladium, Platinum, Potassium, Rhodium, Sodium, Uranium, and other rare Metals.

ANALYSIS of **ORES, EARTHS, METALLIC** and other Compound Bodies, so as to ascertain their component Parts or relative Value.

MINERALS—Specimens of every description.

ESTIMATES given for the **ERECTION** of **LABORATORIES**, to any required extent.

P. HARRIS,

No. 9, BULL RING, BIRMINGHAM. 8212

We can see what surrounded Shaw on the street as he made these images by examining drawings of the city made in the same period shown here in plate 6 and 7. Perhaps Shaw had stood with his camera and made these images from the first-floor window of the Hen and Chickens hotel on the opposite side of the road to the Pantechnethca as seen in Wm. Waddell's advertisement below. As the first president of the Birmingham Photographic Society, he organised exhibitions of the great and good in photographic history at the Hen and Chickens in 1857.¹¹⁸ Samuel Lines (1778 – 1863) drawing of the Hen and Chickens engraved by Garner in plate 6 shows a portico which he could have stood on.



Plate 6: S. Lines Snr engraved by J Garner, *Wm Waddell, Hen and Chickens hotel*, pre 1839, engraving, Birmingham Museums Trust.

Note the Pantechnethca, second building on the right, with statues on the doric columns that are removed by Samuel Hyam.

¹¹⁸ "Photographic Exhibitions in Britain 1839 – 1865," De Montfort university, accessed 1st March 2025 <https://peib.dmu.ac.uk/>

Alternatively, Shaw may have made these photographs from the window at King Edwards school as seen in Cornelius Varley's illustration in plate 7. According to his obituary Shaw was a teacher at King Edwards School on New Street.¹¹⁹ He would have seen the first photographic exhibition in Britain held here as he exhibited a voltaic battery in the Philosophical Instruments section of the exhibition, alongside an exhibition of Talbot's photogenic drawings, held as part of the 1839 meeting for the British Association for the Advancement of Science.¹²⁰ This exhibition can be seen to have inspired his work on the Exhibition of Manufactures and Art ten years later, in 1849.¹²¹ Cornelius Varley's optically accurate scientific drawing from the other side of the road below in plate 7 shows the architecture of the gothic grammar school next to the Grapes tavern. It is also a possibility that Shaw was upstairs in this pub. The long windows of the grammar school are a similar height to the third floor of the tavern and I think I can see an outline of a gothic finial and a lamppost which is on the corner of the school building in Shaw's photograph in illustration 3. On closer inspection perhaps it's not a finial but the shadow detail of a passing coach driver silhouetted by a fast exposure time. Varley has drawn an oddly shaped urn on the portico of the Hen and Chickens that could be a rough outline of a man with a camera, or a painter with an easel. On closer inspection it's not a man with a camera, it's probably an urn.

¹¹⁹"Obituary of Mr George Shaw." Birmingham Daily Post, August 13th 1904.

¹²⁰ *ibid.*

"Catalogue of the Illustrations of Manufactures, Inventions and Models, Philosophical Instruments, ETC., contained in The Exhibition of the British Association for the Advancement of Science" (Birmingham: 1839) Library of Birmingham ref Birmingham Institutions/D/3, 10.

¹²¹ *Catalogue of the Articles in the Exhibition of Manufactures and Art in connection with the Meeting of the British Association for the Advancement of Science.* (Birmingham Central Library collection ref. L./50/61; 129458. 1849).



Illustration 3: Detail from plate 3. George Shaw, *New Street Birmingham*, c.1840s. daguerreotype, 2 x 2.5 inches. Private collection.



Plate 7: Cornelius Varley, *King Edwards Grammar School, New Street, Birmingham*, post 1839, Pencil and wash drawing, Birmingham Museums Trust.

Why is it important where Shaw stood and what building he was in when he made these photographs? Was he a working man in the pub at the Grapes tavern, a learned scientist at King Edwards school or a travelling salesman at the Hen and Chickens? He is all these things at different points in his life and sometimes all of them simultaneously. Shaw's malleable identity has made his role in photography hard to grasp and is at the root of why his work has gone unrecognised. He was not solely a photographer, he operated across many fields as an artist, patent agent, lecturer and exhibition juror to name but a few. Birmingham as a city is the same – it is the 'city of 1000 trades' and within these multiple roles it risks losing its identity and specific contributions to instead be associated with a mass of industry and manufacture that becomes forgotten in a post-industrial society. The discovery of the collection of Shaw's daguerreotypes offers a valuable opportunity to define both Shaw's photographic identity and that of the city of Birmingham.

Looking back into the daguerreotypes the cartwheels are sharper on plate 2, the exposure was faster; or possibly the cart was moving faster in plate 3. Perhaps Shaw was testing equipment here, we know he owned several cameras as he told Talbot about this in correspondence.¹²² However both images are the same size, small ninth plates which suggests they were made with the same camera. The first image is brighter and sharper so Shaw could have used a faster lens or a different plate material. Perhaps he simply adjusted the angle of the camera and moved to a different location further down the building. There are some clouds visible in the second image. Perhaps the clouds in the second image are chemical, traces of uneven vapour during developing or sensitising the plates, or material evidence of harder or softer polishing on areas of the plate created by Shaw's hand. The sun may have just briefly disappeared behind a cloud when he removed the lens cap to expose plate 3. There are many questions which remain unanswered, both scientific and environmental, but the images remain.

We can't know everything about how Shaw made his daguerreotypes. There are no lab records of their making and no detailed notebook of exposure times and dates.

¹²² George Shaw, letter to William Henry Fox Talbot. (London: British Library, Document no 4926, 29th January 1844) The correspondence of William Henry Fox Talbot. De Montfort University accessed on 2nd March 2025 foxtalbot.dmu.ac.uk.

In this study I will introduce his story, to sense and feel where he stood, to understand the connection of the city to photographic history. The thesis is supported by what can be found in archives that both directly relates to Shaw and his more distant networks. New knowledge about this period of photographic development is informed by my position as a practitioner in the Midlands now and what I can glean in between the gaps in the archive through practice.



Illustration 4: Detail of plate 2. George Shaw, *New Street Birmingham*, c.1840s. daguerreotype, 2 x 2.5 inches. private collection.



Figure 4: Jo Gane and Leon Trimble, *View of New Street from Waterstones Wolcott*, August 2017, livestreamed video, 15:32, 11:44. Birmingham New Street
https://www.youtube.com/live/3kDJK2ZW_bl?si=l_uCLK2Ag33Ub38S

The details of these two views of New Street, above in illustration 4 and figure 4 are separated by around 175 years, the former made by Shaw in the 1840s and the latter by myself in 2017 with the hacked Wolcott camera pictured in figure 2. The scalloped edge of the market stall forms a connection across time between them. They are both made to test new technology of the past that has since fallen out of use. The street traders recorded here have long since packed away their stalls and gone home for their tea but their blurred outlines remain in these photographs as extracted moments from the flow of time in the cityscape that connect the Victorian city to what it is now. These images offer an important record of Birmingham as a city that made manufacturing an artform. They show the place for photography that exists in Birmingham. Photography is an industrial artform that makes use of materials made and sold in the city, as we will see in chapter 4 and 5. Photography has a home in Birmingham. In the 1840s Birmingham is the 'midwife' for the development of photographic technology as seen in the newspaper cuttings pictured in plate 8. It is almost family. We have seen that photography is part of the sense of place in the city, that it is used and developed in Birmingham and has been since its invention. It is of Birmingham. From it, off've it.

1880.

BIRMINGHAM REMINISCENCES.

[SECOND SERIES.]

**THE PIONEERS OF PHOTOGRAPHY IN
BIRMINGHAM.**

If Birmingham cannot claim to have originated photography, she is at least entitled to the merit of having assisted at its birth. She can also worthily assume the credit of having given it substantial help as it struggled through many difficulties to maturity. She can in addition claim that she gave the new art most welcome aid and sympathy; and that some of the most successful of photographic discoverers and operators have been amongst those of "her own household."

Plate 8: "Birmingham Reminisces (Second Series) The Pioneers of Photography in Birmingham", *Birmingham Daily Mail*, 28th January 1880.

Family

We have established a home for photography in Birmingham. Now we turn to see Shaw's home, to meet those who surrounded him in his domestic environment. The collection of Shaw's daguerreotypes is an expanded family album that illustrates his place in the city and the people who surround him. Key to this understanding are portraits of Shaw and his father along with his wider family that exist in the collection. Many of the outdoor portraits in Shaw's collection such as plate 9 below and plates 11, 12, 18, 19, 20 and 26 appear to have been made in the same location that is described by the Musée D'Orsay as 'devant l'usine de Stowbridge'.¹²³ This is a Stourbridge glass works which had a connection with the Shaw family according to information provided to the museum by Shaw's descendants in the 1980s.¹²⁴ It is likely that this glassworks was that of Messrs. Green and Bacchus that is mentioned as the firm who employed George Shaw Snr.¹²⁵ Manufacturing is a trade that is often passed from father to son and in this sense, Birmingham is no different to trades in other cities. Shaw Snr's knowledge about glass manufacture passes on to his son.

¹²³ George Shaw *Autoportrait assis à gauche, dans un groupe, devant l'usine de Stowbridge*, 1852, calotype paper negative, 19 x 24.8 (cm) Musée D'Orsay. Accession no. PHO 1981 71.

George Shaw, letter to William Henry Fox Talbot, 19 Jan 1844. Manuscripts – Fox Talbot Collection, LA44-1, British Library, London. <https://foxtalbot.dmu.ac.uk/>

¹²⁴ "Obituary of Mr. George Shaw," *Birmingham Daily Post*, August 13th 1904.

States that his father first worked 'with the firm of Messrs. Green and Bacchus.'

¹²⁵ *Obit*, B'ham Daily Post, 1904.



Plate 9: George Shaw, *The ladder*. George Shaw Jr seated with George Shaw Sr standing c.1844, Daguerreotype, 6 x 5 inches. Private collection.

The connection between father and son in trade is visualised by the ladder in the plate 9 above. Here the ladder could be read as symbolic of a progression, or ascension through society as Shaw used the base of his father's manufacturing knowledge and network around glassmaking to improve his position in Victorian society. In 1851, he wrote about glass manufacture in a detailed and precise way when he lectured on glass manufacture at the Great Exhibition at the Society of Arts,

London.¹²⁶ Shaw's lecture on glass is significant as it illustrates the depth and familiarity of his knowledge of manufacturing. He was a juror for class XXII; Iron and General Hardware at the Great Exhibition of 1851, which did not include glass, yet lectured on glassmaking because of his detailed knowledge of the processes of manufacture; knowledge passed down at an early age from his father. His position as a patent agent had required a detailed knowledge of manufacture in many forms as it related to industry in the city, demonstrated publicly through his work on a range of manufacturing at the Great Exhibition. Birmingham as a city had a broad range of manufacturers operating many and varied processes of manufacture in metal and glass.¹²⁷ This broad range of smaller manufacturers made it the ideal place for making the component parts of photography, silver and glass, which were put into use in improving early photographic processes and later for the manufacture of cameras.¹²⁸

Earlier in the 1840s, Shaw's colleague, metallurgist John Percy was working on removing the stria from flint glass, an improvement in manufacturing processes which would enhance the optical qualities of Birmingham made glass.¹²⁹ Percy gained knowledge about the processes of manufacture through observation in Birmingham glassworks and conversations with glassmakers along with experiments in a furnace he built for testing the qualities of various techniques and mixes of glass. It is probable that he discussed these experiments with his colleague Shaw with whom he worked on other experiments on silver chloride that are recorded in the same notebook (discussed in 4). Glass manufacture is relevant to photography because the improvement of flint glass for lenses able to transmit light effectively was crucial to speeding up photographic exposure times to make portraiture viable.

¹²⁶ George Shaw, "The Manufacture of Glass" in *Lectures on the Results of the Great Exhibition of 1851*. (London: David Bogue, 1852) 185 - 211

Prince Albert, letters thanking Shaw for his work on the Great Exhibition in 1851 and for his lecture in 1853. Author's collection.

¹²⁷ *Catalogue of the Articles in the Exhibition of Manufactures and Art in connection with the Meeting of the British Association for the Advancement of Science*. (Birmingham Central Library collection ref. L./50/61; 129458. 1849)

Richard Vinen *Second City*. 115

James Furnival, Birmingham-made cameras (exhibition), Birmingham library, 2021.

¹²⁹ John Percy, letters to Richard Smith. Imperial College Archives, London ref. B/Percy
Percy is working for Birmingham firm Lloyd and Summerfield Glassworks in 1840, and gaining knowledge from many glassmakers – Matthews, Mr Benson C Neville, I Rice Haris co and a glass button manufacturer in Loveday st, Birmingham.

In the midlands, Chance glass at Smethwick were making high quality flint glass for opticians Voightlander who made early lenses for use in the daguerreotype photographic process. Chance's improvements in glass manufacture were supported by the knowledge of glassmaker, daguerreotypist and photographic pioneer Antoine Claudet (1797 – 1867).¹³⁰ Shaw's knowledge of glass manufacture can be seen to come from his familiar networks in the city and is key to improving early photography as well as to his career development.

George Shaw Jnr's career progression and rise up the social ladder in the city of Birmingham was possible because of his familiar background in glass manufacturing. Historians Richard Vinen and Asa Briggs have both argued that it was the structure of smaller, highly skilled workshops rather than large factories which allowed for social mobility in this Victorian city.¹³¹ Social mobility was demonstrated by Shaw Snr's rise from glass maker in 1814 in Dudley to a glass manufacturer in the city by 1835. George Shaw and his father were evidently proud of their working-class roots as they posed on the ladder in the practical flat, peaked mariner or Greek fishermen hats which are associated with factory workers in this part of the nineteenth century.

Mariner's hats were commonly worn by nineteenth century factory workers, however they also were fashionable, practical and comfortable, especially in contrast to the high top hats of other gentlemen in some of Shaw's daguerreotypes. Shaw was busy working in a practical way and perhaps this low hat was simply more functional than a top hat rather than a class symbol. It is later in the 1960s that the mariner style hat becomes symbolic of the working classes through its adoption into twentieth century popular culture by 'working-class hero' John Lennon. Lennon adopted the style of soviet revolutionaries from the early twentieth century that was in the future during Shaw's time. However, the hat's status as a working-class icon persists today, recently worn by politician Jeremy Corbyn as a symbol of his solidarity with workers. Regardless of the connotations of the hat Shaw reaches high society and wealth

¹³⁰James Frederick Chance, *A history of the firm of Chance Brothers and Co. Glass and Alkali Manufacturers* (Sheffield: Society of Glass Technology, 2018) 194.

¹³¹ Vinen, *Second City*. 115.

Asa Briggs, *Victorian Cities* (1968) 186-7

through his knowledge and by assisting other businesses in Birmingham to develop. I'd argue that climbing the ladder from a relatively humble background makes him an unsung working-class hero for the city.

A pride in humble origins is a typical attitude of Birmingham, as Richard Vinen states, 'Birmingham was a place in which people boasted about having been born poor rather than one in which they hunted down impressive ancestors.'¹³² Shaw Snr's business development and rise from maker to manufacturer was supported by investment which appears to have come from his business partner, auctioneer Charles Leonard Thompson and by association with the large and prosperous Birmingham-based Quaker family, Gibbins Brothers from whom he leased the flint glass section of Aston Glassworks. George Shaw Jnr benefitted from these networks in manufacturing through the knowledge of glass manufacturing processes he acquired with the support of his father. In this study, Shaw Jnr's wider network within the manufacturers of Birmingham is discussed in relation to silver manufacture in chapter four.

As well as a metaphor for progression or ascension to a higher status in plate 9 the ladder is a convenient device for vertical composition which links Shaw's image to other photographs made at around the same time such as William Henry Fox Talbot's calotype photograph of 'The Ladder' at Lacock Abbey pictured in plate 10.¹³³ We have seen that Shaw was in communication with Talbot and it is reasonable to assume that he saw Talbot's ladder photograph, which was published in the 1844 landmark publication of photographs, the *Pencil of Nature*. The ladder may even have been one of the specimens which Talbot sent to Shaw for use in his lectures.¹³⁴

It is interesting to note that whilst Shaw's daguerreotype in plate 9 contains two figures both touching the ladder, Talbot's print has a third well-dressed onlooker. This third detached onlooker suggests the difference in social class between upper-class

¹³² Vinen, *Second City*. 429.

¹³³ Prints from this Calotype negative exist in several collections – see for example Met Museum object no. 2013.159.52

William Henry Fox Talbot, *The Ladder*, April 1844, Salted paper print from paper negative, 19.6 x 24.9 cm, Met Museum, New York.

¹³⁴ George Shaw, letter to William Henry Fox Talbot, 29 Jan 1844. Manuscripts – Fox Talbot Collection, LA44-2, British Library, London. <https://foxtalbot.dmu.ac.uk/>

Talbot and Shaw's working-class family roots, visualising that the onlooker is detached from the hands-on application of photography. Whilst Talbot collaborated with Shaw and social class was not a barrier between them in their correspondence, the middle-class practical and business knowledge of manufacture Shaw had from his working family background gave him an advantage in developing the commercial potential of photographic processes. Shaw's daily work as a patent agent involved working with inventors and manufacturers to develop inventions with a view towards their commercial use and profit. This contrasted with a more detached approach to scientific development for the advancement of knowledge which was taken by the upper classes in Talbot's world.¹³⁵ Perhaps this is not a fair observation as Talbot had tried to monetise his invention by licensing and publishing with Nicholas Henneman at Reading and with his calotype school venture with the marquis de Bassano.¹³⁶ However these ventures were often fraught with difficulties and short-lived. It is impossible to separate photography from commerce at all levels, yet I argue that Shaw and the middle-classes were more interested in the application of scientific and chemical knowledge in manufacturing and commerce rather than upper-class pre-occupations with knowledge generation for philosophical advancement. Shaw had an advantage in knowing the value of photography to the manufacturing community he was part of in Birmingham.

¹³⁵ Steve Edwards *The Making of English Photography: Allegories* (Pennsylvania: Pennsylvania State University Press, 2006) 34

¹³⁶ Larry Schaaf, "Doing the Django – and Finding Talbot's Calotype School in 1843 Paris," *The Talbot Catalogue Raisonné* (blog) 18th May 2018
ibid, 16th February 2018, where Schaaf explains 'Henry Talbot had an uneasy relationship with capitalism.'



Plate 10: William Henry Fox Talbot, *The Ladder*, April 1844, Salted paper print from paper negative, 19.6 x 24.9 cm, Met Museum, New York.

In *The Pencil of Nature*, alongside this image Talbot states; ‘I have observed that family groups are especial favourites: and the same five or six individuals may be combined in so many varying attitudes, as to give much interest and a great air of reality to a series of such pictures.’¹³⁷ Shaw used the greater clarity and sharpness offered by the faster exposure times of the daguerreotype process to push this number to a large group of nine individuals in the family portrait pictured in plate 11. Unusually for portraits made at this time people are standing, which would have made it difficult to achieve a sharp image with exposure times of several seconds. Shaw Snr in the centre had moved slightly during the exposure which may have been slightly longer as there is no bright sunlight; we can see only soft shadows recorded on the plate. Perhaps the sun disappeared behind a cloud once the people were posed. The family here were showing off their prized possession, a cut glass

¹³⁷ William Henry Fox Talbot, *The Pencil of Nature* (London: Longman, Brown, Green and Longmans, 1844) Plate XIV.
<https://www.gutenberg.org/files/33447/33447-h/33447-h.html#toc45>

decanter set. The decanter was likely a to be product of their glass manufacturing business illustrating scientific developments in glass manufacture applied to commerce. The Shaws were a fashionable middle-class family during the 1840s as can be seen in this image with men on the left wearing high top hats and on the far right, Rebecca Shaw was photographed reading a sheet of music, illustrating the value of arts and culture to manufacturing families in the city.



Plate 11: George Shaw, *Family group with Glass Decanters and Music*, c.1844, Daguerreotype, 5 x 4 inches, Private Collection.

Centre, standing – George Shaw Snr. Seated 2nd from left Elizabeth Shaw (nee Silver). Right Rebecca Shaw.

The decanter remains with the daguerreotypes, passed down the generations as a tangible link to the manufactures of Birmingham. I look at it again alongside the daguerreotypes in the attic, as seen in illustration 5 below. The handle shines and it is easy to imagine how it would have shone in the same way that the polished sliver of the plates did on the day that the daguerreotype was exposed. As light passes through the clear glass and forms patterns on the wall the optical and photographic potential of these materials is clear.



Illustration 5: *Glass and silver decanter set. 2021. private collection*



Plate 12: George Shaw, *Ladies with camera and water*, c.1844. daguerreotype 4 ¼ x 3 ½ inches, private collection.
left, Rebecca Shaw, centre, George Shaw Jnr, Prudence Richards (1837 – 1913) right, Elizabeth Shaw nee Silver.

We have discussed the patriarchal line of Shaw's business interests, yet in the group family portraits which he made and in his household women outnumber men.¹³⁸ We can see in the daguerreotype plates 12 – 16, that Shaw was supported by the women he lived with and that he shared photography with them. In plate 12 George Shaw Jnr is surrounded by his sister Rebecca Shaw, niece Prudence Richards and his mother Elizabeth Shaw (nee Silver).¹³⁹ Prudence Richards is named after her great-grandmother, Prudence Silver who was married to a Mark Silver and the name Silver continues with Shaw's older brother, Thomas Silver Shaw (b.1816).

In the daguerreotype shown in plate 12 the glass decanter which the Shaw family previously centred around in plate 11 was replaced with a camera which sat

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¹³⁹ 'Wife' for Elizabeth Shaw and 'Domestic Duties' for Rebecca Shaw 1861.

Mary Veronica Rose Teanby, "Early Women Photographers of Great Britain and Ireland, 1839 – 1861" (PhD thesis, De Montfort University, 2024)

precariously underneath a glass of water near the centre of the composition. Here Shaw held a pocket watch as he was able to freeze and control time with this new cutting-edge photographic technology. The new French Buron camera that is pictured was made in 1841 and had a fast Petzval lens, potentially made from Birmingham glass. The camera appears again with Francis Marrian in plate 18, discussed further in chapter four.¹⁴⁰ The faster petzval lens on this camera would be more suited to individual portraits than large groups, due to its shallow depth of field and was likely used to make the individual portraits of the women who surrounded Shaw in his domestic environment below, in plates 14, 15 and 16.

Rebecca Shaw pictured in plates 12 and 15 was baptised in a Wesleyan chapel in Dudley illustrating links between her family and non-conformism. A nonconformist faith explains George Shaw Snr's collaborative business dealings with the Quaker family of Gibbins brothers. Non-conformist networks may have offered support which initially helped the family to develop their business interests. It is interesting to note that Shaw Jnr's network included Wesleyan preachers such as John Barritt Melson at Queens College who is cited as someone who introduced photography to Birmingham.¹⁴¹ Melson is pictured below in plate 13 which is an outside daguerreotype by an unknown photographer. Shaw assisted Melson's lectures in the city and it is in John Barritt Melson's consulting room where potentially the apocryphal, lost first daguerreotype made by George Shaw in August 1839 was exhibited.¹⁴²

¹⁴⁰ Michael G. Jacob (photographic historian), facebook message to the author, February 2024 Identification of the camera model was generously provided in this private communication. This is probably the camera transcribed as by [Bason] in; George Shaw, letter to William Henry Fox Talbot, 29 Jan 1844. Manuscripts – Fox Talbot Collection, LA44-2, British Library, London. <https://foxtalbot.dmu.ac.uk/>

¹⁴¹ *Birmingham Faces and Places* 1888 129-32

¹⁴² *ibid.*

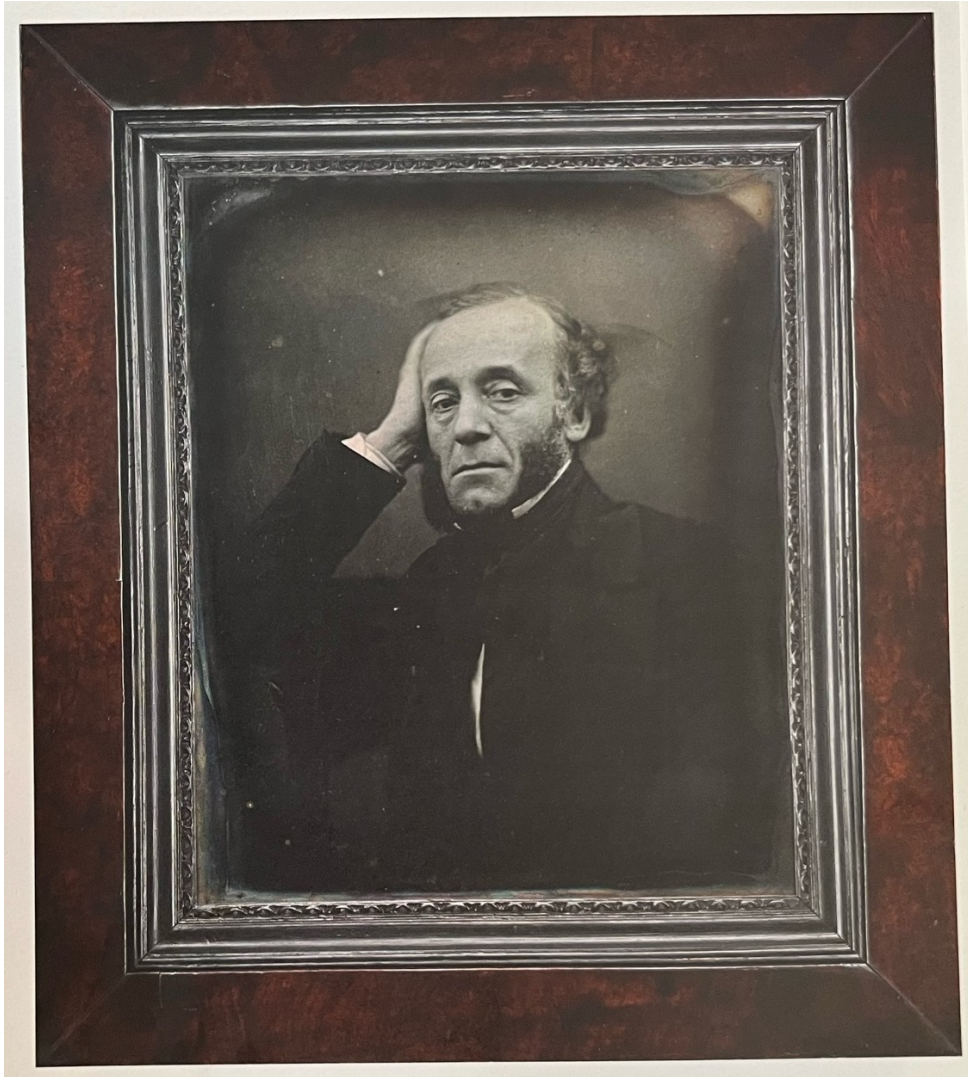


Plate 13: Unknown Photographer, John Barritt Melson, c.1850, Daguerreotype 30.6 x 25.5cm. National Gallery of Canada.

reproduced in Lori Pauli, *19th-Century British Photographs from the National Gallery of Canada* (Ottawa: National Gallery of Canada, 2011) 149.

Links to non-conformism are not unusual in Birmingham where nonconformist faith was ‘important to the image that some Birmingham citizens had of themselves.’¹⁴³ It is evident in later correspondence with landscape painter Frederick Henry Henshaw that George Shaw Jnr is not a religious man and instead places his faith in art and science.¹⁴⁴ However, I argue that the social value of his Wesleyan family background helped him to begin his career and likely allowed him to access an education.¹⁴⁵

¹⁴³ Vinen, *Second City*. 89.

¹⁴⁴ Frederick Henry Henshaw, letter to George Shaw from Stratford, (private collection), August 21st 1869.

¹⁴⁵ Jim Bennett, Aileen Fyfe and James Sumner, “John Dalton.” 27th October 2016, in *In Our Time: History*, produced by BBC Radio 4, podcast, 00:15:03.

Wesleyan women had strong roles in society with female preachers who held leadership roles in the church.¹⁴⁶ John Barritt Melson acknowledged this by keeping his wife Elizabeth's name. Elizabeth Barritt Melson was the niece of Mary Barritt who was known as Mrs Taft; a pioneering itinerant female preacher. Considering strong Wesleyan women in Shaw's extended network and non-conformist values of equality it could be argued that his values towards women were perhaps more progressive than in traditional patriarchal Victorian society. Shaw did not marry. He remained supported by his sister Rebecca's companionship. An attitude of increased gender equality carried forward into the Birmingham Photographic society where Shaw was first president and invited female members from the early meetings of 1856.¹⁴⁷

Shaw's approach to gender at the Birmingham photographic society is important in establishing the place of early female photographers in the city, such as Elizabeth Stockdale Wilkinson (1799 -1871) and Emma Barton (1872 – 1938) who sit outside the focus of this thesis.¹⁴⁸ As a mother and a photographer in the twenty-first century I've often been supported by a network of strong women in the city. I'm involved in matriarchal and female networks of artists and photographers, both through Mothers who Make in Coventry and Women in Photography, Birmingham.

The value of these three images shown in plates 14, 15 and 16 is that they show the matriarchy that supported and allowed Shaw to succeed. They sit slightly outside the focus of this thesis that takes Shaw's story as one of business, manufacture and art but it is important that they are there and that they are seen. 'Domestic duties' are recorded on Rebecca Shaw's census entry of 1861 along with the roles of daughter

"Public Education: Schools" *A History of the County of Warwick: Volume 7, the City of Birmingham*. Edited by W B Stephens (London, 1964), *British History Online*, accessed March 3, 2025, <https://www.british-history.ac.uk/vch/warks/vol7/pp501-548>.

¹⁴⁶ Beverly A Hall "Rooted and built up: Women, Faith Development and the Wesleyan Perspective" Seminar presented to the Wesley and Methodist Studies Centre, Westminster Institute of Education, Oxford Brookes University. October 25th 2000, <https://oxford-institute.org/wp-content/uploads/2020/02/2002-2-hall.pdf>

Ann Cotterrell, "Patriarchy and 'Useful Women' in Wesleyan Methodism, 1810 – 1851" *Journal of Ecclesiastical History* 73, No. 1, (2022): 79–96 <https://doi.org/10.1017/S0022046921000075>

¹⁴⁷ "Birmingham Photographic Society" *Photographic Notes Journal of the Birmingham Photographic Society* 2. (1857): 8. <https://babel.hathitrust.org/>

¹⁴⁸ Teanby, *Early Women Photographers*, 87.

Arthur T Gill, "The Supposed Early Photographs," *The Photographic Journal* 103 (1963) 289 <https://archive.rps.org/>

(1851), sister (1871, 1881) and visitor (1891). We do not know if preparing photographic materials was considered part of her domestic duties or part of her role in supporting Shaw as a sister. She may have operated a camera or coated paper, printed calotype negatives as salt prints or washed iodised paper but this is not recorded. Polishing silver is a domestic activity. The domestic labour of early photography is huge and commonly not recorded.



Plate 14: George Shaw, *Elizabeth Silver Shaw*, 1840s, Daguerreotype, 3 x 2.5 inches, Private Collection. (left)
Plate 15: George Shaw, *Rebecca Shaw*, 1840s, Daguerreotype, 2 x 2.5 inches, Private Collection. (centre)
Plate 16: George Shaw, *Prudence Richards*, 1840s, Daguerreotype, 2 x 2.5 inches, Private Collection. (right)

In my practice, I often prepare Calotypes and make portraits alongside domestic tasks. I photographed my father-in-law whilst doing Saturday morning cleaning to test the chemicals for portrait sessions at the library and I photographed my parents after I'd cooked Christmas dinner to show off how my large camera worked to the family and to use up chemicals left over from these workshops. I'll often make self-portraits and portraits of my children when testing photographic processes. This informal material testing of photographic process on family members and himself is something I see at work in Shaw's daguerreotypes. There are an unusual number of self-portraits in the collection, 7 out of 29 daguerreotypes feature Shaw although some of these are within a group, which raises the question of collaborative portraiture and authorship, discussed more in chapter 4. Who took off the lens cap, at the least? Does taking off the lens cap make that collaborator the photographer? Shaw was testing capacity, refining exposure times and techniques of the daguerreotype for portraiture by photographing his family in these images. In plate 16 when Shaw photographed his niece, a slightly bored looking Prudence Richards, I can feel the ennui in the slouch of her pre pre-Raphaelite posture, almost the same age here as my daughter Minnie is in 2024. Minnie slouches into a corner and is bored of photography when this image in illustration 6 is made by my friend and colleague from Mothers Who Make, jeweller Izzie Grove during some time spent teaching, sharing and testing processes together.



Illustration 6: Izzie Grove, *Portrait of Jo Gane and daughter Minnie Steggall*, December 2024 Wet plate collodion ambrotype, 12.4 x 16.5 cm. Nuneaton.

It can be seen here, through this time-travelling comparison that domesticity is part of photographic processes, especially when photographing your own family. This is more prominent when working with the lengthy procedures of the daguerreotype and calotype. Domesticity plays an important role in the sharing, demonstrating, developing and learning during a material process of photography. Domesticity is seen here in the family images I make and those made by George Shaw.

In conclusion the crux of my argument in this chapter is that Birmingham has a long history as a place for photography that continues today. It is important to the city and

to the identities of families that this sense of place remains, and that photography is still part of the culture of the place into the mid-twenty-first century of the future. This is important to the image of the city and the people who live there as it forms identity and a sense of belonging.

George Shaw's work in photography was supported by his place in Birmingham and his family background. This embedded him at the right place and time in the city during the 1840s and 50s, enabling him to make a lasting impact on the history on photography. Photographic materials run through the entwined story of the city and Shaw's family as the strata of minerals are layered in the formation of the geological bedrock that the city is built on. In chapter four that follows, I expand upon my argument about Birmingham as a place for photography when I extract the specifics of silver manufacturing in the city in relation to Shaw's photographic work with the daguerreotype.

Photography is from and of Birmingham.

Off've it.

Chapter 4. Material

In this chapter I look beneath the image surfaces of Shaw's daguerreotypes at the locally manufactured material they were made with to see how electroplate silver shaped Shaw's practice of daguerreotype photography.

Electroplated silver is softer than traditionally manufactured clad silverplate necessitating a softness of touch when handling the plate surface. I examined electroplate in the daguerreotype photographic process through touch and bodily sensations connecting how silverplate material feels when making new daguerreotypes to historical images made by George Shaw and his colleagues. I share my knowledge of nuances in the daguerreotype process in connection to Shaw's images and contemporary photographic practice today.

I focus on changes to materials during the making process to reconnect Shaw's images with their production. I trace how the photographic material used by George Shaw was connected to his network and place in Birmingham whilst articulating the specific qualities of these materials through re-creation and performance.

Electro-metallurgy

Shaw's expertise in electro-metallurgy was important in Birmingham during the 1840s as industrial developments radically changed the manufacture of metals.¹⁴⁹ Electroplating revolutionised silver plating in Birmingham with competing patented processes of electroplate and magneto-plate vying to sell licenses and produce plated articles. Electroplating was invented as a commercial process in Birmingham in 1840 when the Elkington cousins, George Richards and Henry registered patent 8447 for plating articles of metal with a solution of silver in connection with the application of a galvanic current. The firm of G.R. Elkington was a leading manufacturer of plated articles who purchased and patented many inventions in electroplating to protect their business interests pictured below in plate 17. These included doctor John Wright's (1808 – 1844)¹⁵⁰ discovery of using potassium cyanide in the electro-plating process and expansive patents for electrolytic solutions from chemist Henry Beaumont Leeson which specified most but crucially not all of the viable electrolytic solutions for electroplating.¹⁵¹ Elkington's dominance in this area was challenged by John Stephen Woolrich Jnr (1820 – 1850) who patented the magneto-plate process which circumnavigated Elkington's patents and licensing.¹⁵² These industrial developments in plating were rapidly taken up by industry on a national and international scale.¹⁵³

Changes to silver plating as it moved from traditional cladding to electroplate altered the material properties of the silver which significantly influenced the material process of the daguerreotype.

¹⁴⁹ Vinen, *Second City*

¹⁵⁰ Grant, *Elkington and co.* 47 – 53.

Robert Eadon Leader, *History of Elkington and Co* (Science Museum Collection, 1913.) 8.

¹⁵¹ Grant, "Elkington and co." 75-76.

Leader, *History of Elkington*.

¹⁵² *ibid*, 77 – 81.

ibid, 26.

¹⁵³ 'Electro-metallurgy in France – Messrs. Elkington and Co's Patents,' *Mechanics Magazine*. 40 (1844): 95.



Plate 17: *Messrs. Elkington's Silver Deposit Room*, 1860, Trade Card, Birmingham Museums Trust.

The eminent scientist Michael Faraday was part of Shaw's network and showed a keen interest in the developments in industrial electroplating which Shaw and his circles were involved in as this was the commercial application of Faraday's scientific thinking and experimentation.¹⁵⁴ Faraday was a friend of Shaw's colleague John Percy and reportedly once commented to him about Shaw that 'in many things I am to him a child.'¹⁵⁵ Mrs Crosse, the wife of electrical pioneer Andrew Crosse (1764 - 1855) recounts in her memoir how Faraday explained the importance of electricity in directing and shaping the material properties and behaviour of metals. He remarked, on hearing of Mr. Crosse's success in the transfer of pure silver through distilled

¹⁵⁴ John Percy describes Faraday's 'sparkling delight which he manifested on seeing this result of his purely scientific labours rendered subservient to a beautiful art and to the advantage of others.' Alistair Grant, "Elkington and co. and the Art of Electro-Metallurgy, circa 1840 – 1900." (PhD Thesis, University of Sussex, 2014), 77.

Michael Faraday "on [Electrical Decomposition](#)". *Philosophical Transactions of the Royal Society*. 124: (1834). 77–122. doi:10.1098/rstl.1834.0008. S2CID 116224057.

¹⁵⁵ Birmingham Daily Mail, "Death of Mr George Shaw. A Remarkable Career" Monday 15th August 1904.

Photocopy of a lost letter from Michael Faraday to George Shaw, Authors own collection. 1848. note – in this letter Shaw requests a certificate of recommendation from Faraday that he is unable to provide.

water by slow electric action “that there can be no doubt that that power has been astonishingly influential in bringing about many of the earthy and metalliferous arrangements of the globe.”¹⁵⁶

I’ve argued that these new ‘metalliferous arrangements’ of silver in electroplate daguerreotype materials of the 1840s, originating in Birmingham, made photography an increasingly viable commercial process.¹⁵⁷ The radical shifts in manufacturing processes generated by electroplating influenced photography physically in the material process of daguerreotype photography.

Innovative new manufacturing processes for materials added to rhetoric about photography as a new, advanced technological process between art and science during the 1840s which was echoed in advertisements for electroplated artworks. Science and technological advances in this period brought processes which seemingly created artwork by nature’s hand, and as such many parallels can be drawn between drawn the material processes of industrial artforms under examination here: photography and electroplating, developed during the same period from invention in 1839.¹⁵⁸ Autopoietic processes of photography and electroplate involve forces of light, heat and electricity which transform chemicals to create artwork as a photograph or an electro-type sculpture. Shaw took a keen interest in both processes. As a chemist and patent agent he understood the materials involved, their seismic importance to industry in Birmingham and experimented to know their qualities and application.

To begin to understand the processes of electroplate and the daguerreotype when used together, I collaboratively made new daguerreotypes with electroplater and

¹⁵⁶ Mrs Andrew Crosse *Red-letter Days of my Life* (London: Richard Bentley and son, 1892), 5.

¹⁵⁷ Jo Gane, “Photography and Electroplate in 1840s Birmingham,” *Science Museum Group Journal* 20 (August 2023). doi: 10.15180.232014.

¹⁵⁸ William Henry Fox Talbot “Some Account of the Art of Photogenic Drawing, or the process by which natural objects may be made to delineate themselves without the aid of the artist’s pencil.” (Read before the Royal Society January 31st 1839). In Steffen Seigel,(ed) *First Exposures*. (Los Angeles: Getty Publications, 2017) 109.

Kelley Wilder, “William Henry Fox Talbot und the picture which makes itself” *Von Selbst Autopoietische Verfahren in der Asthetik des 19. Jarhunderts* (Bonn: Dietrich Reimer Verlag, 2006): 189-197.

Grant, Elkington and co, 64.

daguerreotypist Joaquin Paredes Piris on two trips in 2022 and 2023 that are articulated in the artist publication that forms an important part of this research.

New materialist thought offers an account of the transformation of materials, which makes sense in relation to autopoiesis in early photography.¹⁵⁹ Kaja Silverman has expressed the idea that early photographs contain a ‘non-human agency that authors them from the inside.’¹⁶⁰ Jane Bennett offers a way into the material structure of metals which provide this ‘non-human agency’ in *Vibrant Matter* when she describes metals as polycrystalline structures in which holes or intracrystalline spaces allow for change in material qualities, in a way which is startlingly similar to Faraday’s nineteenth century understanding of ‘metalliferous arrangements’ mentioned previously.¹⁶¹ Bennett’s description of metallic structures containing spaces and gaps offers a way into the softer structure of electroplate material. It is the gaps or spaces between the particles of metals which direct the material quality of the metal, its handling and workability, softness and hardness. Spaces and gaps between the particles form a ‘variegated topology of a metal sheet or rod that metallurgists exploit’.¹⁶² I argue that this non-human agency of material properties is evident in electroplate material; with the important caveat that sits beyond new materialism that material qualities are shaped by human handling and the environment where materials are produced. The competitive industrial environment in nineteenth century Birmingham where Woolrich is competing with Elkington shapes the physical qualities of electroplate and magneto plate material.¹⁶³ The images that Shaw and his colleagues made tell a story of competitive industrial development across photography and metallurgy through their material characteristics. As such, electroplate material and more specifically magneto-plate material could be seen as a disruptive material, de-stabilising hierarchies of established power in industry.

¹⁵⁹ Graham Harman *Object-Oriented Ontology* (Pelican, 2018).
Bennett, *Vibrant Matter*.

¹⁶⁰ Kaja Silverman *The Miracle of Analogy: or The History of Photography, Part 1*, (Stanford: University Press, 2015), 142.

¹⁶¹ Bennett, *Vibrant Matter* 59.

¹⁶² *ibid.*

¹⁶³ Leader, *History of Elkington*, 26.

In Shaw's daguerreotypes there is a non-human agency within the material qualities of the silver electroplate that sits beneath the image surface. This material agency dictates the gentle handling of materials, and by extension, portraiture. It makes people respond to the act of being photographed in a way which is visible in their posture and expression. This dictates the meaning of the photographs. The way electroplate material directs the person in the image can be seen in Shaw's daguerreotypes seen below in plates 18, 19 and 20.

Plate 18 shows Francis Marrian (1803 – 1893), who was a Birmingham based electroplater and die sinker, timing the exposure on a pocket watch whilst posing with what was in 1841 a cutting-edge French portrait camera and petzval lens.¹⁶⁴ The camera is the same Buron camera Shaw posed with alongside his sister, mother and niece in plate 12. Consciously timing the exposure in plate 18, Marrian was showing off the speed of the exposure and visualising the superior material he was working with. This fast exposure is further emphasised in plate 19, when the pouring action of milk was frozen by the fast exposure. These images show a direct relationship between the material quality of the plate, which potentially allows for a faster exposure and the image content of the sculpturally frozen milk and pocket watch on the image surface.

The self-portrait of Shaw, plate 20, was taken in the same location as plates 18 and 19 and raises an interesting question of co-authorship.¹⁶⁵ Francis Marrian probably removed the lens cap to expose plate 20 and authorship is further complicated as his expertise is likely to have been responsible for making the daguerreotype plate material. The slightly uneven tones and spotting in comparison to plates 18 and 19 suggests a less practiced hand than Shaw's prepared and developed the plate, if not caused by environmental damage over time. Shaw's pose in his self-portrait in plate 20 was dictated by the qualities of the plate material, posing in a relaxed, informal way unusual for photographs of this time because of his familiarity and success with the daguerreotype process and the materials he was using.

¹⁶⁴Mr Francis Marrian Snr is inscribed verso on this plate in a later hand than Shaw's. There are at least three several generations of Francis Marrian in the Marrian family. I believe this relates to Francis Marrian (1803 – 1893) who is described in detail in the following obituary.

"The Late Mr. Francis Marrian" *Birmingham Daily Post*, June 15, 1893.

¹⁶⁵ Co-authorship in portraiture is discussed further in Chapter 5.



Plate 18: George Shaw, *Francis Marrian with pocket watch and camera*, c.1844 (potentially earlier), Daguerreotype, 15.24 x 12.7 cm. Private collection. (left)
Plate 19: George Shaw, *Francis Marrian Pouring Milk*, c.1844 (potentially earlier), Daguerreotype, 7.62 x 6.35cm. Private collection. (centre)
Plate 20: George Shaw, *Self Portrait with glass*, c.1844 (potentially earlier), Daguerreotype, 6.6 x 5.7cm Private collection. (right)

The new daguerreotypes I made in collaboration with Joaquin Paredes Piris in Caceres were exhibited alongside Shaw's historical images at Compton Verney as seen on the right-hand side of the case in figure 5, below. Their positioning shows a continuation of process between Shaw's historical practices and our contemporary portraits. My new self-portraits reveal what is beneath the image surface through the process of re-creation. A combination of materials, environment and collaboration operate in our re-creations as it had in Shaw's historic images.



Figure 5: Jo Gane, *Exhibition at Compton Verney showing daguerreotypes by George Shaw, along with enlargements and recreations by Jo Gane and Joaquin Paredes Piris*. October 2023, photograph by Tegen Kimberley

Re-creating daguerreotypes

Re-creating Shaw's daguerreotypes with Joaquin Paredes Piris gave me an increased understanding of the specific requirements of the materials needed to work effectively in the way which Joaquin handles the daguerreotype process. This understanding came in equal parts from successful and unsuccessful experiments with the daguerreotype process. Making new electroplate daguerreotypes allowed me to understand the specifics of plate material when manufactured using electroplating. To understand the process that was at work in 1840s Birmingham.

In figure 6 I decided to show off the most advanced imaging technology I own. As Marrian showed off the Buron camera, I hold my iPhone. The Buron camera in Shaw's image has been replaced in our new daguerreotypes by a mobile phone, colour card and lens balanced for pictorial effect. This constructed assemblage of the parts of a camera and studio from then and now reflects the purpose of my study to reassemble photography as a collection of parts from the past and present in the contemporary moment.

The milk has become a cloud in figure 7 because we don't have the large Petzval portrait lens that Shaw had which allowed him to freeze the exposure of Marrian's milk pour. We are using a modern Kodak aero-ektar lens pictured below in illustration 7 which is very fast at f2.5, but potentially not as fast as Shaw's large Petzval portrait lens as pictured on his Buron camera when combined with some bellows extension we needed to shoot close enough for portraits. The milk has de-materialised in our image because of the slower exposure times caused by the qualities of the lens we have available to use. Shaw understood the optical qualities of glass to transmit light from his familial knowledge of glass manufacture as discussed in chapter three. As a businessman Shaw was investing in cutting edge photographic equipment for its future return. Re-creation allows me to demonstrate here that Shaw and Marrian's French Buron camera and Petzval lens were technologically advanced in the ability to transmit light in comparison to the later Toyo camera and Kodak aero-ektar lens we use to make our daguerreotypes. This is because early daguerreotype materials needed more light than later photographic processes. This highlights the importance

of innovative glass manufacture in creating fast lenses for use with early photographic processes.¹⁶⁶ This importance of fast lenses rings true in the high prices commanded by portrait Petzval lenses for wet plate photography today.



Illustration 7: Jo Gane, *Toyo large format camera and Kodak aero-ektar lens used to re-create Shaw's daguerreotypes*, February 2023, iPhone photograph, Caceres, Spain.

In the final plate which I make collaboratively with Joaquin pictured below in figure 8, we attempt to re-create Shaw's relaxed smile seen in plate 20. However, its late afternoon on my last day in Spain when we make this image and the sun is low and yellow, slowing exposures considerably from the bright, white, blue morning light we began with. Our later, slower lens compounds the problematic spectrum of this yellow light, further slowing the exposure. Joaquin grimaces, holding an extended smile squinting into the sunlight as we demonstrate the technical superiority of Shaw's daguerreotype system.

¹⁶⁶ Chance, *A history of the firm of Chance Brothers and Co.*
John Percy, Letters to Richard Smith, 1853-1860, Imperial College London, special collections ref B/Percy/3



Figure 6: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour card and iPhone I*, February 2023, Electroplate Daguerreotype, 8 x 7 cm, Researcher's own collection. (left)

Figure 7: Joaquin Paredes Piris and Jo Gane, *Pouring Milk II*, February 2023, Electroplate Daguerreotype, 12.7 x 10 cm, Researcher's own collection. (centre)

Figure 8: Jo Gane and Joaquin Paredes Piris, *Joaquin with glass II*, February 2023, Electroplate Daguerreotype, 12.7 x 10 cm, Researcher's own collection.(right)

We made the silver plate in our re-creative experiments by electroplating directly onto a polished brass substrate. The electroplating system and silver we used is pictured below in illustration 8 and 9.¹⁶⁷ Initially, six small brass plates measuring 8 x 7 cm or sixth plate were polished and degreased before electroplating with a solution of potassium cyanide and silver nitrate. The brass was plated at varying voltages, starting at a low voltage of 0.5V to mimic the slow plating of John Stephen Woolrich's magneto machine in nineteenth century Birmingham, which electroplate manufacturer G. R. Elkington bemoaned and Robert Hunt reported upon.¹⁶⁸ In our first set of experiments, the voltage we use to electroplate moved upwards from this very low voltage to make 6 sample plates at 0.5V, 0.8V, 1 V, 1.5 V, 2.5 V and 3.5V. The length of time we give each plate to electroplate varied at higher voltages, shortening to compensate for the increased speed of plating at higher voltages, see table 1, below. The plating time we use is slower at a lower voltage; as expected and as was reported on in Robert Hunt's historical text in relation to Woolrich's Magneto generator.¹⁶⁹

Voltage (V)	0.5	0.8	1	1.5	2.5	3
Plating Time (with 4 rotations) (minutes)	35.52	32	32	20	15	10

Table 1: Electroplating times vs voltage for plating sixth plates, February 2023.

¹⁶⁷ Mike Robinson galvanises plates in his thesis by plating an additional thin layer of silver on top of clad plate. We are plating directly to brass, clean and polished prior to plating. Rather often cited copper.

Michael A Robinson, "The Techniques and Material Aesthetics of the Daguerreotype" (PhD Thesis, De Montfort University, 2017), 130.

¹⁶⁸ "Art VI. – Electro-Metallurgy," *The Artizan* 1, (1843), 133.

Robert Hunt, "Chapter IX, Electricity," in *The Poetry of Science*, Third Edition (London: Henry Bohn, 1854), 230, footnote 167.

¹⁶⁹ John Stephen Woolrich, *Woolrich's Magneto Generator*, 1844, collection of Birmingham Museums Trust, accession no. 1889S00044.



Illustration 8: Jo Gane, *Eroded block of silver used to replenish the electrolytic bath*, May 2022, iPhone photograph, Caceres, Spain. (left)

Illustration 9: Jo Gane, *Electrolytic baths*, May 2022, iPhone photograph, Caceres, Spain. (right)

We saw and felt that the tactile qualities of the electroplate material shifted as the voltages increased. At a low voltage such as 0.5V, the plating action took longer, and the silver layer was thin and delicate, soft and fragile but very easy to polish. In places it was too easy to polish and showed the brass through the surface around the edges, as can be seen in figure 13 when we made the electroplate at 0.5V. Incrementally, as the voltage plated at increased from 0.5 V through to 0.8V, 1V and 1.5 V the plate surface was coated more quickly and became denser and more resistant to polishing. Later at 2.5V and up to 3V the surface began to granulate around the edges, as seen in figure 20 when the electroplate was made at 3.5 V forming hard, uneven deposits of silver that could not be polished.¹⁷⁰ All the silver plate emerges from the plating solution covered with a papery white cloud, pictured in illustration 10, which polishes away easily as seen below in illustrations 11 and 12. Commercial platers often use brighteners to remove this but any additional chemistry can impact negatively on the daguerreotype, so we used the simplest solution of silver nitrate and potassium cyanide.

¹⁷⁰ 298.



Illustration 10: Jo Gane, *Electroplate silver before polishing*, May 2022, iPhone Photograph, Caceres, Spain. (left)

Illustration 11: Jo Gane, *Electroplate silver during polishing*, May 2022, iPhone Photograph, Caceres, Spain. (centre)

Illustration 12: Jo Gane, *Polished electroplate silver*, May 2022, iPhone Photograph, Caceres, Spain. (right)

A close observation of the plate surface during electroplating with regular rotations and adjustment of the voltage according to the speed of deposit was key to creating a useable plate surface. In the 1840s, plates were observed during plating and a goose quill feather was used to gently remove any bubbles of gas forming on the plate surfaces.¹⁷¹ Occasionally, the bubbles of gas formed during the plating process escaped the observation of the factory worker and remain fossilised in the silver surface as a trace of the manufacturing process and the transformation of material from liquid to solid states. A telling ripple that communicates the method of manufacture of Shaw's plates in the contemporary moment, as seen in illustration 13 below.

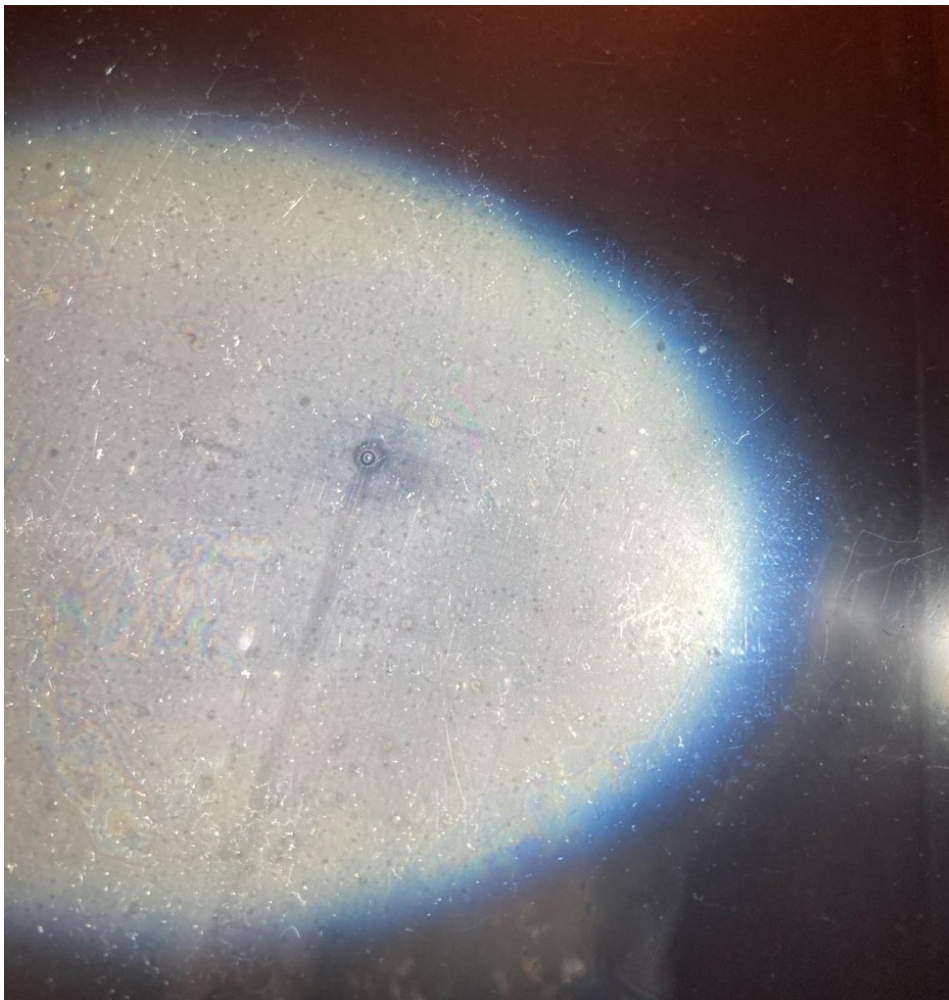


Illustration 13: Jo Gane, Silver bubble in JJE Mayall's outsize daguerreotype, September 2022, iPhone Photograph, National Museum of Science and Media, Bradford close up of JJE Mayall, *Outsize daguerreotype portrait*. 1849. 63.3 x 74.1 x 2.4 (cm) National Science and Media Museum, Bradford MS 1934-649.

¹⁷¹ Ian Moore (photographic conservator) in discussion with the author, Friday 17th June 2022.

Close observation during plating allows for adjustments in the plating process to be made in accordance with the specific requirements of the plate surface. This observation would have been essential in the nineteenth century when plating with less reliable power sources such as cell batteries or steam rather than the stable modern electric system and DC current regulator that we used as seen in illustration 14 below.

The magneto-dynamo used in Woolrich's nineteenth century electroplating process gave a stable source of electricity at a low voltage like our DC current regulator.¹⁷² This stability would have allowed for an even and soft silver deposit upon the base metal offering an advantage to magneto-electroplating for photography. However the softer silver surface this low voltage produces was a disadvantage for the staple product of Elkington and other manufacturers of tableware who licensed the electroplating process, where a hardwearing surface of silver was useful in creating a more durable product.

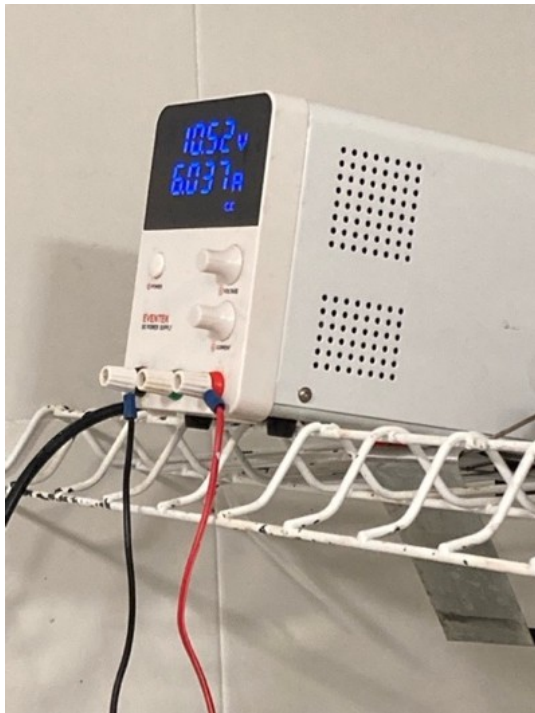


Illustration 14: Jo Gane, *Power supply regulator used during electroplating*, May 2022, iPhone Photograph, Caceres, Spain.

¹⁷² I have deduced that Woolrich's machine works at a low voltage because the following period sources state that the plating occurs slowly, as would happen at a low voltage. See. "Art VI. – Electro-Metallurgy," *The Artizan* 1, (1843), 133. Robert Hunt, "Chapter IX, Electricity," in *The Poetry of Science*, Third Edition (London: Henry Bohn, 1854), 230, footnote 167.

We compared the six, half plate electroplates produced at different voltages to each other by exposing them all to the same levels of controlled studio lighting with a consistent camera and lens. Whilst exposure times were consistent as visible in figures 9, 10, 11,12, 13 and 14 below, the tactile qualities of the plate surface varied from soft and very fine at 0.5 V to become hard and granular at 3.5 V, as can be seen in the differences in the corners of the plate in figures 9 and 13 below.



Figure 9: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour card and iPhone I*, February 2023, Electroplate Daguerreotype made at 0.5 V, 8 x 7 cm, Researcher's own collection.



Figure 10: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour card and iPhone II*, February 2023, Electroplate Daguerreotype made at 0.8 V, 8 x 7 cm, Researcher's own collection.



Figure 11: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour card and iPhone III*, February 2023, Electroplate Daguerreotype made at 1 V, 8 x 7 cm, Researcher's own collection.



Figure 12: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour card and iPhone IV*, February 2023, Electroplate Daguerreotype made at 1.5 V, 8 x 7 cm, Researcher's own collection.



Figure 13: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour card and iPhone V*, February 2023, Electroplate Daguerreotype made at 2.5 V, 8 x 7 cm, Researcher's own collection.



Figure 14: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour card and iPhone VI*, February 2023, Electroplate Daguerreotype made at 3.5 V, 8 x 7 cm, Researcher's own collection.

We made three larger electroplates, see figures 16, 18 and 22 on a brass base layer cut to 5"x4" and plated at 0.8 V, 1.5 V and 3V to directly compare to figures 15, 17 and 19 made using the traditional clad-plate method of manufacturing at the same size.

In this second experiment we found once again that the electroplate was much easier to polish in comparison to traditionally manufactured clad plate. The touch and resistance of the silver to polishing again depended upon the voltage it was plated at with a lower voltage producing a softer surface. Those plated at lower voltages were very fine in surface and easy to polish but scratched more readily, even with the softness of a thread on the edge of a microfibre cloth. The size of the plate influenced the plating time. A 5 x 4 inch plate took longer to electroplate than the smaller sixth plate at an average of 40 minutes per 5x4 plate.

We exposed these larger 5 x 4 plates in a camera outside the studio in daylight that is comparable to the weather conditions in which Shaw and Marrian made their images. Plate 19 of Marrian pouring milk shows they were working in conditions of bright sunlight with hard shadows visible in this image. The winter sunlight in Spain with an exposure value of 14 is comparable in brightness to summer sun in nineteenth-century Birmingham see illustrations 15-17 below.



Illustration 15: Jo Gane, *Set up to re-create milk pouring*, February 2023, iPhone photograph, Caceres, Spain. (left)
Illustration 16: Jo Gane, *Recreating milk pouring*, February 2023, iPhone photograph, Caceres, Spain. (centre)
Illustration 17: Jo Gane, *Blue sky and hard sunlight*, February 2023, iPhone photograph, Caceres, Spain. (right)

We over-exposed our daguerreotype plates to create a deep blue in the sky which is a contemporary aesthetic to the daguerreotype which was not used as commonly in the nineteenth century. Exposure for our milk pouring plate took 16 seconds using the Kodak aero-ektar lens on the Toyo camera with some bellows extension. It was overexposed by one stop at least so we can deduce that 8 seconds would have made a satisfactory image. The bellows extension counts for another stop, reducing time to four seconds for Shaw and Marrian's exposure which was probably made on Shaw's Buron camera with the large, fast Petzval lens pictured in plate 12 and 18. Therefore, we can conclude that Shaw and Marrian would have been able to make plate 19 of Francis Marrian pouring milk with a fast 2 second exposure with some compensation for a stop of underexposure during the development stages of their daguerreotype process.

The electroplate material appeared in some of our tests to be more photosensitive than the clad plate, see figures 19 and 20 below. However, this was not conclusive, as the exposure in figure 17 appeared to be uneven and figure 15 is comparable to the electroplate in figure 16, although the electroplate exhibits more contrast and saturation. Despite these anomalies, I can conclude that electroplate offered more consistent and brighter results in our experiments. This consistency of result when making daguerreotypes with electroplate could be due to the purity of the silver deposited through electro-deposition.¹⁷³ However, an additional factor in the consistency of results with electroplate in comparison to the clad plate could be due to Joaquin's skills and familiarity with electroplate material he is used to handling and working with. In working with the plates he has manufactured, he knows how they will feel and behave. The subtle nuances of tacit knowledge embedded in the process influences the quality of the daguerreian image and a familiarity generated through repeated experiments with the material is essential. Joaquin has tacit skills with electroplate he has made that are different to those used when working with less familiar clad plate. Subtle changes in the handling of the daguerreotype process can create a very visible impact on the resulting images.

¹⁷³ Robinson, *The Techniques of the Daguerreotype*, 90.

Making these daguerreotypes allows me to conclude that the manufacturing processes used to make the silver plate affect the handling and working skills of the daguerreotypist. George Shaw and Francis Marrian knew about the tactile qualities of electroplate and magneto electroplate manufactured in their city, tacit skills of handling their material which made their daguerreotypes successful.

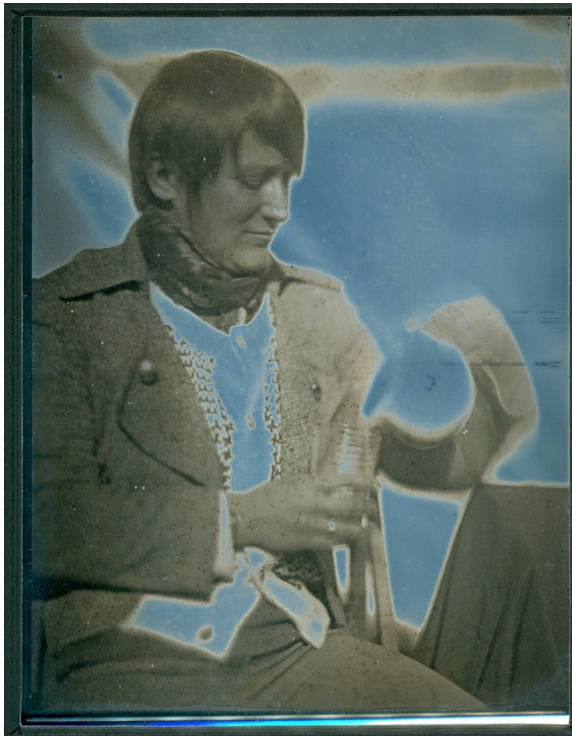


Figure 15: Joaquin Paredes Piris and Jo Gane, *Pouring Milk I*, February 2023, Clad plate Daguerreotype, 12.7 x 10 cm, Researcher's own collection.



Figure 16: Joaquin Paredes Piris and Jo Gane, *Pouring Milk II*, February 2023, Electroplate Daguerreotype made at 0.8 V, 12.7 x 10 cm, Researcher's own collection.



Figure 17: Jo Gane and Joaquin Paredes Piris, *Joaquin with Glass I*, February 2023, Clad plate Daguerreotype, 12.7 x 10 cm, Researcher's own collection.



Figure 18: Jo Gane and Joaquin Paredes Piris, *Joaquin with glass II*, February 2023, Electroplate Daguerreotype made at 1.2 V, 12.7 x 10 cm, Researcher's own collection.



Figure 19: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour Card and iPhone VII*, February 2023, Clad plate Daguerreotype, 12.7 x 10 cm, Researcher's own collection.



Figure 20: Joaquin Paredes Piris and Jo Gane, *Petzval lens, Colour Card and iPhone VIII*, February 2023, Clad plate Daguerreotype, 12.7 x 10 cm, Researcher's own collection.

Despite some inconsistencies, my re-creative experiments show that magneto electro-plate offered a functional, high quality image surface which improved the daguerreotype in comparison to traditionally manufactured clad plate. Through re-creation I can conclude that magneto-plate made at a low voltage was better for photography than both its competitors in the 1840s that were electroplate made at a higher voltage by manufacturers who were not using Woolrich's magneto and traditionally made clad plate.

Whilst this softness of electroplate material was a flaw for the manufacturers of nineteenth century tableware because of a lack of durability, for photography the ease of polishing electroplate moved photography closer to becoming a consumer process. This ease of polishing electroplate was a considerable advantage to the labour employed within a commercial portrait studio.

The success of electroplate photographic materials begins what is described by Bruno Latour as a black boxing of technology, when 'scientific and technical work is made invisible by its own success [...] Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become'.¹⁷⁴ Black boxing of technology has happened to photography. In contemporary photographic practice now a non-specialist person can simply take a photograph with a clean press of a button without ever considering the material process of making a photograph. Electroplate could be seen as beginning this black boxing of photographic technology by taking some of the labour of the daguerreotype away from the hands of the photographer and their assistant and placing it with the manufacturer where it becomes invisible, concealed by a clean layer of easily polished silver. Photography begins to become a consumer process through the manufacture of high quality, functional photographic materials in Birmingham.¹⁷⁵ Shaw and Marrian were there at the start of this black boxing of photographic technology in the 1840s when photography was emerging as a consumer process. Industrial developments in the manufacture of silver electroplate in Birmingham were responsible for pushing the

¹⁷⁴ Latour, *Pandora's hope*, 304.

¹⁷⁵ James Furnival, *Birmingham-made cameras*, (exhibition). 2021 Birmingham library. Chance, *A history of the firm of Chance Brothers and Co.* 194. Teanby, *Early Women Photographers*, 333.

polish of the daguerreotype plate into the manufacturers workshop and out of the photographic studio, a step in the development of photography towards its emergence as a consumer technology. This removal of much of the dirt of photographic processing from the hands of the photographer has ultimately resulted in the contemporary clean layer of a plastic SLR body which dematerialises the photographic process and conceals the metallic elements that make photography possible. In 2025, black boxing of technology hides the devastation of lithium mining from the photographer, whilst lithium remains essential for the batteries of a modern DSLR camera.¹⁷⁶ The protest signs I saw on the way to make daguerreotypes in the windows of Cáceres, 'No A La Mina' are a reminder of the extractive material nature of photography in all its forms.¹⁷⁷

My re-creative practice articulated above contributes to understanding the material properties of daguerreotypes. I will now move on to introduce the individuals involved and explain the industrial forces that shaped the use of new photographic and electroplating technology in Birmingham during the 1840s.

¹⁷⁶ Angus, *Camera Geologica*.

Boaz Levin, Esther Ruelfs and Tulga Beyerle eds. *Mining Photography. The Ecological Footprint of Image Production*. (Leipzig: Spector Books 2022).

¹⁷⁷ Carla Noever Castelos, "Mining out of the crisis? The role of the state in the expansion of the lithium frontier in Extremadura, Spain," *The Extractive Industries and Society* 15, (2023) <https://doi.org/10.1016/j.exis.2023.101329>.

Industrial forces in nineteenth century Birmingham

George Shaw had a tactile awareness of the properties of materials which were his daily work. As a lecturer in chemistry he regularly demonstrated the reactions and manipulation of chemical materials.¹⁷⁸ Shaw was a friend and close colleague of the Professor of Organic Chemistry at Queens College, Birmingham, metallurgist John Percy.¹⁷⁹ Percy is more commonly remembered for his later work in London at the Royal School of Mines from the 1850s, yet I'd argue that it is in Birmingham that his interests in metallurgy and chemistry solidified to make a foundation for his life work as he moved away from his studies in medical practice.¹⁸⁰ Percy investigated the worked properties of metal materials in Birmingham manufactories by visiting factories to observe material changes during making processes and speak with manufacturers regularly during his time in the city in the 1840s.¹⁸¹ A further colleague of Shaw and Percy at Queen's College who was key to the story of electroplating in Birmingham was Professor of Chemistry, John Woolrich Snr (c.1791 – 1843).¹⁸² Woolrich invented a magneto-plating machine which deposited metal with specific qualities outlined in my re-creative investigation above that were useful to photography.¹⁸³ Woolrich Snr's invention was patented by his son, John Stephen Woolrich (1820 - 1850) and after his father's death was first put to work by manufacturer Thomas Prime.¹⁸⁴ Prime advertised his magneto-plate extensively in the second volume of Shaw's *Manual of Electrometallurgy* and Shaw enthused about its use.¹⁸⁵

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¹⁸⁰ John Percy, "Letter to William Sands Cox," Nov 5th 1839, Cadbury Research Library: University of Birmingham, ref. MS 220/A/1/3/84.

¹⁸¹ John Percy, "Light" 1844 (notebook) Science Museum Collection ref. MS0716.

¹⁸² Thomas, *The Educational and Subsidiary Provisions*.

¹⁸³ Gane, "Photography and electroplate.

¹⁸⁴ Patent number 9431

Grant, Elkington and co, 77.

¹⁸⁵ Shaw *A Manual of Electro-Metallurgy* 2, 14, 205.



Plate 21: *Queen's College*, Birmingham, 1844. *Pictorial Times*, Birmingham Museums Trust

Roland Barthes expresses in *Camera Lucida* that the essence of early photographic experiments 'was the chemical discovery.'¹⁸⁶ This chemical development and improvement of photography is continuous both prior to and following its initial 'discovery', both directly and indirectly. These three men, Shaw, Percy and Woolrich are involved in moving on the early chemical development of photography. Shaw and Percy directly as early photographic experimenters and Woolrich indirectly through his involvement in manufacturing processes of silver via his innovative role in competitive industrial developments of electro-plating technology in the city.

Material knowledge about chemistry and the qualities of metals, specifically silver, the main element in photography made Queens College, Birmingham pictured above in plate 21 a productive site for work to develop photographic materials during the 1840s. Chemistry and metallurgy were key research interests at Queens College, as John Percy said upon accepting his post in 1839 'I am preparing for Chemists at all events'.¹⁸⁷ Alongside working on electro-metallurgy, Percy and Shaw made early photographs together and conducted detailed experiments which assessed the

¹⁸⁶ Carol Armstrong *Scenes in a Library* (Massachusetts: MIT Press, 1998), 10.

Roland Barthes, *Camera Lucida* (London: Random House, 1980) 31.

¹⁸⁷ John Percy, "Letter to William Sands Cox," Nov 5th 1839, Cadbury Research Library: University of Birmingham, ref. MS 220/A/1/3/84.

sensitivity of silver chloride under varied atmospheric conditions.¹⁸⁸ Woolrich developed innovative techniques for the manufacture of silver plate material.¹⁸⁹ In addition to his extensive *Manual of Electro-metallurgy*, where George Shaw published on developments in electroplating in two volumes in 1842 and 1844, Shaw's knowledge of silver was further demonstrated later in 1852, when he was appointed Assistant Assayer to attend the Birmingham Assay office in the absence of the Assay Master and assessed the quality of silver which flowed through the city.¹⁹⁰ Shaw made important time-saving discoveries about the ability of iodine to erase a Daguerreian image.¹⁹¹

The knowledge Shaw and Percy generated about photography was shared within their networks. Shaw was first president of the Birmingham Photographic Society and Percy was a key organiser of Victorian social networks that shared knowledge of early photographic techniques through his dinner parties and correspondence and his role on the committee of the Royal Photographic Society.¹⁹² Their contributions around photographic materials build a picture of photography in Birmingham. I argue that through their activities we can see that Birmingham is a place where knowledge that develops photographic processes comes from the manufacture and handling of silver electroplate materials, as we have seen in Shaw's photographs of Francis Marrian. Silver electroplate comes from Birmingham and is embedded within the social fabric of the city.

The manufacture of silver plate was a competitive commercial business as was photography; directed by patents, licensing and invention. Inventor of magneto-plate,

¹⁸⁸ John Percy 'A Pool with Overhanging Oak, near Little Pakington (sic) Church, Warwickshire' *The Photographic Album for the Year 1855 Being Contributions from the members of the Photographic Club*. Salted Paper Print, 20.2 x 25.5 (cm), Getty, Los Angeles. <https://www.getty.edu/art/collection/object/107S1N>.

John Percy, "Light" 1844 (notebook) Science Museum Collection ref.MS0716.

¹⁸⁹ Grant, Elkington and co, 77.

¹⁹⁰ Shaw, *A Manual of Electro-Metallurgy Vol I and II*. (

Jennifer Tann, *Birmingham Assay Office, 1773-1993*, (Birmingham: Assay Office, 1993) 86.

¹⁹¹ George Shaw, "Mr G Shaw on some Photographic Phaenomena", *Philosophical Magazine* 3, vol 25, (1844): 445 – 452.

¹⁹² Harold Baker, "Birmingham Photographic Society, Paper prepared by Mr Harold Baker read by Mr P Bale Rider at the house exhibition by the Birmingham Photographic Society at the Head Quarters of the Royal Photographic society" 30th April 1906. Birmingham Central library collection ref L/acc./661167.

First Ordinary Meeting." *Journal of the Photographic Society* 1 (1853) 4.

John Stephen Woolrich Jnr was in conflict with the established firm of G.R. Elkington over his use of a variant of Elkington's electroplating process. Woolrich was described as 'always a thorn in the Elkingtons' flesh'.¹⁹³ Woolrich challenged Elkington's electroplating patents with his magneto plating device drawn in plate 22 below, which appeared to be a dramatically different process to electroplate but was in fact simply a changed electrolyte and the theatrical power source of the magneto dynamo.¹⁹⁴ Woolrich eventually overcame Elkington's opposition to his process and was able to operate legally and license magneto-plate.¹⁹⁵ However, this was not without controversy as criticised in the Times newspaper which stated when reporting on Woolrich's patent for magneto-plate: 'Nothing can more fully establish the absurdity and gross injustice of our patent laws than the above.'¹⁹⁶ Woolrich was supported by George Shaw who advocated for gilding processes being discovered by John Woolrich Snr in his manual.¹⁹⁷ Woolrich's skillful manipulation of patent legislation around industrial processes allowed plater Thomas Prime to go into business using an adapted version of Woolrich's machine pictured below in plate 23, subverting Elkington's dominance in this field and their acquisition of patents surrounding these processes.¹⁹⁸

¹⁹³ Shirley Bury, *Victorian Electroplate*, (London: Hamlyn, 1971)1971, 20.

Grant, "Elkington and co, 78.

¹⁹⁴ "Tyndall vs Woolrich Bill and Answer" 1842, National Archives collection ref C14/305/T14 .

"Woolrich vs Tyndall Bill and Answer" 1843, National Archives collection ref c/14/178/W163.

"Elkington vs Woolrich and Phipps" 1839 National Archives collection ref C13/1573/7 W 1839 E15. Leader, *History of Elkington*, 8.

¹⁹⁵ Grant, "Elkington and co, 75-76.

¹⁹⁶ "Arts and Sciences," *The Illustrated Weekly Times*, (London) Saturday 15 April 1843, 94.

¹⁹⁷ Claims that Shaw saw 'the most conclusive evidence, both documentary and personal, that the late Mr Woolrich, of Birmingham, succeeded in applying coatings of copper to various articles by means of the voltaic battery [...] before the published experiments of Mr Jordan and Mr Spencer appeared.

Shaw *A Manual of Electro-Metallurgy* 2, 14.

¹⁹⁸ John Percy criticises Elkington's acquisition of John Wright's invention of electroplating with a cyanide solution.

Grant, "Elkington and co, 52.

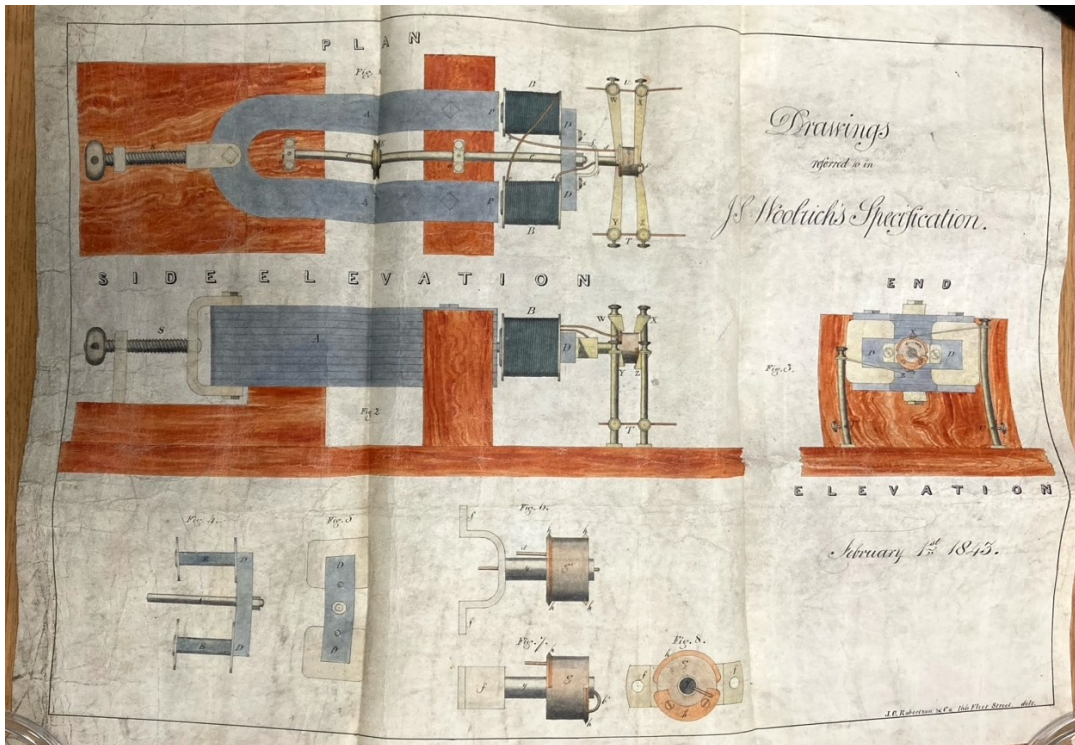


Plate 22: Patent specification drawing for J S Woolrich's magneto dynamo, February 1st 1843, National Archives, Kew, c54/12869.



Plate 23: Woolrich's Magneto Dynamo, made by Thomas Prime and Son, February 1844. Thinktank, Birmingham, Birmingham Museums Trust.

It is likely that John Percy showed off Woolrich's machine at Thomas Prime's patent magneto plate works on Northwood Street to eminent scientist Michael Faraday on one of his visits to Birmingham.¹⁹⁹ Michael Faraday met Benjamin James Pratt Marrian (1811–1891) when he visited Birmingham.

Benjamin James Pratt Marrian, or JP, was the younger brother of electroplater Francis Marrian, photographed by George Shaw in plates 18 and 19. Percy told Faraday about his photographic experiments with Shaw and a discovery JP Marrian had made of the sonorous qualities of the magneto.

My friend, Mr Shaw and I have entered upon a long investigation of the analysis of photographic phaenomena, and I trust we shall arrive at some correct results in respect to the chemistry of these phaenomena.

Mr Marrian whom you saw here, much regretted that he did not mention to you a curious phaenomenon which he observed a long time ago concerning the production of sound by the electric current.²⁰⁰

John Percy recorded his photographic experiments with George Shaw in a notebook, titled 'Light, 1844' which contains numerous references to the manufacturers of Birmingham alongside detailed descriptions of material qualities of metals and glass generated by varied processes of manufacture.²⁰¹ This notebook in the collection of Science Museum group offers evidence of the importance of glass and metal to manufacturing in Birmingham and demonstrates the working knowledge of both Percy and Shaw in these areas of industrial, chemical manufacturing with parts of

¹⁹⁹ In letter 1629, dated 23rd October 1844, Percy mentions that he hopes Faraday can visit them again. It therefore can be seen that Faraday visits prior to 1844, when it is likely he sees Woolrich's machine in operation at Thomas Prime's factory.

Frank James, *The correspondence of Michael Faraday: 1841-1848* 3, (London: Institution of Engineering and Technology, 1996) 263.

John Percy describes Faraday's 'sparkling delight which he manifested on seeing this result of his purely scientific labours rendered subservient to a beautiful art and to the advantage of others.' Grant, "Elkington and co. 77.

Thomas Prime advertises his establishment as having been 'visited by gentlemen of high scientific attainments,'

George Shaw *A Manual of Electro-Metallurgy* 2, 204.

²⁰⁰ James, "1629" *The correspondence of Michael Faraday: 1841-1848* 3, 263.

²⁰¹ John Percy, "Light" 1844 (notebook) Science Museum Collection ref. MS0716.

John Spiller, "Early Experiments, by Dr Percy and Mr George Shaw on the Chemical Phenomena of Light," *Photographic Journal* 30, (March 1890): 121 – 125.

the notebook written in Shaw's hand. The experiments written by Percy appear in his neat and easily legible upright handwriting, whilst additional experiments by Shaw are pasted into the notebook at right angles to Percy's horizontal text, written in Shaw's cursive script which appears to have been written at speed. These methods of recording in the notebook shown in plate 24 and 25 below reflect the relationship between Shaw and Percy and the fast-paced environment in which they operated during this period in the 1840s when photographic technology was developing.

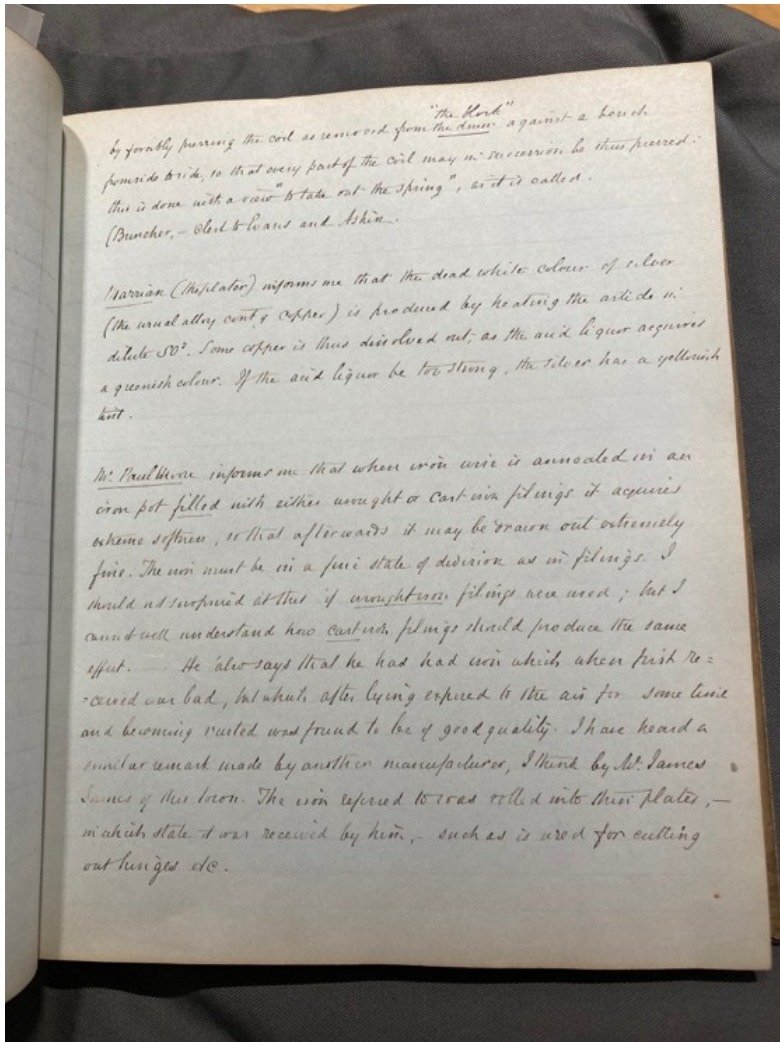


Plate 24: John Percy's neat hand in his "Light" notebook, 1844, Science Museum Collection ref. MS0716, no pagination.

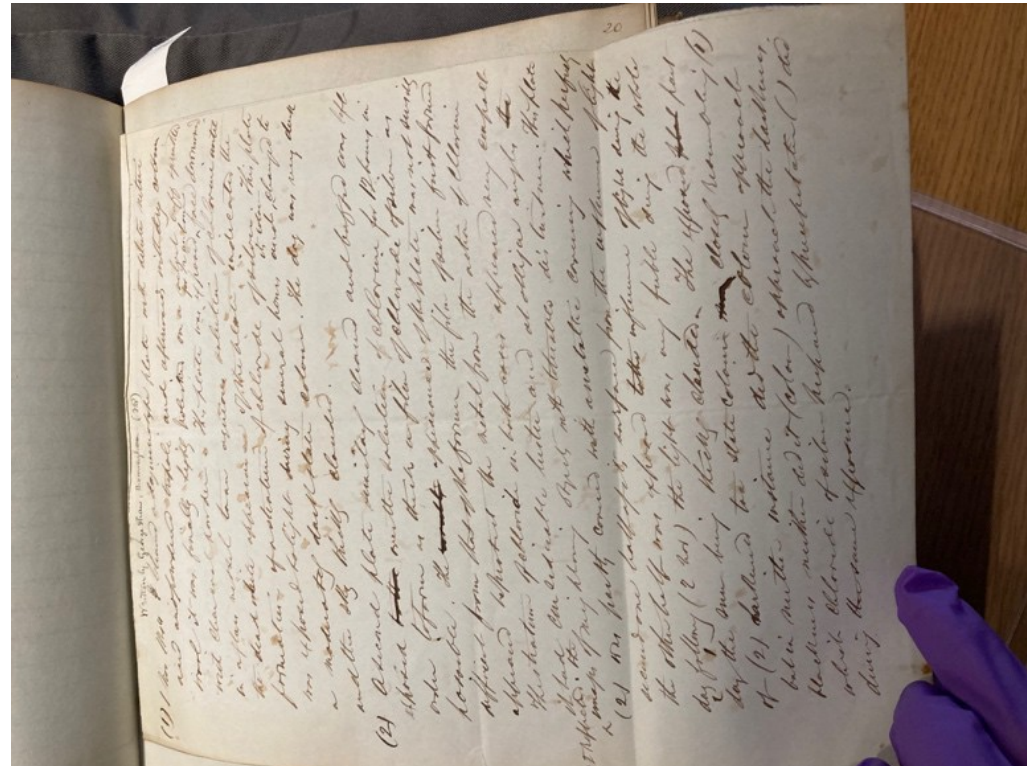


Plate 25: George Shaw's notes pasted in at right angles in John Percy's "Light" notebook, 1844, Science Museum Collection ref. MS0716: 20.

Shaw discovered and published the important fact that re-exposure to iodine wipes the latent image from the daguerreotype plate after exposure around this time in 1844.²⁰² This discovery is hugely time saving considering the laborious processes of polishing and preparing the daguerreotype plate. In a commercial portrait studio, the photographer can then simply sensitise and re-expose the same plate if they notice the person moving in front of the camera during the exposure. Time was saved in the portrait studio by the ease of polishing Birmingham manufactured electroplate. Shaw was speeding up photographic processes to make them increasingly commercially viable. Percy suggests the use of a light meter or actinometer in the *Light* notebook to make the process more consistent.²⁰³ This actinometer was built and tested by Shaw offering improved predictability of early photographic practice that results in the consistent results needed in a commercial studio.²⁰⁴ In an entry to the notebook dated October 1.1847 Percy and Shaw's geographical closeness was articulated when Percy states;

Found Shaw at the Philosophical Institution engaged in preparing urea according to Liebig's method with Cyanate of potass and sulphate of ammonia. Instead of evaporating the mixed solutions at a gentle heat to dryness, he was boiling them down over a spirit lamp. (original emphasis).²⁰⁵

In 'finding' Shaw Percy's text offers an important insight into the development of photography in Birmingham. The network of artists, scientists and manufacturers they are collaborating with all exist in the same city, within walking, 'finding' distances. This makes informal communication, especially that of commercially sensitive information between manufacturers and the observation of tactile processes a simple in conversation activity. In this example from Percy's notebook the boiling of urea illustrates the rapidity that Shaw is working at. Shaw's not got time for gentle evaporation or for failed images. He's keeping up with and adding to rapid scientific advances in his field. Liebig published his method of producing urea

²⁰² George Shaw, "Mr G Shaw on some Photographic Phaenomena", *Philosophical Magazine* 3, vol 25, (1844): 445 – 452.

²⁰³ John Spiller, "Early Experiments, by Dr Percy and Mr George Shaw on the Chemical Phenomena of Light," *Photographic Journal* 30, (March 1890): 121 – 125.

²⁰⁴ W R Hamilton "Royal Institution" *Athenaeum*, 909 (Mar 29 1845): 312-313.

²⁰⁵ John Percy, "Light" 1844 (notebook) Science Museum Collection ref.MS0716, no pagination.

after Shaw's article on wiping the latent image from the daguerreotype in the *Philosophical Magazine*.²⁰⁶ Shaw adopts this method in preparation for his chemical lectures. Shaw is testing and disseminating new chemical techniques through his practice as a lecturer in chemistry. It can be seen in the *Light* notebook that Shaw and Percy are testing, discussing and developing together the material qualities of early photography and chemistry.

The *Light* notebook was analysed by chemist John Spiller (1833 – 1921) who was a pupil of John Percy, for the Photographic Society in 1890. Spiller repeats their findings about the light sensitivity of silver chloride under various atmospheric conditions to a meeting of the Photographic Society. A conversation follows between daguerreotypists William England and Victor Blanchard about the qualities of electroplate, where they discuss the Birmingham manufacture of daguerreotype plates and Blanchard asserts that images made 'on the electro plates were certainly finer' adding further supporting evidence to my argument about the improvements that electroplating offered to the daguerreotype.²⁰⁷

Francis Marrian is referred to in Percy's notebook as 'Marrian (the plater)' who informed Percy about the 'the dead white colour of silver' during electroplating. His brother, 'J.P. Marrian' told Percy about alloys of zinc, tin and copper he uses 'for the nuts of music stools' in the '*Light*' notebook, further illustrating the closeness of this circle of manufacturers and scientists who held tactile knowledge materially pertinent to daguerreotype photography. Later notes include tantalisingly brief snippets of information that resist further research and investigation, perhaps due to their commercially sensitive nature, such as 'Plating with W. Important.'²⁰⁸

George Shaw photographed the Marrian brothers together in the daguerreotype below, plate 26. I've identified Francis Marrian from comparison to the known daguerreotypes discussed earlier which are labelled verso with his name. In this daguerreotype, I identify his younger brother, Benjamin James Pratt Marrian,

²⁰⁶ George Shaw, "Mr G Shaw on some Photographic Phaenomena", *Philosophical Magazine* 3, vol 25, (1844): 445 – 452.

²⁰⁷ Mr V Blanchard in John Spiller, "Early Experiments, by Dr Percy and Mr George Shaw on the Chemical Phenomena of Light," *Photographic Journal* 30, (March 1890): 125.

²⁰⁸ John Percy, "Light" 1844 (notebook) Science Museum Collection ref.MS0716.

standing in the centre of the image from family resemblance and the difference of 8 years between the siblings. They posed for Shaw's daguerreotype along with the jug from which Francis Marrian poured milk in plate 19 and the glass Shaw held in plate 20.



Plate 26: George Shaw, Francis Marrian right seated and Benjamin James Pratt Marrian centre standing, c.1844 (potentially earlier), Daguerreotype, 10 x 12.7cm Private collection

The Marrian family moved to Aston, Birmingham from Kingswinford, Stourbridge in the Black Country as did Shaw's family, allowing for some speculation on a shared family history between the Shaws and the Marrians that is not documented beyond their inclusion together in Shaw's photographs. In Aston, Birmingham the Marrians came from the Sea Horse, a tavern run by their father, known as Francis Marrian (1767-1846).²⁰⁹ The pub was described by nineteenth century journalist and owner of a glass manufactory, Eliezer Edwards (c.1815 - 1891) in *The Old Taverns of*

²⁰⁹Morton Marrian *History and Pedigree of the family of Marrian* (self published, 1957) Birmingham Central Library collection ref. L/acc./660861.

Birmingham as the makers of a legendary ale, known as Digbeth Water which was matured in huge store barrels in the cellar that were only allowed to empty at ‘rare intervals’ known as ‘the farm’.²¹⁰ The farm maintained a brew that always had a combination of ‘the mellowness of age and the briskness of youth.’²¹¹ Francis Marrian’s obituary describes the tavern as serving as ‘the social club of the tradesmen and not unfrequently the professional classes’.²¹² Although the perils of alcohol in Victorian society are well documented by all accounts Francis Marrian Snr had run a tight ship at the Sea Horse.²¹³ I argue that the social space of the Sea Horse and further Marrian’s ‘Digbeth Water’ promoted social cohesion, bridging barriers of class to foster productive relationships between workers and the industrial middle to upper classes as we can see in action here in the relationships between JP Marrian and John Percy, which allowed for Marrian’s hands on tactile and ‘sonorous’ knowledge of material processes to reach Michael Faraday.

The Marrian’s evidently understood music as the Sea Horse was described as an important venue for musical performance by Eliezer Edwards.²¹⁴ Alongside making screws for music stools, JP Marrian lectured on the history of music at the Mechanics Institute. In the same semester, Shaw lectured on water while Dr Melson offered a series of lectures on electrical forces and Mr Bembridge operated the oxy-hydrogen microscope.²¹⁵ These 1841 lectures at the Mechanics Institute were a visual spectacle of scientific materials, enlarged, illuminated and moving under the power of the oxy-hydrogen microscope. Iwan Rees Morus has described the social value of exhibiting electricity as a means of display in the lecture theatre and the laboratory where an experiment was a type of theatrical entertainment.²¹⁶ This mode of scientific theatre was used by John Stephen Woolrich to assert the originality of his magneto-plating invention as well as by Shaw and his circles in communicating

²¹⁰ “Mr Eliezer Edwards,” *Birmingham Daily Post*, February 24th 1891.

“The Failure of Mr. Eliezer Edwards,” *Birmingham Daily Post*, August 31st 1871.

²¹¹ Eliezer Edwards, *The Old Taverns of Birmingham*, 1879 (British Library, Historical Print Editions, 2011), 48.

²¹² “The Late Mr. Francis Marrian” *Birmingham Daily Post*, June 15, 1893.

²¹³ Eliezer Edwards, *The Old Taverns of Birmingham*, 48.

Thora Hands, *Drinking in Victorian and Edwardian Britain, Beyond the Spectre of the Drunkard*, (Palgrave Macmillan, 2018).

²¹⁴ *ibid*

²¹⁵ “Mechanics Institute. Report of the Committee,” *Birmingham Journal* January 16th 1841.

²¹⁶ Iwan Rees Morus, “Currents from the Underworld: Electricity and the Technology of Display in Early Victorian England” *Isis* 84 (March 1993): 55.

the materials and processes which material photography was part of, creating an aura of scientific spectacle around the then new technologies of photography and electricity.²¹⁷ The scientific spectacles that were exhibited in lectures at the Mechanic's Institute and new technology in use at Thomas Prime's patent magneto-plate works along with photography were discussed socially and disseminated amongst the wider community in Aston, Birmingham at the Sea Horse.

The bodily, tactile nature of material making processes persists throughout the past and present moments. As George Shaw and John Percy observed and handled chemical and photographic materials in the 1840s, I handle congruent materials now to understand the implications of their use.

Bodily processes, sensory qualities of manufacturing and music bring us to the dissemination of knowledge through performance. The lectures at the Mechanics Institute in the 1840s were illustrated with an oxyhydrogen microscope that is not unlike the projected visual elements of a collaborative performance that I organised with Leon Trimble in the gallery at Compton Verney in February 2024, described in the accompanying artist's publication. We enlarged and projected photographic particles in the gallery. Our performance communicated the sensory, bodily nature of a sparking, humming industrial machine operating in magneto-plating processes to a contemporary audience who were looking at my photographs made with historical processes. Part of this performance is pictured below, in illustration 18 and 19 and a film of the projections along with some of the sound is available to view on you-tube.²¹⁸

²¹⁷ "Art VI. – Electro-Metallurgy," *The Artizan* 1, (1843), 133.

²¹⁸ Leon Trimble, Video Synth driven by Magneto Dynamo, February 2024.(right).
<https://youtu.be/1-5gGtVTNvQ?si=LGzYOJTgmRGzmDur>



Illustration 18: Jo Gane and Leon Trimble, *The Sonorous Qualities of the Magneto*, projection onto wet plate ambrotype of *Shiam*, February 2024, performance, Compton Verney. (left)
Illustration 19: Jo Gane and Leon Trimble, *The Sonorous Qualities of the Magneto*, projection, February 2024, performance, Compton Verney. (right)

The successful metal plating industry in Birmingham persisted producing photographic materials in Birmingham and by 1852 there were three daguerreotype plate manufacturers in the city. These were Thomas Aston at 3 Brook St, William Hulme and co at 34 Hampton St and of significance to my study, William Barlow Henshaw at 88 New John St.²¹⁹

Daguerreotype plate manufacturer William Barlow Henshaw (b.1821) was within the circles of George Shaw as the nephew of Shaw's friend and neighbour, landscape painter Frederick Henry Henshaw. W B Henshaw listed as an electro-plater in the Birmingham trade directories by 1854, suggesting he was using the cutting-edge manufacturing techniques discussed and tested in this chapter of my research.²²⁰ Shaw and WB Henshaw were colleagues at the photographic society alongside living on adjacent streets in Small Heath.²²¹ Perhaps, although we will never know for certain, William Barlow Henshaw was 'W' who Percy noted that he was plating with in his Light notebook.²²²

Shaw and WB Henshaw's close friendship is illustrated by the fact that Shaw painted a copy of Henry Perronet Briggs grand history painting 'The Challenge of Rodomont to Rogero' for a bet with W B Henshaw, completing the painting upside down.²²³ Shaw may have produced the painting upside down to help him see scale and perspective, or perhaps due to the use of an optical device or lens to invert the image.²²⁴ This apocryphal story illustrates a competitive and experimental relationship between Shaw and W B Henshaw, challenging each other in the production of artwork, a relationship forged in collaborative development of

²¹⁹ Wood, R. Derek, and Peter James. "The Enigma of Monsieur de Sainte-Croix." *History of Photography* 17 (1, 1993), 109. doi:10.1080/03087298.1993.10442600.

²²⁰ *ibid*

²²¹ "Birmingham Photographic Society" *Photographic Notes, Journal of the Birmingham Photographic Society* 2. (1857): 8. <https://babel.hathitrust.org/>

"Photographic Society", *Birmingham Journal*, Saturday 31st January 1857, 3.

"Birmingham Alphabetical List" *History and Directory of Birmingham*, (Sheffield: Francis White and Co. 1849), 178.

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²²³ "The Shaws" Family history typescript given to me by Shaw's descendants, (self published, 2016), 30.

Pete James "Potential Research Project: Identification and Cataloguing of Paintings in the collection of George Shaw" researcher's own collection, 2016.

Copy of Henry Perronet Briggs, 'The Challenge of Rodomont to Rogero,' Landmark Trust collection.

²²⁴ Optical devices discussed further in chapter six.

electroplate photographic materials and in their shared organisation of the Birmingham Photographic Society exhibitions, meetings and excursions.

I'm identifying the daguerreotypes below, plates 27 and 28 in Shaw's collection as likely to show William Barlow Henshaw, based on my comparison of family resemblance that I've found in a later photograph of his uncle, landscape painter F H Henshaw by Shaw shown in plate 29 below. Unfortunately another image with provenance of W. B Henshaw does not exist for comparison.



Plate 27: George Shaw, potentially W B Henshaw I, c.1844, Daguerreotype, 7.62 x 6.35 cm, private collection. (left)

Plate 28: George Shaw, potentially W B Henshaw II, c.1844, Daguerreotype, 7.62 x 6.35 cm, private collection. (right)

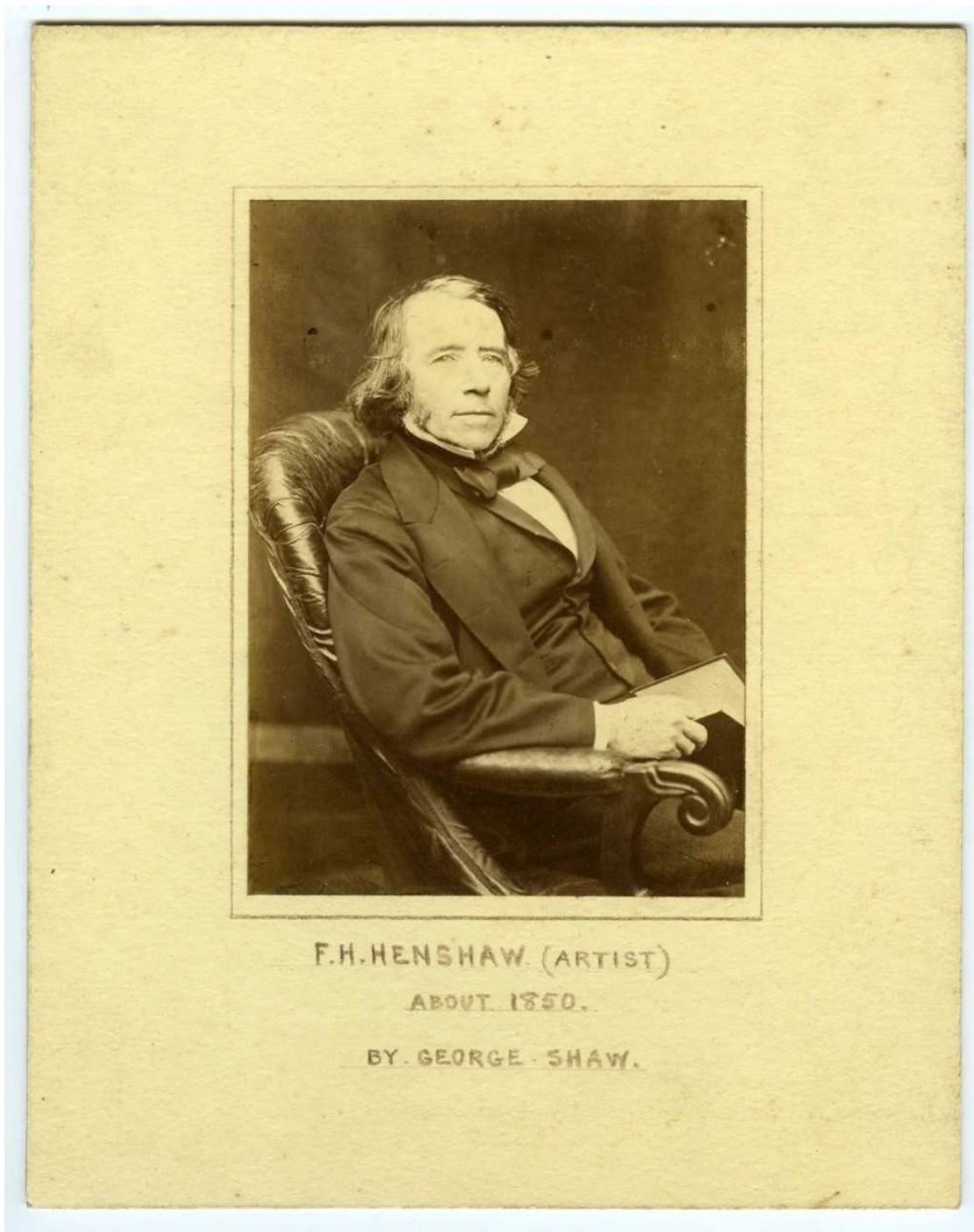


Plate 29: George Shaw, *Frederick Henry Henshaw*, c.1850, albumen print, 24.5 x 29 cm, private collection.

Identification of people in Shaw's portraits throughout my research is problematic due to a lack of other existent photographic images of many people in his circles, including W B Henshaw. However, Shaw's images are occasionally labelled with names, as in the portrait of F H Henshaw above.

Further discussion of the problematic nature of identifying people in Shaw's collection of portraits takes place in chapter five which follows. It is important that likely individuals are identified in this thesis to enable a reconnection of the stories of individuals to their images, sketching a fuller picture of photography in Birmingham during this period.

When we address the material history of photography, industrial advances and technological developments reveal complex stories of human relationships and the social structures of society. The early photographic materials of Birmingham are powerful social materials with the ability to challenge and navigate class hierarchies, disrupt established industry and forge new identities. The importance of photography as a material process is visible in the social and cultural power of these material developments. Material developments, art practice and industry are entangled parts of our cultural heritage. Further, in the contemporary moment an understanding of the materials of photography reveals the importance of extractive materials to photographic practice today. The detailed technical information in this chapter is important in understanding photographic surfaces as collaborative and sensitive.

The performance of historic photographic processes as a sensory spectacle creates a tactile understanding of photography as a bodily experience, not simply a medium to record experiences. This involvement of the senses in photographic practice makes way for an analysis of historic photographs below the image surface during the making process. Re-attaching historic images to making processes through performance of these processes is important in understanding the photograph beyond that which is recorded on the image surface. As such, historic photographs are not flat and silent objects but layered storytelling materials. Whilst contemporary making inevitably differs from historic experiences articulating a process allows us to see the time from which the image emerges. It allows for a sensory form of time travel with an ability to spark an imaginative response to images articulated in the accompanying artist's publication.

These photographic materials bring people together in networks surrounding educational and social institutions. In the connections to materials forged by Shaw with Percy, Woolrich, the Marrian brothers and WB Henshaw early photography in

the city can be seen as a collaborative, human activity with materials. Photographic theorist Margaret Olin has expressed the ability of photographs to establish and maintain relationships as they pass from hand to hand between people.²²⁵ In a similar way to the way photographs function in Olin's work, the archive of daguerreotypes by Shaw can be read as an extended family album of a community. In Birmingham during the 1840s we can see the ability of photographic materials to forge networks and bonds between practitioners collaboratively working with new technologies and developing new materials. This collaborative network of people will be explored further in the following chapter which addresses photographic portraiture.

²²⁵ Olin, *Touching Photographs*, 1.

Chapter 5. Portraiture

In this chapter I explore the role of collaboration when making photographic portraits in both Shaw's practice and in my contemporary portraiture. I look at how collaboration and portraiture operated in Shaw's practice exploring portraits of Shaw made by leading photographer John Jabez Edwin Mayall (1813-1901). I explore collaboration across media between painters and photographers through the portraits Shaw made with landscape painters Thomas Creswick RA (1811-1869) and James Poole (1804–1886).

I make portraits using re-creative methods in various environments to examine what happens during the practice of photographic portraiture when using historical photographic processes in public with people in my community. My re-creative practice in this chapter shifts from the process based re-creation detailed in the previous chapter to explore how people respond during the practice of portraiture to tactile and sensory historical photographic processes. In this chapter I'm working with a slightly later process than the 1840s processes under discussion; wet plate collodion from 1851, because this is a more accessible process at a large scale than the daguerreotype.²²⁶ I've used an outsize Victorian studio camera to make many (50+) portraits in several locations including in my studio, at the Old Grammar school in Coventry, on the street outside Nuneaton Library and in the chapel at Compton Verney that are visible in the accompanying artists publication. The camera and historical process offer a way in to thinking about history for the people being photographed and the audience of the images.

When making portraits a conversation with history is not only happening for me. It is important that a process of historical materials connecting to thoughts and memories is also happening for the people I photograph. My large-scale historic camera acts as a catalyst for memories that sparks connections to places and personal histories, mediating memories and whilst shaping and solidifying connections to places. This marks my re-creative methods of material photography using historical processes

²²⁶ Frederick Scott Archer, "The use of Collodion in Photography," *Chemist* 2, (March 1851).

important to facilitate collaboration offering a useful method for co-authored or socially engaged photographic practice.²²⁷

²²⁷ Helguera, *Education for Socially Engaged Art*.

A magneto-plate studio?

In 1843, the practice of high-quality, fast photographic portraiture carried with it social and commercial capital. It had the power to make a career, establish a place in society and provide for the family of a photographer. However this was tightly controlled by patent restrictions and licensing regulations.²²⁸ Benjamin James Pratt Marrian was ambitious, articulate and seeking out opportunities. He wrote to William Henry Fox Talbot several times in 1843.²²⁹ In his letters he expressed that he wanted a license to operate the calotype process in Birmingham to make a business from portrait photography in competition with the Beard patentee. JP Marrian asked Talbot about practicing portrait photography and about an arrangement for his brother, Francis Marrian's electroplating business.²³⁰

I beg to be considered in treaty for the exclusive right of practising your process in Birmingham [...] An agent of Mr Beard is taking portraits here under his patent but with what success I cannot exactly tell – I think however not very great – Mr M. of Cannon St is a Brother mine [sic] a silversmith and plater and I think is still open for an arrangement for electro-plating – the patent of Mr Woolrich is creating quite a sensation among us. ²³¹

His letter implies that he felt that he could do better than Joseph Whitlock (1806 – 1857) who was the afore mentioned the Beard patentee and the first to establish a permanent daguerrean portrait studio at 120, New Street, Birmingham. As a Beard

²²⁸ R.Derek Wood, "The calotype patent lawsuit of Talbot v. Laroche, 1854." (Bromley: 1975). Steve Edwards "Beard Patentee: Daguerreotype Property and Authorship," *Oxford Art Journal* 36.3 (2013): 387.

Christine Macleod, "The Paradoxes of patenting: Invention and Its Diffusion in 18th and 19th Century Britain, France and North America," *Technology and Culture* 32, no.4 (Oct 1991): 885-910.

Stathis Arapostathis and Graeme Gooday, *Patently Contestable: Electrical Technologies and Inventor Identities on Trial in Britain*. (Massachusetts: MIT press, 2013).

Charles Dickens, "A Poor Man's Tale of a Patent," *Hard Times and reprinted pieces* 2 (New York: Hurd and Houghton, 1870):150 – 157.

²²⁹ Benjamin James Pratt Marrian to William Henry Fox Talbot, 20th March 1843, 15th March 1843 and 15th June 1843, British Library Manuscripts, Fox Talbot collection, document no 4772, 6481 and 4832. <https://foxtalbot.dmu.ac.uk/>.

²³⁰ Marrian & Gausby to William Henry Fox Talbot, 17th March 1848, 29th March 1848 and 5th April 1848, British Library Manuscripts, Fox Talbot collection, document nos. 6121, 6128 and 6133. <https://foxtalbot.dmu.ac.uk/>.

²³¹ Benjamin James Pratt Marrian to William Henry Fox Talbot, 20th March 1843, British Library Manuscripts, Fox Talbot collection, document no 4772, <https://foxtalbot.dmu.ac.uk/>.

patentee Whitlock was using equipment and material supplied by Beard, whereas Marrian had access to superior cameras and materials as we have seen in Shaw's French cameras and electroplates.²³² Visual evidence which remains in Shaw's fine images of Marrian's brother, Francis, as seen in plates 18 and 19 confirms the superiority of Francis Marrian and Shaw's daguerreotypes from this date.

In his letter to Talbot, quoted above J P Marrian mentioned his brother's skills in electroplate as a separate business venture and the patent of Mr Woolrich as a sensation. The letter does not clearly communicate Marrian's potential aims to use the disruptive material of electroplate for photography as to do so would be an admission of guilt in patent litigation. Yet mentioning magneto-plating in the same letter illustrates the linking of material and process in Marrian's world suggesting a potential application for electroplate in photography. The legalities of using magneto-plate for photography remain unproven, however it could be argued that magneto-plate was a different surface for the daguerreotype offering a change to the process and a potential loophole in patent restrictions.²³³ At this stage in photographic history in the early 1840s if Marrian had set up a daguerreotype studio in Birmingham it would have been legally challenged because Daguerre's patent specification was owned by Beard and licensed in Birmingham to Joseph Whitlock.

Woolrich had previously been aggressively pursued by Elkington for patent infringement twice, in 1839 and 1842, illustrating the competitive and secretive environment which these circles of Birmingham industrialists were operating in.²³⁴ However the placing of Marrian's knowledge about the 'sensation' of magneto electro-plate alongside his business plans for a portrait studio creates a strong case

²³²Steve Edwards "Beard Patentee: Daguerreotype Property and Authorship," *Oxford Art Journal* 36.3 (2013): 387.

Plates 12 and 18 show a French, Buron camera made c. 1841.

²³³ R.Derek Wood "The calotype patent lawsuit of Talbot v. Laroche, 1854." (Bromley: 1975) Steve Edwards "The Daguerreotype Patent, Richard Beard and the Emergence of Photography in Britain." *Acervo* 32, 2 (May August 2019): 38-68.

²³⁴ Woolrich is pursued by Elkington for patent infringement based on evidence supplied by a J Haseley, of 33 Constitution Hill who entraps Woolrich by asking him to gild a gold chain and informs Talbot about Woolrich's licensing activities.

J Haseley to William Henry Fox Talbot, 17 September 1842, British Library Manuscripts, Fox Talbot collection, document no. 2326, <https://foxtalbot.dmu.ac.uk/>.

Elkington vs Woolrich and Phipps (1839, National Archives, Kew), C13/1573/7 W 1839 E15.

Tyndall vs Woolrich Bill and Answer (1842, National Archives, Kew), C14/305/T14 1842.

Woolrich vs Tyndall Bill and Answer (1843, National Archives, Kew), c/14/178/W163.

for speculation on the potential history of a cutting-edge magneto-plate portrait studio in Birmingham and the use of magneto-plate for photography JP Marrian was attempting to arrange to discuss in person with Talbot.²³⁵ But this cutting edge magneto plate daguerreotype studio did not materialise. Yet daguerreotype images remain which demonstrate the potential of this process as seen in plates 18 and 19, made by Shaw with the Marrian brothers. I argue that these images show the technologically improved photographs which a magneto-plate daguerreian studio in Birmingham could have produced had the patent restrictions allowed it.

Crucially in his second letter to Talbot on 20th March 1843 Marrian perhaps appeared to have confused Talbot's paper-based calotype process with the daguerreotype upon metal plates. Marrian admitted a lack of hands-on experience when he stated that he had 'never tried your plan but have perused your specification and have seen the process at the Polytechnic Institution London.'²³⁶ We know that Marrian had in fact seen Shaw make daguerreotypes, and probably also calotypes but he doesn't mention this perhaps as Shaw was using these process without a license.²³⁷ Patent restrictions separated the materials of paper and metal used in each process meaning a calotype license would not have allowed Marrian to make portraits upon electro or magneto plate in the city at this early date because these were on metal plates and would fall under the terms of Daguerre's patent. By the time of his third letter on 15th June 1843 JP Marrian has experimented with the calotype process and found the paper problematic.²³⁸ The early photographic processes of the daguerreotype and calotype are very different in their processes, application and visual qualities as can be seen in the calotypes explored in chapter six. Although successful portrait studios existed which used the calotype process the sharpness,

²³⁵ Benjamin James Pratt Marrian to William Henry Fox Talbot, 20th March 1843, British Library Manuscripts, Fox Talbot collection, document no 4772, <https://foxtalbot.dmu.ac.uk/>.

²³⁶ Benjamin James Pratt Marrian to William Henry Fox Talbot, 20th March 1843, British Library Manuscripts, Fox Talbot collection, document no 4772, <https://foxtalbot.dmu.ac.uk/>.

J T Cooper was demonstrating the Daguerreotype process at the Polytechnic Institution, London, see Steve Edwards "The Daguerreotype Patent, Richard Beard and the Emergence of Photography in Britain." *Acervo* 32, 2 (May August 2019), 41.

²³⁷ Benjamin James Pratt Marrian pictured in plate 26.

²³⁸ Benjamin James Pratt Marrian to William Henry Fox Talbot, 15th June 1843, British Library Manuscripts, Fox Talbot collection, document no 4832, <https://foxtalbot.dmu.ac.uk/>.

speed and visual quality of the daguerreotype is more suited to commercial portraiture.²³⁹

The cutting-edge magneto-plate Marrian and Shaw portrait studio remains as science fiction, a story of potential history which seemingly did not emerge due to the restrictions and licensing surrounding photography in England in the 1840s.²⁴⁰ However by 1853 portrait photography was booming in Birmingham boasting improved and changed photographic processes in spite of remaining challenges to the legalities of these businesses.²⁴¹

Re-creative portraiture and collaboration

I have described above how in the early 1840s, Shaw and Marrian were collaboratively making portraits, testing materials and the boundaries of the legalities of their practices. Shaw had photographed Marrian and Marrian photographed Shaw. My new portraits contribute knowledge about how the making of a photographic portrait using historic processes unfolds as a collaborative performance in which materials are a central component. My understanding of photographic portraiture more widely sits beneath this research as lived experience. Making new portraits gives me an understanding of the both the commercial and the experiential exchange value in making photographic portraits. Fair portraiture should be equal in the gains achieved by the photographer and those received by the person in the photograph. This could be a financial exchange for the commodity of a photograph, or in knowledge or friendship shared between both participants. I always make sure the people I photograph have if not the original plate at least a scan or a print of their portrait to use for their own purposes as an exchange for their time and involvement in the process. During the making processes of producing portraits and cyanotype prints from these portrait plates and other objects at Nuneaton Library I share knowledge, explaining materials and processes in exchange for the time and reciprocal knowledge of the person in the portrait in sharing their experiences. This reveals the potential of the performance of material photographic portraiture to

²³⁹ Notably, Hill and Adamson operated a successful calotype portrait studio in Edinburgh from 1843 – 1848. Evidence remains in a private collection which shows Shaw was in contact with this studio. Daguerreotypes were more commonly used for portraiture.

²⁴⁰ Ariella Aisha Azoulay, *Potential History*, 130-131.

operate as a co-authored, socially engaged practice that uncovers rich histories of place in a fair, equal exchange.

At this point I'd like to raise a likely objection to my collaborative, re-creative methods of portraiture: that my description of my process and portraiture is idealistic and of course, not always the case. Photography can be exploitative and extractive. Yet I argue that even in cases of exploitative and extractive photography in the space of the image the person in the portrait holds power in the way they look even if that look is a furious or pained expression. It could be argued in my work the use of arcane, historical processes adds a layer of obscurity which shifts the power balance towards me as the photographer in control of this process. Whilst I concede that it could initially appear this way I've learnt to mediate this by explaining the re-creative historical processes I use, allowing time to demonstrate how materials work and discussing technical difficulties with the person I'm photographing. My sharing of photographic materials and process levels the power balance by showing the process, making it transparent and visible. On many occasions this prompts the person being photographed to share their valuable experiences of photography. For example, at Nuneaton library Ellis wanted to be photographed as he is a photographer himself and wanted to see the process and camera at work. Manish was drawn to be photographed because my darkroom reminded him of his childhood experiences with his uncle who ran a photographic business in India. His collodion plate lifted during the washing stage and was ruined, I explained and apologetically re-made it which prompted him sharing an experience of being in trouble as a child for fogging his uncle's film because he wanted to see the pictures prior to their development. My photographic process becomes collaborative through human interaction and communication driven by and including the experiences of people involved.

I'm resisting the use of terms usually applied to the person in a portrait within this writing, 'subject,' or 'sitter'. These words carry with them a power relationship of authority and control resting with the photographer and technology along with a passive role for the person being photographed that does not sit with my experience of making portraits using early processes. The subject is not a passive sitter in early processes. They are the protagonist, antagonist. The people in the photographs

actively collaborate with the materials in their own representation. They see the camera and by extension the viewer as much as it sees them. The encounter with my large-scale camera dominates the situation of making a portrait, dwarfing my role as the photographer to becoming the operator of the rear end of a pantomime horse during the making performance as can be seen in illustration 20, below. In the consensual photographs that are the subject of my study I propose that the individual person in the portrait is the protagonist whilst the photographer and materials are their collaborators producing and shaping the image.



Illustration 20: Shiam Wilcox's view in front of the camera whilst being photographed, April 2023, Nuneaton Library.

An understanding of the powerful, active role of the person in a photograph in shaping meaning during the process of portraiture is articulated by Tina M. Campt in her book, 'Listening to Images'.²⁴² Although the portraits Campt discusses in the archive at Birmingham Central Library are required by the state, she articulates the tension and gestures that can be perceived even within the restrictions of controlled institutional portraiture.²⁴³ The subtle gestures of people in portraits caused by the circumstances of their production speak volumes. As such the person in the portrait holds the power to shape the meaning of the image through their posture and expression. I'm using this term, power, rather than agency as it feels more direct in the way it communicates. Agency is a term often used in writing about portraiture and socially engaged practice which abstracts 'power' to a slippery term that instead describes the impact of actions rather than their root force. Campt's argument offers a means of navigating the consensual gaze I discuss in both historical portraits by George Shaw and contemporary portraits that I have made. The situation and reasons that a portrait is made along with the process and material shape the way the person looks in the image and its future meaning. I'm making new portraits to develop an understanding of the circumstances that Shaw's portraits were made in.

In my work it is crucially important that the people I photograph are curious about the camera and processes I use and that they want to be photographed. I can't know the exact circumstances that Shaw made his portraits but my re-creative practice allows me a way in to how and why they were made. In the early years of photography in an industrial city Shaw's portraits of his peers were partly driven by a curiosity into the photographic encounter with materials both from Shaw and his peers. We can see this curiosity about materials and process at work in plate 18 and 19 of Francis Marrian.²⁴⁴ Marrian knew silver as a silversmith.²⁴⁵

²⁴² Campt, *Listening to Images*, 2017.

²⁴³ *ibid*, 33.

²⁴⁴ John Percy, "Light" 1844 (notebook) Science Museum Collection ref. MS0716.

George Shaw *A Manual of Electro-Metallurgy Vol I and II*. (London: R. Groombridge, 1842 and London: Simpkin, Marshall and Co 1844).

J.P. Marrian "LXVI. On Sonorous Phaenomena in Electro-Magnets," *Philosophical Magazine and Journal* 25, (July – December 1844): 382 – 384.

²⁴⁵ John Percy, *Metallurgy: The Art of Extracting Metals from Their Ores, and Adapting Them to Various Purposes of Manufacture* 4 volumes. (London: John Murray 1861)

There was resistance to Shaw's portrait photography. Shaw wanted to photograph Elizabeth Henshaw but she had felt nervous that she would be a 'bad sitter' and the process of photography will give her 'some pain' and so the portrait was not made.²⁴⁶ This ability to refuse and further, a right to withdraw once an image is made by the destruction of an image is crucial to any equitable process of portraiture.²⁴⁷ Collodion is an unforgiving medium and I have edited varnished glass plates with a hammer several times during this project on the instruction of people I have photographed. Collodion makes red tones appear darker and it can highlight damage in the skin which is not always flattering in a portrait when wrinkles and age-related sun damage is exaggerated by the sensitivity of the chemistry. Collodion portraits can age people. Some people I have photographed feel this makes them appear timeless and look like their ancestors. If someone is unhappy with the way they look in one of my portraits I'll offer reassurance by explaining this but if they remain concerned I'll wipe the image and use softer lighting and movement or print the plate with the emulsion side upwards to soften it. On occasions an objection has arisen after the varnishing of a plate when the image is hard to remove from the glass so breaking the glass is the best means of permanently removing the image from circulation.

It is important that this right to withdraw remains in perpetuity as once a photograph is made as the meaning of a portrait can shift over time.²⁴⁸ Ariella Aïsha Azoulay comments on the futurity of the photographic portrait and the ability of its meaning to shift depending upon the encounter involved in its viewing as discussed in chapter 2.²⁴⁹ My findings extend this dialogue with the image beyond its viewing to look at

George Henry Osborne, "The Late Mr. Francis Marrian" in *Obituary Notices of Birmingham and District, Vol 1. 1864 – 1904*. (Birmingham Central Library Collection. Ref. LF78).

²⁴⁶ Frederick Henry Henshaw, "Letter to George Shaw" (Small Heath, Saturday 30th May 1863).

²⁴⁷ Johnny Turpie, "The drawn serigraph: An Investigation through portraiture" (PhD thesis, Birmingham City University, 2025).

²⁴⁸ Izabela Radwanska Zhang, "Sasha Huber redresses the haunting daguerreotypes of enslaved people in an act of healing colonial and historical traumas." *British Journal of Photography*, (10th November 2022): <https://www.1854.photography/2022/11/sasha-huber-redresses-the-haunting-daguerreotypes-of-enslaved-congolese-people-in-an-act-of-healing-colonial-and-historical-traumas/>

Abigail Soloman-Godeau, "Winning the game when the rules have been changed: Art Photography and Postmodernism," in *The Photography Reader*, ed. Liz Wells (London and New York: Routledge, 2003), 154.

Repurposing Photographic Materials: Transforming Social, Political, and Cultural Heritage. (Leicester: De Montfort University, 7th-8th July 2025).

²⁴⁹ Ariella Aïsha Azoulay "Photography, The Ontological Question" *Mafte'akh*, 2e (2011): 65-80. Azoulay, *Potential History*.

the circumstances before it is made and the making process. In my work the question is less about the viewing of the portrait and more around the situation of its production. As a practitioner, through re-creation I can access the subtle nuances of processes and materials that direct the person in a photograph to communicate in a particular way. It is these circumstances of production shaped by materials and processes that enable the way that photographic portraiture can communicate. This shift in reading portraits through their making processes enables Shaw's portraits to communicate through materials in my work and speak to socially engaged photographic practice today.²⁵⁰ We can see that the power held by a sitter creating meaning through materials across time is important both in my work and that of George Shaw.

Photographer Margaret Olin has described the connections and collaboration that is essential to the photographic portrait as a social activity in establishing and maintaining relationships between people.²⁵¹ Both Shaw's historic collection of portraits and those I have made establish and maintain relationships between people becoming an extended family album of interconnected individuals. The historical daguerreotypes are portraits of people that Shaw knew and collaborated with personally and professionally that form an alternative 'family' album of his colleagues and relations. My portraits are of people who live in my community. This familiarity between photographer and subject along with the number of self-portraits shapes their reading and tells us of the importance of a network in collaboratively developing early photographic portraiture into a viable, pleasurable and commercial process. Shaw's portraits are made possible by people he knew. George Shaw and I have both collaborated with scientists, photographers, artists and our friends and acquaintances in the making of portraits using material photographic processes.

Azoulay, Ariella Aïsha. *Death's showcase. The Power of Image in Contemporary Democracy*. Massachusetts: MIT press, 2001.

Ariella Aïsha Azoulay, . *The Civil Contract of Photography*. New York: Zone books, 2008.

Ariella Aïsha Azoulay, Wendy Ewald, Susan Meiselas et al *Collaboration: A Potential History of Photography*. London: Thames and Hudson, 2023.

Mathilde Bertrand and Karine Chambefort-Kay, eds. *Contemporary Photography as Collaboration*. 1st ed. 2024. Cham: Springer International Publishing, 2024. doi:10.1007/978-3-031-41444-2.

Savannah Dodd, The Photo Ethics Podcast.

²⁵⁰ Helguera, *Education for Socially Engaged Art*. 1,2.

²⁵¹ Olin, *Touching Photographs*,1.

My argument is that historically photographic portraits were powerful collaborative objects that told people's stories through their material representation presenting their relationships to others and the world in their handling and reception. Daniel Palmer has articulated the collaborative premise of photography in his book, *Photography and Collaboration*, from his analysis of early photography as a collaboration with the sun to the human collaborations of contemporary practitioners.²⁵² However, in his argument about portraiture, Palmer does not discuss the shaping of the collaborative encounter by the materials of early photography. The necessity of collaboration when working with historic photographic processes because of the materials is demonstrated through the examples of historic and contemporary portraiture in this chapter. My work readdresses the language of photographic portraiture that subjects and takes images and instead looks at how portraiture made in collaboration with people and materials is a powerful act. Collaboration allows for co-authorship which is a fundamental element of socially engaged photographic practice, which I go on to discuss further at the end of this chapter.²⁵³

The role of the material in enabling collaboration during photographic portraiture and its value in socially engaged practice is underrecognized because in contemporary photographic practice, photographic materials have become invisible.²⁵⁴ As photographic technology has evolved, consequently photography has become a faster and a less convivial experience. In my work, the use of re-creative historical methods means that process takes a central role in the making of a portrait. It offers a slower, more visible way of working, a visible, tactile collaboration. My explanation of materials and processes helps to provide participants with skills and increase confidence by the operation of photographic technology. In a similar way, photographer Anthony Luvera makes use of an 'assisted self portrait' methodology, in which he teaches people to photograph themselves using large format and medium format cameras with flash, cable shutter release and laptop. This goes

²⁵² Palmer, *Photography and Collaboration*. 20.

²⁵³ Photovoice, "About PhotoVoice." accessed 20th May 2025, <https://photovoice.org/ourwork/>. Open Eye Gallery, "Socially Engaged Photography." accessed 20th May 2025, <https://openeye.org.uk/about/socially-engaged-photography/>

²⁵⁴ Latour, Pandora's hope, 304.

some way towards de-mystifying the process of photography and shifting the power balance from photographer to subject.²⁵⁵

In the contemporary moment, new photographic technology carries a violence in its ability to snatch a moment swiftly and without the recognition and collaboration of people involved. Azoulay has written about this contemporary use of the shutter as a violent means of control, of technology that strips context and isolates the moment of exposure as a 'petty sovereign' extracted from reality.

What is suppressed and made irrelevant is excised by the shutter. In the technological and historical discussion of the shutter, the only elements that matter are the quality – precision, clarity, recognisability – of the images, the end product, and the erasure of any trace of the shutter's operation.²⁵⁶

My images show all the traces of operation by my hands. Fingerprints, smudges and blurring; the opposite of the violence of precision and clarity that Azoulay binds with the photographic image and the mechanical shutter. But what came before the shutter? The head brace. My camera and the camera Shaw was using have no shutter. The head brace is the nineteenth century device that renders a person photographic, sculptural. The head brace pauses the movement and blur of life to create a sharper image as described in the accompanying practice-diaries. In the illustrations below, illustrations 21 and 22, I show the various head braces I have used in my recent practice. Head brace 1.0 in illustration 21 is an assemblage of woodwork and scientific equipment. I attempted to soften, humanise this head brace with the addition of a scarf. Head brace version 2.0, pictured in illustration 22 is a microphone stand and a drawing curve, a combination of equipment used for performance and art practice. None of these devices hold a person still, they act simply as placeholders for their position within the frame of the camera. Shaw's process was fast enough that he didn't need to use a head brace.

²⁵⁵ Luvera, *Construct*.

²⁵⁶ Azoulay, *Potential History*, 2.



Illustration 21: Jo Gane, *Outsize Watson Victorian studio camera set up for portraiture*, April 2022. Old Grammar School Coventry.



Illustration 22: Jamie Gray, Jo Gane and Jason Tilley's portrait session, April 2022. Old Grammar School Coventry

I'm interested in the process, the materials and the labour of the image – precisely the things that Azoulay points out that the shutter later conceals. The shutter has always been violent, with early French guillotine designs that resemble the execution device able to sever a moment from the flow of time.²⁵⁷ A continuation of the violence that led skilled French craftsmen to safety in Birmingham and the Black Country such as George Bontemps, the French glass consultant who works for Chance glass in Smethwick 'whom circumstances connected with the French Revolution obliged to quit France for a while.'²⁵⁸ My camera does not have a shutter attached and it is not violent. It is before the later mechanics of the iris shaped leaf shutter concealed within the lens that freezes a moment or the curtain that rolls up to expose the film to a measured fractional second of performance, stilled, fractured and paused for posterity. My camera operates from within the flow of movement and life that surrounds it, it brings people together. The shutter in my portraits and in early,

²⁵⁷ James Lequeux, *Hippolyte Fizeau, Physicist of the Light*, (Paris: EDP Sciences, 2020), 12.

²⁵⁸ Chance, *A history of the firm of Chance*, 57.

experimental processes pre-1860 like the calotype, daguerreotype and their unruly child, wet plate collodion is human, a hand and the lens cap, a visible uncapping and exposure. Tactile, visible; not concealed and mechanical. The shutter in my re-creative process is the sound of my voice explaining, counting seconds. Before the shutter it is in collaboration with the person that photographic images are exposed and recorded.



Plate 30: JJE Mayall, *George Shaw*, c.1846/47, 12.5 x 15 (cm), private collection.



Plate 31: JJE Mayall, *Outsize portrait of an unknown sitter*, c1849, 63.6 x 74.1 (cm), National Science and Media Museum, Bradford.

Collaboration on a large scale. George Shaw and JJE Mayall

These daguerreotypes in plates 30 and 31 show George Shaw photographed by leading portrait photographer John Jabez Edwin Mayall (1813 -1901). I have identified Shaw in the large-scale portrait, plate 3, which had previously been recorded as of an unknown sitter in the collection of National Museum of Science and Media. Usually daguerreotypes are small, intimate objects. The large scale of plate 31 is exceptional.²⁵⁹

Bringing Shaw's name to his image in this portrait by Mayall is a significant contribution to photographic history that allows me to tell a story of collaboration.²⁶⁰ Plate 30 is a smaller half plate size 12.5 x 15cm made by Mayall of Shaw held in a private collection with provenance establishing that around 1847 George Shaw began collaborating in London with Mayall. At the time this portrait was made, Mayall had recently arrived in London from his successful portrait studio in Philadelphia to set up the American Daguerreotype Institution at 433, West Strand, London.²⁶¹

JJE Mayall worked with George Shaw to create these two portrait daguerreotypes, pictured in plate 30 and 31 that I believe firstly tested, then pushed the behaviour of daguerreotype materials to a grand scale. Shaw needed the caché and reach of Mayall's important portrait studio to raise the profile of Birmingham manufacturers and to champion the photographic, silver plate materials they could produce. The network of Mayall and importantly, his colleague Antoine Claudet, offered access to important markets for the photographic materials made by Birmingham manufacturers. In return Mayall needed Shaw's network of manufacturers and materials to make plate materials with which he could produce his ambitious large-scale images. Shaw's collaboration with Mayall brought together the right

²⁵⁹Most daguerreotypes are small, intimate hand-held objects. Rare large-scale plates exist, such as the daguerreotype portrait of John Barritt Melson, plate 13 in chapter 3, by an unknown photographer. Larry J.Schaaf, "Mayall's life-size portrait of George Peabody." *History of Photography* 9, (1985): 279-288.

John Jabez Edwin Mayall, *The Crystal Palace at Hyde Park, London*, 1851, daguerreotype, 46.7 x 41.8 (cm), Getty Museum, Los Angeles.

²⁶⁰ JJE Mayall, *Outsize daguerreotype portrait*. 1849. 63.3 x 74.1 x 2.4 (cm) National Science and Media Museum, Bradford MS 1934-649.

²⁶¹ David Simkin, "John Jabez Edwin Mayall 1813-1901" last updated 7th November 2002, <https://spartacus-educational.com/DSmayall.htm>

connections for the production of ambitious cutting-edge images, which were exhibited through Shaw's network.

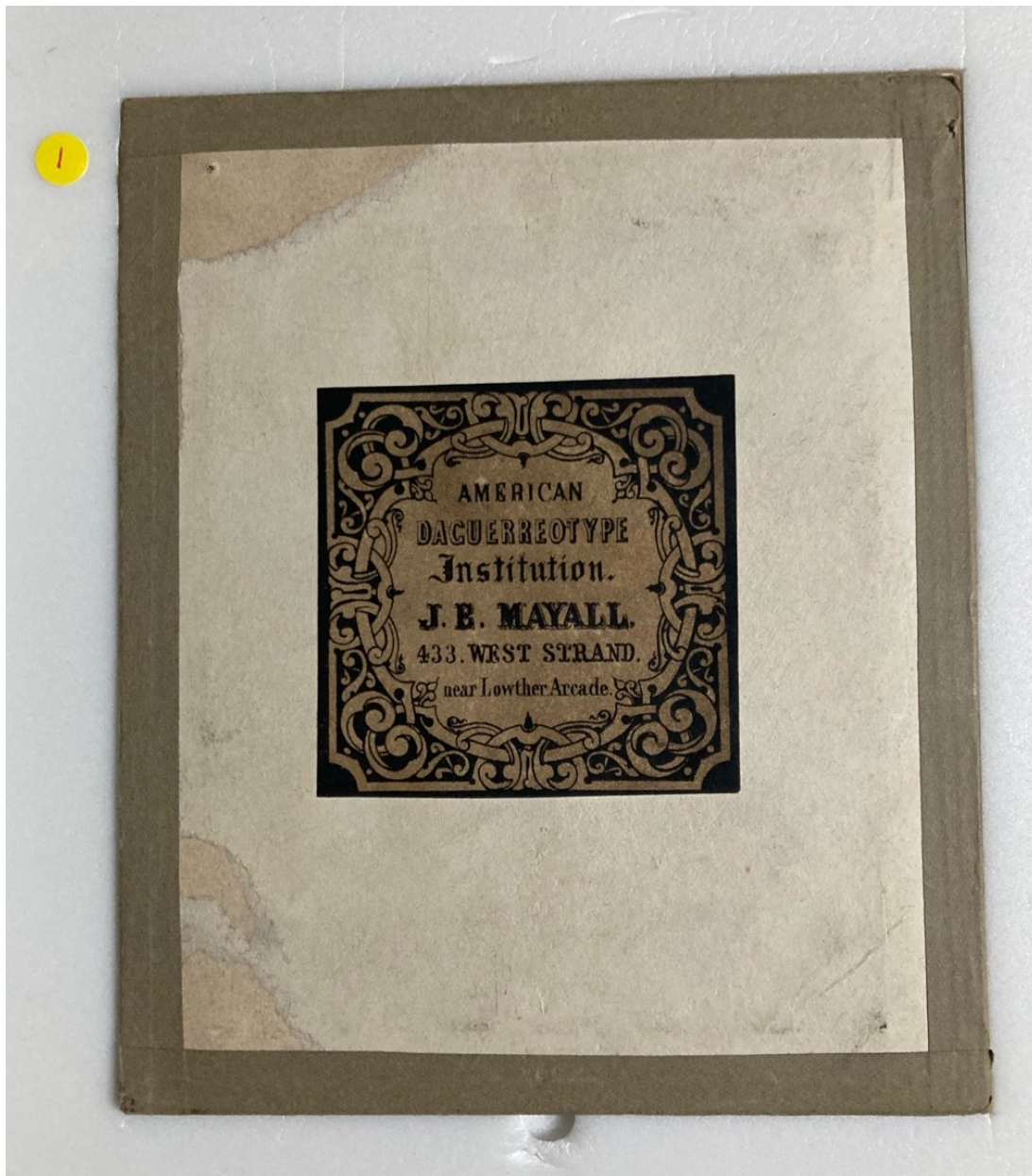


Plate 32: JJE Mayall, *George Shaw* [verso], c.1846/47, 12.5 x 15 (cm), private collection.
Note – rear of Plate 30.

Evidence these portraits were potentially made to test the electro or magneto-plate silver material Shaw knew though his multiple roles in the industrial circles of Birmingham comes from correspondence. In 1846, whilst in Philadelphia, Mayall wrote to a photographer, George Pyle who he had recently taught the daguerreotype process to say, 'nothing fresh has turned up of any consequence, except that a new quick plate, much easier manufactured than the one I gave thee & will answer just as

well'.²⁶² I believe based on my practice as described in chapter 4 this new, 'quick' and 'easier manufactured' plate material was electro, or magneto-plate manufactured in Birmingham. At this time, Mayall is advertising 'new discoveries' in the daguerreotype process offering a process he has discovered which creates 'a degree of delicacy, depth of tone, and life-like reality never previously obtained.'²⁶³ This is likely to refer to new plate materials shared with him by Shaw during this period.

The mammoth scale daguerreotype Shaw and Mayall collaboratively produced in 1849 stretches the small intimate scale of the daguerreian image to an outsize 28" plate. Very close to life-size. The person who looks out of the large plate surface at an almost 1-1 scale bears a striking resemblance to Shaw in the previous smaller portrait by Mayall, plate 30. I acknowledge my identification of Shaw here may be controversial given the importance of the material I am investigating, yet the circumstantial evidence corroborates my identification and after close visual examination of the plate I firmly believe it is him, aged by two years and much work between sittings.

Further evidence for Shaw's involvement in Mayall's mammoth plate can be gathered through studying the plate materials. Both portraits, plate 30 and 31 by Mayall were made on electroplate which was likely, given Shaw's involvement and expertise, to be manufactured in Birmingham at this time.²⁶⁴

Further clues to the material manufacture of the plate can be found upon close inspection of the daguerreotype if we read the rear of the plate surface. Illustration 23 below shows the cracked surface of the rear of the historic large-scale plate. It is covered with a resist, a black paint substance. This appears to have been used to prevent the rear of the plate from plating, to economise on the amount of silver deposited during plating which would have been important when making silver

²⁶² Robinson, *The Techniques of the Daguerreotype*, 12.

²⁶³ "New Discoveries in Daguerreotype" *Morning Post*, (London) Wednesday 26th May 1847.

²⁶⁴ 171

Gane, "Photography and Electroplate.

Grant, "Elkington and co.

Shaw *A Manual of Electro-Metallurgy* 2.

electro-plate on such a large scale. Joaquin used a similar but modern black heat-proof paint on the rear of the plates we made to save costly silver from attaching to the rear during the plating process, pictured below in illustration 24.

The rear of the large-scale plate shows some white metal through the gaps in the black resist. This could be where silver has eaten through the resist whilst plating as in the lower contemporary plate, pictured below. However as the plate has aged, it is likely the resist has flaked from the rear of the plate over time revealing the base metal used for plating. Daguerreotypes are commonly cited as being produced on silver-plated copper, however for our contemporary plate we used brass as a substrate.²⁶⁵ We used brass because it was cheaper, more readily available and silver adheres well to the surface during the plating process; all factors that were equally true in 1840s Birmingham. In John Percy's 'Light' notebook there are references to the manufacture and plating of copper with silver alongside various alloys such as German silver, and brass from Birmingham manufacturers.²⁶⁶ It is possible from visual inspection of the light colour of this metal the base metal for this large daguerreotype is nickel rather than copper, especially if we take into account historical evidence of the metal trades in Birmingham. In 1845, John Stephen Woolrich sells the patent for his magneto plating machine to the firm of Evans and Askin who are leading manufacturers of nickel or German silver.²⁶⁷ If the plate was made with John Stephen Woolrich's process of magneto-plate, as endorsed by George Shaw it would be appropriate for the substrate to be nickel.

²⁶⁵ Robinson, *The Techniques of the Daguerreotype*, 105.

²⁶⁶ John Percy, "Light" 1844 (notebook) Science Museum Collection ref.MS0716. no pagination.

²⁶⁷ Grant, *Elkington and co*, 80.

Leader, *History of Elkington and Co*, 26.



Illustration 23: *Metal surface and black paint resist on rear of Plate 31. September 2022*

Detail from verso of JJE Mayall, *Outsize portrait of an unknown sitter*, c1849, 63.6 x 74.1 (cm), National Science and Media Museum, Bradford.



Illustration 24: Jo Gane, *Electroplating resist paint in use with Joaquin Paredes Piris*, May 2022.

The rear of the large-scale daguerreotype offers yet more information about its making, showing a supporting structure papered by attendance records for students which appear to date from the 1840s, show below in illustration 25. Perhaps these were incomplete attendance records for Shaw's students at the Mechanics Institute or Queen's college. We can't know this, but the presence of this institutional paperwork provides a useful reminder of the supporting structure for photography which comes from education, sitting between art, science and industry.



Illustration 25: *Detail of paper on the rear of Plate 31.* September 2022

Detail from verso of JJE Mayall, *Outside portrait of an unknown sitter*, c1849, 63.6 x 74.1 (cm), National Science and Media Museum, Bradford.

This large-scale daguerreotype portrait, plate 31, was produced to compete with grand formal paintings for public attention and spectacle at the 1849 exhibition of the British Association for the Advancement of Science, held in Birmingham at Bingley Hall, Britain's first purpose-built exhibition hall. The 1849 Birmingham Exhibition of Manufactures and Art was a forerunner to the Great Exhibition of 1851 and the

International Exhibition of 1862.²⁶⁸ Shaw played an important role in organising the Birmingham exhibition as honorary secretary alongside chemist Robert Hunt (1807 – 87).²⁶⁹ Shaw's work on this Birmingham exhibition illustrated his value to the organising committee of the London exhibitions acting as a precursor to his work in London as a juror at the Great Exhibition of 1851 and the International Exhibition of 1862.²⁷⁰ I argue it is entirely appropriate that a portrait of George Shaw as honorary secretary for the 1849 exhibition was exhibited as this large scale daguerreian image made with Birmingham electro-plate silver.

Unfortunately information to verify the sitter as Shaw and the Birmingham manufacture of the plate materials was not recorded in the exhibition catalogue. This fact is criticised by Robert Hunt in his review of the exhibition when he states, 'we feel again called upon to remark upon the impolicy and injustice of permitting mere dealers to contribute articles in their own names; thus depriving the actual manufacturer of that honour'.²⁷¹ The large scale daguerreotype is simply listed in the catalogue as supplied by Mayall's colleague, Antoine Claudet.²⁷² However further verification of the important place at the exhibition held by this large-scale portrait by Mayall can be ascertained by period news articles about the exhibition:

We may not pass over without comment the admirable specimens of the Daguerreotype from the establishments of Mayall and Claudet ; it is only now that the pictorial effects of this invaluable art agent is being understood and its power demonstrated : 'comparisons are odious' on the authority of Mrs Malaprop: we, however, have but little fear of contradiction when we say that nothing is equal to the specimen shown by Mayall, we have not seen anything to come near the portrait of himself, it has all the effect of a mezzotint

²⁶⁸ John Allwood, *The Great Exhibitions* (London: Studio Vista, 1977), 12.

²⁶⁹ *Catalogue of the Articles in the Exhibition of Manufactures and Art in connection with the Meeting of The British Association for The Advancement of Science at Birmingham* (Birmingham: M.Billing's Steam Press, September 1849), Birmingham Central Library L50.61/129458. 1.

James R Ryan, "Placing Early Photography: The Work of Robert Hunt in Mid-Nineteenth-Century Britain" *History of Photography* 41, Issue 4 (2017): 343-361.

²⁷⁰ Shaw is listed as a juror for Section XXII. Iron and General Hardware in; *Reports by the Jurors on the subjects in the thirty classes into which the Exhibition was divided*. (London: William Clowes and Sons, 1852), xxix. <https://doi.org/10.5479/sil.464343.39088012405411>. George Shaw, Jurors badge, 1862 international exhibition, private collection.

²⁷¹ *The Art Journal* Volume X1 (1849): 336.

²⁷² *Catalogue of the Articles in the Exhibition*. 1849. 1.

engraving ; the same artist exhibits the largest Daguerreotype yet made ; but it is by no means distinct²⁷³

Mayall had needed a large lens to make this portrait and had invested in this in Paris in 1846.²⁷⁴ We don't know the origins of Mayall's lens beyond its purchase in Paris, but the existence of such a large, optically pure lens was made possible by industrial developments in the manufacture of optical glass during the 1840s. As discussed in chapter four, John Percy was experimenting with optical glass in Birmingham in the early 1840s using Stourbridge clay and fine Wedgewood bowls to heat glass and make samples of flint glass in his test furnace whilst he observed glass making processes in several manufactories.²⁷⁵ Elsewhere in the Midlands, Antoine Claudet worked as a middleman to supply skilled labour to the flint glass section at Chance glass in Smethwick with Georges Bontemps.²⁷⁶ Chance made flint glass which was supplied to leading opticians such as Voightlander and Ross for grinding, forming the central element of renowned lenses.²⁷⁷ Shaw's father had made flint glass with the potential to be ground into an element of a large Petzval lens in Birmingham when he ran the flint glass section of Aston Glass Works on Baggot street from 1835.²⁷⁸ We can see from this evidence how beyond the manufacture of silver plate innovations in glass manufacture in the Midlands played an important role in making Mayall's large scale daguerreotype possible.

Mayall's large-scale daguerreotype glorified the person in the portrait, competing with grand historical portrait painting. The scale and material presence spoke of importance and value. I intend for the large-scale portraits I'm making described in the accompanying practice-diaries and appendix to feel the same to the people I photograph mediating their stories through a material presence. The portraits I'm making on the outsize Victorian studio camera are 15-inch square glass ambrotypes. I've simplified the process because I don't have the budget for a huge sheet of silver

²⁷³ "Exposition of Arts and Manufactures. Concluding Notice," *Birmingham Journal* (Saturday 22nd December 1849). 7.

²⁷⁴ Walter Thornbury, "A Thirst for Knowledge in Old Age" *The Life of JMW Turner* 2. (Oxford: Oxford University, 1862): 262.

²⁷⁵ John Percy, correspondence, Imperial College London, special collections ref B/Percy/.

²⁷⁶ Chance, *A history of the firm of Chance*, 8.

²⁷⁷ *ibid*, 197.

²⁷⁸ "Flint Glass Manufactory." *Aris Birmingham Gazette*, Monday 4th January 1836, 3.

plate or a large petzval lens. However with the camera's bellows outstretched and my smaller (f4, 8 1/2 x 6 1/2inch coverage) Petzval lens pushed to the limit of its capabilities the images I make appear on the glass at the same size as a human face 1:1 scale at the limits of the technology available. This 1:1 scale maximises the power of the person in looking outwards from the glass plate offering communication on the same scale as a human face.

Conversely in Mayall's large-scale portrait the reflective silver materials of the daguerreotype interrupt the communication of the sitter under normal viewing conditions as seen in illustration 26. The large, mirrored surface of the silver makes it difficult to view without interruptions caused by reflections. It needs to be viewed in a situation with controlled lighting. The reflective interruptions that disrupt the act of looking are a useful reminder of the problematic nature of looking at a photographic portrait. The reflections visualise the problem that the meaning of a portrait shifts over time depending on the circumstances when it is viewed. We often see ourselves and where the image is viewed as much as we see the person who was photographed.

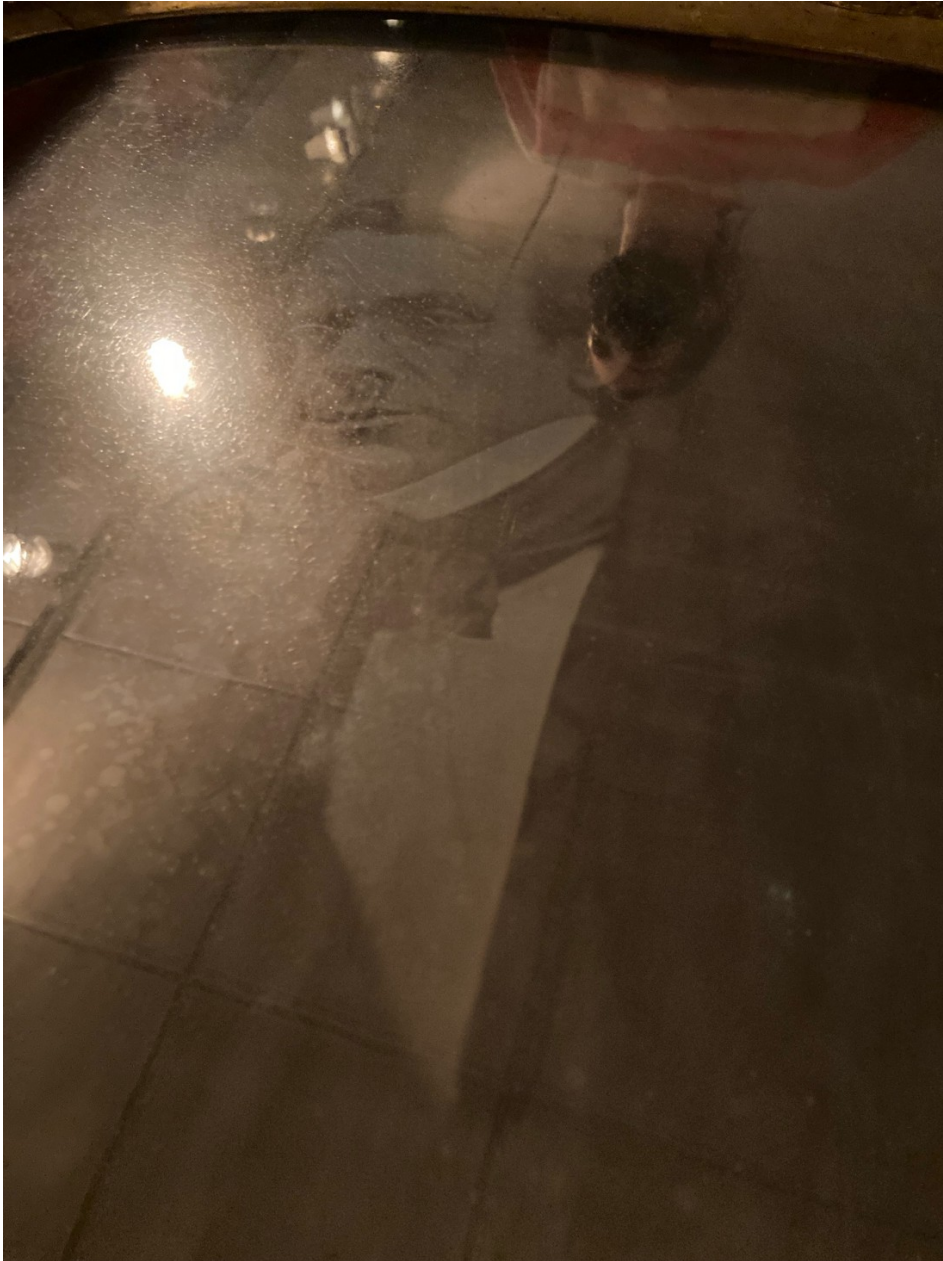


Illustration 26: Jo Gane, *Reflections of the curator and the archive room on the surface of Plate 31*, September 2022

Note- image of Plate 31: JJE Mayall, *Outside portrait of an unknown sitter*, c1849, 63.6 x 74.1 (cm), National Science and Media Museum, Bradford.

Shaw's collaboration with JJE Mayall serves as a reminder in my practice that working collaboratively allows our networks push us forward both in technological developments and in art practice. Collaboration with successful portrait photographer JJE Mayall allowed Shaw to continue to develop and test ambitious daguerreotype materials moving beyond the patent block which had prevented Benjamin James Pratt Marrian from opening a magneto-plate portrait studio in Birmingham earlier in 1843 as discussed earlier in this chapter. Mayall in turn had needed recognition and

support, which initially came from Antoine Claudet as Mayall established his business in London.

Photographers and Painters

Support for Mayall's portrait studio later came from painter Joseph Mallord William Turner (1775 – 1851).²⁷⁹ Financially, emotionally and artistically Turner supported Mayall past the potential stopping point of patent restrictions which prevented Marrian and Shaw's portrait business from emerging in Birmingham. Turner told Mayall he would be successful and gave him the significant sum of £300, equivalent to almost £30,000 today to overcome the 'patent battle of the daguerreotype'.²⁸⁰ In return Mayall worked with Turner to experiment with light and shade in the daguerreotype.²⁸¹ George Shaw collected Turner's etchings.²⁸² Birmingham landscape painter, Frederick Henry Henshaw who is discussed further in chapter six was inspired by Turner's work, watching him paint in 1840 when Henshaw was based in London.²⁸³ Henshaw's nephew, William Barlow Henshaw is a friend of Shaw and manufactures daguerreotype plate. This sketch of an entangled network cannot prove that Mayall used William Barlow Henshaw's plate materials, but it serves to illustrate the circumstantial connections and interdisciplinary interests of this group. These networks of support between painting and photography allowed photography to grow in scale, physically and conceptually.

The collection of portraits by Shaw show his many collaborations within his network, including his connections with landscape painters of Birmingham. Landscape painters Thomas Creswick RA (1811-1869) and James Poole (1804–1886) were photographed by Shaw in the mid-1840s. Creswick and Poole painted together at

²⁷⁹ David Simkin, "John Jabez Edwin Mayall 1813-1901" last updated 7th November 2002, <https://spartacus-educational.com/DSmayall.htm>

Mayall states about Turner that 'He sent me many patrons.' in Walter Thornbury, "A Thirst for Knowledge in Old Age" *The Life of JMW Turner 2*. (Oxford: Oxford University, 1862): 262.

²⁸⁰ Simkin, "John Jabez Edwin Mayall 1813-1901".

Thornbury, *The Life of JMW Turner 2*. 351.

²⁸¹ Thornbury, *The Life of JMW Turner 2*. 349.

²⁸² J.M.W. Turner, *Selections from Liber Studiorum by JMW Turner* (private collection).

²⁸³ "Frederick Henry Henshaw" *Birmingham Faces and Places 2* (Birmingham: J.G.Hammond, 1891). 90.

Betws-y-Coed and shared a kinship as painters from Sheffield, educated in Birmingham.²⁸⁴ Shaw painted watercolours in the landscape and so he understood the professional lives of these men in the landscape, as discussed in the following chapter.²⁸⁵

²⁸⁴ "The Death of Mr James Poole, Landscape Painter" *Lichfield Mercury*, Friday 19th March 1886.4. Stephen Wildman, *The Birmingham School* (Birmingham: Birmingham City Museum and Art Gallery, 1990), 45.

²⁸⁵ Frederick Henry Henshaw, Letter from Llangollen to John Spiller, (Wellcome Collection, 5151/B 1857).



Plate 33: George Shaw, *James Poole*, c.1844, daguerreotype, 6.35 x 5 (cm), private collection. (left)

Plate 34: *Engraving of James Poole*, *The Graphic*, 10th April 1886. 13. (right)

I've identified James Poole as likely to be the person in the daguerreotype portrait by Shaw in plate 33 by comparison to the etching shown next to it in plate 34. The wildness of his eyes, ruffled brows, curve of his lip and wayward whiskers match. He's around 40 in the laterally-reversed daguerreotype, older in the etching yet his features remain softened by age and the translation of the image into lines for printing. James Poole was in Shaw's circle as he remained a regular visitor to Frederick Henry Henshaw's studio in Small Heath even after his move to Sheffield.²⁸⁶

My identification of his portrait depends on the skill and accuracy of the engraver, degrees of flattery and accuracy in their eye along with the angle and lighting the photograph was taken in. This identification is uncertain, there are gaps of time and gaps in the image between the daguerreotype and the etching. I've tried to close these gaps physically, flipping and layering images in photoshop and moving the sliders for transparency between the layers. I've looked at the portrait upside down and thought about the features as I'd draw them with a camera lucida, discussing this with a friend who is a portrait painter. There is a particular unusual curve at the top of Poole's left eyebrow in the etching and right eyebrow in the laterally reversed daguerreotype that is where a drawing of his features would begin. Transparency in between these layers is important as well as transparency in the uncertainties of the research process. This process of photographic comparison and identification is touched upon when Margaret Olin speaks of the ability of photographs to re-enforce family ties through resemblance and identification.²⁸⁷ In this process, I'm both identifying these people and identifying with them, I'm adopting these people into the circles of Shaw's kin which is problematic. They may have been his friends or he might have disliked them personally and we can't know this. They may have met only briefly, formally when Shaw made the portrait. We do know, however that Shaw kept the portraits and as such this collection of daguerreotype portraits operate as a family album of Shaw's connections, kept together and held now for longer than when they were alive. The archive boxes bind the group of portraits together as

²⁸⁶ "The Death of Mr James Poole, Landscape Painter" *Lichfield Mercury*, Friday 19th March 1886.4.

²⁸⁷ Olin, *Touching Photographs*, 158.

people who are connected to George Shaw, those he has made photographs of and with and kept, his network, his people.

I have identified the landscape painter Thomas Creswick RA (1811-1869) in the daguerreotype portrait, plate 36, below in a similar way, through visual comparison to a self-portrait, painted in his own hand pre-photography in 1828 shown in plate 35. We can see Creswick take the power of representation of his own image forward from his painting into the medium of photography in Shaw's portrait. When Shaw photographed Creswick he had left Birmingham where he was educated to work in London and recently been elected as an associate to the Royal Academy. He had a powerful sense of his own self-image as a successful man which is articulated in his confident stare at the camera that is enhanced by the camera positioned slightly below his gaze. In the painting his eyes are level with his own material, as a painter he looks downwards upon the camera as a mechanical tool.



Plate 35: Thomas Creswick, *Self Portrait*, 1828, Oil on Canvas, 50.8 x 61 (cm), Royal Academy of Arts collection, London. (left)
Plate 36: George Shaw, *Thomas Creswick*, c.1844, daguerreotype, 6.35 x 5 (cm), private collection (right)

Creswick's father was a cutler; as such he had handled and knew about silver plate.²⁸⁸ He knew from his father's work the softness of electroplate discussed in the previous chapter in contrast to the wear resistance of traditionally manufactured Sheffield plate tableware which was made in the town of his birth. He knew the touch and the taste of the silver plate and of the paints which paid his bills. He knew the power and value of representation in a portrait. I propose Creswick's embodied material and image knowledge made him curious about the potential of the materials in photographic portraiture and he had a daguerreotype made by Shaw to test this, curious to see how the silver materials functioned in comparison to his specialism in painting. Shaw was known to the circles of landscape painters in Birmingham through his friendship with Frederick Henry Henshaw, discussed further in the following chapter 6. I argue Shaw made this portrait of Creswick because of Shaw's networks in Birmingham in art and manufacture through Shaw's friendship with Henshaw and Creswick's curiosity about materials. In placing the photograph next to his painting we can trace Creswick's features, identify him, restore his name in his confident gaze at the camera.

This portrait of Thomas Creswick, plate 36 above, remains held in the private collection of Shaw's daguerreotypes. It is partly Creswick's outward, confident gaze in 2022 that is a catalyst for my practice when I make new portraits at Nuneaton library. I want people to look at my camera with confidence and curiosity. People gaze at my camera and by extension outwards from their portraits when recorded in silver on the resulting glass plates that document the interaction between a person and a camera.

I made 20 large-scale wet plate collodion portraits at Nuneaton library included in appendix 4 and in the accompanying artist's publication. Everyone I photograph has a story to share that is drawn out as they sit in front of the camera. Stories of connections to people and places. Sharing all these stories in this written thesis would not do them justice. It is beyond the scope of this PhD as each story is pertinent and deeply personal with the potential to be its own study. As such these

²⁸⁸ Wildman, *The Birmingham School*. 45.
 Leader, *History of Elkington and Co*. 7.
 Grant, *Elkington and co*. 57 – 66.

stories are integral to the act of photographic portraiture as an individual and personal process. All the stories held within the portraits were shared through art practice, printmaking and collaborative writing in a form that the people were comfortable with sharing developed through making workshops and discussion in the exhibition held firstly at Nuneaton Library then at Compton Verney. The sharing of these stories is where the collaboration inherent in my re-creative process of working with historical photographic materials meets contemporary socially engaged photography providing a means to share stories and make space for people to be seen with photographic portraiture. I've included all these stories with the portraits made at Nuneaton Library in their own space in appendix 4.

Representation in an image promotes an awareness of a person in their absence. I argue that when people are represented at a large scale in a material image this representational force is increased in power allowing the image to begin to metaphorically stand in for the person. The eyes on the glass plate meet our eyes at the same size unblinking. This power of the portrait to look out from the photograph and communicate is often lost in photographic discourse about the ethics of the gaze that centres the power of the observer.²⁸⁹ A focus of photographic discourse about the ethics of the viewer or photographer's gaze misses the viewpoint of the person in the photograph. In his canonical text that underlies much photographic theory, *Discipline and Punish*, Michel Foucault uses the analogy of Bentham's panopticon to visualise the all-seeing, controlling eye of the camera.²⁹⁰ When describing how light controls by making the actor in a cell in a phrase that has been conceptualised as analogous to the photograph he states that the person is;

'perfectly individualised and constantly visible [...] Full lighting and the eye of a supervisor capture better than darkness, which ultimately protected. Visibility is a trap.'²⁹¹

Yet I'd argue that in portraiture visibility is not always a trap it is a way to be seen and heard. Foucault's philosophical viewpoint of the power relations within prison

²⁸⁹ Laura Mulvey, "Visual Pleasure and Narrative Cinema" *Screen* 16, 3 (Autumn 1975), 6-18. <https://doi.org/10.1093/screen/16.3.6>

²⁹⁰ Foucault, *Discipline and Punish*. 195 – 228.

²⁹¹ Foucault, *Discipline and Punish*, 200.

architecture has been extensively applied to photographic theory and used to conceptualise the power relations in the photograph.²⁹² However I'm arguing that as an analogy of how the mechanical eye of the camera upon the sitter focuses power upon the singular observer behind the lens with a directional gaze that judges and controls Foucault's argument falls short. It fails to communicate that individualisation is the key to portraiture that communicates effectively. Foucault's panoptic theory denies reflexive communication to the person in the photograph as Foucault states below.

'He is seen, but he does not see; he is the object of information, never a subject in communication.'²⁹³

My critique of Foucault is an example of how photographic theory often fails to take into account the practitioners' view of the act of making a photograph and the collaboration of the person in this process. Through a focus on image and object photographic theory can silence the participants in the photographic process. Photographs are silent, but they speak visually.

Through collaboration in the making process I aim to make material portraits that tell a story. I worked with individuals and community groups in many workshop sessions to do this. These workshop sessions introduced people to my camera, the process of wet collodion photography, digital studio photography, cyanotype printmaking and captioning photographs at Nuneaton library. During this period, I shared cyanotype printmaking more broadly with community groups, Escape Arts and In Stitches. This allowed people to participate with making processes.²⁹⁴ There is a tired trope within socially engaged or collaborative portraiture of 'giving voice' to the participants in the

²⁹² Allan Sekula, "The Body and the Archive" *October* 39 (winter, 1986) 3-64.

John Tagg, "Evidence, Truth and Order: Photographic Records and the Growth of the State," in *The Photography Reader*, ed. Liz Wells (London and New York: Routledge, 2003), 443 – 453.

Bill Jay, "Prison Portraits" in *Cyanide and Spirits: An Inside-Out View of Early Photography* (Munich: Nazraeli Press, 1991), 101 – 118.

²⁹³ As footnote 79.

²⁹⁴ Claire Harrison, "Why portraits have appeared in the windows at Nuneaton's library," Coventry Live, 31st June 2023. https://www.coventrytelegraph.net/news/local-news/portraits-appeared-windows-nuneatons-library-27428835?utm_source=linkCopy&utm_medium=social&utm_campaign=sharebar
Sandra Godley, "Upbeat," BBC CWR, Monday 31 July 2023.

Marian McNamee, "Weekday afternoons" BBC CWR, Wednesday 2nd August 2023.

project through photographic explorations of identity.²⁹⁵ In these many workshop sessions such as that pictured in illustration 27 below I understood that no-one in my work needs me to give them a voice they have one already that they use every day. They chose to share this or not to in their photographs and the resulting Cyanotype banners we exhibited at Nuneaton library pictured in illustration 28.



Illustration 27: Jo Gane, *Cyanotype workshop at Escape Arts, May 2023, Nuneaton.*

²⁹⁵Becky Warnock, Kristine Langhoff and Camille Warrington, “Imagining Resistance? Reflecting on the Role of Creative Practice in Facilitating Young People’s Capacity to Represent and Document Their Own Experiences of Resistance.” *Membrana – Journal of Photography, Theory and Visual Culture* 8, 1 (2023): 163–182. <https://doi.org/10.47659/mjv8n1id140>



Illustration 28: Tegen Kimberley, *Installation shot of 'Blue is the colour of memory' exhibition by Jo Gane*, August 2023, Nuneaton Library.

In my installation of the glass plate portraits made in Nuneaton Library at Compton Verney I attempt to reverse the way the images are looked at. The people in the portraits look outwards from the installation via the projection of a central light that moves and animates the surface of the plate from negative to positive under the red glow of a darkroom filter seen in illustration 29 below. I aim to reconnect the image to the process of making in this installation.



Illustration 29: Tegen Kimberley, Installation shot of 'Reverse Panopticon' by Jo Gane, November 2023, Compton Verney.

The central light moves around the wet plate collodion portraits. On clear glass as ambrotypes the portraits change from a negative image to a more visible positive as the light passes over them shining off the silver particles. They are not always visible as in Bentham's panopticon.²⁹⁶ Depending up the angle and environmental

²⁹⁶ Foucault, *Discipline and Punish*, 200.

conditions when the silver is viewed the portraits are both easy and difficult to see as are people. The 15” plates present an almost 1-1 scale view of faces yet at this scale the faces are sometimes distorted by photography, by the lens. The portraits are high and people can be seen through each other, networks and connections of people who live in the same town, people who are connected often by a few degrees, by places they visit and friends in common. The portraits communicate by looking outwards as light moves around the installation. Words accompany the portraits carefully written in close collaboration with the people to articulate the stories they want to share through photographic materials and the camera. The installation becomes an alternative family album centred around the local area as a place.

In an evaluative performance of the impact of Coventry Biennial who commissioned these portraits performance researcher Charlie Ingram articulated the anonymised words of a member of the Coventry Biennial team describing the impact of my installation that they had commissioned. They described when a person in one of my portraits was looking at their image in the exhibition at Compton Verney as an example of a successful part of the Biennial.

‘[...] small moments [...] Jo Gane [...] at the opening for that [...] I saw one of the ladies in the portraits standing next to her portrait for her family member to photograph her because she was so proud and so pleased and so delighted to be represented and to be part of it [...] you could see how much it meant to her.’²⁹⁷

There were many moments like that described above during the course of the exhibition and one such moment was captured below in illustration 30. I hope that this feeling of power and value in being represented in the exhibition goes some way to honouring the contributions of this person to the community where she plays a valuable role as an educator. In recognising her and making her visible beyond this community through photographic materials.

²⁹⁷ Charlie Ingram and Francesco Chiaravalloti (dir), “...like a shortcut through the brambles: an Evaluative Performance” Performance, (Research Centre for Dance Research: Coventry University / University of Amsterdam, 2024), 1:06:08. <https://www.youtube.com/watch?v=nqRil1TJws8>



Illustration 30: Tegen Kimberley, Opening night of 'Liquid Silver' by Jo Gane, November 2023, Compton Verney.

As described in chapter two Pablo Helguera describes socially engaged practice as rooted in the practice of performance and pedagogy, as 'a form of performance in the expanded field' that draws 'parallels between the processes of art and education.'²⁹⁸ My practice making portraits at Nuneaton Library is socially engaged on several levels. It is work that educates the public about the history of photography in exchange for the sharing of their stories and involvement in the performance of a portrait. In his description of artwork that operates as socially engaged Helguera makes the important distinction between works that operate symbolically through representation and in the actual real-world sphere.²⁹⁹ This exclusion from representative works within the realm of socially engaged practice could be argued to include photography. Therefore the impact of socially engaged photography must sit beyond representation to elicit change in the world to be socially engaged in Helguera's description of the term. I argue that Shaw's historical work and my practice allow us to see that when photography is a material process. as a material process photography offers rich opportunities for collaboration that move beyond

²⁹⁸ Helguera, *Education for Socially Engaged Art*. x, xi.

²⁹⁹ *ibid.*

representation to a physical act that can open up the way that networks of connections operate in society to drive commercial and personal relationships.

Beyond representation my work at the library shares stories and memories recording personal histories and connections to places. It ultimately aims to subvert class hierarchies in historical discourse through representation and public sharing of everyday stories. Beyond representation George Shaw's practice in nineteenth century Birmingham was one of education, development and sharing of ideas within and beyond his network of collaborators. Shaw shared knowledge with all classes in Birmingham through his lecturing activity at the Mechanics Institute as discussed in chapter three.³⁰⁰

Margaret Olin expresses that photographs operate as a substitute for people and that tactile looking stimulates a physical response, materially generating feelings of community and connection.³⁰¹ Photographs might not be able to make a physical difference but perhaps they are the connective tissue that joins across time to allow us to surround ourselves with those who are important. We need this network of people who are important and collaboration is essential in life and photography. I'm photographing an extended family album of those who are important to me, to my community and those who want to be photographed within their own circles. Socially engaged photography should be a collaborative celebration of our achievements as we see in the portraits of George Shaw by J J E Mayall.

In conclusion this chapter has shown how historic, material photographic practices are inherently collaborative. A collaboration between people, process and materials. This can be seen from Shaw and Percy's collaboration with materials in 1844, Shaw

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Shakespeare Memorial Library Minute Book 1, (Birmingham Central Library 1863-1903)

In his work as a patent agent, Shaw was remembered as someone who worked collaboratively in the community, W H James describes in his obituary:

'I think it would be most fitting that some tribute should be raised to one so well known, so much respected, and one whose life for so long a period should have been connected with the inventive, and certainly advancing portion, of the Birmingham manufacturing community.'

W H James, "The Late Mr. George Shaw, to the Editor of the Daily Post." *Birmingham Daily Post*, August 20th 1904. 5.

³⁰¹ Olin, *Touching Photographs*. 1.

and Marrian's co-authored portraits and through to collaborative explorations of portraiture between Shaw and Mayall, Mayall and Turner, Shaw with Poole and Creswick. I've understood this collaboration through my own collaborative making with people and photographic materials with Jason Tilley in Coventry and with people at Nuneaton Library. Portraiture remains a powerful way of communicating who we are and forging connections between people and places, between the past and the present.

Chapter 6. Packington Park

In this chapter I explore the act of making a calotype photograph in the landscape at Packington Park. I return to Packington many times to make over 50 calotypes in the landscape. The question that this activity both asks and answers: What is the relationship between the process of making a photograph and the landscape? My re-reading of Shaw, Henshaw and Percy's steps in the twenty-first century parkland at Packington generates new tacit knowledge of the behaviour of early photographic materials and people in relation to the landscape.

My exploration of the parkland and calotype process is based on a collection of calotype negatives made by George Shaw held by the Musée D'Orsay and a print by John Percy made in Packington Park which is in the Getty collection, alongside drawings and correspondence from landscape painter Frederick Henry Henshaw.³⁰²

³⁰² A collection of 26 calotypes by George Shaw were acquired by the Musée D'Orsay from Christies in 1981, accession no.s PHO 1981 50-71.

I have located the following 14 of these calotypes as being made in the parkland at Packington, these are;

George Shaw, *Forêt de chênes en hiver, Sentier et cours d'eau*, 1852, calotype paper negative, 30.6 x 24 (cm) Musée D'Orsay. Accession no. PHO 1981 51.

George Shaw, *Chênes en hiver, Sentier et cours d'eau*, 1852, calotype paper negative, 24 x 31.1 (cm) Musée D'Orsay. Accession no. PHO 1981 52.

George Shaw, *Forêt de chênes en hiver*, 1852, calotype paper negative, 23.7 x 31.2 (cm) Musée D'Orsay. Accession no. PHO 1981 53.

George Shaw, *Chemin en forêt*, 1852, calotype paper negative, 31.4 x 24 (cm) Musée D'Orsay. Accession no. PHO 1981 54.

George Shaw, *Chênes en hiver*, 1852, calotype paper negative, 31.2 x 23.2 (cm) Musée D'Orsay. Accession no. PHO 1981 55.

George Shaw, *Forêt de chênes en hiver*, 1852, calotype paper negative, 23.3 x 31.3 (cm) Musée D'Orsay. Accession no. PHO 1981 56.

George Shaw, *Group de chênes à la belle saison*, 1852, calotype paper negative, 31.7 x 23.5 (cm) Musée D'Orsay. Accession no. PHO 1981 58.

George Shaw, *Pont Rustique*, 1852, calotype paper negative, 23.8 x 31.5 (cm) Musée D'Orsay. Accession no. PHO 1981 59.

George Shaw, *Etude d'un vieux chêne mort*, 1852, calotype paper negative, 31.1 x 23.1 (cm) Musée D'Orsay. Accession no. PHO 1981 60.

George Shaw, *Etude d'un vieux chêne mort*, 1852, calotype paper negative, 31.5 x 24.1 (cm) Musée D'Orsay. Accession no. PHO 1981 63.

George Shaw, *Chênes en hiver*, 1852, calotype paper negative, 24 x 30.7 (cm) Musée D'Orsay. Accession no. PHO 1981 65.

George Shaw, *Forêt avec un arbre mort au premier plan*, 1852, calotype paper negative, 30.8 x 23.5 (cm) Musée D'Orsay. Accession no. PHO 1981 66.

George Shaw, *Pont à travers un ruisseau*, 1852, calotype paper negative, 24 x 31.2 (cm) Musée D'Orsay. Accession no. PHO 1981 68.

George Shaw, *Forêt avec un arbre mort au premier plan*, 1852, calotype paper negative, 30.8 x 23.3 (cm) Musée D'Orsay. Accession no. PHO 1981 69.

I argue that the psychogeography of Packington Park was formed by historical events in the parkland that precede Shaw and Percy connect it to industry in the city and make it an important place for photography. The concept of psychogeography and Jan Hogan's term 'surfacing' remember multiple elements and histories that make up a place. These multiple, layered histories of place are important to this chapter. Historical events are drawn out of the archive and exposed by walking and photographic processes that sense the history of the place.³⁰³ Historical stories operate as an imaginative catalyst for new practice which resonates through the re-creative methods I use in the landscape.³⁰⁴

I recognise my methodology in the landscape Kaja Silverman's explanation of Walter Benjamin's 'Jetztzeit' as a recognition of the present in an image of the past. My methods and Silverman's text describe a coming together of two moments in order to create a 'constellation' or a relationship across time that is reversible and reciprocal.³⁰⁵ My practice brings the history of this landscape to the photographic surfaces of the calotype negative as these surfaces mediate the environment and my touch. This 'constellation' of environment, historic activity and photographic material brings together the past and the present in the surface of the damp calotype paper.

I argue in this chapter for collaboration in the parkland at Packington and further afield between photographers Shaw and Percy and landscape painters from the 'Birmingham School' as an essential part of their making processes.³⁰⁶ That photography and sketching in the landscape are activities that were much closer in technique during the 1840s than today. In the 1840s when photography is emerging and developing it is a material, painterly process. Chemicals are brushed onto paper

See plate 62 for John Percy's print.

Frederick Henry Henshaw, "Pencil Studies for many of F. H. Henshaw's Important Works." (Folio: Birmingham Museums Trust) ref. 1994924.

Frederick Henry Henshaw, letter to George Shaw from Stratford, (private collection), August 21st 1869.

Frederick Henry Henshaw, letter to George Shaw from Stafford, (private collection), August 21st 1866.

Frederick Henry Henshaw, Letter from Liangollen to John Spiller, (Wellcome Collection, 5151/B 1857).

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³⁰⁴ Hogan, *Surfacing*.

³⁰⁵ Silverman, *The miracle of analogy*. 8.

³⁰⁶ Wildman, *The Birmingham School*.

with the pressure and movement of the fluids directed by the photographer's hand crucial to the look of the image. Early photography is fallible and tactile. Calotypes, Daguerreotypes and wet plate photographs are informed by the environment. They are touched and touching when made during a process of interpretation that relies on the hand, the place and the environmental conditions.

The accompanying artist publication articulates how I've walked, drawn, written and photographed in the landscape. This allows me to communicate the layered 'surfacing' of the history of the parkland in Shaw and Percy's images of trees and in my contemporary calotypes and video work. The experiential writing alongside images in the publication articulate my process and communicate new knowledge about the behaviours of photographic materials in the landscape.

The historical activities of Shaw, Percy and the landscape painters from the Birmingham School in the parkland at Packington surface later in my re-creative practice in the landscape at Compton Verney. At Compton Verney, I created a performance and print installation in collaboration with Helen Wheatley and Shiam Wilcox using photographic materials in response to the landscape. This performance was based on knowledge I gained in the parkland at Packington.

In contrast to the privileged position of Victorian men I read the landscape from my personal perspective as a woman working in the landscape which carries important difference to Shaw and Percy's work in Packington.³⁰⁷ My position as a woman however is not the subject of this thesis. In this thesis I am a person working in the landscape. However, I am a mother and a primary carer to two small children as acknowledged in my experiential writing in the artists publication. I'd like to acknowledge here that Shaw, Percy and Henshaw were privileged white Victorian men and they did not have to rush back from Packington for the school run. They could walk and explore the parkland at leisure. This affects their photographs. I divide my photographic time into sections according to the schedules of my family around the school day. My time in the parkland is often cut short by the school bell at 3pm. I cannot use lengthy 45 minute exposure times like Percy or always develop

³⁰⁷ 15 Wells, "Mr Andrew's place..."

the images immediately on return from the parkland. This sometimes causes my images to fog and stain. I often prepare paper in the middle of the night and sensitise early in the morning whilst the family is sleeping. Fixing images similarly often occurs nocturnally. As such there are some differences in the processes and importantly in my thinking in and about the landscape. This bias in my experiential diary writing is echoed in the processes of photography within the landscape. Both photography and walking in the landscape are shaped by environmental factors of time, access, weather, topography and light. These factors make processes of exploring and photographing subject to potential failure. However failure enlightens my perspective on the landscape and the activities of the historical figures who worked in Packington Park. Through failure I understand that the calotype is a difficult process affected by the environment and conditions. I understand that access to the landscape is a privileged position for which I'm grateful.

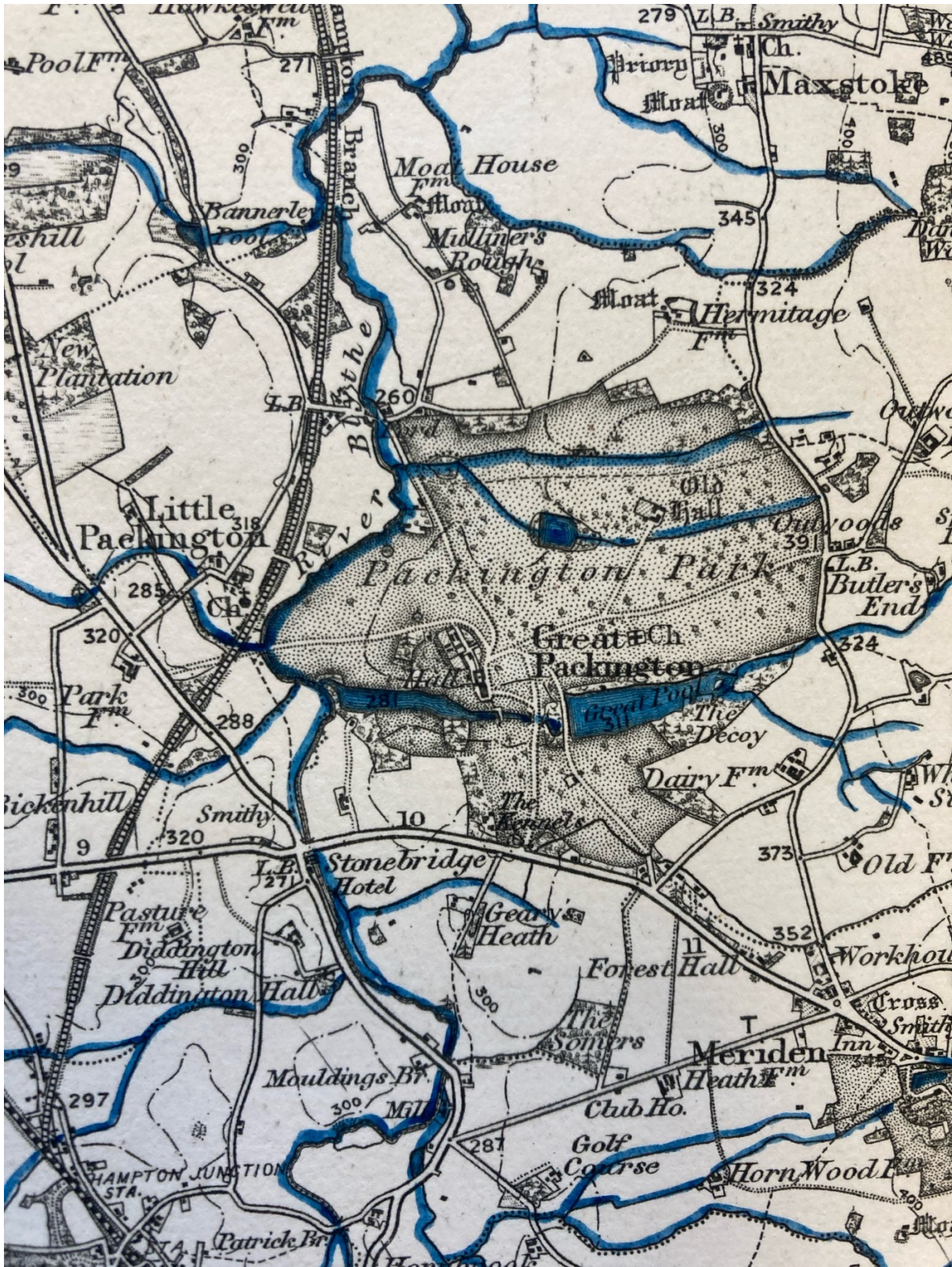


Plate 37: Birmingham Waterworks Company, *Map of Packington Park*, 1875, Birmingham Central Library collection LS 11 /Bham Institutions/D/9/72231.

In Monument Field

Photographic history sits in the landscape at Packington Park below the surface and buried in the soil. It is visible through a tracing of the topography, rising above the ground in the trees. Historical events move under and surface in the liquid form of the rivers and watercourses that are traced in blue on the map above in plate 37. This area of countryside to the south of the city of Birmingham that can be seen in a wider view on plate 38 below is on the verge of photographic activity which centres in the city. Around the edges of the city in the 1840s then-new paper negative, calotype photographic processes were tested in the landscape and networks formed in the practice of joining people and photographic materials through processes. Around the edges of the calotype negatives contact with the camera's wooden plate holder is visible in a hard white edge softened by the brushing of chemicals by Shaw and Percy's hands and later in calotype negatives made by my hands. The edges show the visible movement of fluids during the making process stable and fixed in place. Paper material that had been moving and in flux when transported to the countryside from the city to be exposed and transformed is preserved in progress in the edges that are only partially exposed, developed or fixed. The edges tell of the journey and contact by fogging. The edges show transforming materials by human handling with fingerprints and contamination from the environment as shown in illustration 31 below. The edges are active spaces both in the photograph and the landscape. Things happened here and traces remain which can tell us about the past and the future.

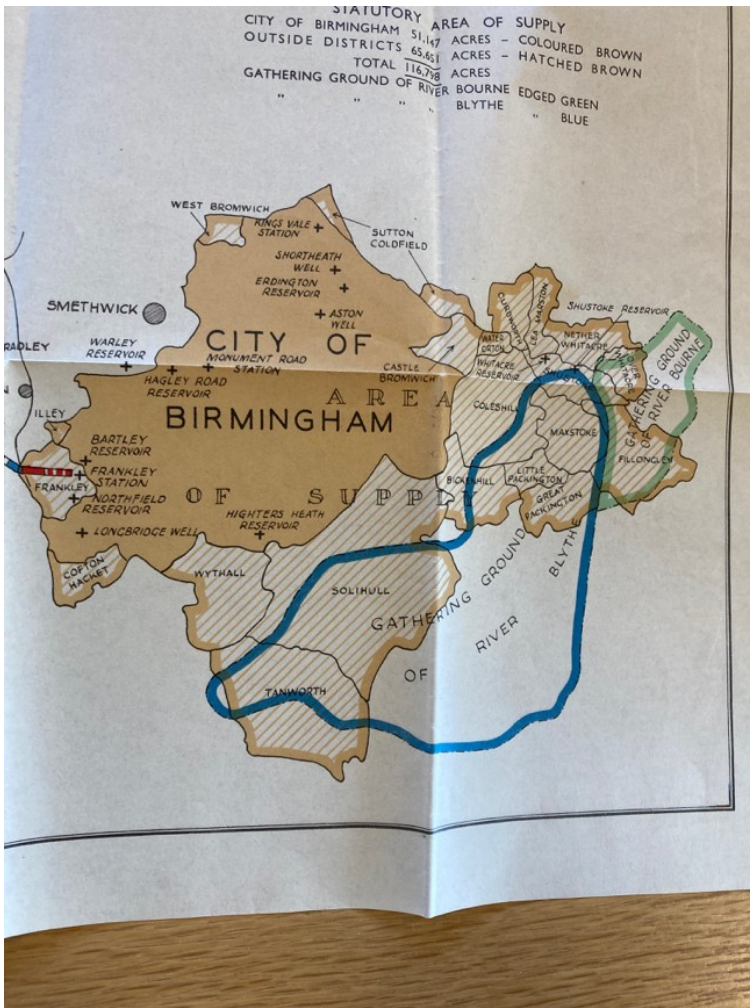


Plate 38: Birmingham Waterworks Company, Map of Birmingham's Water supply, 1948, Birmingham Central Library collection BCC/1/FF/D/1/9/1.



Illustration 31: Jo Gane, Edge of a calotype with notation, fogging and fingerprints, June 2025. (right)

In Packington Park, September 1789 lightning struck an ancient oak tree. The electrical force killed a man named William Cawssey who was sheltering from the storm. The lightning passed through his walking stick to the soil making a hole in the ground which was later inspected by botanist and mineralogist Dr William Withering (1741 – 1799).³⁰⁸ Later a monument was built to this event rising from the hole in the ground to function as a public health and safety broadcast in stone.³⁰⁹ Withering wrote a paper which was presented to the Royal Society about this event.³¹⁰ Melted ‘quartzose’ matter, or metamorphosised sandstone known as fulgurite was unearthed when the ground was dug for the monument’s construction. Sand had turned to glass demonstrating the ability of the intense electrical force to fuse and change material. A transformation of the soil through electrical forces and human action into a lasting memorial. A piece of fulgurite is pictured below in illustration 32.

³⁰⁸ William Withering, *The botanical arrangement of all the vegetables naturally growing in Great Britain*. (Birmingham: M.Swinney, 1776).

T. Whitmore Peck and K. Douglas Wilkinson, *William Withering of Birmingham*, (Bristol: John Wright, 1950).

³⁰⁹ “Packington Hall,” Historic England listing, (no.1001193, 1986)

<https://historicengland.org.uk/listing/the-list/list-entry/1001193?Chapter=official-list-entry> .

“Memorial, Approximately 850 metres south east of Packington Hall,” Historic England listing, (no. 1365122, 1988) <https://historicengland.org.uk/listing/the-list/list-entry/1365122?Chapter=official-list-entry>.

³¹⁰ William Withering, “XV. An Account of some extraordinary Effects of Lightening” *Philosophical Transactions of the Royal Society of London* 80 (March 18 1790) 293 -295. <https://www.jstor.org/stable/106840>.



Illustration 32: Jo Gane, *Fulgurite*, January 2025. digital scan, artist's own collection.

'Mr Watt' suggested to Withering that the hollow left behind in the fulgurite dug from the ground at Packington was formed by the expansion of moisture.³¹¹ 'Mr Watt' in Withering's paper was industrialist and inventor James Watt (1736 – 1819) one of the 'golden boys' of the city of Birmingham and an emblem of the city's industrial heritage as seen in the statue below in illustration 33. An expansion of moisture fuelled Watt's steam engines and drove the industrial revolution. At Packington an

³¹¹ *ibid.*

expansion of moisture operated in the ground through natural forces transforming sandy soil to glass.



Illustration 33: Jo Gane, *The Golden Boys*, May 2025, Birmingham.

The granular structure of fulgurite surfaced in my practice when I made electroplate daguerreotypes discussed in chapter four. A similar texture to fulgurite was visible in the grains of silver that grow on the cathode during electroplating and in the granular edges of electroplate for the daguerreotype when it is too hard and made with a voltage that is high.³¹² Both fulgurite and electroplate are shaped by electrical forces. The shape of silver particles during electroplating were a familiar sight to George Shaw and John Percy who made photographs in Packington 60 years after the lightning strike.³¹³

Photography later transforms landscape and people into memorials, monuments, lasting traces of things that have happened as the electrical force of lightning occasioned in Packington in September 1789. This tragic, pre-photographic natural event caused by lightning metaphorically and physically prepares the ground in the parkland for the later photographic activities by Shaw and Percy setting a precedent which I revisit to make contemporary calotypes. Industrial innovation in the city echoes to the edges appearing under the ground reflected in natural forces, surfacing in a crystallised grain of sand.

³¹² 170.

³¹³ George Shaw, *A Manual of Electro-Metallurgy Vol I and II*.

John Percy, *Metallurgy: The Art of Extracting Metals from their Ores and Adapting them to Various purposes of Manufacture*, (London: John Murray. 1864).

Evidence for Shaw and Percy in Packington, see;

“Death of Mr FH Henshaw”, *Birmingham Daily Post*, October 12th 1891. 18.

Lady Louisa Finch and Heneage Finch.



Plate 39: Heneage Finch, *In the Park at Packington*, 1770-1812. Pen and brown ink, 21.3 x 27.9 (cm) Met Museum, New York.

The drawing in plate 39 above was made in the parkland at Packington by the 4th Earl of Aylesford, landscape artist Heneage Finch (1751 – 1812) who owned the parkland and lived at Packington Hall at the time of the tragic lightning strike. Finch sketched and painted the oak trees in the parkland during the late eighteenth and early nineteenth century. His approach to drawing rooted in place in the landscape reflects the perspective of the photographers who follow him a generation later. I argue that Finch's confident and detailed lines that accurately traced the branches are pre-photographic. His drawing comes from the experience of being in the place and is made with and by this landscape in collaboration with the human touch of the artist on paper; much like the calotype. I've experimented with this approach in the parkland at Packington drawing trees using optical devices and by hand to understand and experience the type of line each approach creates as shown in illustrations 34 and 35. I found that a camera lucida gives a much smoother and confident outline than sketching by hand creating lines that are similar to those in Finch's drawing. Around 50 years later George Shaw makes a calotype in the

parkland of the same tree that is shown below in plate 40 below. In 2022, I re-created this calotype in figure 22.



Plate 40: George Shaw, *Chênes en hiver*, 1852, calotype paper negative, 24 x 30.7 (cm) Musée D'Orsay. Accession no. PHO 1981 65.

Accurate drawings pre-empt photographic techniques which later surface in response to the landscape at Packington. The accuracy of Finch's lines suggests the potential use of an optical device to make this image or at least measurement with a pencil and hand over paper. Optical devices such as the camera obscura and camera lucida were tools for sketching that were more technically advanced than simple pencil measurement. Camera lucida and obscura were often used in the nineteenth century as tools for accurate drawing.³¹⁴

³¹⁴. Charlotte Klonk, *Science and the Perception of Nature – British Landscape Art in the Late Eighteenth and Early Nineteenth Centuries*, (Yale: University Press, 1996). 130-133.

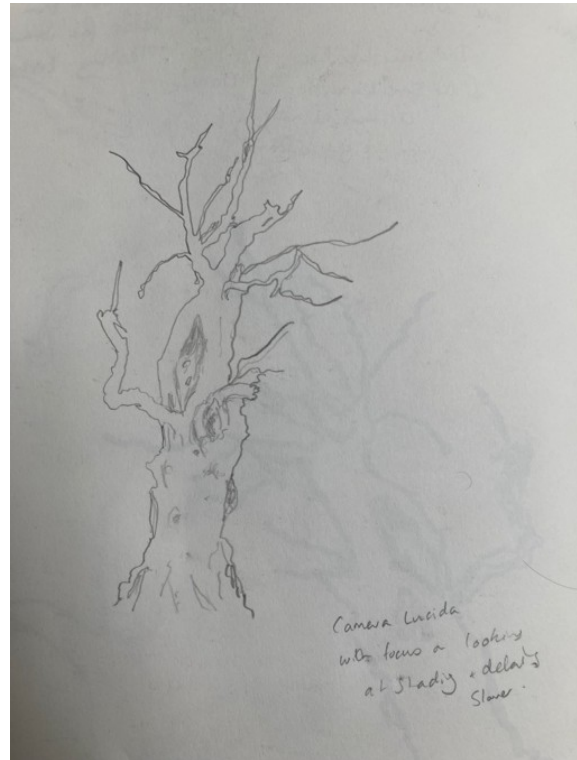


Illustration 34: Jo Gane, *Sketching with a Camera Lucida*, November 2021, Packington Park. (left)

Illustration 35: Jo Gane, *Camera Lucida sketch*, November 2021, Packington Park. (right)

The camera lucida remains connected to the invention of photography through its use by photographic inventor of the calotype process, William Henry Fox Talbot.³¹⁵ Talbot's lack of hand skills for drawing with this device and perceived frustration at his wife Constance's observational artistic skills are well documented. Talbot's use of the camera lucida is the origin story for his photographic experiments described in his own hand in *The Pencil of Nature* as a driver for his invention of photography.³¹⁶ This reinforces my argument that accurate scientific drawing is an activity which pre-figures photography as discussed by numerous photographic historians.³¹⁷

³¹⁵ William Henry Fox Talbot, "Album containing camera lucida drawings of the Villa Melzi," 1833, pencil drawings, 146 x 228 (mm), National Science and Media Museum, Bradford.

³¹⁶ William Henry Fox Talbot, "Brief Historical Sketch of the Invention of the Art" in *The Pencil of Nature* (London: Longman, Brown, Green and Longmans, 1844). 3-4.

<https://www.gutenberg.org/files/33447/33447-h/33447-h.html#toc45>

Teanby, *Early Women Photographers*. 119-120.

Martin Kemp, *The Science of Art : optical themes in western art from Brunelleschi to Seurat* (Yale: University Press, 1990), 200.

³¹⁷ Larry Schaaf, "Floating Philosophic Visions," *Talbot Catalogue Raisonne* (blog), 19th January 2018.

<https://talbot.bodleian.ox.ac.uk/2018/01/19/floating-philosophic-visions/>

Martin Kemp, *The Science of Art : optical themes in western art from Brunelleschi to Seurat* (Yale: University Press, 1990), 200.

Steve Edwards, 'The Dialectics of Skill in Talbot's Dream World,' *History of Photography* 26, (2002): 113 – 118.

Further evidence suggests the use of drawing devices before photography in Packington Park.³¹⁸ Withering made use of two optical devices for drawing; a gridded sighting grid with a viewfinder like that pictured below in plate 42. He also used a folding pocket microscope of his own design pictured in plate 41 through which he used a lens to observe detail in botanical specimens;³¹⁹

'here too [at Stafford in 1767] he devised his microscope for the more exact examination of minute objects – a lens so mounted that it could be conveniently used or carried in the pocket. Thus he was assisted in his collection of specimens.'³²⁰

Withering's folding pocket microscope appears remarkably similar to my folding brass and wood field cameras (see plate 41 and illustration 36, below). They both consist of lenses mounted on wooden boxes that fold for easy transportation during use in the landscape illustrating the essential links between place, materials and observation that are common across photographic and drawing practices.



Plate 41: Dr Withering's botanical microscope, c.1795, wood, copper alloy, glass, paper, ivory and textile, 25 x 120 x 60 (mm), Science Museum Group. (left).

Illustration 36: Jo Gane, *Folding field cameras in the studio*, June 2025, Nuneaton. (right).

Teanby, *Early Women Photographers*. 119-120.

³¹⁸ William Withering, *Withering's Botanical Arrangement* vol IV, (London: Cadell and Davies, 1818)

³¹⁹ Alberti's window, sometimes known as Alberti's veil, refers to the technique described by artist and architect Leon Battista Alberti (1401 – 1472) of drawing perspective from a fixed point through a gridded screen.

³²⁰ Whitmore Peck, *William Withering of Birmingham*, 53.

Withering's gridded drawing device is like the structure of a monorail camera as seen in illustration 37 and plate 42 below and as is it described in his biography;

'he devised an apparatus to facilitate sketching in true perspective. This was a sheet of plate glass ruled with horizontal and vertical lines 1 in apart, supported on a vertical stand, and at a distance of some 18in was a small metal disk with a central aperture through which the scene to be drawn was viewed. Thus the cross-lines were superimposed upon the prospect which was to be drawn. With this useful instrument Withering soon learned to draw accurately.'³²¹

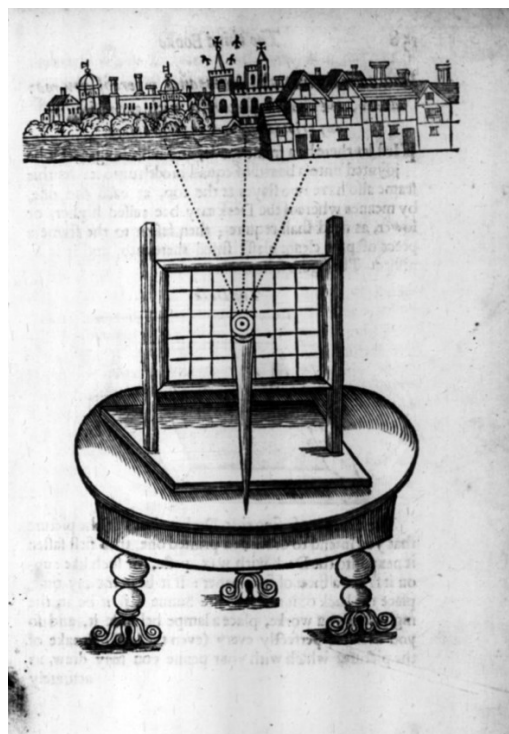


Illustration 37: Anon, *Sinar Monorail Camera*, c.1990. Note – gridded glass screen.

Plate 42: John Bate, *Sighting Grid*, 1634 in *The mysteries of nature and art*, (London: Ralph Mabb, 1635) accessed 13th June 2025, https://archive.org/details/bim_early-english-books-1475-1640_the-mysteries-of-nature-_john-bate_1635/.

I argue that as Withering's apparatus for botanical drawing consisted of a glass frame and lens, the basic ingredients of a camera, his equipment was photographic, simply without the chemical means of recording an image; instead reliant on graphite

³²¹ Whitmore Peck, *William Withering of Birmingham*. 44.

and watercolour. Similar materials of paper and a brush are used to record both a drawing and a calotype photograph and both techniques rely on the subtlety of touch from the artist's hand. This is under-recognised in the calotype as this chemical photographic process it is often viewed as mechanical. However, my experience making calotypes has taught me that the right pressure and direction of the chemicals when brushed on at any stage of the process directly impacts upon the visual representation which is recorded as with drawing and watercolour painting. In the calotype the chemicals must be brushed on with a smooth gentle and even pressure that is wet enough to smoothly flood the paper but does not transmit chemicals to the rear of the paper. This is a tacit skill which takes patience and practice. There are many stages in the calotype process during which the handling of the brush and correct pressure whilst coating the paper is essential; during iodising, sensitising, developing and intensifying the negative image, and again, when sensitising paper to make the positive salt print. It can therefore be seen that there is a connection between the tacit skill of calotype photography and watercolour painting. I argue that drawing and watercolour painting in Packington park by Withering and the Finches sets up the place for the material process of photography later in the Parkland.



Plate 43: Anon, *Earl and Countess of Aylesford*, 1790, stipple engraving on paper, 120 x 195 (mm), British Museum, collection ref 1939,0303.81.

Lady Louisa Finch (1760 – 1832), Countess of Aylesford is pictured above in plate 43 with her husband, landscape painter Heneage Finch, the fourth Earl of Aylesford. Louisa Finch was an important, widely cited and respected botanist and mineralogist who corresponded with leading scientists including Dr William Withering.³²² She amassed a huge collection of 5,500 mineral and 2,000 botanical specimens of which some were found in the parkland along with 27 volumes of botanical drawings.³²³ She was actively and accurately drawing in the parkland at Packington alongside collecting botanical and mineralogical specimens for scientific study.³²⁴ Withering was exploring mineral specimens and botany in Packington Park evidenced in his account of the lightning strike described earlier in this chapter and in his botanical guides.³²⁵ It is likely that Finch and Withering shared their methods for drawing given their proximity and shared interests in botany and mineralogy.³²⁶ However, Withering did not cite Louisa Finch in his botanical guides preferring to refer to the patriarchy as the ‘Earl of Aylesford’s parkland at Packington’ and ‘Lord Aylesford’ as often as 64 times throughout the 4th volume of his series, ‘A botanical arrangement of British plants.’³²⁷

³²² Marilyn Bailey Ogilvie and Joy Dorothy Harvey, *The Biographical dictionary of women in science : pioneering lives from ancient times to the mid-20th century*. (Abingdon: Routledge, 2000). 446.

³²³ Consuelo Sendino and Julian Porter, “Female aristocrats in the Natural History world before the establishment of the GSL,” (Geological Society, London, Special Publications, 2020).11.

³²⁴ Lady Louisa Finch, *Botanical Watercolours I and II*, c.1784-1820, Watercolours on Paper, 51.44 x 40.32 x 6.67 (cm) Minneapolis Institute of Art ref. 2020.77.1 and 2020.77.2.

“Catalogue of the Mineral Collection of the Rt. Hon the Dowager Countess of Aylesford,”(London: Natural History Museum)

³²⁵ William Withering, An Account, 293 -295.

William Withering, *Withering’s Botanical Arrangement* vol IV.

³²⁶ Ogilvie and Harvey, *The Biographical dictionary of women in science*. 446.

³²⁷ Withering, *Withering’s Botanical Arrangement* vol IV.

Withering uses female knowledge and labour in his work, notably his discovery of the digitalis (foxglove) based drug he used to treat dropsy was based on a recipe from an ‘old woman’ in Shropshire who became known as Mother Hutton. He ‘found botanical specimens’ for his wife, Helena Cookes to draw.

Dennis M.Krikler, “The Foxglove, the Old woman from Shropshire and William Withering,” *Journal of the American College of Cardiology* 5 (May 1985): 3-9. [https://doi.org/10.1016/S0735-1097\(85\)80457-5](https://doi.org/10.1016/S0735-1097(85)80457-5).

Peter Sheldon, “William Withering, Physician, Botanist and Mineralogist,” West Midlands History, accessed 10th June 2025.

<https://historywm.com/file/historywm/william-withering-hires-58872.pdf>.

William Withering, *A botanical arrangement of British plants*, (London: G.G.J & J. Robinson, 1787). xv.

When I am photographing in the parkland at Packington in 2021 it is Louisa Finch's drawing of compressed bog rush as seen in plate 45 that sparks a trail of imaginative time travel in my mind. A tactile connection to my memories of visiting the parkland as a child, when bog rushes poked through my socks in the late 1980s. Today, spikey grasses poke through damp holes in my jeans whilst I'm trying not to cut my fingers in the dark-bag when changing sheets of glass that sandwich calotype paper; underneath trees that I make a calotype of in figure 21. Trees that were photographed by Shaw in plate 45.

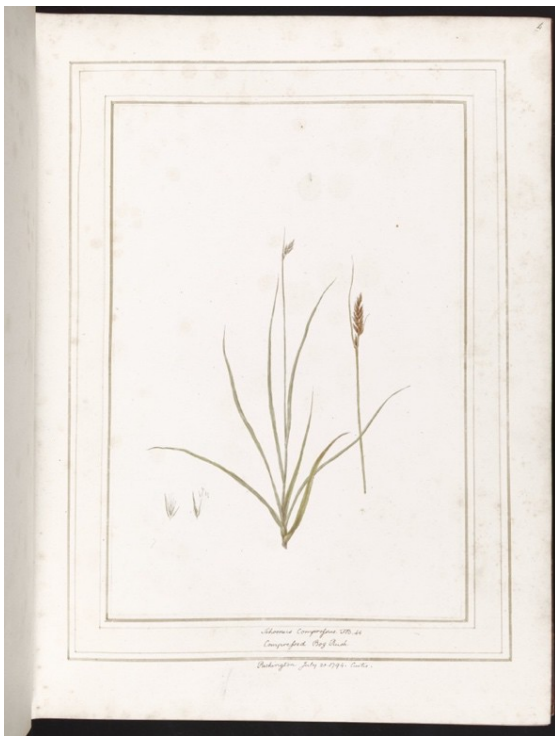


Plate 44: Louisa Finch, *Compressed Bog Rush*, 1794, Watercolour on Paper, 40.32 x 51.44 (cm), Minneapolis Institute of Art, accession no. 2020.77.1. (above, left)

Illustration 38: Jo Gane, *Sitting on damp bog rush*, January 2022, Packington Park. (above, right)



Figure 21: Jo Gane, *In the forest of Arden*, February 2022, calotype negative, 16.4 x 12 (cm), Packington Park.



Plate 45: George Shaw, *Chênes en hiver*, 1852, calotype paper negative, 31.2 x 23.2 (cm) Musée D'Orsay, accession no. PHO 1981 55.

In the 1840s Shaw's tripod stood near to the spot where Heneage Finch had drawn the oak tree. The perspective differed slightly, with George Shaw's camera standing to the left of Finch's drawing position. The accuracy of Finch's lines can be traced by overlaying his drawing with Shaw's later photograph of the same tree. Shaw recorded the ancient, gnarled oak with calotype photography, using precisely controlled quantities of light sensitive silver iodides painted and soaked into paper and developed out into a negative image using gallic acid derived from oak galls. The branches of the drawing and the photograph almost align, allowing for 50 years of growth and decay between the pencil and the silver.

I am often physically alone when photographing in Packington but I do not feel alone when I am working with my cameras and calotype materials in the parkland. I'm collaborating with the history of the landscape, photographic materials and the current weather and environment. I carry drawings by Finch, later by Henshaw and the Birmingham school along with Shaw and Percy's photographs with me, sometimes physically as in illustration 39 below. Later, once I know the place I carry the images in my mind.



Illustration 39: Jo Gane, Oak Tree and print, c.1845-2025, digital image, Packington Park.

Shaw was not alone he was collaborating with Percy and Henshaw when working in Packington. Evidence for this comes from a second camera pictured in the background of his image of the oak tree seen in plate 46 below. This reveals a photographic partner on Shaw's excursions because there would be no need for a single photographer to carry the weight of two cameras in the landscape.³²⁸ It is likely to be a camera belonging to Shaw's colleague at Queens College, John Percy who photographed in Packington, see plate 57.



Plate 46: George Shaw, *detail from Chênes en hiver*, 1852, calotype paper negative, 24 x 30.7 (cm) Musée D'Orsay. Accession no. PHO 1981 65.

John Percy owned landscape images by Heneage Finch similar in form to the drawing of the oak tree pictured in this thesis in plate 39. Percy was familiar with Finch's drawings which has influenced his work in the parkland.³²⁹ Perhaps Percy

³²⁸ It could belong to W B Henshaw or J Johnstone, MD who exhibits two images titled 'Farm Yard, Packington' in 1857 with Birmingham Photographic Society.

³²⁹ Heneage Finch, *Landscape with Cows and Sheep*, ca 1770-1812, watercolour, 5.6875 x 10.3125 (in), Victoria and Albert Museum. Stamped on the back with the monogram of Dr John Percy.

and Shaw were seeking this tree in the landscape during the 1840s from Finch's drawing as I am in 2022 from Shaw's photograph. I eventually found the tree after weeks of working in proximity to it when I caught sight of it from a different angle under cloudy conditions while walking back uphill from the river. The distinctive hole in the trunk was visible as a line on the ancient trunk, now smaller than in Shaw's image as parts of the wood had fallen away as can be seen in figures 22 and 23. Finch's drawing pre-empted the surfacing of Shaw and Percy's experiments with photographic materials in the parkland. The drawing surfaced in Shaw's calotype photograph. Shaw's calotypes surface in mine. Where they connect the place communicates now and speaks of its history in the contemporary moment.

The current custodians of the landscape at Packington are working towards a more sustainable future.³³⁰ My calotype images as seen in figure 22 below can point towards a future with more ecologically sustainable, slower photographic practices where plants develop themselves.³³¹ The calotype negative offers a sustainable photographic process with a small quantity of silver used in each image, as the silver is developed out.³³² The calotype is developed using gallic acid that come from oak galls grown on oak trees because of the action of the gall wasp larvae. The oak tree makes the image appear in an act of communication where it is both the material of the image and the image itself; it is from and of the place. This close connection between place and material offers an alternative to more extractive methods of

³³⁰ "Rewilding" Packington Estate (online. accessed 11th June 2025.

<https://packingtonestate.co.uk/about/rewilding/>

"Wild Packington" Rewilding Britain (online) accessed 11th June 2025.

<https://www.rewildingbritain.org.uk/rewilding-projects/wild-packington>

³³¹ Carolin Lange, "On the performance of colours – Plant-based spectral photographs by John F. W. Herschel (1792 – 1871) and the network of experimental practices of science, photography, and botany in mid nineteenth century Britain." (PhD Thesis, DeMontfort University, 2025).

The Sustainable Darkroom, accessed 11th June 2025. <https://sustainabledarkroom.com/>

Adrian Cousins, "Photographic Garden, online lecture #6", video lecture, Film Werk Plaats, accessed 11th June 2025.

<https://vimeo.com/645674145>

Andres Pardo, *Four Photographs from waste developer*, 2018, Oxford: Bodleian Libraries, MS. 22909 photogr.

Niniane Kelley, "Nettie Edwards Grave Goods" in *Analog Forever*, 20th February 2023,

<https://www.analogforevermagazine.com/features-interviews/nettie-edwards-grave-goods?rq=nettie%20edwards>.

³³² A calotype negative half-plate size uses 0.537g of silver nitrate (roughly calculated by the following; 1.62g silver nitrate / 20 sheets [0.081g] for iodising +sensitiser (1.14g silver in 10ml / 1 ml in 10ml H2O sensitiser [0.114g] + 3ml sensitiser in 2nd development [0.342]).

Compared to 1.67 g silver nitrate in a salt print (5g silver nitrate + 30ml dH2O, 10ml per sheet).

photographic practice. Current practice by a community of contemporary artists is resulting in development of these more ecological photographic techniques through a community of practitioners.³³³

I'm printing the calotype negatives as direct to plate photopolymer gravure prints as seen in figure 23 below. The polymer gravure process carries echoes of experiments throughout the early years of photography to make etching plates from both daguerreotypes and calotypes that has been the subject of recent research.³³⁴

Photo-polymer gravure printing has an advantage over a salt print because it is stable and more easily reproducible. The prints I'm making are produced direct to plate further improving sustainability by removing the need for plastics in the process as acetate negatives and stochastic screens are not required.³³⁵

³³³ see footnote 56.

London Alternative Photography Collective, "Beyond Silver," (Birmingham: The Hive, 19th January – 10th February 2023). <https://www.londonaltphoto.com/exhibitionslist/2022/12/5/beyond-silver>.

Megan Ringrose, "Botanicograms" (online) accessed 11th June 2025, <https://www.meganringrose.com/botanicogram>.

Michelle Henning, "The Stowaway Image. Latency and Photographic Ephemerality," (keynote lecture, University of Lausanne, 31st October 2024).

³³⁴ Dr Francesca Strobino, "Investigating William Henry Fox Talbot's Experiments in Photomechanical Printing." (PhD thesis, De Montfort University, 2024).

Martin Jürgens, "Redefining the origins of photomechanical printing: etching, electrotyping and multiplying daguerreotypes in Europe from 1839 to 1860." (PhD thesis, De Montfort University, TBC).

³³⁵ Direct to plate printing has been developed at the School of Art in Birmingham by printmaker and technician, Justin Sanders.



Figure 22: Jo Gane, *Heneage Finch's Oak Tree*, February 2022, calotype negative, 16.4 x 12 (cm), Packington Park.



Figure 23: Jo Gane, *Heneage Finch's Oak Tree*, April 2025, photopolymer gravure print, 16.4 x 12 (cm), Packington Park.

The centre of artistic, literary and scientific society.

Packington Park was an important site for nineteenth century landscape painting amongst the Birmingham school of landscape painters who emerged from Joseph Vincent Barber's (1788 – 1838) drawing academy and Samuel Lines (1778 – 1863) art teaching in the first part of the nineteenth century.³³⁶ This generation of landscape painters were centred around Shaw's friend landscape painter Frederick Henry Henshaw (1807 – 1891) and consisted of many of Shaw's peers in the city who studied under Joseph Vincent Barber including Frederick Henry Henshaw, Thomas Creswick, James Poole and Francis Marrian. These artists of the Birmingham School were often the sons of manufacturers training for skilled artisan work in the cities manufacturing industries.³³⁷ As such they occupied a position between art and manufacture like photography emerging from an industrial environment into the rural landscape.



Plate 47: Henry Harris Lines, *In Packington Park, Warwickshire*, 1825. Pencil drawing, Birmingham Museum Trust, ref. 1951P65.

³³⁶ Jane Croom, "Joseph Vincent Barber: Leamington Speculator, Birmingham Artist," *Warwickshire History* 13, 4. (Winter 2006/7): 155 – 162.

Connie Wan, "Samuel Lines and Sons: rediscovering Birmingham's artistic dynasty 1794-1898 through works on paper at the Royal Birmingham Society of Artists." (PhD thesis, University of Birmingham, 2012).

³³⁷ "Death of Mr F H Henshaw" *Birmingham Daily Post*, October 12, 1891.

Wildman, *The Birmingham School*. 45.

School of Art minute book, 1840 -1850, (Birmingham City University, ADM Archive). 114.

Sian Vaughan, "The Art School, School of Artists and the City." *A Place for Art: the story of the Royal Birmingham Society of Artists*, (Birmingham : RBSA, 2008). 39-44.

The parkland features in artworks frequently titled as both Packington and the Forest of Arden by painters such as Thomas Baker of Leamington (1809 – 1864), John Adam P. Houston (1812 – 1884) and Henry Harris Lines (1800 – 1889, as pictured in plate 47 above) to name but a few.³³⁸ The depiction of trees in the parkland and its importance to art history collides with photography in both Shaw and Percy's calotypes and in Shaw's daguerreotype portraits which I proposed in chapter five, feature landscape painters of the Birmingham School, Thomas Creswick and James Poole.

As Birmingham lacked the sweeping mountainous views that many of these painters produced on trips further afield to Wales and Europe the focus of their paintings closer to home was trees. In Packington Heneage Finch had been accustomed to drawing trees and kept ancient trees in the parkland as studies for painting and sketching resulting in Packington becoming a place for ancient trees that were both aesthetically pleasing for drawing and useful for the natural habitat.³³⁹ The importance of these trees can be seen in the sketchbook of Thomas Baker of Leamington who frequently moved drawings of trees at Packington into finished works of landscapes further afield as seen in plate 48 below.³⁴⁰ These portable trees show the importance of the landscape at Packington to a wider range of landscape paintings than those which can be directly attributed to the parkland. Usefully for calotype photography many of these ancient trees have limbs that appear as light-coloured bones bleached by the weather that show up detail and texture according to the spectral register of calotype chemistry. The calotype like other early silver-nitrate based processes has a spectral sensitivity that shows red as a dark shade and blue as light resulting in the silver shades of bleached wood photographing clearly with good contrast.

³³⁸ Robert Mulraine, "Thomas Baker 1809 – 1864, Memoranda of Pictures Painted" (online) accessed 11th June 2024. <https://www.thomasbakerofleamington.com/>.

John Adam Houston did not attend Barber's academy but did paint in Packington. He was friend of Henshaw and resided with him in Paris in 1837. See;

"Frederick Henry Henshaw," Colburn's New Monthly Magazine, March 1880. 275.

John Adam Houston, *Study of Oak trees in the Forest of Arden, Warwickshire*, mid-nineteenth century, 69.2 x 51 (cm), collection Royal Scottish academy of Art and Architecture. Accessed at <https://artuk.org/discover/artworks/study-of-oak-trees-in-the-forest-of-arden-warwickshire-186472/search/2025--keyword:john-adam-arden--referrer:global-search>.

³³⁹ Packington Park contains bleached dead ancient trees because of family tradition, explained on a visit to the parkland in October 2021, by Lady Guernsey.

³⁴⁰ Mulraine, Thomas Baker.

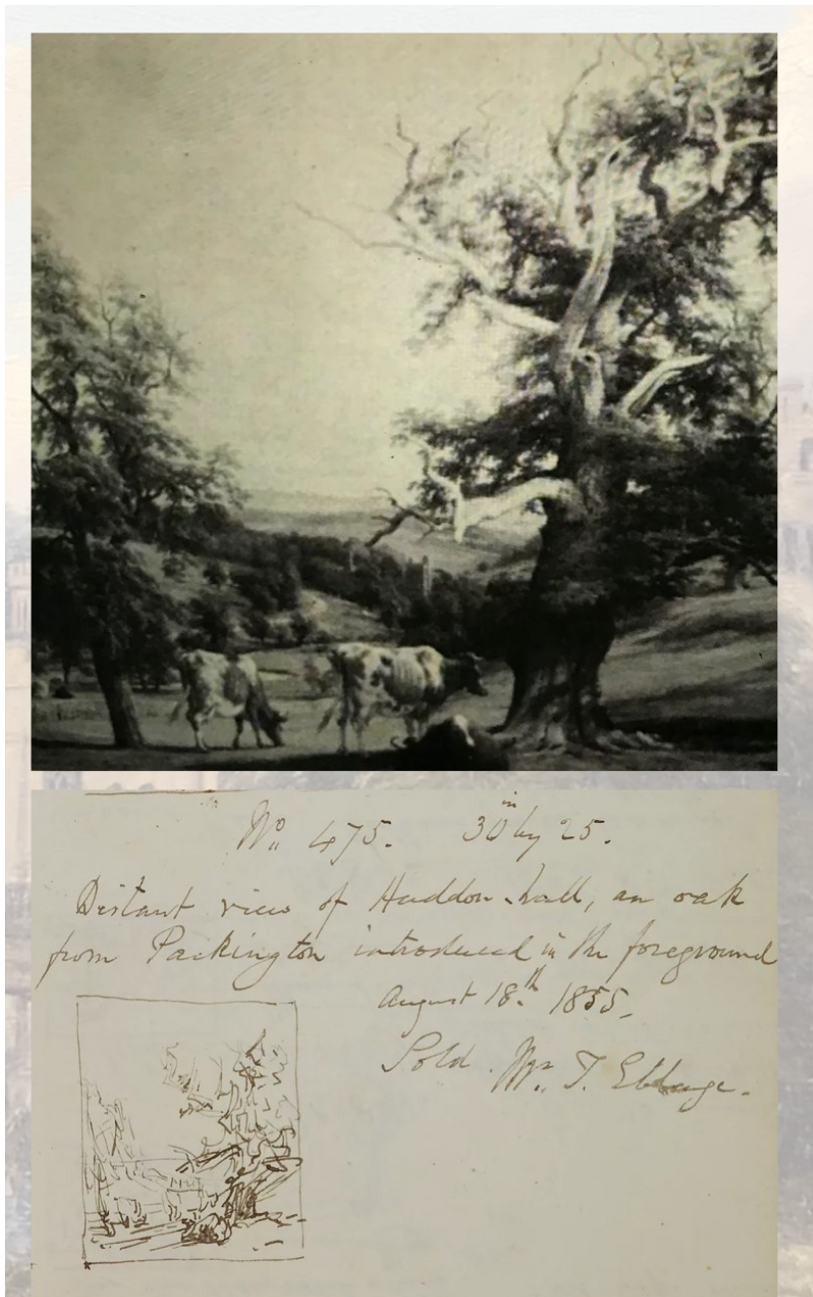


Plate 48: Thomas Baker of Leamington, *Memoranda No. 475*, 1855.
Robert Mulrairie, "Thomas Baker 1809 – 1864, Memoranda of Pictures Painted" (online) accessed 11th June 2024. <https://www.thomasbakerofleamington.com/>.

The 'sympathetic portraiture' of trees is described by art historian Stephen Wildman as a common element of the 'precision and character in rendering nature' that features consistently in images from the landscape tradition of the 'Birmingham School'.³⁴¹ Frederick Henry Henshaw was renowned for his paintings of trees.³⁴²

³⁴¹ Wildman, *The Birmingham School*, 6.

³⁴² "The Death of Mr Henshaw" *Birmingham Faces and Places*, November 1891, 111-112.

"Death of Mr F H Henshaw" *Birmingham Daily Post*, October 12, 1891.4.

"Death of Mr F H Henshaw" *Birmingham Daily Mail*, October 12, 1891.

Wildman, *The Birmingham School*, 6.

Henshaw's obituary places him working in the landscape at Packington Park throughout the 'outdoor season of the years from 1841 to 1843 and here for ten or twelve years later' as evidenced in the painting, 'A Forest Glade,' Arden, Warwickshire 1845, plate 49.³⁴³ We know that Shaw and Henshaw worked together in the landscape experimenting with the qualities of their materials from Henshaw's obituary which states;

it was his custom also to refer to photographs of the scenes he had visited, or special portions of them ; these photographs being mostly taken for him by his friend Mr. George Shaw, who was often his companion from time to time during the sketching season.³⁴⁴



Plate 49: Frederick Henry Henshaw, *A Forest Glade, Arden, Warwickshire*, 1845, Oil, 96 x 114 (cm), Birmingham Museums Trust, accession no. 1885P2661.

³⁴³ "Death of Mr F H Henshaw" *Birmingham Daily Post*, October 12, 1891. 4.

³⁴⁴ "Death of Mr F H Henshaw" *Birmingham Daily Post*, October 12, 1891.4.

Shaw and Henshaw were close friends and neighbours as evidenced by correspondence.³⁴⁵ They lived near to each other on parallel roads in Small Heath with Henshaw's home and studio on Green Lanes and Shaw's home on Grange Road, as can be seen in the map and evidence from the archive in illustration 40 and plates 50 and 51 below.



Illustration 40: Google Maps, *Green Lane*, 2025, digital image, Small Heath, Birmingham.

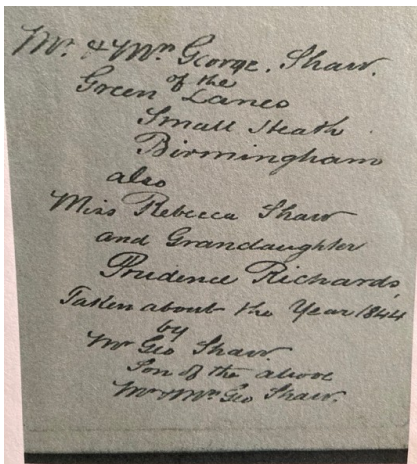


Plate 50: George Shaw, *George Shaw Snr, Elizabeth Shaw, Rebecca Shaw and Prudence Richards* (verso), c.1844. daguerreotype, 31/2 x 3 (in), Private collection.

Plate 51: Anon, *Envelope addressed to George Shaw*, 1864, 10 x 6.5 (cm), Private collection.

³⁴⁵ Frederick Henry Henshaw, letter to George Shaw from Stratford, (private collection), August 21st 1869.

Frederick Henry Henshaw, letter to George Shaw from Stafford, (private collection), August 21st 1866.
 Frederick Henry Henshaw, Letter from Llangollen to John Spiller, (Wellcome Collection, 5151/B 1857).

Frederick Henry Henshaw's studio on Green Lane, Small Heath, pictured in plate 52, was described as;

'the centre of artistic, literary and scientific society in Birmingham ; there were few men of note in the town and its neighbourhood who were not at least occasional visitors to Mr. Henshaw's studio and smoking room combined;'³⁴⁶



Plate 52: Anon, *Henshaw's House, Green Lane, Small Heath*, 1895, postcard, 13.6 x 8.5 (cm). Researcher's own collection.

Henshaw's studio was positioned to the south of the city ten miles from Packington Park. He habitually invited people to his studio which served as a social salon.³⁴⁷ Shaw and many painters from the Birmingham School of landscape painters were regular visitors to Henshaw's studio salon including landscape painter of Sheffield, James Poole.³⁴⁸ I argue that many of the paintings and sketches made in Packington Park and the Forest of Arden were made by artists in Henshaw's circles on visits to see him at his studio.³⁴⁹ The studio at Green Lanes in Small Heath is a key location

³⁴⁶ B'ham Daily Post, Oct 12 1891p.18 Death of Mr FH Henshaw

³⁴⁷ "Death of Mr F H Henshaw" *Birmingham Daily Post*, October 12, 1891.4.

Frederick Henry Henshaw, Letter from Llangollen to John Spiller, (Wellcome Collection, 5151/B 1857).

³⁴⁸ "The Death of Mr James Poole, Landscape Painter" *Lichfield Mercury*, Friday 19th March 1886.4.

³⁴⁹ "Frederick Henry Henshaw," Colburn's New Monthly Magazine, March 1880. 275.

John Adam Houston, *Study of Oak trees in the Forest of Arden, Warwickshire*, mid-nineteenth century, 69.2 x 51 (cm), collection Royal Scottish academy of Art and Architecture. Accessed at

in the history of art and photography in Birmingham. Henshaw's studio is a location that demonstrates the collective power of a community of practice in art and science working together across disciplines in the parkland at Packington.³⁵⁰

Shaw's relationship with Henshaw extended beyond the studio into their working practices in the landscape. Both Shaw's photographs and Henshaw's paintings seek detail and realism in truth-to-nature which converges artistic and scientific vision through shared observation.³⁵¹ Despite the beauty in the precise details of the ancient trees they depict their images are not sentimental or pictorial but realistic to the places they work in; a kinship between the ability of photography to record detail and the practised hand of Henshaw to paint it. Pre-photographic painting informs photography and photography informs post-photographic painting. We are now in a contemporary artworld which is post-medium in the culmination of this cyclical reflexive relationship.³⁵² There is also a literal post that remains in the River Blythe at Packington we will discover later in this chapter.³⁵³

Henshaw comments on the differences between their practices of photography and painting in his letters when he comments to Shaw that the shadows cast by trees in the scene he is working on are,

'exquisitely beautiful for painting but whether it is too flickering for the camera only a practised eye like yours can say without seeing it so.'³⁵⁴

This quotation tells us that Henshaw is invested in the qualities of photographs and how they see the landscape. At this stage of photographic development, especially given the longer calotype exposures Shaw was working with in the landscape, the

<https://artuk.org/discover/artworks/study-of-oak-trees-in-the-forest-of-arden-warwickshire-186472/search/2025--keyword:john-adam-arden--referrer:global-search>.

³⁵⁰ Etienne Wenger, *Communities of Practice: Learning, Meaning and Identity*, (Cambridge: University Press, 1998).

³⁵¹ Daston and Galison, *Objectivity*, 82.

³⁵² Joan Fontcuberta, *The Post-photographic Condition*, (Berlin: Kerber Verlag, 2015).

Robert Shore, *Post-Photography: The Artist with a Camera*, (London: [Laurence King Publishing](#), 2014).

³⁵³ A wooden post, see plate 57, illustration 88 and figures 39 and 40.

³⁵⁴ Frederick Henry Henshaw, letter to George Shaw from Stratford, (private collection), August 21st 1869.

eye could see more detail than the camera and flickering light would appear as a mid-tone in the exposure as highlights and shadows blended during the time that the paper is exposed. The calotypes that remain made by Shaw in Packington Park mostly contain images of leafless trees in winter. This is likely to be because capturing the form of moving leaves in even a light breeze to produce the ‘flickering’ light Henshaw mentions is problematic. However, Shaw’s technical skill and appropriate environmental conditions allow him to overcome these problems. In 1845 early photographer Michael Pakenham Edgeworth describes visiting Shaw and Percy in Birmingham to learn how to improve his calotypes and describes seeing a calotype by Shaw which has ‘every oak leaf perfectly formed!’³⁵⁵ This image would have been made on a still and sunny day.



Plate 53: Frederick Henry Henshaw, *The Old Footbridge Over the River Cole at Yardley*, 1890. Oil on Canvas, 54.1 x 76.3 cm, Birmingham Museums Trust collection ref 1957P31.

The painting above, plate 53, is one of several paintings by Frederick Henry Henshaw that show a rustic wooden bridge over a watercourse, illustrating the

³⁵⁵ Michael G. Jacob, “Michael Pakenham Edgeworth (1812 – 81) Pioneer Irish Photographer,” *History of Photography* 24, (2000): 169-174.

Michael Pakenham Edgeworth, “An account of a visit to Dr John Percy, and a meeting with Mr George Shaw in Birmingham” 22 April 1845 – Bodleian Library, Oxford. MS Eng. Misc c. 1473/1

similarities in the subject matter between the painter's works and the photographs of George Shaw. It is not the same bridge as seen in Shaw's photograph in plate 54 below. Along with other paintings and sketches such as plates 59, 60 and 61 it illustrates the intersection between the subject matter of Shaw's photographs and Henshaw's paintings.³⁵⁶ It is important to note that artistic license is at play in Henshaw's hand and as such it is often impossible to precisely align photographs by Shaw with Henshaw's paintings. An exception to this is possible in the example of plates 55, 56 and 57, that show the same building. It is apparent across their bodies of work that Shaw and Henshaw make photographs and paintings at the same dates and in the same places of similar subject matter using photographic and sketching processes.



Plate 54: George Shaw, *Pont à travers un ruisseau*, 1852, calotype paper negative, 24 x 31.2 (cm) Musée D'Orsay. Accession no. PHO 1981 68.

³⁵⁶ Frederick Henry Henshaw, "Worcestershire Scenery in Autumn," 1843, Oil, 1520 x 1935 (mm) Birmingham Museums Trust collection ref. 1887P960.

Frederick Henry Henshaw, 'Untitled scene, view of bridge.' From a folio of drawings, Pencil on Paper. Birmingham Museums Trust collection ref. 1994P24.78 and 1994P24.79.

I found the remains of the bridge Shaw photographed pictured in plate 54 as a weathered post still holding on in the River Blythe in the parkland. I revisited the location over the course of several months rephotographing the remaining pole from the bridge structure as it rose and fell depending on the weather conditions as can be seen in figures 24, 25 and 26 below. In the final image, plate 26, the pole is not visible as it is underwater when the river is flooded but my handling of the calotype materials has drawn the bridge back in place. The history of the site is revealed by my handling of historical photographic materials and their contact with the environment that Shaw, Henshaw and Percy worked in.



Figure 24: Jo Gane, *A monument in the River Blythe I*, 2021, calotype negative, 16.4 x 12 (cm), Packington Park.



Figure 25: Jo Gane, *A monument in the River Blythe II*, February 2022, calotype negative, 16.4 x 12 (cm), Packington Park.



Figure 26: Jo Gane, *A monument in the River Blythe III*, April 2022, calotype negative, 16.4 x 12 (cm), Packington Park.

The experience of time was experienced differently between the painter and the photographer depending on their medium. The experience of time alters further still in my work as a twenty-first century photographer. I experience the calotype as a slow process in comparison to the rapid utility of modern technology. In contrast to my contemporary experience of slow calotype time, Henshaw experienced the calotype process as fast in comparison to the speed of sketching. Photographic and painterly time are counterpoised in Henshaw's letters to Shaw; he commented on the utility of the rapid nature of photography.

'If you have two such days you will have 10 or a dozen glorious pictures.'³⁵⁷

In the same letter, Frederick Henry Henshaw described sketching cottages that is likely to be the drawing below in plate 55.



Plate 55: Frederick Henry Henshaw, 'Untitled sketch of an Inn or other large old house.' from a folio of drawings, n.d. [1869], Pencil on Paper. Birmingham Museums Trust collection ref. 1994P24.54.

³⁵⁷ Frederick Henry Henshaw, letter to George Shaw from Stratford, (private collection), August 21st 1869.



Plate 56: George Shaw, Cottages, c.1869, Albumen Print, 24 x 30 (cm), Private Collection.
 Plate 57: George Shaw, Cottages, c.1869, Albumen Print, 24 x 30 (cm), Private Collection.

Henshaw's drawing in plate 55 corresponds directly to albumen prints in the private collection of George Shaw pictured above in plates 56 and 57 which show that the working relationship they began in Packington in the 1840s continued in other landscapes beyond this, for over twenty years.³⁵⁸

It is important to note despite photography's rapid utility in comparison to painting, Henshaw's comment referred explicitly to calotypes as pictures rather than images as tools for sketching or printing. The calotype negatives were an end point in themselves as photographically reversed seeing which mediates the landscape to a two-dimensional shadow image. It was the act of photography in the landscape which is important in making these images both historically and in my practice. An important joining of place and process in the calotype image.

³⁵⁸ It is important to note, these photographic images only exist as prints in the private collection, whereas the Musée D'Orsay collection contains calotype negatives. These images look to be made with collodion and the fragile nature of glass may be why the negatives do not survive. Alternatively, it is possible that these photographs were purchased by Shaw at a studio auction of Henshaw's effects that advertised 'a large number of photographs, [...] collected by the late F.H.Henshaw.' held on May 12 and 13th 1892 at the Masonic Hall, New Street. George J. Whitfield, "Important Unreserved Sale" (Birmingham: F. Madeley Mole, 1892.) Birmingham Central Library, ref. L./54/833; 296448.

Shaw's calotypes were published by Joseph Cundall in two volumes in 1853.³⁵⁹ However they did not meet with the approval of the *Athenium* which stated that 'the limits, blemishes and short-comings of the Sun's work are more distinctly to be seen.'³⁶⁰ The reviewer in the *Athenium* praised Shaw's studies of trees as 'striking and valuable,' yet drew a distinction between photography and art because 'minuteness and clearness, rather than aerial perspective, were the graces to be tried for.'³⁶¹ This review of Shaw's photographs, criticised as lacking 'air', highlighted the detail Shaw was able to achieve that with the calotype in comparison to a poetic interpretation of picturesque scenery as seen in paintings. The *Athenium* critiqued Shaw's photographs on the same ground as painting rather than looking at the merits of a photograph from the medium specificity of photography. This criticism based on the traditions of painting further bound together public perceptions of photographic and painting practices in the landscape in the early days of photographic publishing.

In Henshaw's letters it is apparent that companionship in the making process and the pleasure of the experience of being in the landscape were what Henshaw was seeking with Shaw rather than simply photographs as reference material.³⁶² Henshaw's letters reveal friendship and an ongoing working relationship between the painter and the photographer in the landscape that continued throughout their working lives. Henshaw's letters document that Shaw and Henshaw worked on painting and photography in the landscape beyond Packington into the late 1860s at Stratford, Stafford and Llangollen as demonstrated below when Henshaw misses Shaw at Stafford in 1866.³⁶³

³⁵⁹ Ruari McLean, *Joseph Cundall, A Victorian Publisher*, (Edinburgh: Private Libraries Association, 1976). 78.

³⁶⁰ 'Fine Arts, New Publications,' *Athenaeum*, no.1365 (London: J.Francis, 1853). 1559.

³⁶¹ *ibid.*

³⁶² The experience of being at Packington stayed with F H Henshaw and he sketched in the parkland throughout his life. In 1884 as a widower aged 77 he married his third wife, Frances Bint, a spinster of 'full age' who is the daughter of the park-keeper at Packington.

"Death of Mr F H Henshaw" *Birmingham Daily Post*, October 12, 1891.4.

"Warwickshire, England, Church of England Marriages and Banns, Great Packington," 1884. 16.

³⁶³ Frederick Henry Henshaw, Letter from Llangollen to John Spiller, (Wellcome Collection, 5151/B 1857).

‘-still we hoped that speedy amendment might enable you to come. [...] we looked for you last evening and this but were again disappointed [.]’³⁶⁴

I argue that companionship and collaborative working in the landscape was an important part of Shaw’s practice. Further to the second camera discussed earlier that is visible in plate 46 more evidence for John Percy’s collaboration with Shaw and the history of Packington is visible in the Photographic Album for the year 1855.³⁶⁵ This album contains a photograph made by John Percy at Packington pictured in plate 58 below. The album also contains important details of the process that Percy is using pictured in plate 59. I have used this description of Percy’s calotype recipe as a basis for my own calotype images pictured in figures 25 to 33. I found the subject matter of a pool in a similar location to the area of the parkland Percy is working in near to Little Packington Church in figure 26 and 27 as a direct response to the location in which Percy was working.

Percy’s print of a pool near Little Packington Church in plate 58 is dated as 1850, however Shaw and Percy are making calotypes much earlier than this from the early 1840s. When Michael Pakenham Edgeworth visited Shaw and Percy in Birmingham on 22nd April 1845 to improve his calotype photography he comments that they had ‘plenty of most clear negatives’ that ‘far surpass any that I had seen.’³⁶⁶ This evidence puts Shaw and Percy actively making calotypes from the early 1840s onwards in dates which are consistent with reports of Henshaw painting in the park from 1841.³⁶⁷ Shaw’s letters to Talbot state he is making calotypes ‘soon after the publication of your process’ which would be 1841 for the calotype, or possibly 1839 for the photogenic drawing.³⁶⁸ This earlier dating of Shaw’s calotype activity is

³⁶⁴ Frederick Henry Henshaw, letter to George Shaw from Stafford, (private collection), August 21st 1866.

³⁶⁵ John Percy ‘A Pool with Overhanging Oak, near Little Pakington (sic) Church, Warwickshire’ *The Photographic Album for the Year 1855 Being Contributions from the members of the Photographic Club*. Salted Paper Print, 20.2 x 25.5 (cm), Getty, Los Angeles. <https://www.getty.edu/art/collection/object/107S1N>.

³⁶⁶ Michael G. Jacob, “Michael Pakenham Edgeworth (1812 – 81) Pioneer Irish Photographer,” *History of Photography* 24, (2000): 169-174.

³⁶⁷ “Death of Mr F H Henshaw” *Birmingham Daily Post*, October 12, 1891.4.

³⁶⁸ George Shaw, letter to William Henry Fox Talbot, 19 Jan 1844. Manuscripts – Fox Talbot Collection, LA44-1, British Library, London. <https://foxtalbot.dmu.ac.uk/>.

important because a later dating of Shaw's photographs of 1852 has lessened his impact as an early photographic pioneer.³⁶⁹



Plate 58: John Percy. *A Pool with Overhanging Oak, near Little Pakington [sic] Church, Warwickshire*, September 1850, Salt print from Calotype, 20.2 x 25.5 (cm), Getty Museum, Los Angeles in The Photographic Album for the Year 1855, object no. 84.XA.871.6.7.

The description of Percy's photographic chemistry in this album illustrates a masterful knowledge of the behaviour of materials in relation to the environment and the circumstances of his photographic excursions to Packington. He used the Scottish method of double iodide of silver method for iodising the paper.³⁷⁰ He used a surprisingly weak sensitising or 'exciting' solution of only two drops of aceto-nitrate solution with two drops of gallic acid per dram as described in plate 59, below (0.1ml sensitiser – 3ml water) which resulted in slow exposure times and had the benefit of a lower chance of the paper fogging before development.³⁷¹ This allowed him to

³⁶⁹ George Shaw, 26 Calotype photographs, Paris, Musée D'Orsay, PHO 1981 50-71.

³⁷⁰ Graham Smith, *Disciples of Light, Photographs in the Brewster Album* (Los Angeles: The J. Paul Getty Museum, 1990), 38-39.

³⁷¹ This knowledge comes from experience, experimenting to see which strengths of developer had the least chance of fogging when developed sometimes as long as 12 hours after sensitising the paper.

'develop in the evening on returning from the excursion.'³⁷² Developing in the evening made it possible for him to have travelled with Shaw on the then newly built London and Birmingham railway from Curzon st in the city, connecting at Hampton in Arden with the Birmingham and Derby Junction railway which ran through the parkland near to the locations they were photographing (see annotated map of the parkland, illustration 40).

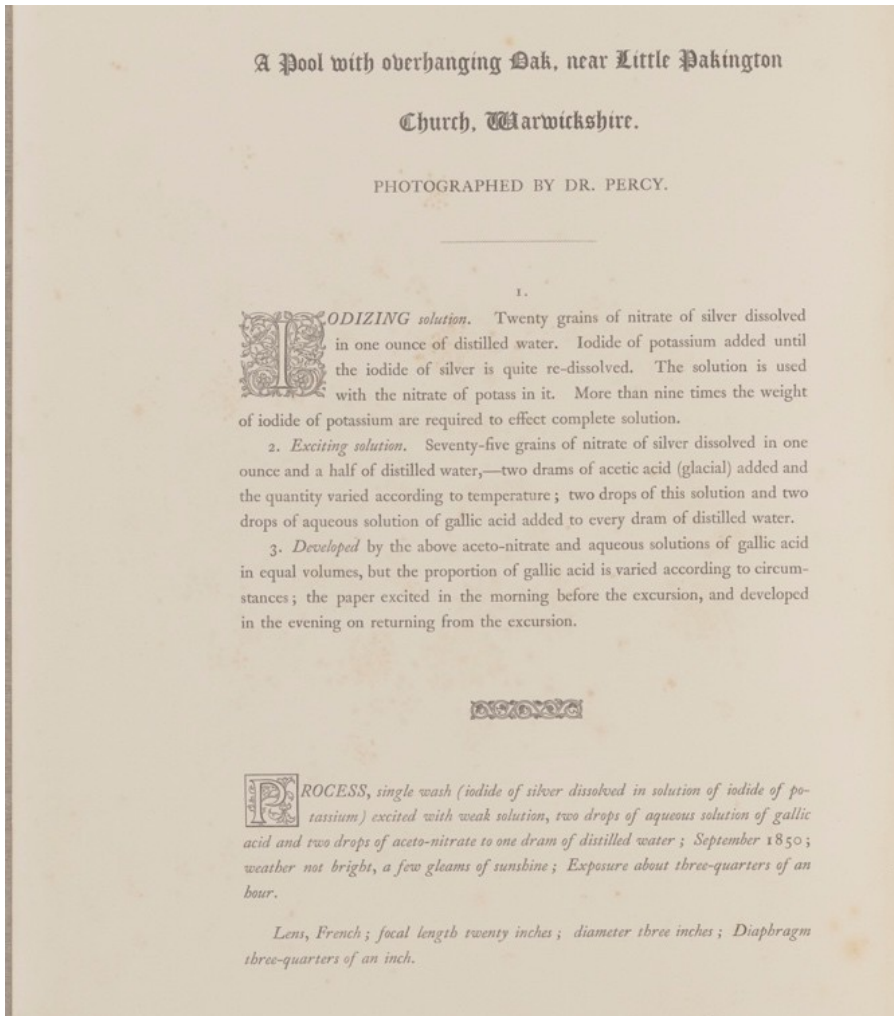


Plate 59: John Percy. Process for 'A Pool with Overhanging Oak, near Little Pakington [sic] Church,' Warwickshire, September 1850, Salt print from Calotype, 20.2 x 25.5 (cm), Getty Museum, Los Angeles in The Photographic Album for the Year 1855, object no. 84.XA.871.6.7

I have mapped the places where it is possible to see where Shaw, Percy and Henshaw and others made their photographs and paintings in the parkland in

³⁷² John Percy 'A Pool with Overhanging Oak, near Little Pakington (sic) Church, Warwickshire' *The Photographic Album for the Year 1855 Being Contributions from the members of the Photographic Club*. Salted Paper Print, 20.2 x 25.5 (cm), Getty, Los Angeles.

illustration 41, below. This visualises that they are working in an area to the north east of the parkland close to the railway. The proximity of their existing works to the railway line suggests the importance of the railway and its raised sections of embankment and bridges in seeing the landscape photographically from the new, raised viewpoint that the railway line offered.



Name: PACKINGTON HALL

This is an A3 sized map and should be printed full size at A3 with no page scaling set

Illustration 41: English Heritage, *Map of Packington Park with annotation by Jo Gane, 2025.*

We can see that the railway, pictured above on the northeast edge of the map makes this group able to access the landscape offering a collaborative way of working in the landscape underpinned by technological progress in the railways as well as in photographic processes. The activities of Shaw, Henshaw and Percy in the parkland at Packington on experimental photographic and sketching visits sets up a social and collaborative system of making artwork, seeing and representing the landscape that continues throughout their careers.³⁷³ In 1857, Frederick Henry Henshaw corresponded with chemist and early photographer John Spiller during a sketching trip in Llangollen.³⁷⁴ Henshaw discussed collecting photographs of the landscape and Shaw's visits and activity;

'My friend Mr Shaw has paid me a fortnightly visit staying with me from Saturday to the following Wednesday. [...] Mr Shaw tells *me often* as I will engage to spend next summer here. He will engage to come and take some Photographic Pictures – he talks of adopting the dry process. This year he has been most intent upon water colour drawing & some very charming things he has done. I have not heard him think of any of his Chemical or other pursuits. Art has enchanted him entirely whilst here.'³⁷⁵

Henshaw's statement above that art, or more specifically watercolour painting, had enchanted Shaw entirely in 1857 concludes this sketch of the activities of this group with Shaw moving away from photography on this trip.³⁷⁶ Shaw's use of watercolour illustrates his desire to spend time in company in the landscape and record the beauty of the landscape using a range of artistic media both at Packington and further afield in Wales. This suggests a social drive to create in company rather than photography specifically is at the root of Shaw's landscape activities at this date. Shaw's experimental interests in photography as a chemist and patent agent meant

³⁷³ Frederick Henry Henshaw, letter to George Shaw from Stafford, (private collection), August 21st 1866.

³⁷⁴ Spiller was Percy's assistant; John Spiller, "Early Experiments, by Dr Percy and Mr George Shaw on the Chemical Phenomena of Light," *Photographic Journal* 30, (March 1890): 121 – 125.

³⁷⁵ Frederick Henry Henshaw, Letter from Llangollen to John Spiller, (Wellcome Collection, 5151/B 1857).

³⁷⁶ Correspondence from 1869 confirms that Shaw continues to take photographs after 1857: Frederick Henry Henshaw, letter to George Shaw from Stratford, (private collection), August 21st 1869.

that he was interested in the latest technological advances. By 1857, photographic processes were established and relatively stable and so no longer appealed as keenly to his pioneering experimental instincts. Watercolour became a more attractive, relaxing artistic challenge during his time away from the city. It is likely that the plate below is a watercolour which Shaw made on one of his visits to see Henshaw during this year.³⁷⁷



Plate 60: George Shaw, *Valle Crucis Abbey*, 1857, Watercolour, no dimensions, private collection.

Shaw, Henshaw and Percy's longstanding activities in the landscape reflect a hegemonic, western, white, male gaze that has persisted in the representations of the English landscape.³⁷⁸ As a woman making artwork in the landscape I am both contributing to and resisting this vision through my practice by aiming to make the processes of working in the landscape and the histories that are inscribed there

³⁷⁷ *ibid.*

³⁷⁸ Liz Wells, "Mr Andrew's place: picturing the land is hard for women. Liz Wells deconstructs the English landscape." *Women's Art Magazine* 52 (May-June 1993) *ale Academic OneFile* (accessed June 19, 2025). <https://link-gale-com.bcu.idm.oclc.org/apps/doc/A262786511/AONE?u=uce&sid=bookmark-AONE&xid=e48ec28a>.

visible. Alongside drawing and walking in the parkland I have made a series of 50+ new calotype photographs and salt prints in these areas at Packington Park, some of which are pictured below in figures 27-32. My calotypes are included in the accompanying exhibition and artists publication.



Figure 27: Jo Gane, *After George Shaw, A rustic bridge (removed)*, February 2022, calotype negative, 16.4 x 12 (cm), Packington Park.

Figure 28: Jo Gane, *After George Shaw, A rustic bridge (removed)*, February 2022, salt print, 16.4 x 12 (cm), Packington Park.

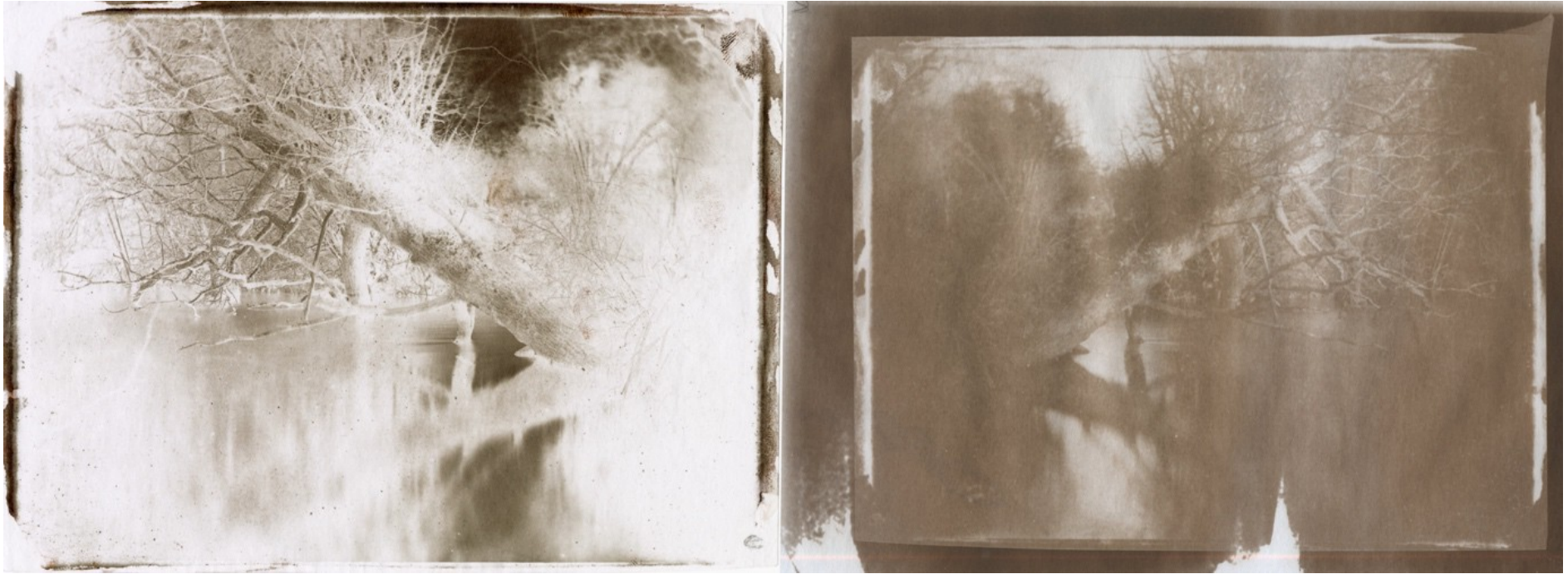


Figure 29: Jo Gane, *John Percy's Pond*, February 2022, calotype negative, 16.4 x 12 (cm), Packington Park.

Figure 30: Jo Gane, *John Percy's Pond*, February 2022, salt print, 16.4 x 12 (cm), Packington Park.



Figure 31: Jo Gane, *After Frederick Henry Henshaw, Weather-Blasted Oak*, February 2022, calotype negative, 16.4 x 12 (cm), Packington Park.
Figure 32: Jo Gane, *After Frederick Henry Henshaw, Weather-Blasted Oak*, February 2022, salt print, 16.4 x 12 (cm), Packington Park.

Photographic curator and theorist Liz Wells has written extensively about the difficulties of depicting often invisible history in a visual form through photography in the landscape.³⁷⁹ These issues of visibility play a part in my work. I represent the invisible history of the landscape at Packington through the titles of my images which reference images that have been made before. In my work the historical photographic process that I re-create alongside the interaction between materials and people in the landscape form an image of place that communicates the history of the site. I aim to reconnect the process of making to the discussion of landscape. In this sense, perhaps my work aligns with a generation of land artists working in a sculptural form in the landscape who highlighted the interface between place and material.³⁸⁰ The importance of landscape in the formation of national identity has been discussed by photographic historian Joan Schwartz who articulates that photography is a ‘powerful ally’ to the geographical imagination. In my work, I deal with historical binding of the English national identity to the oak tree by representing ancient oak trees as traces of the past which persist today. The oak tree in figure 31 and 32, a relic of the past, questioning itself with a finger pointing to the sky.

In my exhibition at Compton Verney alongside the portraits I made at Nuneaton library in 2023, as described in chapter five, I wanted to communicate the act of experimental making in the landscape with materials that Shaw, Henshaw and Percy were exploring in Packington Park during the 1840s. Compton Verney is a very similar landscape to Packington because both were remodelled in the mid eighteenth century and sit in Capability Brown landscaped parkland. I wanted to make the photographic process visible in the landscape so working on a large scale in the

³⁷⁹ Liz Wells, “Hidden Histories and Landscape Enigmas” *Photographies* 12 (2): 177–193. doi:10.1080/17540763.2019.1582434.

Liz Wells, *Land Matters, Landscape Photography, Culture and Identity* (Abingdon: Routledge: 2011).
Joan M Schwartz and James R Ryan, “Introduction: Photography and the Geographical Imagination” in *Picturing Place, Photography and the Geographical Imagination*, ed Joan M Schwartz and James R Ryan (London : IB Tauris, 2003), 1 – 18.

³⁸⁰ Andy Goldsworthy, *Holes, Middleton Woods, Yorkshire*, 1981, Photograph, silver gelatin print on paper, 393 x 293 (mm), Tate, London.
Richard Long, *A line made by walking*, 1967, Photograph, gelatine silver print, 840 x 1139 (mm), Tate, London.
Robert Smithson, *Spiral Jetty*, 1970, Basalt Rock and Earth, 18000 x 180 (in), Great Salt Lake, Utah.
Tacita Dean, *Trying to find the Spiral Jetty*, 1998, cassette tape, 10.8 x 7 (cm), MOMA, New York.
Helen Chadwick, *Piss Flowers*, 1992, bronze with cellulose lacquer, 70 x 65 x 65 (cm) Richard Saltoun, London.

Susan Derges, *River Taw*, 1997, silver gelatin print, 154 x 52 (cm), Ingleby gallery, Edinburgh.

open articulated this more clearly. Showing the darkroom process as a performance communicated the acts of experimentation in the landscape which were key to this nineteenth century group of artists.

I'd made water photograms in the River Cole previously. I tested making nocturnal water-grams again in 2022 in the River Blythe at Packington, in front of the crumbling bridge and viaducts, submerging silver gelatin photographic paper under the fluid surface of the landscape, next to the pole which formed an unstable memorial to Shaw's calotype photograph of a bridge (see figures 24, 25, 26 and plate 54). Here, I fired a flashgun and froze both myself and the shape of the water to make photographic images. I pulled photographs from the river, allowing images to surface in developer in the nocturnal landscape under the lights of planes and light pollution from the nearby NEC and BHX airport which threatened to fog the paper, see illustration 42.



Illustration 42: Richard Gane, Making Water Photograms, January 2022, Packington Park.

The movement of aeroplane lights overhead felt like the sensation of looking at James Poole's painting of Donati's comet, pictured in plate 61, below. We met James Poole in the previous chapter, when he was photographed by George Shaw (see plate 33 and 34). Poole had emerged in the same group of painters as Henshaw and Creswick, from Joseph Vincent Barber's drawing academy. Poole joined Creswick and Cox in the landscape on a sketching visit in Betws-y-Coed.³⁸¹ After moving from Birmingham to Sheffield he remained an occasional visitor to Henshaw's studio.³⁸²

The prominence of water in Poole's work is explained in his obituary which explains that he was drawn to bodies of water as a fly fisherman and as a young boy frequently fished without waders, a phenomenological sensation which would return to him in old age;

'very frequently, the angler overcame the artist, and the ruling passion, coming strong upon him, he would go into the water up to his knees, according to his wont in younger days. When gently reproved by his friends for his indiscretion he would quietly excuse himself by saying, 'The temptation was too strong ; I could not help it.'³⁸³

³⁸¹ Poole's obituary states; 'Mr. Poole made the acquaintance of David Cox, an association which ripened into companionship and friendship. They went on sketching expeditions together, notably in the Betws district, and it is said – we know not how truly – that when Cox painted the famous signboard for the Royal Oak at Bettws, Poole held the ladder for him.'

"The Death of Mr James Poole, Landscape Painter" *Lichfield Mercury*, Friday 19th March 1886.4.

³⁸² 'Death of Mr James Poole, Landscape Painter.' *The Lichfield Mercury*, Friday March 19 1886

³⁸³ 'Death of Mr James Poole.' *Sheffield Daily Telegraph* Monday March 15 1886



Plate 61: James Poole, *Donati's Comet*, 1858, Oil on Canvas, 58.5 x 89.5 (cm), Sheffield Museums, accession no. K1908.66.

My work in the lake at Compton Verney, described in the accompanying practice diaries, is titled after Poole. I'm drawn into the lake to explore the hidden flows and textures that move beneath the surface that become visible in my prints, see figure 33, below.³⁸⁴ Poole's appreciation of the sensation of standing in water and the companionship of his fellow painters fuel his painting practice as they do my making. His practice surfaces in the prints I make in the lake at Compton Verney. In the lake, as can be seen in the film via the link below and in figure 34, I collaborate with my friends, Shiam Wilcox and Helen Wheatley to experiment with paper photographic materials and processes. This performance of photography in the landscape aims to create a sense of time travel via the senses to explore the fluid sensations of early photography in the landscape that is often forgotten by contemporary photographic practice.³⁸⁵

Raft. After James Poole. <https://vimeo.com/900533900>

³⁸⁴ There are more flows at Compton Verney than other swimming spots, because it is river fed at both ends and there tends to be more weed in the lake because it is shallow.

³⁸⁵ Jeff Wall, "Photography and Liquid Intelligence" *Jeff Wall, Selected Essays and Interviews*, (New York: MOMA, 2007): 109 – 110.



Figure 33: Jo Gane, *Raft: Water Photogram III*, July 2023, silver gelatin paper, 120 x 50 (cm) Compton Verney.



Figure 34: Jo Gane, camera Duncan Whitley, *Raft, After James Poole*, July 2023, Compton Verney.

I conclude this chapter having proven that the parkland at Packington is a site for material transformation, now and historically. We have seen that collaborative experiments with photography took place in the landscape at Packington Park, alongside sketching and painting from the Birmingham School of Artists during the 1840s and 50s. I've argued that these working practices are grounded in the landscape at Packington and come from a history of drawing in the parkland, notably by Louisa and Heneage Finch from the 1780s in the generation that precedes the invention of photography. In tracing links between early photography and painting I've shown the clear alignment of the two practices and generated new knowledge of pre-photographic drawing in relation to photographic practice. I've shown that the landscape in Packington Park is important in pre-figuring photographic activity. Here early photographic processes sat in close, reciprocal relationships with painting and observational drawing.

The social activity of collaboration in the landscape at Packington and in Henshaw's studio amongst groups of interdisciplinary artists and scientists offers a productive method of collaborative practice in a place across arts and science. This historical collaboration feeds my contemporary practice as collaboration and experimentation is an essential element of my work. My new calotypes were made in collaboration with the landscape environment and its history. I've collaborated with my friends in the landscape and with historical figures, the previous inhabitants of the landscape, Shaw, Percy, James Poole and Louisa Finch, to name but a few.

In making the work in this chapter of my study, I've developed an increased awareness of how a slower photographic practice with historical materials involves inhabiting a place. This closer physical connection to a place in turn creates an awareness of the environment and an ecological consciousness of the way in which human activity impacts upon and is impacted by the landscape. Further, the experience of spending time in the landscape has the potential to foster deep connections with place which can begin to erode barriers of class and gender. All these factors combine to make Packington Park an important location for art and photography in history and suggests potential for future sustainable creative activity in the landscape. My practice has explored methods of creating slowly and through this forming connections to the place by working with and within the natural

environment. I have moved my practice beyond the private landscape of Packington into the public realm at Compton Verney. The landscape at Packington informs us of photography's capacity to access the past whilst speculating on future ways of working. The photographic history at Packington has surfaced and landed, grounded in practice.

Chapter 7. Conclusion

Findings and Contribution to Knowledge

In the research articulated through this written thesis, my artist's publication and the accompanying exhibition, I have answered my initial research questions. I have articulated the importance of George Shaw's work both historically and today. I've found that Shaw's relevance extends today to collaborative art practice across materials, portraiture and in the landscape. My re-creative practice has generated new knowledge about the role of historical photographic materials and processes.

To answer my second research question about the role of re-creative practice in generating new knowledge accurately I first needed to understand the wide-reaching scope of Shaw's early photography across varied processes and locations. I have conducted extensive research both in the archive and through practice to understand and articulate the narrative of Shaw's work. By looking at objects in the archive I've generated knowledge of his practice, exploring the touch of the materials and the shape of the landscapes he worked with to understand and articulate the challenges he faced and the impact of his work. I have used my understanding of the narrative of Shaw's work to test the processes he used and explore the locations where he worked. My research results in an important methodological contribution, the use of re-creative and art practice to understand, share and articulate historical information through tacit knowledge.

My work offers a contribution to historical knowledge in photographic history and industrial histories. I have narrated Shaw's historical practice in Birmingham and further afield in the landscape, tracing his interdisciplinary work in the arts, science and business. I have connected relevant objects in a wide range of archives that have not previously been brought together, including the private collection of Shaw's daguerreotypes and related ephemera which only recently came to light through the work of the late Pete James, the collection of calotypes in the Musée D'Orsay,³⁸⁶

³⁸⁶ A collection of 26 calotypes by George Shaw were acquired by the Musee D'Orsay from Christies in 1981. Accession no. PHO 1981 50-71.

John Percy's notebook in the Science Museum collection³⁸⁷ and a significant large-scale daguerreotype in the collection at the National Science and Media Museum.³⁸⁸ My research has brought more distant objects back into the orbit of Shaw and his circles, such botanical drawings of Lady Louisa Finch³⁸⁹ and John Stephen Woolrich's Magneto Dynamo³⁹⁰ alongside many landscape paintings by painters of the mid-nineteenth century Birmingham School.³⁹¹ Bringing together these objects to tell Shaw's story offers the opportunity for further research that will be the subject of ongoing study. I intend to continue to work on Shaw's portraiture and his later business interests in water in the future.³⁹²

As a visual artist working with photography my study offers a contribution to knowledge in contemporary photography. During this study I've made several bodies of new photographic work in portraiture and the landscape that have been exhibited in leading galleries and locally in the communities where they were made. Through my work making photographs, I understand that as a material process, photography is a collaborative, equitable conduit for stories of history and memory that allows for an expression of connections to a place. Photographic material has the potential when handled with care to shift the power balance that exists between the photographer and person or place being photographed to a more level ground. Material photography makes visible the problematic nature of photography both ethically and environmentally. When brought to light, ethical and environmental problems inherent in photographic practice can be addressed in plain sight through the making process. Material photographic processes offer potential for future work on the sustainability of photographic practice, both in terms of the use of more environmentally sensitive materials and processes and in the use and value of photography as a social, participatory practice.

³⁸⁷ John Percy 'Light. Oct: 1844' Science Museum collection MS 0716

³⁸⁸ JJE Mayall, *Outsize daguerreotype portrait*. 1849. 63.3 x 74.1 x 2.4 (cm) National Science and Media Museum, Bradford MS 1934-649.

³⁸⁹ Lady Louisa Finch, *Botanical Watercolours I and II*, c.1784-1820, Watercolours on Paper, 51.44 x 40.32 x 6.67 (cm) Minneapolis Institute of Art ref. 2020.77.1 and 2020.77.2.

³⁹⁰ Thomas Prime and Son, 'The Woolrich Electrical Generator,' Birmingham Museum Trust collection, ref 1889S00044 on display at Thinktank, Millenium Point, Birmingham.

³⁹¹ Wildman, *The Birmingham School* (

³⁹² From 1862, Shaw was a director of Birmingham Waterworks Company.

"Birmingham Waterworks Company," *Birmingham Daily Gazette*, Thursday 17th September 1863. 6.

This study has shown the value of photographic practice in action, demonstrating the collaborative, social development of photographic materials in relation to place, both historically and in contemporary practice. It goes beyond an explanation of interdisciplinary, collaborative social values to show how these operate amongst groups of interconnected individuals across science, industry and art.

Methodological Review

I have developed my methodology to reflect my practice as an artist. The two are inseparable: my methodology is my practice. In this study I've seen the value of my re-creative practice with historical photographic materials. The importance of tacit knowledge to be gained through the hands and methodologies of practice and making has been recognised by academics across a broad section of the social sciences, arts and humanities, such as Smith, Edwards, Sibum and Nasim, as articulated in chapter 2.³⁹³ My study builds on the work of these scholars and many others, adding to a new wave of research about industrial and photographic processes and the sources of materials.³⁹⁴

Recreative practice is not new having been successfully established in previous photographic work by practitioners such as France Scully and Mark Osterman, Mike Robinson and Mark Klett as previously explained in chapter 2. However, my approach to re-creative practice as a method for understanding Shaw's work has moved throughout this study from an established recreative methodology to a more experimental form of re-creative art practice. This sensory, art and performance approach to re-creative practice borrows from methods commonly used by contemporary visual artists and is not often used to inform historical research.³⁹⁵ However, re-creative art practice plays a part in many successful artists practices that offer a sense and experience of history and materials, such as in artwork by established contemporary artists Cornelia Parker, Jeremy Deller and Mat Collishaw.³⁹⁶ All of these artists use comparable processes to those I've used in this

³⁹³ 39

³⁹⁴ 53

³⁹⁵ 38

³⁹⁶ Jeremy Deller, *The Battle of Orgreave*, (Artangel: 2001)
Cornelia Parker, *Shared fate (Oliver)*, (1998)

study to access and communicate a sensory experience of historical events. Artists deal in sharing sensory qualities of experiences, materials and processes.

In chapter 2, I define the way I am using re-creative practices to understand the sensory nature of photographic processes and connect them to place. Throughout this study, I have arrived at the realisation that I cannot separate out re-creative practice, performance and art practice. Re-creation and performance are means of making and sensing that are my own method of re-creative art practice-performance. More simply put, this is my practice as an artist.

Making visual art as research has recently become more established in academic discourse and holds implications for future study as a method of addressing historical narratives because foregrounding sensory experiences is subjective.³⁹⁷ However, this subjective and bodily experience of the subject matter is a strength in my methodology. Direct experience offers a close link to historical activities that communicates in a relevant way by bringing into play the distance from history created by time. The extent to which history is always partial, biased and fragmented is something which is a familiar battleground for historians and whilst some scientists may strive for objectivity in their work, this is not something which scientific experimentation as a bodily practice offers readily. I invite people to think of history as a continuous, connected and human cycle through my work rather than a chronological, linear passing of time.

Art practice enables both an articulation of stories through material making and a sensory understanding of the feeling of these material processes, ultimately facilitating an imaginative form of time-travel. I hope this allows the viewer of my images and the reader of this study to connect to the work of George Shaw in early photography and understand the bodily feeling of his practices. In this study, I have

Mat Collishaw, *Thresholds*, (2017)

³⁹⁷ Bolt, *Practice as Research*.

Patricia Leavy, *Method Meets Art: Arts-Based Research Practice*, (New York: Guilford Publications, 2020).

Hazel Smith and Roger T Dean, *Practice-led Research, Research-led Practice in the Creative Arts*, (Edinburgh: Edinburgh University Press, 2009).

Graeme Sullivan, *Art practice as research: Inquiry in visual arts* (New York: Sage Publications, 2010).

made connections across time and place which form the root of this articulation of a historical story through new images, performance and place.

Chapter Summaries

In chapter three, I articulate that Shaw is in an ideal position to develop and use photography because of his family background and his place in the city. My practice allows me to imagine the city in the 1840s and consider how it felt for Shaw to make daguerreotypes of the Pantechnethca.

In chapter four I investigate the specifics of silver plate materials made in Birmingham in the 1840s because Shaw was using electro-plate silver to make daguerreotypes and was an expert in electro-metallurgy.³⁹⁸ I take a deep dive into the manufacture of electroplate, an industrial technology that comes from Birmingham-based manufacturing innovation. Technological advances in the manufacture of silver plate in Birmingham have not previously been connected to photography. I show how Shaw collaborated with silversmith and electroplater Francis Marrian to make daguerreotype portraits. This collaboration through materials has been lost as the camera has become a black-boxed technology today. I collaborate with contemporary electroplater and daguerreotypist, Joaquin Paredes Piris to test the specific qualities of electroplate silver in comparison to more traditionally manufactured clad silver plate. I explain how the material qualities of electroplate alter its handling and use in the daguerreotype process. When plated at a higher voltage it is granular and hard but at lower voltages it is soft and fine. Electroplate in comparison to clad plate is much softer, which I argue offers an improvement to photography when used in a commercial setting. It polishes more readily even when using a soft microfibre cloth as seen in illustration 97 below. Decreasing the lengthy polishing process would be a significant commercial advantage in a busy nineteenth century portrait studio. The softer plate surface is better for photographic use, offering a perceived improvement in the speed and quality of the image. Finally, as electroplating deposits pure silver, it removes the issue of contamination from impure clad silver plate in the daguerreotype process. I

³⁹⁸ Ian Moore (photographic conservator) in discussion with the author, Friday 17th June 2022. George Shaw *A Manual of Electro-Metallurgy Vol I and II*.

conclude that electroplate silver offers an improvement to the daguerreotype process.

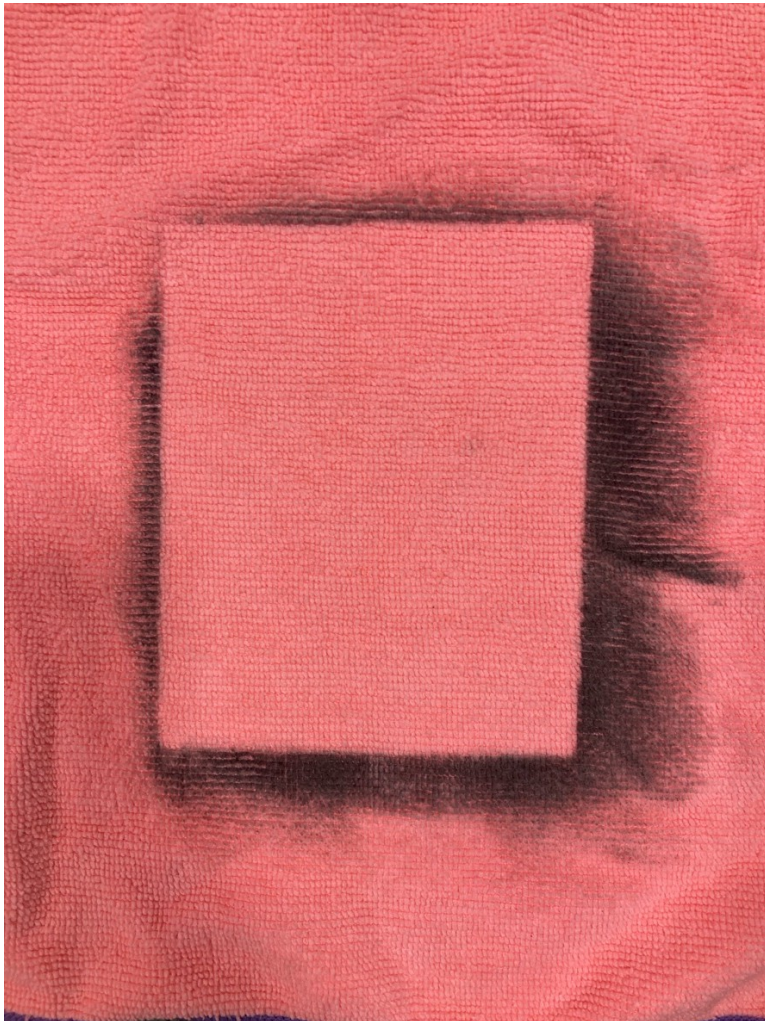


Illustration 43: Jo Gane, *Residue from polishing a daguerreotype plate*, 14th February 2023, i-phone photograph, Caceres, Spain.

Following these experiments, I devised a performance with audio visual artist Leon Trimble in the gallery space at Compton Verney, to engage a gallery audience in a sensory experience about the qualities of photographic materials. This sensory experience was an audio-visual projection of electron microscope scans of photographic materials and a spoken performance, developed from Benjamin James Pratt Marrian's paper on the sonorous qualities of the magneto-dynamo.³⁹⁹ This performance articulated the qualities of silver in a sensory and visual form, bringing my historical research and re-creative practice into the present day.

³⁹⁹ J.P. Marrian "LXVI. On Sonorous Phaenomena in Electro-Magnets," *Philosophical Magazine and Journal* 25, (July – December 1844): 382 – 384.

In chapter five, I investigated the networks of people surrounding George Shaw. Here I made the significant discovery that a unique large-scale daguerreotype of a previously unknown sitter is of George Shaw by providing evidence for an ongoing collaboration between Shaw and photographer John Jabez Edwin Mayall.⁴⁰⁰

I considered the impact of the exhibition of this large-scale daguerreotype pictured below in plate 61, in Birmingham in 1849.⁴⁰¹ The scale and material qualities of the silver plate serve to celebrate and elevate Shaw's status as the secretary of the exhibition, making him an iconic symbol in this exhibition of the success of innovative industrial manufacture in relation to photography.



Plate 61: JJE Mayall, *Outsize daguerreotype portrait*. 1849. 63.3 x 74.1 x 2.4 (cm) National Science and Media Museum, Bradford MS 1934-649.

reproduced in DB Thomas, *The Science Museum Photography Collection* (London: Her Majesty's Stationary Office, 1969), 52.

Accessed at Pete James Archive, ADM Archives, Birmingham City University, ref research papers, misc5. AA3:008

Note; The figure for scale and Pete James red pen mark circling this entry.

⁴⁰⁰ JJE Mayall, *Outsize daguerreotype portrait*. 1849. 63.3 x 74.1 x 2.4 (cm) National Science and Media Museum, Bradford MS 1934-649.

⁴⁰¹ *Catalogue of the Articles in the Exhibition of Manufactures and Art in connection with the Meeting of the British Association for the Advancement of Science*. (Birmingham Central Library collection ref. L./50/61; 129458. 1849):7.

My interpretation of this historic portrait of Shaw has a significant practical, contemporary application. I celebrated people in my community by making large scale portraits using an outsize Victorian studio camera and wet plate collodion. There is an important caveat to be made here that this is about scale as seen in plate 66 above and that wet plate collodion is not the daguerreotype. However, wet plate is an accessible period process for me to work with in public. An essential part of successful re-creative practice is the improvements that practiced hands can bring to the tacit knowledge held in material processes and I am practiced in wet plate collodion. Making processes require extensive repetition to perfect. I made a large number of large scale wet plate portraits with the public in my community in Nuneaton town centre. I shared materials and processes with people as we made portraits together, pictured below in figure 35 which is one of two 'self-portraits' made collaboratively with photographer Jason Scott Tilley, see also figure 1.

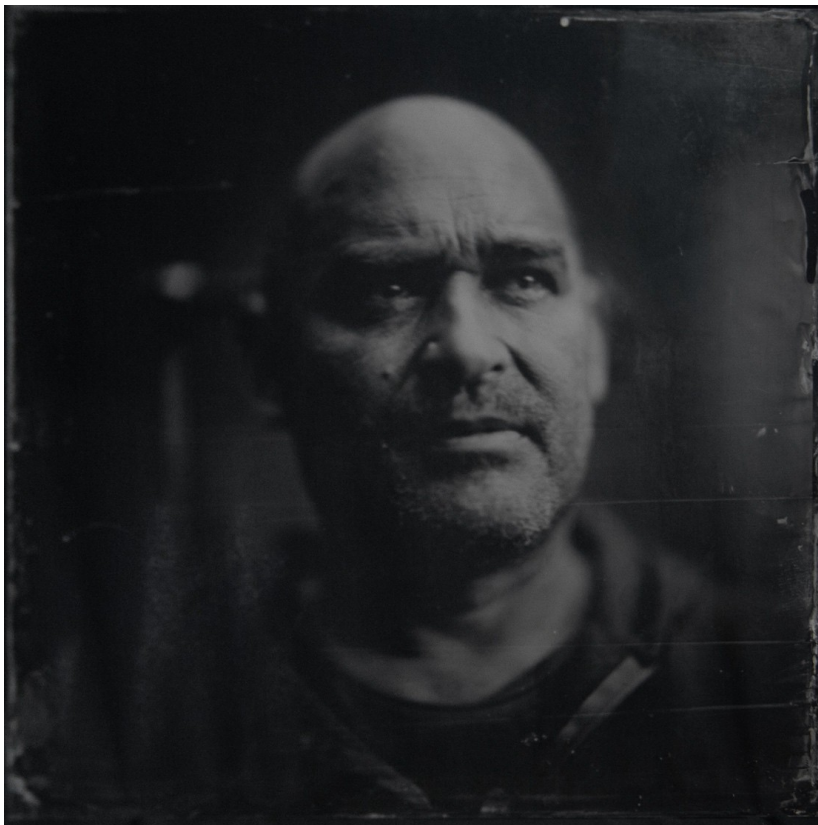


Figure 35: Jo Gane and Jason Scott Tilley, *Self Portrait*, April 2022, clear glass ambrotype, 38 x 38 x .2 cm, artist's own collection.

I discovered the value of using historical photography as a material process in public. The age of my camera made people want to be photographed and invited them to

talk about their histories. The camera and process facilitated conversation and allowed me a way into understanding the stories of people I was photographing. A curiosity driven by the camera and process seemed to make people less self-conscious, making the photographic process more convivial and even-handed. I explained the process as I made photographs, offering a story of materials as they transform in exchange for the time and stories of the person being photographed. My findings here build on the accepted knowledge of the value of photography as a social practice to offer the value of historic, material photography as a more equitable knowledge exchange and the historic camera as a facilitator of memories.

Following this understanding of contemporary stories of place and memory in Nuneaton, I identified two daguerreotype portraits by Shaw as landscape painters James Poole and Thomas Creswick. In naming these men, I have reconnected their stories to their images. The connection between Shaw and these landscape painters, along with his ongoing friendship with landscape painter Frederick Henry Henshaw and his nephew, daguerreotype plate manufacturer William Barlow Henshaw begins an investigation into the roles of photography and painting within Shaw's networks in chapter six.



Illustration 44: Jo Gane, *In the new plantations at Packington, with George Shaw's images*, 28th September 2021, i-phone photograph. Laser prints of Shaw's calotype negatives in the Musee D'Orsay accession nos. PHO 1981 51 and 63, reversed.

In chapter six, I look at George Shaw's collaborative work in the landscape at Packington Park, alongside landscape painter Frederick Henry Henshaw and John Percy. I explored the landscape at Packington by walking with Shaw's photographs as in illustration 44. I pinpoint places where Shaw made several of his calotypes. This on the ground knowledge of place enabled an understanding of the land at Packington which allowed me to understand the composition and choices which Shaw made when photographing in the landscape. I've tested the calotype process in the landscape to study how the environmental conditions in the landscape affect the qualities of the image, developing an understanding of the impact of time and place on the calotype process. I understand that Packington is an important place for photography in Birmingham, firstly because of the shape of the landscape and picturesque qualities of the ancient trees. The railway which ran through the parkland at Packington made the landscape visible from high ground and easily accessible

with time to return to Birmingham to process Calotype negatives before they spoil. I've used similar chemistry in my calotypes and analysed the images which result from an interaction of these materials with the place at Packington.

I've made a tactile connection between William Withering's paper on fulgurite found in the parkland to the later manufacture of silver and glass in the industrial city of Birmingham, via the botanical drawings of Lady Louisa Finch. Articulated through sensory experiences in the accompanying artists publication, the touch of materials and my experience of the place in the parkland at Packington makes a connection across time to bring Shaw's story into the moments when I'm making calotypes there in 2021 and 2022. The close relationship between early photography and drawing I articulate in the landscape at Packington position photography as a situated practice that communicates the specifics of a place. This offers a way into experiencing photography as a sensory collaboration between materials and the environment is further communicated in my practice by a performance in the lake at Compton Verney, pictured in figure 36, below.



Figure 36: Jo Gane, Still from 'Raft: After James Poole,' July 2023, Compton Verney, 09:14, 1.30. <https://vimeo.com/900533900>

The specific linking of photography and place with a close connection to environmental conditions in this chapter of my study in Packington park allows for a

way into future research into more environmentally sustainable photography. Photography as a material process can raise awareness of the impact of our material consumption on the landscape, advocating for more sustainable use of materials which impact on future environmental issues. The calotype process is a relatively sustainable form of photography as it uses a paper-base and only small amounts of silver, developed into larger image particles through their development with gallic acid which is derived from oak galls.

New Directions for Future Research

The scope of this PhD ends in 1857, when Shaw paused from his chemical pursuits in Llangollen with Frederick Henry Henshaw, and instead made watercolour paintings in the landscape.⁴⁰² From 1863 Shaw was a director of The Birmingham Waterworks company.⁴⁰³ In future research, I intend to explore Shaw's work with the Birmingham Waterworks company and the water supply to Birmingham during this period when it moves from sources in the Blythe valley at Packington to Wales. I'll look more closely at Shaw's practices with the group of landscape painters from Birmingham, exploring and making new work about water supply and land rights. This will then lead into further exploration of a portrait in the private collection I have not included in this PhD which needs space for its own detailed study.

Further to this, I'm beginning to develop new work testing and developing the potential I've noticed in these early processes for social, collaborative photography. I've been commissioned to make new photographs using material, historical techniques in contemporary social practice in a project photographing community events with Open Eye Gallery, Liverpool. I'm working with the Exchange, University of Birmingham to share historical stories of their building, Birmingham's first municipal bank with people in local communities and encourage them to share their histories.

⁴⁰² Frederick Henry Henshaw, Letter from Llangollen to John Spiller, (Wellcome Collection, 5151/B 1857).

⁴⁰³ "Birmingham Waterworks Company" *Birmingham Daily Gazette*, Thursday 17th September, 1863.

Beyond this study, the value of my re-creative methods can be seen as I've utilised re-creative practice to generate new knowledge about important photo-history collections in the Talbot collection at the Bodleian library. At the Bodleian, I was commissioned to re-make some of Talbot's early paper images. These were shown in the Talbot exhibition, 'Bright Sparks: Photography and the Talbot Archive' and they allowed the curators and the public to see and understand Talbot's processes in flux, during the making process.⁴⁰⁴ I've been working with photographic historian Dr Rose Teanby at Lacock Abbey to examine Constance Talbot's role in early photography and will be sharing the historical photographic processes of the photogenic drawing and calotype that I've been using at Lacock with the public in workshops with the National Trust.

The calotype as a reproducible negative image is the source material for the expansion of a small in-camera negative to many other, larger more visible printmaking processes. I've experimented during this PhD in using calotype negatives as the basis for small, traditionally contact-printed salt prints, that scanned and printed on a large scale engage an audience viscerally with the textures and touch of the material, allowing a sense of the making process through the inclusion of fingerprints and process artefacts which become increasingly noticeable on a larger scale. I've printed calotype negatives as direct to plate (DTP) photo-polymer gravure prints, a process innovated in the School of Art through a combination of traditional and cutting-edge print techniques. Making DTP polymer gravures from digital scans of my calotype negatives has allowed me to reduce the plastic in the printing process, offering an improvement in sustainability. The ink-based printing process offers an expansion of photographic practice into printmaking, through which the ephemeral colour changes in photographic processes can be halted and shared through the grinding of brightly coloured ink pigments. I intend to continue to develop and work with this process. I am learning a new language in ink, that changes the chemical and light drawn image to something more permeant, embedded, embossed in paper. There is a softness in the wiping of the ink on the plates, a tactility that suits the qualities of the calotype, as visible in illustration 45, below.

⁴⁰⁴ "Bright Sparks: Photography and the Talbot Archive", Bodleian Libraries, Oxford University 2023.

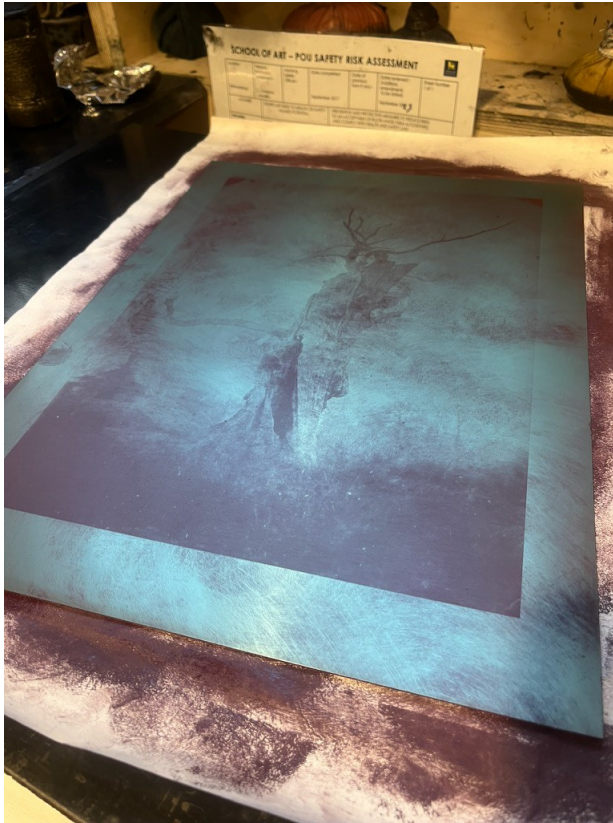


Illustration 45: Jo Gane, *Inking a polymer gravure plate from Packington Park*, March 2025, i-phone photograph, Birmingham School of Art.

I will share Shaw's historic story in Birmingham publicly so that the value of his work is more widely known amongst people in the city. The contribution to photographic history that comes from Birmingham should be a source of local pride, allowing for important connections to place amongst a non-specialist public audience. I'm being supported by Colmore BID to create a visible public exhibition in Birmingham city centre which highlights Shaw's contribution that will go some way to achieving this aim along with publication and exhibition outputs arising from this study. I hope that Shaw's story can become common knowledge, embedded in the fabric of the contemporary city.

My research here offers a perspective of the value of art practice in articulating history and thinking through re-creative practices to activate a historical imagination. It shares and articulates an important historical story in the present day. Contributions to science, history, manufacturing and industry alongside personal stories are all drawn out in this study. I have shown that photography is a collaborative, interdisciplinary process that operates as a form of communication between materials, people and places.

I have presented an informed reading of Shaw's photographs through their making process. This has contributed knowledge about how historical photographic materials behave when used in the environment. I have also articulated how these materials shape the way that people behave during the photographic encounter, offering a contribution to the understanding of photographic portraiture. This results in knowledge and experience of the difference and importance of photography as a material encounter when using historical methods. This study expresses the entangled relationship between, people, material and places in photography, historically and today.

To conclude, my research has found that bringing the past into view in the present is a productive method for exploring the future of photography.

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Appendices

Appendix 1: PHRC Framework for Recreative Practice

1.1 PHRC Recreative practice framework form

Version 4, 6-1-2023

PHRC Framework for Re-creative Practice in the History of Photography and the Moving Image

Use this Framework to explore, define and document the goals, methodology and results of your re-creative experiments in photography and the moving image. Where indicated by an *, see the accompanying Guide.

1	Title of the experiment ...
2	Date of the experiment ...
3	Experimenter/s ...
4	Rationale (why do this?)* o artistic o scientific o historical o conservation o business o other:
4.1	Aim* ...
4.2	Goal* ...
4.3	Objective* ...
5	Historical sources that this experiment is based on ...
6.1	Methodology/summarise*: Which <i>historical element</i> will be re-created using which <i>method</i> , resulting in which <i>new element</i> ? ...
6.2	Experiment details* ...
7	Forms of documentation o written o photographic o audiovisual o other: ...
8	Results* ...
9	Discussion/evaluation* ...
9.1	Crucial elements of the experiment* ...
9.2	Problems encountered* ...
9.3	Limitations* ...
10	Manual knowledge gained * ...
11	Conclusions/new queries forthcoming from this experiment* ...
12	Date of conclusion of the experiment ...

1.2 Guidance notes for PHRC recreative practice framework

Version 4, 6-1-2023

Guide to the PHRC Framework for Re-creative Practice in Photography and the Moving Image

Introduction

...

*Use this Guide to better understand the issues involved in planning, executing, and evaluating your re-creative practice. The following notes relate to the sections in the Framework that are marked with an *.*

1-3. Self-explanatory

4. Rationale (why do this?): The Framework differentiates between the broad *Aim*, the more concrete *Goals* and the even more concrete *Objectives*.
The following explanatory quotes are from [Towndrow 2012/2019](#): “Are aims the same as goals? We could argue they are synonymous but there may be a subtle difference. Goals can be viewed as intermediate steps that come together towards the successful completion of objectives. For example, 'The aim of this research is, ultimately, the mapping of the whole human genome. Our first objective is to develop a reliable method of high-speed DNA sequencing. Within two years, our goal is to sequence the entire X-chromosome.' ([source](#)) We might best view goals as sub-objectives.”
- 4.1. “Aims are general statements that provide direction and/or identify an intention to act. Aims identify targets but these are not directly measurable. For example, 'Maria's aim is to lose weight'. In education, aims state what a learner might learn or what the teacher might do.”
In terms of content: Are you aiming at re-creating a historic process to understand how it worked/happened, and/or are you conducting a new experiment to understand the science/chemistry/etc behind the historical experiment/event?
- 4.2. “A goal is a high-level, non-measurable statement concerning a broad, open-ended measure of achievement. For example, 'To develop the ability to guess the meaning of unknown words from context'. Typically, goals are vague in the sense that they do not specify a time period for completion or quantity.”
- 4.3. “Objectives are statements about what is to be achieved in concrete terms. These can be SMART – that is, Specific, Measurable, Achievable, Realistic, and Timed. For example, 'Read all 500 pages of the course textbook by the end of the semester.' In education, objectives are specific statements about what a learner will be able to do (or do better) as a result of a particular objective (Rowntree, D. 1994. Preparing materials for open, distance and flexible learning: An action guide for teachers and trainers. London: Kogan Page.)”

6.1. Methodology

Summarise: Try to form a simple sentence using the conceptual framework of the table below and following this syntax: Which *historical element* will be re-created using which *method*, resulting in which *new element*?

historical element	method	result
<ul style="list-style-type: none"> - product - process - event - environment - experience 	<ul style="list-style-type: none"> - historical/modern recipe - historical/modern production process - historical/modern/replica device - re-enactment/performance 	<ul style="list-style-type: none"> - new product - new process - new event

Examples:

- A historical product will be recreated using a historical recipe and production process with a modern device, resulting in a **new** product.
- An etched daguerreotype will be recreated using Hippolyte Fizeau's original etching recipe and method, but with a modern camera and lens, resulting in a new etched daguerreotype.
- A view originally photographed by Hippolyte Fizeau will be rephotographed using a modern camera and lens, resulting in a new photograph of the view.

Consider the importance of autodidactic, trial-and-error experimentation, since it may help you improve your physical manipulations during the experiments and enhance your understanding of the topic.

6.2. Experiment details: Recording as many experimental details as possible will be crucial in documenting your work from both a technical point of view as well as in terms of personal experience.

7. Self-explanatory

8. Results: List of results

9. Discussion/evaluation:

- Were you aiming to examine experimental *methods* of the past or the *products* that came out of those experiments (or both)?
 - Which state of the product were you striving to achieve? The successful result of the process or the experimental artefact that is often found in collections)

9.1. Crucial elements of the experiment: Which elements were crucial to the methodology and outcome of your experiment? Consider questions of historical accuracy (for example, how far did you depart from the original recipe?) and your conscious choice of how important this is for your work.

9.2. Problems encountered: To what extent are problems encountered in recreating due to the materials, the techniques and/or the skills needed to execute the historical process/performance?

9.3. Limitations: Are you aware of the limitations of your experiment? Is the experiment sufficient in its methods and materials to function properly? To what extent are the choices you made about your methodology (and perhaps materials and techniques) limiting the value of the results, and what impact will this have on your conclusions? Can your experiment be regarded as following a modern, valid research methodology, or are you rather following a best practice method? Are you being critical with your work and being honest about the flaws?

Directionality: who is making decisions within/during the process; do you direct it in a certain way to get the result that you want to get or are you completely objective?

- How far can you depart from the original recipe?
- How far can you depart from the original practice? (e.g. wearing rubber gloves to handle chemicals)

Time-travel: With the knowledge of today: how much can/should we let our current (supposedly advanced) knowledge influence or re-creation?

- What was the scientific knowledge/practice at the time? -> history of science

10. Manual knowledge gained: What new knowledge is gained in re-creating that enriches the skillset, or tacit knowledge of the researcher?

- How much previous knowledge do we need to ensure that our results are reliable?
 - How can I quantify this scientifically?
 - And how much experience did the original practitioners have? What were their skills?
 - Also, does the final product need to be similar in order for the results to be reliable? That is, you could still learn gesture, method, haptic knowledge, that doesn't result necessarily in the similar object.

11. Conclusions/new queries forthcoming from this experiment: ...

12. Self-explanatory

1.3 PHRC Recreative Practice framework as used for planning re-creating electroplate daguerreotypes

Version 4, 18-11-2022

PHRC Framework for Re-creative Practice in the History of Photography and the Moving Image

Use this Framework to explore, define and document the goals, methodology and results of your re-creative experiments in photography and the moving image. Where indicated by an *, see the accompanying Guide.

1	Title of the experiment Testing the photo-sensitivity of electroplate for the Daguerreotype
2	Date of the experiment February 2023
3	Experimenter/s Jo Gane, Joaquin Paredes Piris
4	Rationale (why do this?)* <input type="radio"/> artistic <input type="radio"/> scientific <input checked="" type="radio"/> historical <input type="radio"/> conservation <input type="radio"/> business <input type="radio"/> other:
4.1	Aim* To understand how the electroplate material used in 1840s Birmingham handled and affected the photographic process in the Daguerreotype
4.2	Goal* To ascertain if the electro-plated silver surface, as produced in a congruent way to the magneto plating process in use in 1840s Birmingham offers a significant improvement to the Daguerreotype process. To see how the voltage and speed of electroplating used affects this. <i>-voltage = speed combine</i> To assess any other apparent differences between clad silver and electroplate surfaces in terms of their handling and behaviour Understand the tactile, bodily nature of photographic materials and the machines that produced them
4.3	Objective* Produce a set of daguerreotype images that function as artwork and a separate set as a recreative test of materials. <i>↳ All images do both in reality.</i> To produce 3 5 x 4 inch electroplated daguerreotypes made at differing voltages and assess the speed of exposure in comparison to 3 clad daguerreotype plates. The content of these images to be recreations of Shaw's daguerreotype of Francis Marrian pouring milk. Measure the exposure times and density of the resulting images in controlled conditions. Understand how making the images feels.

	<p>To produce 3 small (3cm square) material sample images of a colour wheel that can be examined at a later date within a scanning electron microscope to dissect the grain size and materiality of the plate structure.</p> <p>Understand the Improvements offered by electroplate and sense changes in handling to know the feel of the process- and how to communicate the tactile, material relationship of photography to people and places through installation and performance</p>
5	<p>Historical sources that this experiment is based on</p> <p>Existent electro-plate daguerreotypes by and of George Shaw ⁰⁰⁰⁰ h-c.....c, <input type="checkbox"/> <input type="checkbox"/> e..._</p> <p>Woolrich's magneto dynamo</p> <p>Information in Shaw's Manual of electrometallurgy</p> <p>Information on Elkington and Prime's development of electroplating in 1840s Birmingham</p> <p>John Percy's light notebook</p>
6.1	<p>Methodology/summarise*: Which <i>historical element</i> will be re-created using which <i>method</i>, resulting in which <i>new element</i>?</p> <p>New daguerreotypes will be made using the electroplate process to produce the silver substrate using modern cameras and a historic lens for comparison to control daguerreotypes produced in the same session using clad silver plates.</p>
6.2	<p>Experiment details*</p> <p>Voltage that electroplate is produced at</p> <p>Comparison of electroplate to clad plate in controlled conditions</p>
7	<p>Forms of documentation</p> <p><input type="checkbox"/> written <input type="checkbox"/> photographic <input type="checkbox"/> audiovisual <input type="checkbox"/> other:</p>
8	<p>Results* <i>speed / photosensitivity is similar a Clad + Electroplate Slower on Solid Silver. Is possible to get same</i></p>
9	<p>Discussion/evaluation*</p> <p>Use of modern cameras and not the exact same lens that Shaw uses <input type="checkbox"/> 1 <input type="checkbox"/> · ? 0 L <input type="checkbox"/> , v. v. , < L,</p> <p>A magneto will not be used as the power source, however the electrical supply will be constant and kept to a low voltage as per the magneto. This will be compared to Elkington's (ta. _d, D()q <input type="checkbox"/> <input type="checkbox"/></p> <p>plating process which operated more quickly at a higher voltage</p>
9.1	<p>Crucial elements of the experiment*</p> <p>Variations in Daguerreotype plate</p> <p>Use of varied voltages</p> <p>Consistency in exposure</p>

9.2	Problems encountered•
9.3	Limitations• <i>U. □ ofl. f..tc.,il--□ rr-UJrf l..J.c,a</i> <i>for consistency of exposure</i> Modern chemistry (use of period manuals/ conversion. Of weights) Camera not identical Different environmental/ weather/ lighting conditions
10	Manual knowledge gained• Bodily understanding of the Daguerreotype and its making
11	Conclusions/new queries forthcoming from this experiment" Further tests on the hardness of the silver and its grain structure needed In the scanning electron microscope in the lab.
12	Date of conclusion of the experiment <i>17/02/202</i>

1.4. PHRC Recreative Practice framework as used for planning calotypes in Packington Park

PHRC Framework for Re-creative Practice in Photography and Cinematography

Use this framework to explore, define and document the goals, methodology and results of your re-creative experiments in photography and cinematography. Where indicated by an *, see the Critical Questions section below.

1. Title of the experiment: *Calotypes in Packington Park*
2. Aim: *To identify the purpose, methods and place of George Shaw's calotypes made in Packington Park*
3. Goal: *To create new Calotype photographs and through this to develop an understanding of the place and process of Shaw's historic images.*
4. Objectives:
 - 1) *A series of (minimum) 20 new Calotype images*
 - 2) *A set of salt prints from these Calotype negatives*
 - 3) *Writing which contextualises this making and offers and understanding of the place and processes that Shaw was using through the act of making.*
5. Rationale (why do this?)*: X artistic o scientific o conservation o business o other
Details: _____
6. Methodology*:
Which *historical element* will be re-created using which *method*, resulting in what *new element*?

historical element	method	result
x product x process x event	x historical/ modern recipe o historical/ modern production process o historical/ modern/replica device (both – camera not period 1840s - 1870s / tripod? x re-enactment /performance	x new product o new process o new event

Examples:

- A historical product will be recreated using a historical recipe and production process with a modern device, resulting in a new product.
- An etched daguerreotype will be recreated using Hippolyte Fizeau's original etching recipe and method, but with a modern camera and lens, resulting in a new etched daguerreotype.
- A view originally photographed by Hippolyte Fizeau will be rephotographed using a modern camera and lens, resulting in a new photograph of the view.

Views photographed by George Shaw in Packington Park and other locations in the park will be re-photographed using congruent Calotype processes and equipment, resulting in new Calotype photographs and writing about the place and process which shares an understanding of the purpose of their work and the role of place and materials within that.

Experimental details: _____

From October 2021 to March 2022 Jo Gane spent time walking and photographing in Packington Park, exploring and making in the landscape. Equipment used is congruent with that used by Shaw, but not precisely aligned as it is slightly later in period due to the availability of devices. An 1870s half plate camera and Birmingham manufactured Lancaster landscape lens offer the touch of the materials and are congruent with the processes used in the period despite being later (and therefore affordable/ useable). A modern tripod was used for weight and practicality. Modern chemicals were used, weights and measures converted from period documents which detail the photographic processes in use during the period.

7. Forms of documentation: _____

Photographic and written notes. Notetaking later transcribed and expanded upon to produce an 'experiential' writing document.

8. Results: _____

c.20,000 words and 48 new Calotypes

9. Discussion/evaluation*: _____

- *The act of photography was more closely aligned with artistic practices - drawing and sketching in the landscape due to the nature of hand-coating materials and spending time for long exposures in a place.*
- *The images are beholden to the environmental/ weather conditions at the time of their making, much like sketching. And the situation of their maker - the maker's feelings and attitudes towards the place can be transcribed within the materials.*
- *The materials have an agency in their reflexive relationship with the maker and place,*
- *The situation of this specific area of landscape - accessible by train and near the city was important for access and travel to be able to process images in the evenings after excursions.*
- *Chemical formulas were adjusted to make allowances for this delay in processing during travel back to the city*
- *Photography was a collaborative process - Shaw and Percy were working together, along with landscape painters, Frederick Henry Henshaw et al*
- *The images produced came actively after painting - from Percy's collection of landscape paintings*
- *The photographers were situated in a circle of artists who also used the park to make nature studies*

- *These images were in demand by the middle class urbanised population of Birmingham as nostalgia for a generation only just removed from the land.*

10. Conclusions: _____

Early photography in Birmingham came from the uniquely entwined nature of manufactures and art in the city. Photography operated in the centre of this. As such, nineteenth century industrial Birmingham was instrumental in pushing forwards both the artistic and technical development of Photography.

Name and date: _____

Jo Gane May 2022

Appendix 2 Exhibition documentation

2.1 Jo Gane and Jason Scott Tilley. 'My New Brain.' Coventry Cathedral

Supported by the Heart of England community foundation



Appendix 2.1.1: Jo Gane and Jason Scott Tilley, *Self Portraits installed in the vaults*, February 2023, Ambrotypes on Clear Glass, 15 x 15 (in), Coventry Cathedral.



Appendix 2.1.2: Jo Gane and Jason Scott Tilley, *Portraits from 'My New Brain,' installed in the vaults*, February 2023, Ambrotypes on Clear Glass, 15 x 15 each (in), Coventry Cathedral.

2.2 Jo Gane and Jason Scott Tilley. 'My New Brain.' Common Ground, Coventry.

Supported by the Heart of England community foundation



Appendix 2.2.1: Jo Gane and Jason Scott Tilley, *Jason with his self-portrait from 'My New Brain' at Common Ground*, November 2022, Giclée Prints, 15 x 15 (in), FarGo Coventry.



Appendix 2.2.2: Jo Gane and Jason Scott Tilley, 'My New Brain' exhibition at Common Ground, November 2022, Giclée Prints, 15 x 15 (in), FarGo Coventry.



Appendix 2.2.3: Jo Gane and Jason Scott Tilley, Mayor of Coventry, John McNicholas collects his portrait at Common Ground, November 2022, Giclée Print, 15 x 15 (in), FarGo Coventry. note – all the people in these portraits were given their framed prints from this exhibition.

2.3 Making Ambrotype Portraits at Nuneaton Library



Appendix 2.3.1: Ruby Nixon, Jo Gane setting up the camera to make a portrait of her Aunt Betty, May 2023, Nuneaton Library.



Appendix 2.3.2: Ruby Nixon, Jo Gane's portable darkroom, May 2023, Nuneaton Library.



Appendix 2.3.3: Ruby Nixon, Jo Gane outside the darkroom, May 2023, Nuneaton Library.



Appendix 2.3.4: Ruby Nixon, *Jo Gane pouring a collodion plate*, May 2023, Nuneaton Library.



Appendix 2.3.5: Ruby Nixon, *Inside the darkroom*, May 2023, Nuneaton Library.

2.4: Blue is the Colour of Memory at Nuneaton Library



Appendix 2.4.1: Jo Gane, *Blue is the colour of memory* exhibition, August 2023, Cyanotype banners, 50 x 150 (cm), Nuneaton Library. photo by Tegen Kimberley.



Appendix 2.4.2: Jo Gane, *Blue is the colour of memory* exhibition, August 2023, Cyanotype banners, 50 x 150 (cm), Nuneaton Library. photo by Tegen Kimberley.



Appendix 2.4.3: Jo Gane, Elissa in Blue is the colour of memory exhibition, August 2023, Cyanotype banner, 50 x 150 (cm), Nuneaton Library. photo by Tegen Kimberley.



Appendix 2.4.4: Jo Gane, *Blue is the colour of memory exhibition*, August 2023, Cyanotype banners, 50 x 150 (cm), Nuneaton Library. photo by Tegen Kimberley.



Appendix 2.4.5: Jo Gane, *Carol in Blue is the colour of memory* exhibition, August 2023, Cyanotype banner and antique camera, 50 x 150 (cm), Nuneaton Library. photo by Tegen Kimberley.



Appendix 2.4.5: Jo Gane, *Blue is the colour of memory exhibition*, August 2023, Cyanotype banners, 50 x 150 (cm), Nuneaton Library. photo by Tegen Kimberley.

2.5: Compton Verney



Appendix 2.5.1: Jo Gane, *Raft* in *Liquid Silver* exhibition, November 2023, Unique Silver Gelatin Prints, 6.5 x 2.5 x 0.5 (m), Compton Verney. photo by Tegen Kimberley.



Appendix 2.5.2: Jo Gane, *Safe Light in Liquid Silver* exhibition, November 2023, Red Acrylic Gel, 1 x 4 (m), Compton Verney.



Appendix 2.5.3: Jo Gane, *Safe Light in Liquid Silver* exhibition, November 2023, Red Acrylic Gel, 1 x 4 (m), Compton Verney. photo by Tegen Kimberley.



Appendix 2.5.4: Jo Gane, *Reverse Panopticon* in *Liquid Silver* exhibition, November 2023, Ambrotype photographs, Beech Plywood and Light Bulb, 3.5 x 1.7 (m), Compton Verney. photo by Tegen Kimberley.



Appendix 2.5.5: Jo Gane, *Reverse Panopticon* in *Liquid Silver* exhibition, November 2023, Beech Plywood and Light Bulb, 3.5 x 1.7 (m), Compton Verney. photo by Tegen Kimberley.

Appendix 3 Paper Processes

Appendix 3.1 Diagram of The Calotype Process

Le Calotype (négatif)
The Calotype (negative)

1) Choix du Papier Paper Choice

Carson frères
Ruscombe Mill
Timothy
Whatmans Turkey Mill

Fin et lisse Thin and Smooth
Fort pour le lavage Strong for washing
Fabrication sans produits chimiques
Chemical free manufacture

**2) Acidifier et loder le papier
Acidify and lodise paper**

Acidifiez d'abord pour éliminer les liants - Acide citrique
Acidify first to remove binders - Citric Acid

1 Acidified
2 Washed
3 Iodised
4 Plain yellow

2.1 Papier acidifié Acidified Paper
2.2 Iodé mais non lavé Iodised but unwashed
2.3 Lors du premier lavage During first wash
2.4 Iodé Iodised

Iodure avec double iodure d'argent - Solution de nitrate d'argent et d'iodure de potassium
Iodide with Double Iodide of Silver - Silver Nitrate and Potassium Iodide Solution

3) Sensibiliser Sensitise

Solution de nitrate d'argent + Iodures dans le papier
Silver Nitrate Solution + Iodides in paper

Iodure d'argent
Silver Iodide

Ajouter de l'acide acétique comme agent de retenue en fonction de la température et des conditions
Add Acetic Acid as a restrainer depending on temperature and conditions

4) Exposition Exposure

Utilisez du papier humide pris en sandwich entre le verre
Use paper wet sandwiched between glass

Les temps d'exposition varient en fonction de la force de sensibilisant, quantité d'acide acétique, conditions météorologiques, couleurs photographées, objectif et température
Exposure times vary according to strength of sensitizer, amount of Acetic Acid, weather, colours photographed, lens and temperature.

4.1 Sous-exposition Underexposure 4.2 Surexposition Overexposure

EV 15 - 7 seconds
- 19 seconds
TAG (for side) - 28 seconds
EV 11 - 1 minute
EV 10 - 4 minutes

EV 13 / exposition exposure - 15 secondes / révélateur development 45 minutes
EV 13 / exposition exposure - 5 minutes / révélateur development 5 minutes

5) Révélateur Developer

Acide Gallique, Gallic Acid
Aceto-Nitrate et Acide Gallique
Aceto-Nitrate and Gallic Acid

Le temps de Révélateur est décalé pour s'adapter à l'exposition
Development time shifts to accommodate the exposure

5.1 / 5.2 = Sous-exposition Over exposure - 1 minute // 5 minutes révélateur development time
5.3 / 5.4 = Exposition standard Standard Exposure - 5 minutes // 10 minutes révélateur development time
5.5 / 6.5 = Surexposition Under Exposure - 30 minutes // 45 minutes révélateur development time

6) Fixatif Fix
Sodium Thiosulphate


6.1 Fixatif Fixed ↔ 6.2 Pas fixateur Unfixed

7) Laver Wash

Lavez les négatifs du calotype pendant au moins 2 heures pour éviter les taches et la décoloration.
Wash Calotype negatives for a minimum of 2 hours to avoid staining and fading

Appendix 3.2 Diagram of The Salt Print


1) Choix négatif Negative Choice



Bien et
Aucune tache au dos No staining on back
Couleur marron uniforme - pas de rouge/jaune Even brown colour - no red / yellow

2) Papier salé Salt Paper

2.1




2.2 EXCESS SALT IN PAPER

2.1 10 g de chlorure de sodium + 1 litre d'eau du robinet. Séchez et polissez doucement la surface.
2.2 L'excès de sel à la surface du papier retarde l'action du nitrate d'argent lorsqu'il est sensibilisé.
10g Sodium Chloride + 1 litre tap water. Blot dry and polish surface gently
Le choix du papier pour le tirage est plus facile que pour le négatif Paper choice for the print is easier than for the negative


L'impression de sel (Positive) The Salt Print (Positive)

3) Sensibiliser Sensitize



Nitrate d'argent et eau distillée
Ajoutez de l'acide acétique pour conserver le papier pour une utilisation ultérieure.
Silver Nitrate and distilled water
Add Acetic Acid to preserve the paper for use later.

4) Exposition Exposure




L'exposition dans un cadre d'impression sur 3 tracts est de 10 minutes en plein soleil Exposure in a contact with a frame is 10 minutes in bright sunlight
L'exposition n'est possible qu'entre 10h et 14h en été au Royaume-Uni. Exposure is only possible between 10am - 2pm in the UK summertime
Impossible sous la pluie Impossible in rain
L'utilisation d'acétate/papier ciré/verre pour protéger le négatif des taches dues à la chimie dans les unités d'éclairage paper
Use of Acetate / Wax paper / Glass to protect the negative from staining from chemistry in the paper
900 de mon unité d'exposition - le réglage au maximum n'est pas suffisant. 900 light units from my exposure unit - set at maximum is not enough.
Ce tirage est sous-exposé car il a été réalisé en octobre au Royaume-Uni sous la pluie This print is underexposed as it was made in October in the UK in the rain

5) Laver Wash

Laver dans deux bacs d'eau tiède pour enlever l'argent en vrac
Wash in two trays of warm water to remove loose silver

6) Fixatif Fix
Sodium Thiosulphate
Fixatif Fixed // Pas fixateur Un-

7) Laver Wash



Ce tirage est sous-exposé car il pleuvait lors de sa réalisation.
This print is under-exposed as it was raining when it was made.
La fixation et le lavage enlèvent une certaine densité.
Fixing and washing removes some density

Appendix 4: Portraiture and Memories, Nuneaton Library and Compton Verney.

**Nuneaton Library – July - August 2023. Blue is the Colour of Memory
Compton Verney – November 2023 – February 2024. Liquid Silver**

This exhibition shares stories from residents of the local area about their memories and connections to places.

Artist Jo Gane has made portraits at the library using a large-scale Victorian studio camera with a range of people who came forward to talk about their experiences of places and things in the local area. The historic camera became a time-travelling vehicle which allowed people to talk about their histories and memories.

The portraits are made with the historic wet plate collodion photographic process from 1851 and printed as cyanotype blue-prints, a process from 1842. Blue is a colour which evokes a sense of memory and the historic processes used reference the past.

The exhibition also aims to offer a sense of what the town and community can be in the future through an understanding of its history.

With thanks to everyone who has come forward to support this project

COMMISSIONED BY:

**COMPTON
VERNEY**

**COVENTRY
BIENNIAL**

WITH SUPPORT FROM:



Supported using public funding by
**ARTS COUNCIL
ENGLAND**



4.1 Carol



Appendix 4.1.1: Jo Gane, *Carol*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.1.2: Jo Gane, *Carol*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Carol started working at Nuneaton Library 40 years ago when the building was new and light streamed through the tops of the curved mid-century windows designed by architect Frederick Gibberd. The curved sections of the windows were filled in during one of the building's many refurbishments, but the outline of these shapes remain on the building today. The windows connect the activities inside the library with the town outside, welcoming and inviting people into the building, as Carol has done for the past 40 years.

4.2 Anne

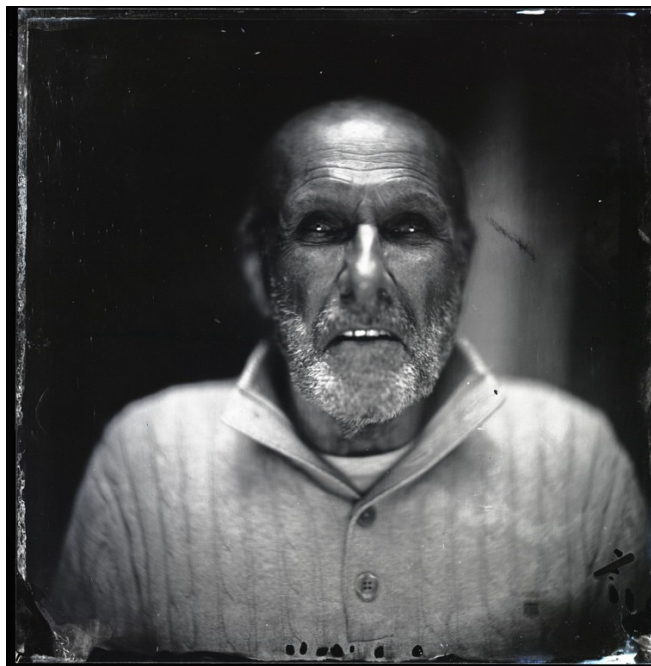


Appendix 4.2.1: Jo Gane, *Anne*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.2.2: Jo Gane, *Anne*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Anne was a regular at the art-deco dancehall, the Co-Op Hall, on Queens Road, Nuneaton throughout the early 1960s. 'The Co' was a meeting place for generations of the town's young people from the late 1930s. At the hall Anne danced, sketched, saw many bands of the period and met her husband. On Saturday mornings she would go to the market to choose fabrics which she would sew into dresses to wear out to the hall in the evening.

4.3 Ken



Appendix 4.3.1: Jo Gane, *Ken*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.3.2: Jo Gane, *Ken*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Ken delivered beer for Courage Brewery across Nuneaton and Bedworth during the 1970s in a wagon with a golden cockerel on the roof. The golden cockerels from the Courage wagons later made their way to the top of a pair of gateposts in the countryside near Bramcote Barracks.

It is a common boast that Bedworth once held a world record for having the most pubs within a square mile, many of which were owned by Courage. The brewery depot situated off Longford road was surrounded by newly planted small fir trees when Ken drove the wagons – these trees now measure 40 foot high.

4.4 Laura



Appendix 4.4.1: Jo Gane, *Laura*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.4.2: Jo Gane, *Laura*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Laura was drawn to the town centre of Nuneaton as a teenager shopping with her friends on a Saturday.

The music shops were a regular high street draw, where she would buy Britpop singles in the late 1990s and early 2000s.

4.5 Betty



Appendix 4.5.1: Jo Gane, *Betty*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.5.2: Jo Gane, *Betty*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Betty was born in and grew up on Evans Close, Bedworth in a house that backs onto the former site of Johnny Downing's Brickworks. The brickworks later became Bedworth tip and is now green space used by dog-walkers. In the 1960s, Evans Close offered a playground to Betty and her peers. The former industrial site of the brickworks, converted to the tip by the 1970s was also a site of fascination, escape and dangerous play. At the tip, Betty and her friends would find broken and discarded objects and toys to play with which would be used to make ramps and slides in the Close.

4.6 Khadija



Appendix 4.6.1: Jo Gane, *Khadija*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.6.2: Jo Gane, *Khadija*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Khadija arrived in Nuneaton in 2005 leaving memories of 42 years of her lavish life in Pakistan along with a huge network of family and friends. At that point her English language was not to 'entry level' and it was hard for her to communicate with people. She didn't know how to explain to the shopkeeper that she wanted to buy a calling card. Purchasing cards from local shops offered a dual way of improving communication – by both offering a means of communicating with shop workers to build language skills and providing a bridge to speak with family members and friends in Pakistan. A shared smile in shops communicated beyond language to build lasting bonds with the town and people. Khadija said "I never pay back Nuneaton Library which facilitates opportunities to use the computer for chatting with family and friends in Pakistan using Hotmail messenger to manage long distance relationships. Without this support I might be isolated and end up with mental health problems as using a calling card costs us a fortune, but this free service enables us to chat an hour without any penny. Now as a gesture of gratitude and to pay back what Britain gave me I support others in the town, by working with local charities which offer help and guidance to others in the community."

4.7 Norman



Appendix 4.7.1: Jo Gane, *Norman*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.7.2: Jo Gane, *Norman*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Norman brought light to the dark spaces in Newdigate Colliery as an electrician, wiring lighting and other equipment to help miners see as they worked at the coalfaces under Bedworth and Nuneaton. Invisible, explosive and noxious gases that seeped through the coalface made the mining environment difficult and dangerous to work in. Growing up in a mining community, off Smorrall Lane in the Ponderosa, colloquially known as 'the Jock', mines were a part of his daily life and upbringing, in both the architecture of the mining houses and the close-knit community who lived and worked together. It was rare to own a car or travel beyond the local community. As a child, Norman learnt to swim in an open pool of water outdoors that was warmed by the coal processing plant. Scrumping apples from the boss's orchard was a regular part of the late summer during his childhood.

4.8 Amber



Appendix 4.8.1: Jo Gane, *Amber*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.8.2: Jo Gane, *Amber*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Amber found a creative and supportive community in Nuneaton during her early twenties through a drama group at the Abbey Theatre, allowing her to be part of the town and get to know people. Establishing a creative practice through this community group and finding her identity, she was involved in the direction and stage management of productions such as 'The Importance of Being Earnest'. Her memories of time spent with the drama group in this place are of handling materials such as the bread and butter and cake used as a device to illustrate an argument in this play. A memory of cutting cucumber sandwiches for a gluten intolerant Ernest with huge slices of cucumber to make this visible for the audience has become part of the visual material in her print.

4.9 Rahima



Appendix 4.9.1: Jo Gane, *Rahima*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.9.2: Jo Gane, *Rahima*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Rahima helped people in Nuneaton through her work as a teacher at Nuneaton Library where she ran courses that develop language skills with groups of people who have newly arrived in the area. As a language teacher, her role was vital in establishing a means for people to communicate and be able to forge their lives as a part of the community in the town. The library offers a range of support to help people establish themselves in a new environment. Rahima's positive attitude and welcoming approach to her sessions has guided and supported many people in the town.

4.10 Kristi



Appendix 4.10.1: Jo Gane, *Kristi*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.10.2: Jo Gane, *Kristi*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Kristi explores the green spaces of Nuneaton and Bedworth to carefully and conscientiously forage for natural materials that enhance life, making a human connection with the natural environment. In parks and green spaces such as the Miners' Welfare Park in Bedworth and the Nook she collects materials that can be utilised for food, medicine and decoration with her children and others. At the time of making her portrait, lime trees were in blossom in the Miners' Welfare Park and Kristi explained how they can be dried, infusing an indoor space with a scent that reminds her of her grandmother's house. The dried blossom makes a powerful tea that can lower temperatures in cases of fever, directly showing the impact of nature upon the body.

4.11 Shiam



Appendix 4.11.1: Jo Gane, *Shiam*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.11.2: Jo Gane, *Shiam*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Shiam is a canal trader and has always lived on boats on the local waterways, nomadically moving along the Ashby canal and other canal networks in the region. She feels that the rural Ashby is the most beautiful and restful place in the area. The winter sunlight on water on the Ashby canal creates natural patterns that infuse her daily living space on her boat.

4.12 Jessica



Appendix 4.12.1: Jo Gane, *Jessica*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.12.2: Jo Gane, *Jessica*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Jessica's third great-grandfather, James Sidwell, was killed along with 13 other miners in the Exhall Mining Disaster of 1915 when a burning lamp was accidentally dropped down the shaft causing an explosion that led to a partial collapse of the mine. This disaster is part of local history and an important case that shows the danger of work in the extractive mining industries of the area. Beyond this, it is important to remember the history as a personal part of Jessica's family history which impacted the family for generations. Jessica's grandfather, the great-grandson of miner James Sidwell, John, was involved in a centenary memorial project in 2015 which planted 14 silver birch trees, one for each miner, at St Giles church, Exhall and laid a locally quarried memorial stone to remember those lost in the disaster.

4.13 Sheila

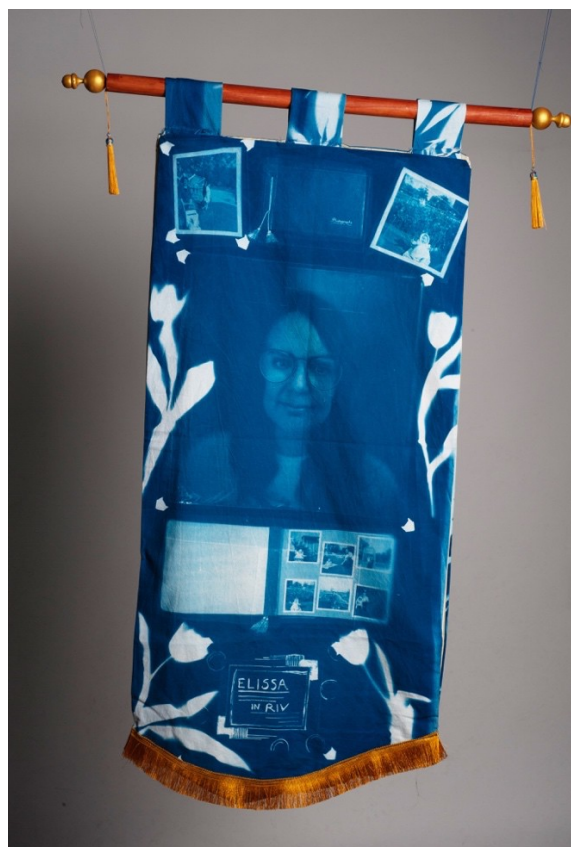


Appendix 4.13.1: Jo Gane, *Sheila*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.13.2: Jo Gane, *Sheila*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Sheila drove a horse and cart on milk rounds for the Co-Op dairy, out around Bermuda when the lanes were rural, long before the new houses were built. Later she regularly delivered the milk around Camp Hill, a round that the horses knew as well as the people, starting and stopping in their daily places. People would come out and collect the ‘hos muck’ for their roses. At the dairy, Sheila met Jonah, her husband who became a well-known entertainer as the ‘whistling milkman,’ appearing on TV in Opportunity Knocks after performing in clubs with Larry Grayson when he was still known as Billy Breen. Jonah became a celebrity but always kept his milk round in Camp Hill and later in Whitestone, Nuneaton. The job was not always idyllic and Sheila and Jonah navigated their share of conflict during the rounds in times of poverty, although this is balanced with many fond memories of people and places experienced from the milk float, behind the rear end of the cart-horse.

4.14 Elissa



Appendix 4.14.1: Jo Gane, *Elissa*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.14.2: Jo Gane, *Elissa*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Elissa's memories of family life in Nuneaton are punctuated by walking on the paths through 'Riv', alongside the Anker River and past the bandstand. Riversley Park is the location of the registry office where she married, recorded her son's birth and her grandmother's passing. It is a space which is walked through daily and a place where she played as a child and now regularly takes her son. The red and yellow tulips in the municipal planting retain their brightness, enhanced by photographic processes behind the plasticky gloss emulsion of polaroid photographs in her family albums. Vivid colours of time in Riv and mid-century structures which are no longer there such as the aviary, are preserved in the pages of her photo albums where images of herself as a child, her parents and her son all exist in the same space across multiple eras.

4.15 Simone



Appendix 4.15.1: Jo Gane, *Simone*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.15.2: Jo Gane, *Simone*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Simone remembers the burning which was held in the Miner's Welfare Park, Bedworth as an important part of her connection with the local area. Having lost a close relative to Covid-19 without a funeral, the burning allowed for a collective community memorial and a release from restrictions that prevented families from being physically close during this period.

4.16 Manish



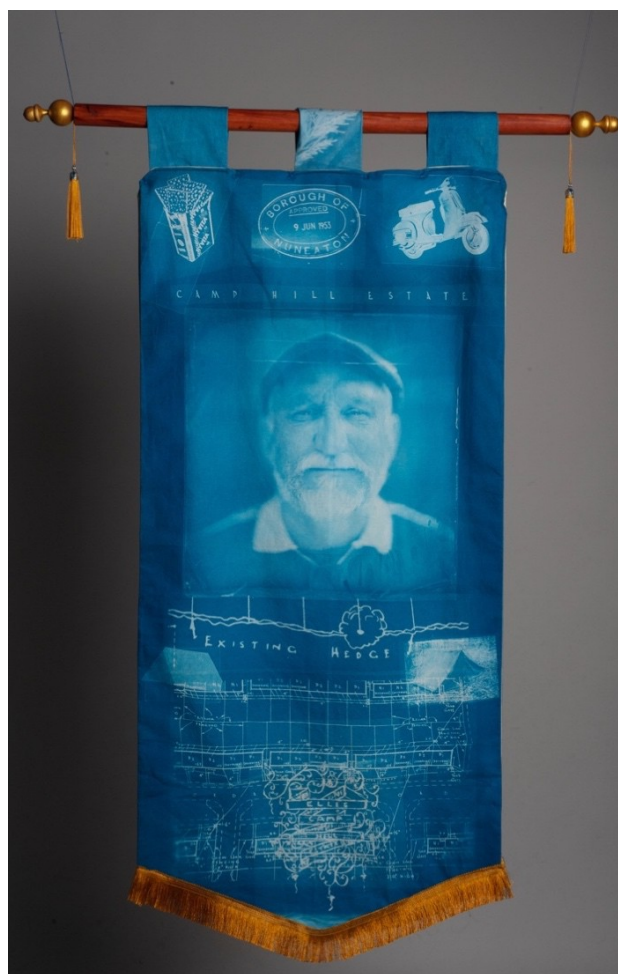
Appendix 4.16.1: Jo Gane, *Manish*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.16.2: Jo Gane, *Manish*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Manish arrived in Nuneaton in 2022 initially with plans of moving to a bigger city. However, upon spending time in the town and walking in the local area he experienced a place where ‘the air feels cleaner’ as it moves amongst the willow trees in Riversley Park and around the green spaces of the town. He has decided to stay.

From a family of photographers in India, Manish was drawn to the chemical smells of Jo Gane’s darkroom when it was set up at the library. He has enjoyed photographing natural spaces in the local area, some of which are printed in his banner, and found his own sense of place in the town. The library and other public spaces have been important in welcoming him to a new town along with his experiences of people here.

4.17 Ellis



Appendix 4.17.1: Jo Gane, *Ellis*, April 2023, Clear Glass Ambrotype, 15 x 15 (in), Compton Verney. (left)

Appendix 4.17.2: Jo Gane, *Ellis*, July 2023, Cyanotype banner, 150 x 50 (cm), Compton Verney. (right)

Ellis grew up on the Camp Hill estate in a household of 10. Times were hard and in such a large household, often the only food left at the end of the week was Ryvita. Crowded living conditions in the post-war social housing led to him finding space out of the house as a teenager, camping in an ex-army tent and finding freedom and air on his Vespa Rally 200 – both in the local area and further afield throughout the 1980s. The independence that these temporary escapes from his living situation brought in his teenage years have stayed with him and enabled him to forge a successful career. He still can't eat Ryvita.