

PHOTOGRAPHY  
AND THE 1851  
GREAT EXHIBITION

*Anthony Hamber*

WITH A FOREWORD BY

TRISTRAM HUNT



NEW CASTLE, DELAWARE AND LONDON

2018

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*Floor Plans of the Exhibition are included in the pocket at the back of book.*

# INTRODUCTION

THIS is the first comprehensive study of the diverse role and impact of photography at the 1851 Great Exhibition in London. Based on research undertaken over two decades, it draws together numerous sources of information to create a broader understanding of the step change in image making and distribution represented by this exhibition.

*The Great Exhibition of the Works of Industry of All Nations* was the first international display of manufactured products. It is credited by historians as being a pivotal point in mid-nineteenth century industrialisation, presenting a view of the world as seen from a primarily British perspective. Significantly, contemporaries also saw the exhibition in London's Hyde Park as a defining moment. The Exhibition is often equated with its elegant and technologically advanced home, Joseph Paxton's Crystal Palace.

While the Great Exhibition has received a variety of detailed examinations since it closed on 11 October 1851, its role in exhibiting and furthering the cause and exploitation of photography has been largely underappreciated. More broadly, 1851 saw a massive change in information management: in the creation and dissemination of visually based graphic information characterised by images of the building, its contents and their display that collectively constituted the Great Exhibition. Photography played a critical role in this quantum leap.

A variety of contemporaries acknowledged the importance of photography at the Great Exhibition. The official *Reports by the Juries*, published in 1852, remarked that "never before was so rich a collection of photographic pictures brought together, the products of England, France, Austria and America."<sup>1</sup> Of the thirty Council Medals awarded for scientific instruments, sixteen were won by Britain. Three of these were for photography. Statistically, this represents 10% in this category of medal, a disproportionate share given the actual number of photographic exhibits. Alternatively, this might be explained as reflecting a growing awareness of the significance of photography.

James Glaisher (1809–1903), F.R.S., meteorologist and aeronaut, was the Reporter to the Jurors for Class X of the Great Exhibition – the class that contained the vast majority of exhibited photographs. In a lecture on the Exhibition given at the Society of Arts, Manufactures, and Commerce, London, a year after the Exhibition closed, he described:

the collection of photographs in the Exhibition, which afforded to the photologist a larger field of observation than he could have before enjoyed: many of the producing processes have long been common property, but not so their several results. The Exhibition supplied this deficiency as far as existing causes permitted, and placed the inquirer at once in possession of a class of information, which before could only have been obtained through the trouble and inconvenience of personal introductions and mutual interchange of specimens; at the same time placing him in possession, not only of a means of estimating their relative merits, but also of emulating any one style it might seem desirable to him



Mauill & Polyblank. *Portrait of James Glaisher*. 1855. Albumen print. 19.7 × 14.6 cm. Perhaps intended for *Photographic Portraits of Living Celebrities* (London: Mauill & Polyblank; W. Kent & Co. (late D. Bogue), 1856–1859).  
© National Portrait Gallery, London. NPG P120(53).

to adopt or improve, either of his own or other countries, the characteristics of which were severally attended with some peculiar merit or excellence. A means of studying cause and effect, such as this collection afforded to the practised photographer, can scarcely be unattended with important results; and the public, many of whom have, for the first time, seen a really good daguerreotype, will be better informed of the power of the art as applied to the purposes of representation.<sup>2</sup>

Significantly, William Henry Fox Talbot (1800–1877), the very inventor of photography on paper, publicly stated in July 1852, “Ever since the Great Exhibition I have felt that a new era had commenced for photography.”<sup>3</sup> As will be discussed in this study, Talbot not only was instrumental in the changes but also unwittingly played the role of a central protagonist within the matrix of politics, patent law, legal contracts and industrial production that defined photography’s course during 1851.

Roger Fenton (1819–1869) was to become one of the most prominent photographers of the 1850s. On Wednesday, 22 December 1852, he presented a paper “On the Present Position and Future Prospects of the Art of Photography” at an Ordinary meeting of the Society of Arts in London. He declared, “During the last year and a half the [photographic] art appears” in England and France “to have made rapid progress, and in both [it] is due to the same cause – the impulse given by the Great Exhibition.”<sup>4</sup> This meeting was ostensibly the founding meeting of the Photographic Society of London (from 1894 the Royal Photographic Society of Great Britain), another outcome from the success of photography at the Great Exhibition.

Historians of photography have consistently acknowledged that the display of photographs and photographic equipment at the Crystal Palace acted as a catalyst for transforming the medium from a comparatively high-end bit player in mid-nineteenth-century imaging and reprographic processes. Yet there has been a dearth of detailed scholarly studies of those photographs and the photographic equipment and accessories exhibited. This study brings together information from disparate sources to identify the subject matter of the great majority of the photographic exhibits and in many cases to document their contemporary reception. It also evidences that several hundred daguerreotypes – and a similar number of photographic prints from paper negatives – were taken of the Crystal Palace in Hyde Park. A key issue is that photographic historians have often been driven by an institutional imperative to document holdings and to present artefacts in exhibitions and published surveys, and thus tended to focus on locating extant daguerreotypes and paper photographs rather than establishing and analysing available contemporaneous evidence that they once existed.

However, this study has unearthed the far wider applications considered for photography by the Royal Commis-

sioners and its Executive Committee. This includes photographically illustrated publications, the use of photography for formal administrative purposes such as production of illustrations for the *Official Catalogue*, collections management and the building of visual resources, including a pictorial record of the exhibits within the Crystal Palace. Evidence points to such aims and objectives being considered at an early stage, and Henry Cole (1808–1882), one of those who conceived the Great Exhibition and was a member of its Executive Committee, was a primary driving force in realising these ambitions.

Towards the end of the nineteenth century, John Werge (1824–1911), who in 1849 had started operating as a provincial itinerant daguerreotypist, published one of the earliest detailed histories of photography.<sup>5</sup> In 1851 Werge travelled from his home in Durham to London to visit the Crystal Palace and also took the opportunity to visit all of the daguerreotype studios in the Metropolis. He wrote:

Of all the wonderful things in that most wonderful exhibition, I was most interested in the photographic exhibits and the beautiful specimens of American daguerreotypes, both portraits and landscapes, especially the views of Niagara Falls, which made me determine to visit America as soon as ever I could make the necessary arrangements.<sup>6</sup>



Unknown photographer. *Portrait of William Henry Fox Talbot*. c. 1858. Gelatin silver print, 1934, by Herbert Lambert of Bath. 20.9 × 16.0 cm, mounted on 23.2 × 17.3 cm paper. Hans P. Kraus Jr., New York.





*Portrait of Henry Cole.* Wood engraving after daguerreotype of June 1851 by Antoine Claudet. From a double-page illustration, “The Royal Commissioners, Executive Committee and Foreign Commissioners of the Great Exhibition”, *Illustrated London News*, 18 October 1851, pp. 508–509. Private collection.

It may be significant that Werge did not mention any of the paper photographic prints on display at the Exhibition.

Isolated individual photographs taken at the Exhibition have fared well in modern exhibits and in the marketplace, but the overall impact of the 1851 Great Exhibition on photography has been largely underappreciated by modern historians, and there have been few studies on the photographs exhibited.<sup>7</sup> Helmut and Alison Gernsheim present a major exception, indicating in their influential *History of Photography* “two events” in 1851 that “were soon the change the position [of photography] radically.” These were the Great Exhibition, about which they perceptively noted that the photographs on display “revealed [to many] the isolation in which they had been working”, and secondly, the publication of Frederick Scott Archer’s wet collodion process.<sup>8</sup> As will be seen below, these two milestones were actually interlinked since images using Scott Archer’s process were first exhibited to an international audience at the Great Exhibition.

The Exhibition inspired one of the most significant milestones in photographic illustration. During the Exhibition, Prince Albert (1819–1861) was instrumental in the decision to produce photographically illustrated presentation copies of the *Reports by the Juries on the Subjects in the Thirty Classes into which the Exhibition was Divided*. In cer-



William Edward Kilburn. *Portrait of Prince Albert*. 1848. Coloured daguerreotype. 8.6 × 6.3 cm. Royal Collection Trust / © Her Majesty Queen Elizabeth II 2018. RCIN 2932487.

tain respects, the *Reports* encapsulated the issues, challenges and opportunities facing photography in 1851. This hugely ambitious production led to 131 copies of the four-volume edition of the *Reports*. Each copy contained 154 separately mounted, individually printed original photographic prints, which were unevenly distributed throughout the four volumes. Never before had so many photographs been commissioned to illustrate such a substantial text.

The complex background to the production, distribution and impact of these volumes forms a key component of the present study. It is the result of the examination of multiple copies and detailed research distributed across a wide range of archival material and contemporary sources.

The historiography of the approach taken by photographic and print historians to the *Reports* is worthy of note since it explains much of the context of the evaluation of the publication over a period of more than a century and a half.

The Gernsheims made no mention of the *Reports* in the first edition of their *History of Photography*, published in 1955. This omission is curious since they owned the copy originally presented to Thomas Bazley (1797–1885), one of the Royal Commissioners, and they had exhibited it at the Victoria and Albert Museum in London in 1951. However, the catalogue entry included a number of factual errors. Nicolaas Henneman was credited as one of the photographers, and the number of photographic illustrations was

# CHAPTER ONE

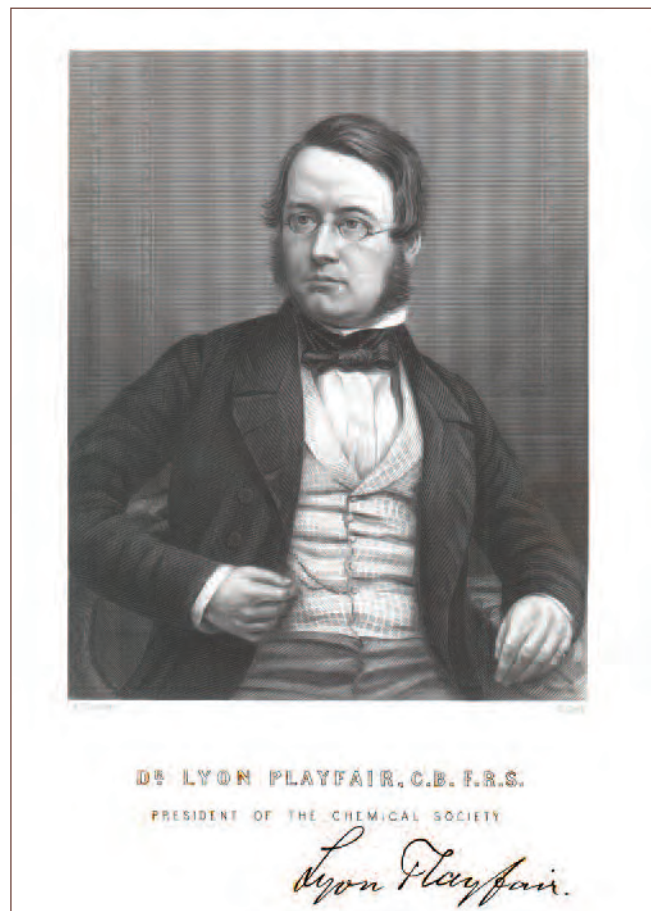
## State of Photography in 1851

WHEN Prince Albert announced the Great Exhibition in a speech at the Mansion House in London in March 1849, photography was a decade old. The Exhibition could have been seen as a perfect opportunity to assemble a global view of the state of photography in 1851 – or rather late 1850 when the majority of exhibits were being selected. It would present the commercial and industrial progress made by the new imaging medium, showcasing those individuals and companies involved in the production and distribution of the equipment, accessories, materials and processes to create and display photographs. To a degree this is true, yet the actuality reveals a range of nuances.

Firstly, there were limitations to the eventual geographic coverage. While there were some photographs exhibited by the German Zollverein, the Hanseatic League, Italy and parts of the Austro-Hungarian Empire, the majority of photographs on display came from only three countries: Britain, France and the comparatively young USA. In addition, the display of photographic equipment and accessories was limited in scale, scope and geographic distribution. Therefore, a fundamental question is: to what extent did the photographs and photographic equipment exhibits in the Crystal Palace represent the best contemporary images and photographic technology produced by amateur and professional photographers and their commercial suppliers of equipment? This question encompassed the photographs themselves, the photographic processes by which they were created, the optics, materials and equipment supporting these photographic processes, and the business of commercial photographic sales.

The planning of the Exhibition and the taxonomic classification of items submitted clearly played a crucial role. Photography did not appear in the early schema of Classes of exhibits. Just who first championed photography to be included as a distinct category of exhibit is open to speculation. The breakdown of subjects into the thirty Classes into which the Exhibition was divided was managed by Lyon Playfair (1818–1898), a Scottish scientist and Liberal politician who, while he had a good knowledge of photography, did not initially place the medium within the classification schema. Another champion was David Brewster (1781–1868), Scottish physicist, mathematician, astronomer, inventor, and writer, who was probably

amongst the most prominent influencers within Great Britain. He was to become chairman of the jurors of Class X at the Great Exhibition, the primary class that included photography. Brewster was also an exhibitor, since his stereoscope was displayed on the stand of the French optical instrument maker Duboscq-Soleil, which had begun manufacturing his stereoscope in 1850. As will be seen below, prior to the Great Exhibition, Brewster, a close friend of William Henry Fox Talbot, had taken a keen interest in photography and promoted the medium through channels such as the British Association for the Advancement of Science. Another key player may have been Henry Cole



*Portrait of Dr. Lyon Playfair, C.B. F.R.S. President of the Chemical Society. 1849. Engraving by George Cook after a daguerreotype by Antoine Claudet. Published by William Mackenzie of London in 1860.*  
Courtesy of the Smithsonian Libraries, Washington, D.C.



# CHAPTER TWO

## Selecting Photographs for the Exhibition

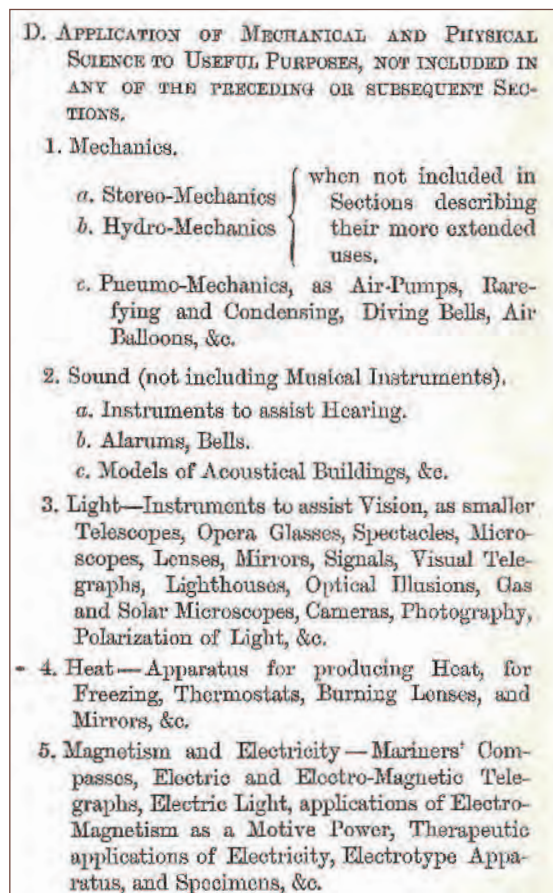
AT the time that the selection of exhibits for the Great Exhibition began in earnest in late 1850, there were several thousand professional and amateur photographers distributed worldwide across the industrialised countries, supported by an array of equipment, materials and accessories manufacturers. This chapter will examine the criteria and mechanisms for selecting the small percentage that were to find their way onto exhibitors' displays in the Crystal Palace. While it will centre on the three countries with the greatest number of exhibits – namely, the United Kingdom, France and America – exhibitors of photographs and photographic materials and equipment from other countries will also be discussed. What follows is a somewhat patchy overview since establishing the details of the administrative processes adopted by contributing countries, and how these impacted on the selection of photographic exhibits, has yet to be ascertained fully.

The Archive of the Royal Commission for the Exhibition of 1851 holds little information on the process by which photographs were selected. From one perspective, this is only to be expected in that the primary interface with exhibitors would have been the local organising committees. However, examination of the holdings of the archives of Local Committees has yet to bear any significant reward. Very few survive in the UK, and a similar situation can be found in those nations that exhibited photography. Such archival material may well be contained in uncatalogued local and provincial archives or remain in private hands. However, the methodology applied below may act as a framework for future researchers to establish a wider geographic view of how, where and why photographs were submitted for consideration by Local Committees.

Queen Victoria appointed a Royal Commission for the proposed exhibition on 3 January 1850, with Prince Albert as president. Formal invitations to participate were sent out to Foreign States on 15 March. Quite how active the global photographic community was during the second half of 1850 in furthering its cause and securing involvement at the Great Exhibition remains to be established.

The Exhibition was eventually classified into thirty Classes with numerous sub- and sub-sub classifications that are documented in some seventeen pages in Appendix A of the *Reports by the Juries*.<sup>1</sup> Lyon Playfair (1818–1898), Scottish scientist and parliamentarian, was Special Commissioner to

Communicate with Local Committees; Member of the Catalogue Committee; Member of the Mineral Kingdom Committee; and was responsible for the final classification schema. He later recalled that he needed to move the initial classification from Prince Albert's tri-partite "philosophical" approach to a more "practical" one that would better resonate and align with the promoters and manufacturers. He therefore added a fourth term, "machinery".<sup>2</sup> "Cameras" and "Photography" were eventually to fall under



*D. Application of Mechanical and Physical Science to Useful Purposes, not Included in any of the preceding or Subsequent Sections. D3 – Light. Sub-section of "Class X, Philosophical Instruments and Processes depending upon their use; Musical, Horological, and Surgical Instruments" in Reports by the Juries on the Subjects in the Thirty Classes into which the Exhibition was Divided* (London: William Clowes and Sons, 1852), p. xxvii – two-volume edition. Private collection.

# APPENDIX ONE

## Photographs and Photographic Equipment Exhibited

CHAPTER ONE presented a twenty-first-century perspective on the state of photography at the time of the Great Exhibition. As part of its report on Class X, the *Reports by the Juries* gave a contemporary overview of the “Progress of Photography” as illustrated by the photographs on display. This anonymous account is worth reading before examination of the photographic exhibits listed in this Appendix.

There are many photographic cameras, to the improvement of which much attention is at present being paid in both England and France. This leads us to the most remarkable discovery of modern times, – the art of *Photography*, – and never before was so rich a collection of photographic pictures brought together, the products of England, France, Austria, and America.

Before going further, it would be well to inquire into the utility of the photographic process as regards its application to art and science, – and, indirectly, to literature, – by affording a faithful transcript of authentic papers and original documents, upon which subsequent literary and historical research must necessarily be greatly dependent. That photography is yet in its infancy, there can be little doubt; and it is more than probable that its present application, (which we believe to be well represented in the Exhibition), is no more its ultimatum than were the first applications of the telescope, shortly after the chance placing of two pieces of glass by Jansen’s children had led to its invention. Who, at that time, could have predicted the important part that the instrument, based upon that discovery, was destined to play in the world of science? or have foreseen the excellence which it has since attained by successive improvements – even now making, – and of which the Exhibition affords ample proof.

Viewing Photography in connection with Art, it may at first appear as if a vast and powerful rival had risen up against and was destined to depress her in exact proportion to the superiority of the operations of nature over those of man. In its success, we perhaps expect to behold a transcript of objects and compositions more elaborate and more truthful

than any the greatest genius could ever hope to achieve. United to this, and in addition to the rich Vandyke browns and Claude Lorraine tints of many of the works now before us, by the agency of chemicals whose existence is yet unknown, we may see foreshadowed a perfection of colouring as yet never imagined. By improvements in the camera and the daily increasing practical knowledge of experimenters, we may expect to behold compositions, embodying a degree of reality otherwise beyond our power of attainment. The truthful delineation of the various and just relations of the architectural edifice; the groups of figures at its base; the middle distance blended into the horizon by gradations so fine and truthful as to defy the utmost efforts on our part to surpass or even equal; are indications only of that which will ultimately [*sic*] be achieved by the photographer, rich in experience and knowledge of the processes of photographic art.

But this is a superficial and imperfect view of the case,—not as regards the ultimate perfection of photography itself, but as concerning its influence upon art. With art, doubtless, its future destiny will be closely linked; but so far from becoming a rival, it will prove a most useful auxiliary, and a means by which the artist of merit may rise higher in reputation and eminence. By using photography as a means of replacing the purely mechanical parts of his labour, the work of the artist may be much lightened; and as, by speedy transit from place to place, man’s life is virtually lengthened, so by relieving his path from that part of his labour which involves an expenditure of time disproportionate to the end attained, one great obstacle to the achievement of success is removed. Never need the artist fear that the employment of its services in conjunction with his pencil, or his adaptation of it in any way to his art, will ever derogate from that art, or render him a servile copyist; we may rather predict that each improvement in photography will tend to place both the painter’s and the sculptor’s art on a firmer and surer basis. It is likely that time will show that this beautiful compound of art and science will essentially cast its weight into the balance of art, and in future render itself more and more inseparable from, and essential to, her interests.



# APPENDIX FOUR

## Reports by the Juries – Catalogue of Photographic Illustrations

ESTABLISHING the identity of a photographer for each image in the *Reports by the Juries* requires triangulation between physical examination of the photographs and a number of contemporaneous sources:

1. Hugh Owen frequently used a monogram (an intersected “H” and “O” in a vertical configuration) inserted in the negative, after processing and prior to printing. The location of the monogram varies, but the bottom right-hand corner of the image was the most common. However, the prints from Owen’s negatives – which a contemporary source states were not printed by Owen himself – have badly faded, particularly around the edges of the print. While this in itself is a distinguishing feature, with some prints the fading is so extreme that it is possible that while an Owen monogram originally existed, it is no longer visible. The negatives taken by Owen in the Crystal Palace, and those that were used to illustrate the *Reports by the Juries*, have yet to be located.

2. Photographs from the set used to illustrate the *Reports by the Juries* formed part of two photographic exhibitions. The first was held from 22 December 1852 until 29 January 1853 at the Society of Arts in London. The names of Ferrier and Owen appeared against some seventy-two photographs exhibited by the Royal Commissioners at this seminal exhibition that resulted in the founding of the Photographic Society of London.<sup>1</sup>

Similarly, Ferrier and Owen were credited as the photographers of prints of views of the Crystal Palace exhibited at a commercial venue, the Photographic Institution, 168 New Bond Street, London, between 28 April and December 1853. The photographer of each image was credited, these being variously Claude-Marie Ferrier and Hugh Owen.

3. Photographs from the set used to illustrate the *Reports by the Juries* formed part of three touring photographic exhibitions organised by the Society of Arts, one “tour” taking place in 1853–1854, and two sets touring in 1854. Again the photographer of each image was credited, these being variously Claude-Marie Ferrier and Hugh Owen.

4. The Correspondence of William Henry Fox Talbot also provides significant details of photography at the Crystal Palace that enables Ferrier and Owen to be identified as the photographers of the photographic images illustrating the *Reports by the Juries*, with Robert Bingham undertaking the printing of photographs – albeit only from Ferrier’s glass negatives.

The location of each object is taken, where possible, from the *Official Descriptive and Illustrated Catalogue*. Locations can be found on the two detailed plans to be found at the back of this book: one for the ground floor, and the other for the gallery level.

### NOTE:

Since each photograph was manually printed and manually cropped and trimmed, the measurements given below of each photographic print should be seen as representative. The measurements below are taken from the copy held by the Biblioteca Nacional, Madrid, collated and published in: Gerardo F. Kurz and Isabel Ortega, *150 Años de Fotografía en la Biblioteca Nacional: Guía-inventario de los fondos fotografías de la Biblioteca Nacional*. (Madrid: Edición el viso, Ministerio de Cultura, 1989). The heavier paper stock onto which the prints have been mounted are consistently each 25 × 35 cm.

The illustrations of each photograph have been taken from the copy presented to Edgar Alfred Bowring (1826–1911), Acting Secretary to the Royal Commissioners, and now held in the Archive of the Royal Commission for the Exhibition of 1851.

High-resolution digital images of every plate in the copy of the *Reports by the Juries* presented to the Royal Engineer Lieutenant William Crossman (1830–1901), held in the collections of the Art Gallery of Ontario, can be viewed online at the following URLs:

Volume I: <https://ago.ca/collection/object/2007/1940.1.1-.5>

Volume II: <https://ago.ca/collection/object/2007/1940.2.1-.45>

Volume III: <https://ago.ca/collection/object/2007/1940.3.1-.45>

Volume IV: <https://ago.ca/collection/object/2007/1940.4.1-.59>

1. See *A Catalogue of an Exhibition of Recent Specimens of Photography Exhibited at the House of the Society of Arts* (1852) and *Photographic Exhibitions in Britain 1839–1865* at <http://peib.dmu.ac.uk>. In 1874 the name was changed to the Photographic Society

of Great Britain to reflect its growing importance, and in 1894 it became The Royal Photographic Society of Great Britain by permission of Queen Victoria.



## VOLUME III

Vol. III/01

*VIEW OF EASTERN NAVE.*

16.4 × 22 cm [by Claude-Marie Ferrier]

Vol. III, Frontispiece

Taken from the gallery level across the end of the Eastern Nave, referred to in the *Official Descriptive and Illustrated Catalogue* as the “Main Avenue, East”, looking west. The top of the India Rubber boat and pontoons of Goodyear can be seen in the immediate centre-left foreground. Behind this is the colossal porphyry vase manufactured at the Älvdalen (Elfdahl) works. It was exhibited by King Oscar of Sweden (1799–1859) who during the Exhibition gave it to Prince Albert. The vase subsequently formed a central ornament on the lawn to the northwest of Osborne House on the Isle of Wight.

This photograph was exhibited by the Royal Commissioners at the exhibition held at the Society of Arts in London from 22 December 1852 until 29 January 1853, Cat. No. 66.

This view shows a far brighter illumination of the Central Transept and the west end of the building. On the right

hand side of the view, at gallery level, bright sunshine has created highlights on the balustrade.

A negative for this image was offered at Sotheby's, 29 June 1979, lot 234.

Vol. III/02

*EMBROIDERED SADDLE. INDIA.*

23. × 17.2 cm [by Hugh Owen] “H. O.” in the negative.

Vol. III, p. 1005

Exhibited in the East Indian Court on the south side of the Main Avenue, West at the junction with the Transept.

This photograph was exhibited by the Royal Commissioners at the exhibition held at the Society of Arts in London from 22 December 1852 until 29 January 1853, Cat. No. 72. This photograph was exhibited as part of the 3rd Tour, 1st Set of circulating photographs organised by the Society of Arts, Cat. No. 17, which toured between 1855 and 1856. A photograph by Owen matching this title was exhibited at the exhibition held at the Photographic Institution, London, between 28 April and December 1853, Cat. No. 113. Two photographs by Owen of an “Embroidered

# APPENDIX FIVE

## Reports by the Juries – Census of Presentation Copies

*Presentee*

*Role in Exhibition*

*Biography*

- 1. Her Most Gracious Majesty Queen Victoria.**  
Issued the Royal Charter as Letters Patent.  
Her Most Gracious Majesty Queen Victoria (1819–1901).
  
- 2. His Royal Highness Prince Albert. Prince Albert.**  
President of the Royal Commission; Chair of the Surplus Committee.  
Prince Albert of Saxe-Coburg-Gotha (1819–1861), Prince Consort.
  
- 3. His Grace The Duke of Buccleuch.**  
Royal Commissioner; Member of the Building Committee.  
Walter Francis Montagu-Douglas-Scott (1806–1884), 5th Duke of Buccleuch.
  
- 4. The Right Honourable The Earl of Rosse.**  
Royal Commissioner; Member of the Machinery Committee.  
William Parsons, 3rd Earl of Rosse, KP (1800–1867). Rosse served as a member of Parliament from 1821 to 1834, an Irish representative peer after 1845, and president of the Royal Society (1848–1854); he built the world's largest telescope in 1847. In June 1842 he acquired a complete set of daguerreotype equipment from E. M. Clarke of 428 Strand, London.
  
- 5. The Right Honourable The Earl of Ellesmere.**  
Royal Commissioner; Member of the Building Committee.  
Francis Egerton, 1st Earl of Ellesmere (1800–1857), known as Lord Francis Leveson-Gower until 1833, British politician, writer, traveller and patron of the arts. Lord Ellesmere served as president of the Royal Geographical Society and as president of the Royal Asiatic Society (1849–1852), and he was a trustee of the National Gallery. He also initiated the collection of the National Portrait Gallery by donating the Chandos portrait of Shakespeare.
  
- 6. The Right Honourable The Earl Granville.**  
Royal Commissioner; Member of the Subscription Committee; Member of the Contract Committee; Member of the Prices of Admission Committee; Member of the Catalogue Committee; Chair of the Committee for Communication with the Local Committees of the Metropolis; Member of the Surplus Committee.  
Granville George Leveson-Gower, 2nd Earl Granville, KG, PC (1815–1891), British Liberal statesman and vice-president of the Board of Trade in 1848. Trusted by Prince Albert, he was Vice-President and Chairman of the Finance Committee.

*Present Location*

*Provenance of Copy*

Royal Collection, RCIN 2800000–03  
On 3 February 1853, Captain Henry Cunliffe Owen wrote from his office at Marlborough House to Colonel Grey, Prince Albert's private secretary, stating: "The volumes for Her Majesty and the Prince have been dispatched by Great Western Railway to your address at Windsor and are packed in two separate boxes. I think the Prince will approve of what has been done." The letter itself has been annotated by Prince Albert with "Presentation Copies". Windsor, Royal Archives, RA VIC/MAIN/F/25/153

[Royal Collection]  
This copy has yet to be located.

Not located.  
Perhaps initially kept at Dalkeith House, Midlothian, Scotland, and possibly now in the archives held in Boughton House, Northamptonshire.

Not located.  
Dispatched before 8 April 1853 (RC/A/1853/42).  
Possibly held in the library of Birr Castle, Parsonstown, County Offaly, Ireland.

Not located.  
Dispatched before 8 April 1853 (RC/A/1853/42).  
Possibly held in the library of his London residence, Bridgewater House, St. James's Park, or at his country residence at Hatchford Park, Cobham, Surrey.

Not located.  
Dispatched before 8 April 1853 (RC/A/1853/42).  
Possibly held in the library of his London residence, Stafford House.



# APPENDIX SIX

## Photoscience: Behind the Negatives and their Printing

*Nicholas Burnett*

Chief Executive and Chief Conservator, Museum Conservation Services Ltd.

### Types of Negative Employed

In the early 1850s, in addition to making the exposure, developing the negative and producing a positive print, photographers first had to make their own light-sensitive materials. This applied to both the negatives and the positive prints made from them. The raw materials could be bought, but the coating and sensitising was very much a do-it-yourself procedure. Around this time several establishments were attempting to industrialise the production of positives, but with only limited success.<sup>1</sup>

The negatives used to produce the photographs for the *Reports by the Juries* were taken at a time of change, when glass plate negatives were just starting to replace paper negatives. Both were used for taking the images used in the *Reports*.

### The Albumen on Glass Process

Albumen on glass was the process used by Claude-Marie Ferrier for the negatives he took of the Crystal Palace and the Great Exhibition's exhibits. This was the first practical negative process to use glass as a support; it was introduced by Abel Niépce de Saint-Victor in 1847.<sup>2</sup> In the do-it-yourself photographic culture that existed, however, variations and improvements on the process were subsequently published.<sup>3</sup>

The precise variant used by Ferrier to prepare the negatives for exposure has not yet been identified. The following description of one possible method is paraphrased from Bingham's text in *Photogenic Manipulations* (1851).

The photographer or an assistant would separate the yolks from several hens' eggs and then beat the whites (albumen) for ten minutes. The resulting foamy liquid would then be covered and left to stand until the froth had settled into a liquid. While this was happening the glass plates would be given a final clean, and levelled to ensure an even coating. The egg white was then poured onto the glass to form a thin, even layer. The edge of a piece of smooth and clean writing paper could be used like a brush to help spread the albumen. [Note: in practice, the plates were often held horizontally between

finger and thumb by one corner and gently tilted to encourage the albumen to flow and cover the plate. The evidence for this is clear on a number of the surviving negatives, which show that the corner that was held is free of albumen.]

The albumen coating would then be allowed to dry and was subsequently heated to about 212° F for two or three minutes. The plate was then quickly plunged into a solution of silver nitrate, removed and briefly rinsed in distilled water. Next, the plate was put into a solution of potassium iodide for a minute, removed and washed well in distilled water for about ten minutes. The glass was then removed, angled to let the water run off, and allowed to dry. This part of the process could be done some days in advance of when the negatives were needed.

To render the plate light sensitive for the exposure it would then have been immersed in a solution of gallo-nitrate of silver<sup>4</sup> for about three or four seconds, removed and shaken to get rid of superfluous liquid. At this point, when it was very sensitive to light, it was placed in the plate holder ready for the camera exposure. The plate had to be used within ten or twelve hours. [Note: The glass plates could have been prepared late at night for the following day or before setting off for the Crystal Palace in the morning, but it is also quite possible the final sensitisation took place in a black cloth bag or similar portable "darkroom" on site at the Crystal Palace.]

After the exposure was taken, the image was developed with gallo-nitrate of silver, washed, fixed in sodium thiosulphate solution for about ten minutes and then washed in plain water.<sup>5</sup>

Bingham does not suggest varnishing the negatives to protect the image layer. This is a significant omission. Paper negatives were not varnished, and it did not occur to Bingham that negatives on glass were vulnerable to scrapes in a way that paper negatives are not. Varnishing later became standard with the wet collodion process, which was introduced in 1851, and this process largely superseded the albumen on glass process within a very few years. Importantly, the Ferrier negatives were only varnished at a point partway through the printing contract (see below).

Further physical protection was provided by wooden

boxes. Three of the original boxes used to house the negatives for the *Reports by the Juries* have been found.<sup>6</sup>

### The Surviving Albumen on Glass Negatives

At present, 66 of the surviving glass negatives have been located by the author.<sup>7</sup> Others are known to have survived, but their present whereabouts are unknown.<sup>8</sup> In total, 39 have been examined for this appendix.<sup>9</sup> Clara von Waldthausen examined 31 and published her results in 2007.<sup>10</sup> The two groups of negatives show the same features, though only the two negatives belonging to the Victoria and Albert Museum appear in both groups examined.

The surviving negatives that were examined are in varying states of preservation. For most of the past 167 years, they seem to have been kept in their original boxes. The boxes are fitted with slotted wooden interiors, and the process of sliding in and out has started to abrade away the albumen on the short sides. One box was stored in a damp location for some time, and the negatives housed within became mouldy.<sup>11</sup> None of the other negatives in other collections were affected in this way as the boxes had been dispersed, and only this one was then subjected to poor environmental conditions.

In general, the albumen on glass negatives are less dense than the much later, and more familiar, gelatin dry plates

and film negatives of the late nineteenth and twentieth centuries. The natural image colour of the darkest areas (Dmax), by reflected light, is usually a dull greenish to brown shade, occasionally grey, with the highlights (Dmin) having a slight yellow colour typical of aged albumen. Some of the negatives have a reddish shade, but this is the result



One of the original negative boxes with negatives.  
Nicholas Burnett collection.



An albumen on glass negative by Ferrier of *The Amazon (zinc bronzed) Kiss*. 17.65 × 22.8 cm. from *Reports by the Juries*, Volume IV (left) and a later, anonymous, gelatin dry plate (23.8 × 17.8 cm.) (right).  
Nicholas Burnett collection.