

PART B

BODLEIAN
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(Dep. C 354)

RETOUCHING THE ARCHIVE
WOMEN'S CONTRIBUTION TO EARLY PHOTOGRAPHY IN SCOTLAND

PART B

PhD Candidate, Caroline Douglas
Part B: Visual Essay, Image Appendix and Collections
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Submitted June 2024



Retouching the Archive
Women's Contribution to Early Photography in Scotland

Submitted for the Degree of
Doctor of Philosophy, School of Arts and Humanities

Royal College of Art

2024

Caroline Douglas

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Declaration

This thesis represents partial submission for the degree of Doctor of Philosophy at the Royal College of Art. I confirm that the work presented here is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Caroline Douglas

June 2024

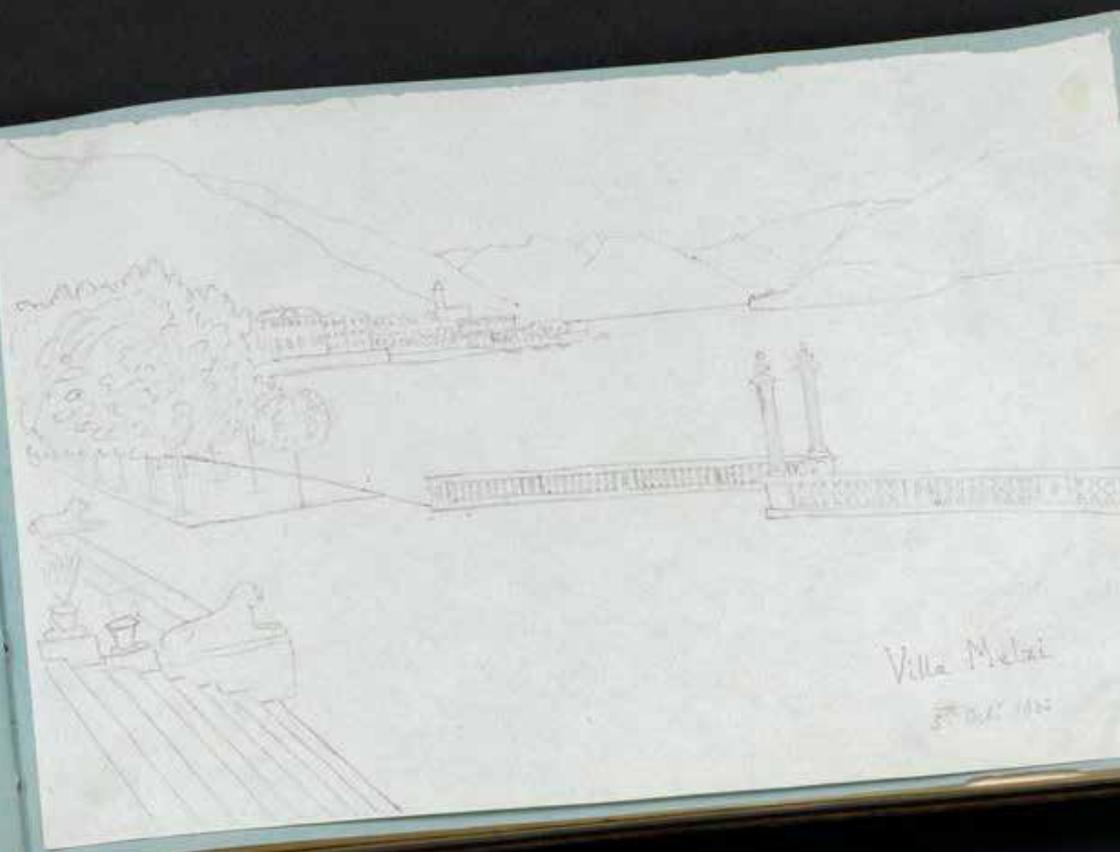
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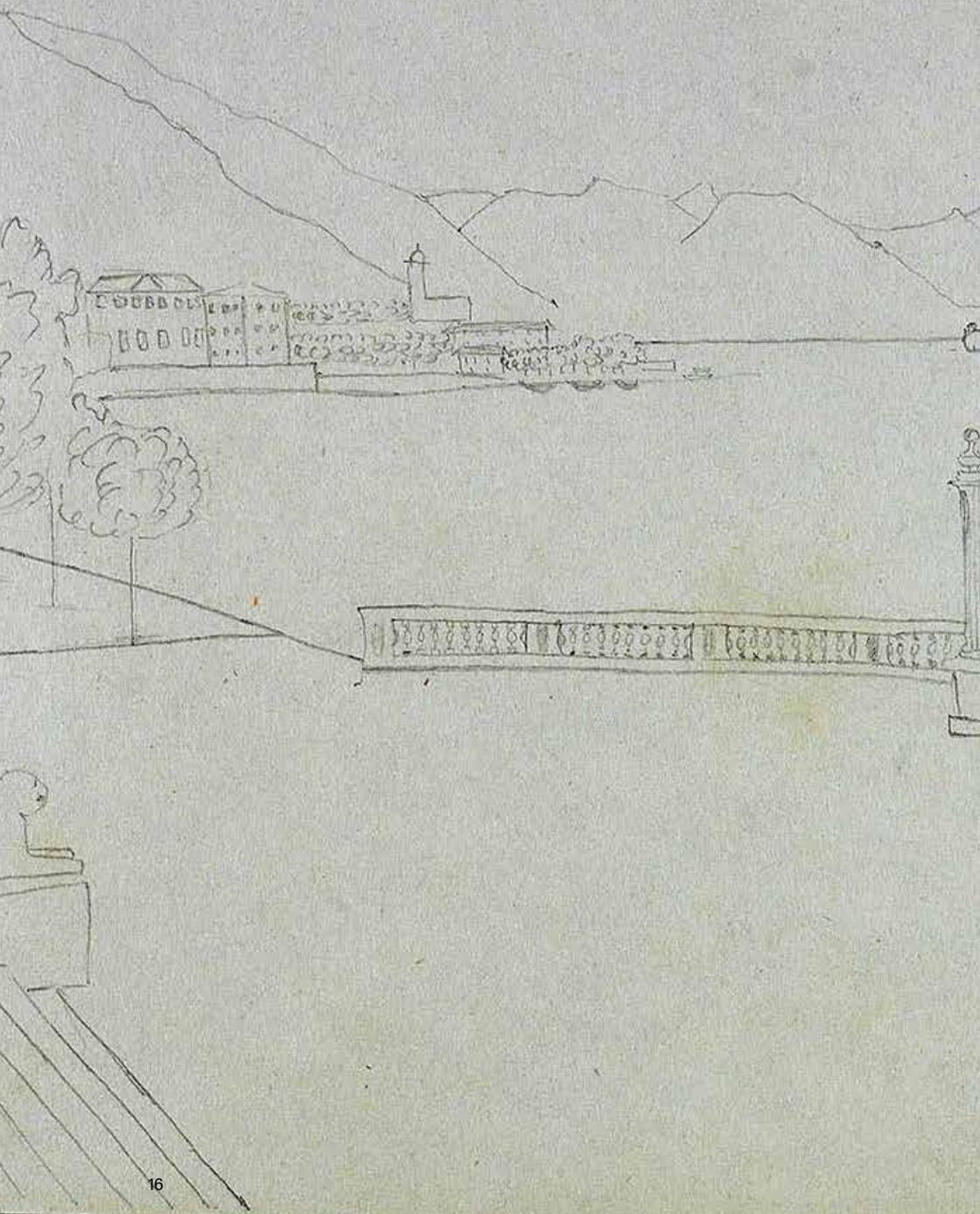
PROLOGUE

Mythical Pictures: The Conception of Photography





Villa Melai
1912



SUBLIME AND FATAL CREATION

The astonishment which I had at first experienced on this discovery soon gave place to delight and rapture. After so much time spent in painful labour, to arrive at once at the summit of my desires was the most gratifying consummation of my toils. But this discovery was so great and overwhelming that all the steps by which I had been progressively led to it were obliterated, and I beheld only the result.¹

¹ Mary Shelley, *Frankenstein or The Modern Prometheus* (London: Wordsworth Editions, 1999), p. 42.



INTRODUCTION

Sublime and Fatal Creation: Women in Early Photography







CHAPTER I

Spectre of a Woman: Reenacting Elizabeth Fulhame

Women are every where in this deplorable state; for, in order to preserve their innocence, as ignorance is courteously termed, truth is hidden from them, and they are made to assume an artificial character before their faculties have acquired any strength. Taught from their infancy, that beauty is woman's sceptre, the mind shapes itself to the body, and, roaming round its gilt cage, only seeks to adorn its prison. Men have various employments and pursuits which engage their attention, and give a character to the opening mind; but women, confined to one, and having their thoughts constantly directed to the most insignificant part of themselves, seldom extend their views beyond the triumph of the hour.

— *A Vindication of the Rights of Woman*, Mary (Wollstonecraft 1792)

It may appear presuming to some that I should engage in pursuits of this nature,... and censure is perhaps inevitable; for some are so ignorant that they grow sullen and silent and are chilled with horror at the sight of any thing that bears the semblance of learning, in whatever shape it may appear; and should the spectre appear in the shape of woman, the pangs which they suffer are truly dismal.

— *An Essay on Combustion...* Elizabeth (Fulhame 1794, iv November 5th)

Presmark M.33.d
FRAGILE
HANDLE WITH CARE



A
VINDICATION
OF THE
RIGHTS OF WOMAN:
WITH
STRICTURES
ON
POLITICAL AND MORAL SUBJECTS.

By MARY WOLLSTONECRAFT.

L O N D O N:
PRINTED FOR J. JOHNSON, N^o 72, ST. PAUL'S CHURCH YARD.

1792.

AN
ESSAY
ON *Libris*
COMBUSTION,

WITH A VIEW TO A
NEW ART

OF
DYING AND PAINTING.

Biblioth: Edinensis.
THE PHILOGISTIC AND ANTIPHLOGISTIC HYPOTHESES
ARE PROVED ERRONEOUS.

BY MRS. FULHAME.

LONDON: -

PRINTED FOR THE AUTHOR,
BY T. COOPER, BOW STREET, COVENT GARDEN,
And Sold by J. JOHNSON, No. 72, St. Paul's Church Yard;
G. G. and J. ROBINSON, Paternoster Row; and
T. CADELL, Jun. and W. DAVIES, Strand.

1794.

[PRINTED AT STATIONERS HALL,]

1771

John ...
...
...

X
AN
ESSAY
ON
COMBUSTION,
WITH A VIEW TO A
NEW ART
OF
DYING AND PAINTING.

WHEREIN
THE PHLOGISTIC AND ANTIPHLOGISTIC HYPOTHESES
ARE PROVED ERRONEOUS.

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G. G. and J. ROBINSON, Paternoster Row; and
T. CADELL, Jun. and W. DAVIES, Strand.

1794.

[ENTERED AT STATIONERS HALL.]

Note on the use of
of the Chemical rays of Light
Historical Representation

Communicated
March. 14
1839.

Read 14 March
by J. J. Waterhouse

Attention having been used
very remarkable application
Solar Light to the representation
of works of art by a
(to which it appears to me
the title of this note may
appropriately applied) —
Daguerre in France and by
any contradiction however

Photography or the application
of light to the purpose of
~~light~~

1039

Dr. J. F. W. Herschel M. R. S. V. P. R. S.

ently must direct to the
ions of the Chemical rays of
entation of natural objects
Species of painting or drawing
that the term adopted in
on the whole be more
by Messrs. Dillidge and
by Mr. Talbot in this country
small to our stock of

Initial rays, as I exhibited
precipitated Muriate (Chloride)
remarkable property, ^(first) anna
brightness of the solution
and Lime water, which is
~~the~~ Solar Light,
compound which bright after
a variety of agents —
of Gold in contact with de
as described by Carnot Rev

London & Edinb. Phil. Mag. new series
Phil. Trans. 17. Page.

To there might be added Hydro
~~peroxide of Chlorine~~ pure or diluted (explosive)
Local decomposition might
be attended with ~~and~~ de
tion of insoluble chloride which
compound & soluble salt should

in their action on recently
de) of Silver — 2^d. The
(in 1832) *
and by myself) of a
of Inmate of Platinum
instantly precipitated by
forming an insoluble
towards be blackened by
and 3^d The reduction
oxidizing agents by light
fordt and Mrs Fotherme

no 1. — p. 59. —

an aqueous compound soluble in water
under an atmosphere of
ion being avoided) by which
to be determined on illuminated
element of Chlorine by produce
would adhere after the under
be washed off. I have not tried the
Experiment













P R E F A C E.

THE possibility of making cloths of gold, silver, and other metals, by chymical processes, occurred to me in the year 1780: the project being mentioned to Doctor Fulhame, and some friends, was deemed improbable. However, after some time, I had the satisfaction of realizing the idea, in some degree, by experiment.

Animated by this small success, I have, from time to time, ever since, prosecuted the subject as far as pecuniary circumstances would permit.

I imagined in the beginning, that a few experiments would determine the problem; but experience soon convinced me, that a very great number indeed were necessary, before such an art could be brought to any to-

DISSERTATIO
DE
FEBRE PUERPERARUM.

QUAM,

ANNUENTE SUMMO NUMINE,

Ex Auctoritate Reverendi admodum Viri,

D. GULIELMI ROBERTSON, S. S. T. P.
ACADEMIÆ EDINBURGENÆ Praefecti;

NEC NON

Amplissimi SENATUS ACADEMICI consensu,

Et nobilissimae FACULTATIS MEDICÆ decreto,

PRO GRADU DOCTORIS,

SUMMISQUE IN MEDICINA HONORIBUS ET PRIVILEGIIS

RITE ET LEGITIME CONSEQUENDIS;

Eruditorum examini subjicit

THOMAS FULHAME, M. A.

H I B E R N U S.

Societ. Phys. Edin. Soc. Hon. et Praefes Annuus.

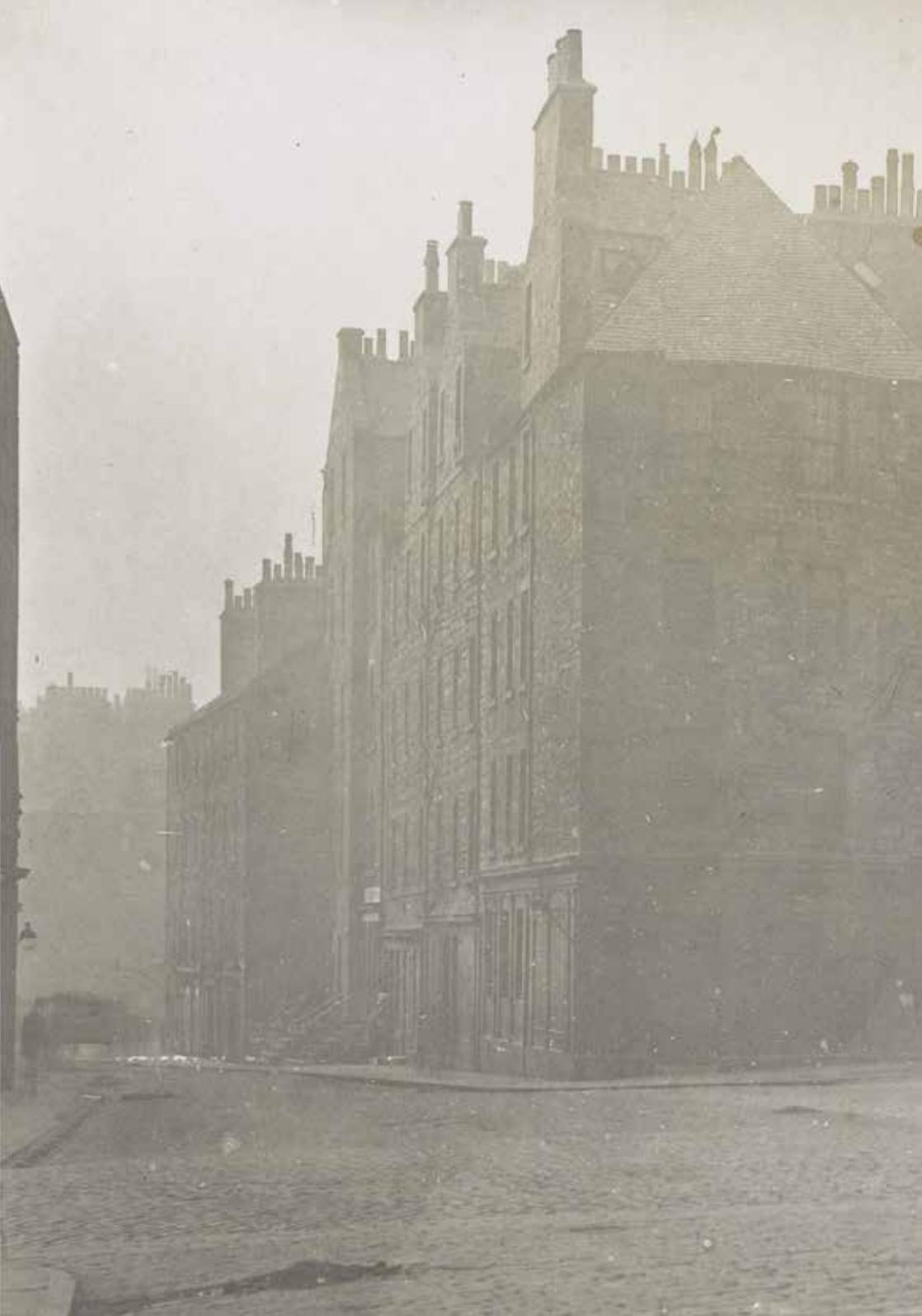
Ad diem 13. Septemb. hora locoque solitis.

EDINBURGI:

Apud BALFOUR et SMELLIE,

Academiae Typographos.

M, DCC, LXXXIV.





Chemical Society
1785



A List of the Members of the Chemical Society 1785

- | | |
|----------------------|----------------|
| John Walker | Gen: A. Ward |
| Wm Scott | Morgan Davis |
| Wm Haldiday | H. Pachel |
| John Forster | J. Gay |
| Sam: Black | Th: McMorran |
| Jos: Black | Adam Gillespie |
| J. Plumb | Th: Burnside |
| Th: Walker | Colin Pyne |
| Ge: Johnston | J. Stothart |
| W: Johnston | J. Barrow |
| Br: Fernon | J. Donovan |
| Rob: Ross | Sam: Macoy |
| L. van Meurs | G. Tower |
| antoniensis bataviae | J. Sedgwick |
| Hugh Brown | T. Maete |
| John Wm Boyton | Wm Robertson |
| Edw: Fairbairn | J. Spole |
| Richard Mc Donald | Th: Cooke |
| T: Galley | |
| J. Mann | |

1782



Chambers (Edinburgh)
1841

Guyton Jolly
 J. Anderson
 W. M. Elwaine
 T. Gill
 E. Willson
 Th. Montgomery
 Mr. Swainson
 And. Webb
 J. Cumber
 Geo. Majoribanks
 T. Greig
 J. Parr
 Alex. Stevens
 Wm. Symonds
 Thos. Beddoes
 J. Thompson
 G. Kitchaldie

J. Carmichael
 Rich. Elcock
 Richd Gray
 J. Hay Ce



30037-11.

LECTURES
on
CHEMISTRY

Begun 25 October 1786

By J. Black

For M. Tho^s Wedgewood

application which I am happy to find you bestow on them. Some particular lectures in Moral Philosophy or the belles lettres may perhaps afford you an agreeable entertainment; of which I suppose Jos. may be able to give you some previous notice; but to enter upon either of them as a branch of study would, I am convinced, at present not improve or strengthen, but weaken and distract the mind.

In retaining but an imperfect recollection of things you only hear or read of, you are far from being singular, and therefore don't be discouraged by it. It is the common failing (if it can be called by that name) of mankind. It was so in the days of Horace as well as ours:

*Serius irritant animos demissa per aures
Quam qua sunt oculis subjecta fidelibus —*

'Tis the oculis subjecta that make lasting impressions, and I hope D. Black speaks to the eye, as well as to the ear, though even that is not so good as doing a thing with ones own hand.

I have told you of my disappointment hitherto respecting the wolfram or tungsten. One or the other of them shall be procured for you, if I cannot succeed otherwise I will apply to Mr Kirwan. A small piece will be sufficient to shew its remarkable decomposition by the alternate application of alkali & acid, which is all that I imagine you will have any convenience of trying with it before your return Philhell

Your Laboratory shall be taken care of. The first thing I did on coming home was to look into my own (for charity begins at home) ~~was to~~ ~~look after my own~~, and the next yours. I was more afraid of freezing, and consequent bursting of glasses, than of rotting, for a hard frost had been begun & has continued till this day. I doubt not but you have felt it more severely than we. At present, it ^{may for a short season} ~~thaws~~. The cold has prevented my doing any thing more than seeing that all is safe: yours, you know, is very dry & only the water had begun to grow a hole, & at a ^{late} ~~late~~ evening.

I hope to get a little alteration made in our furnace (my smallest furnace I mean) against your return. The great thickness of brickwork, which we all so often find fault with, I now believe to be more disadvantageous than any of us apprehended. I wanted a strong fire the other day, & it was 3 or 4 hours before I could get a therm. piece so far as 100°. 61

100% Silk
8





Samples of Tape dyed in comparative
 Trials of different kinds of Indigo June 1789

N.B. The tape was steeped in the dyeing liquors 24 hours cold &
 24 hours more boiling hot or in the heat of steam

1st Trial with the colouring matter of one part of Indigo to 50 parts
 of the Tape by weight in each experiment

Indigo
 in Prose

Spanish Indigo
 (at 14/6 at 10/)

Carolina Indigo
 (at 5/6 at 4/)



2^d Trial with the colouring matter of two parts of Indigo to
 50 parts of the tape in each experiment
 Indigos as above



First Trials of
 Indigo
 got too much
 heat

























MS 129
165-69

Dear Sir

I thank you for your directions for the silver pictures, on which when at home I shall try some experiments - I was thinking on your mill after I left you, I fear the motion of the spindle is too slow to go regularly without a very heavy fly however the experiment is easy tried, & if it does not answer I can put you in a way to make it do so, by adding a toothed wheel upon the mill spindle and a pinion to work into it on the axis of which must be the crank of the fly, the wheel should have ^{or twice} twice the number of teeth that the fly has

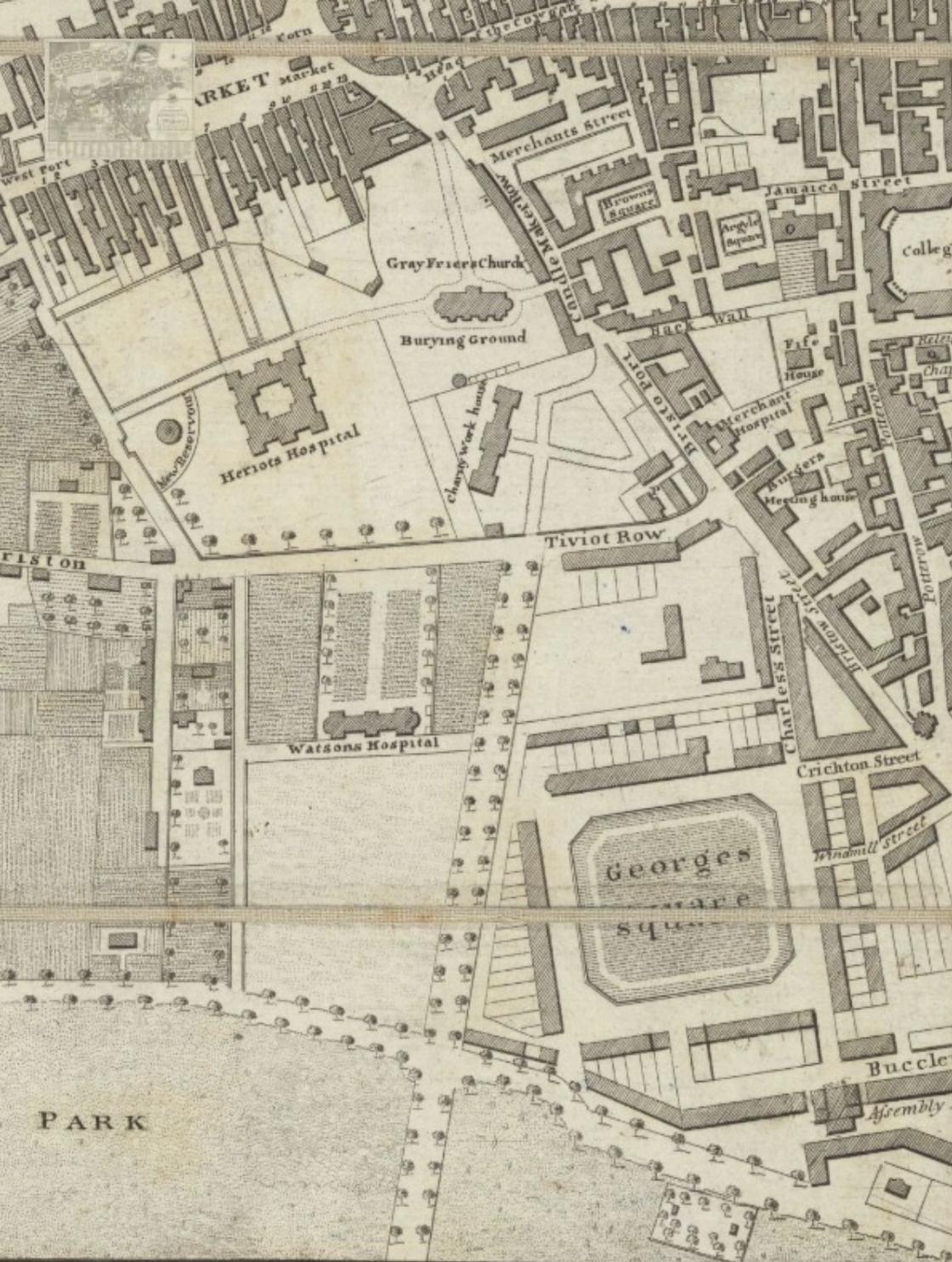
I am just setting out for Dunster to be back to morrow evening - The Ladies here join me in best respects & kind wishes to all the good family with you & Lorraine

Dear Sir

Yours sincerely

James Watt

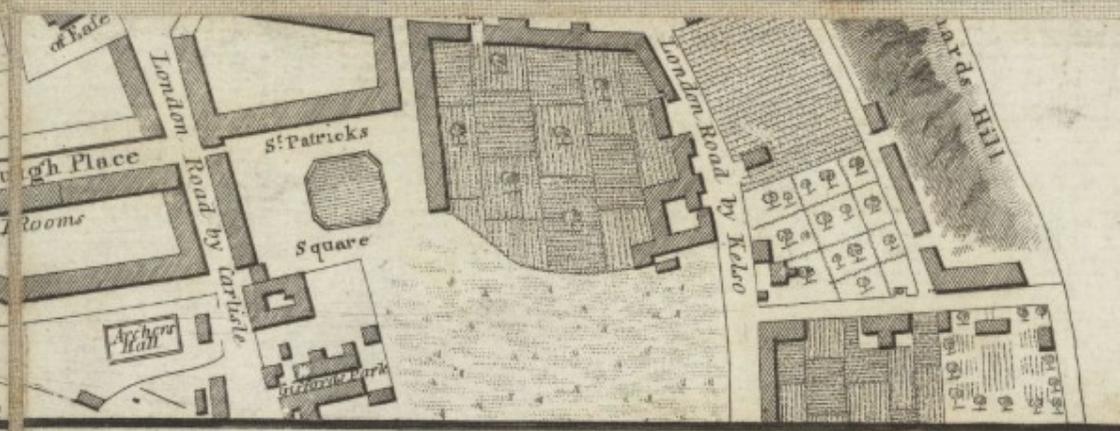
Thursday



Wynd 14 Milns Square
 15 Halkerstons Wynd
 STREET 16 Kinlocks Clofs

SOUTH SIDE HIGH STREET from 16 Murdochs Clofs
 the PARLIAMENT Square 17 Skinners C
 to the NETHER BOW 18 Grays C

8 Crooks Clofs
 9 Moyser C
 10 Plainstone C



12 Walkers Clofs
 NORTH SIDE of the
 COWGATE

16 Conns C
 17 Ferlies C
 18 Sawers's C

12 Brodies C
 13 Taylors Hall
 14 Campbells C

30 Bailies C
 31 Buchans Entry
 32 High School Wood

12J

Author of Whole
Antony Harvey

1794 December 4th
These Entered for this Copy
Mental Improvement, or the beautiful
and Wonders of Nature and Art, &c.
is a series of instructive conversations
By Criscella Wakefield Author of several
Tracts. 2 Volumes. 12^o

Recd Nine Copies - Robert Horsfield

M. Coxe G.

9
These Entered for his Copy -
A private Sonata for the Harpsichord
or Spinnet -
composed by Chas. Lockhart -
Recd Nine Copies -

Robert Horsfield

J. F. Kimbault G.

10
These Entered for his Copy -
Oh! Why should Love with Tyranny
a favorite Rondeau for the Piano Forte
sung by Miss Newman at the Public
concerts -
composed by J. F. Kimbault -

Recd Nine Copies - Robert Horsfield

M. Ivison G.

10
These Entered for her Copy -
The retired Poetess a Poem
By Ursula Ivison -
Recd Nine Copies Robert Horsfield

December 12. 1794

Proof of Grace
Hand Made

Then Entered for his Copy -
Blackstone's Commentaries. N. 52
Rec'd Nine Copies - Robert Howfield

12

Then Entered for his Copy -

Math

A Demonstration of the true and
eternal Divinity of our Lord Jesus Christ,
in opposition to the attacks of the present
Age - By Dionysius Van de Wyngaerde.
Tust. Doct. Phil. Math, et Astr. Prof. at
Leyden, to whom the Gold Medal was
adjudged by the Hague Society -
Rec'd Nine Copies - Robert Howfield

12

Then Entered for his Copy -

Math

D^o

Pindarica N. 67 -
Rec'd Nine Copies Robert Howfield

13

Then Entered for her Copy -

Tullhame

D^o

An Essay on Combustion, with a
view to a new art of Dying and
Painting, wherein the Phlogistic and
Antiphlogistic Hypotheses are proved
erroneous. By M^{rs}. Tullhame. 8^{vo}

Rec'd with price
Dec. 15. 1794

Rec'd Nine Copies Robert Howfield

ments may be performed in the open air.

It may appear presuming to *some*, that I should engage in pursuits of this nature, but averse from indolence, and having much leisure, my mind led me to this mode of amusement, which I found entertaining, and will, I hope, be thought inoffensive by the liberal, and the learned. But censure is perhaps inevitable; for some are so ignorant, that they grow sullen and silent, and are chilled with horror at the sight of any thing, that bears the semblance of learning, in whatever shape it may appear; and should the *speêtre* appear in the shape of *woman*, the pangs, which they suffer, are truly dismal.

There are others, who suffer the same torture in a still higher degree; but by virtue of an *old inspiring tripod*, on which ignorance, servility, or chance, has placed them, assume a dictatorship in science, and fancying their rights and prerogatives invaded, swell with rage, and are suddenly seized with a violent and irresistible desire of revenge, manifesting itself by innuendos, nods, whispers, sneers, grins, grimace, satanic smiles, and witticisms uttered sometimes in the acute, and sometimes in the nasal obtuse twang, with an affected hauteur, and contempt of the *speêtre*;
shrugs,

Jean Senebier to Marc-Auguste Pictet

24 December 1797

Monsieur,

Ce n'est pas ma faute si vous n'avez pas su l'arrivée de Mistress Fulhame à Rolle ou plutôt de son ouvrage que j'aimerais peut-être mieux qu'elle, j'écrivis Jeudi au Soir à M. De Saussure comme vous aviez paru le désirer et je le priai de me laisser dans le Comité de Dessin où j'avais toujours été et dont je me regardais toujours comme un de ses membres, je lui envoyai la recette de l'encre où je crains d'avoir commis une erreur en mettant 18 livres d'eau poids de 16 onces pour 10 qu'on doit employer. Ainsi vous voyez que je suis en règle. Je vous envoie le Tome IV du Repertory qui est coupé, par le Coche et je l'ai mis sous bande afin qu'on vît bien que c'était un livre, vous pourrez le ravoïr par Monsieur le Résident au cas que malheur lui arrive; apprenez-moi son sort, il m'instruira pour le voyage du volume V. La préface de votre Chymiste Anglaise est bien noire, il me paraît qu'on l'a bien maltraitée, j'en suis véritablement fâché car je l'aime beaucoup.

Je vois que je n'ai pas eu les mêmes succès qu'elle parce que je n'ai pas eu la même persévérance dans mes expériences et je n'avais pas humecté mes oxydes¹⁹⁴⁶; cependant j'ai eu des oxydes de plomb parfaitement réduits et les oxydes d'argent noircis comme ceux de Mercure. Son explication est bizarre, elle produit une décomposition de l'eau pour la reproduire avec les mêmes éléments, cependant dans l'un le gaz hydrogène est dans l'état naissant et dans l'autre sous forme de gaz tandis que l'oxygène est dans un cas sans calorique et dans l'autre avec lui, mais cela n'est pas suffisant je crois pour expliquer cette décomposition et cette recomposition qui me paraissent assez hypothétiques.

Il me semble qu'il y aurait moyen d'appliquer cette découverte aux Indiennes, aux Mousselines, aux rubans sur lesquels on imprimerait ce qu'on voudrait dorer ou argenter comme on imprime le reste et l'on ferait tomber avec une vessie armée d'un jet de cuivre un filet de gaz hydrogène tiré de l'eau sur les parties qu'on voudrait dorer ou argenter, ce qui se ferait sans nuire aux autres couleurs, on pourrait faire la même chose sur le papier, mais il serait tout à fait aisé de faire cela sur des bijoux ou des pièces d'écaïlle, de corne, de bois et caet. qu'on peindrait avec un pinceau en se servant de ces dissolutions métalliques et qu'on pourrait exposer sous des récipients pleins de gaz hydrogène tiré de l'eau. Voilà un rêve dont vous pourriez peut-être tirer parti.

Je ne suis encore qu'au 2d chapitre et je vais lire de suite les autres, mais vraiment ce livre est original et fait penser. Je vous en remercie mille fois, vous avez souvent amusé et instruit ma solitude.

Voici ma recette d'encre, je vous la répète parce que je crains de l'avoir mal donnée à M. De Saussure: 10 livres d'eau poids de 16 onces où vous mettrez 24 onces d'écorce de Chêne séchée et pulvérisée avec 2 onces de bois d'Inde, vous ferez bouillir le tout jusqu'à ce qu'il soit réduit au plus au 3/5 du volume, vous le passerez bouillant dans un tamis ou au travers d'un linge et vous exprimerez fortement le marc ensuite pendant que le fluide est chaud, vous y mettrez les drogues suivantes bien pilées: 2 onces 1/4 Vitriol de Mars ou sulfate de fer, 1 once 3/4 gomme, 1/2 once sucre candi et vous remuerez le tout jusqu'à ce qu'il soit fondu et le laisserez 24 heures à l'air avant de mettre l'encre dans des bouteilles que vous boucherez bien.

J'ai repris l'ouvrage de Mistress Fulhame, elle observe que dans la dissolution du phosphore par l'Ether il se forme des cristaux, c'est l'acide phosphorique qui s'est formé, le phosphore a pris l'oxygène à l'Ether; il serait curieux de voir ce que serait l'Ether saturé de phosphore quand on l'aurait débarrassé du phosphore dissout. Je vois que l'or se réduit quand le phosphore fume, ne serait-ce point parce que le phosphore qui est déjà oxygéné dans l'Ether, se change en acide phosphorique par l'oxygène qu'il enlève à l'oxyde [et que] l'eau lui ôte le contact de l'air ? L'eau me paraît nécessaire dans les réductions avec le gaz hydrogène, par la même raison elle l'applique immédiatement sur l'oxygène de l'oxyde où elle favorise leur union par son action sur l'oxyde, on pourrait par le moyen des poids s'assurer de la réalité ou de la fausseté de cette idée.

Je crois que votre explication des gouttelettes de Mercure est fondée par les observations que j'ai faites, mais je vais les suivre dans ce but; j'ai ici un Baromètre qui me fait voir constamment ce phénomène, je vais y porter mon attention; je comprends votre explication, je ne comprenais pas l'autre. J'ai l'honneur d'être avec considération.

Monsieur Votre très humble et obéissant serviteur
Senebier

Je me recommande à vous pour Beddoes quand vous le pourrez aisément, quand M. Odier vous le rendra.

— Jean Senebier to Marc-Auguste Pictet, 24 December 1797, Rolle, (PR:C2), *Correspondance De Marc-Auguste Pictet (1752-1825), Tome I: Les Correspondants Genevois*, 2016, pp. 642-644

Jean Senebier to Marc-Auguste Pictet

7 January 1798

Monsieur,

J'espère que vous aurez bien reçu le Vol. IV du Repertory, je vous envoie le Vol. V avec celui de Mistress Fulhame par le Coche de demain. J'ai bien reçu les 3 Vol. de Beddoes dont je vous remercie beaucoup.

Ce que je vous proposais relativement aux procédés de Mistress Fulhame pour les Indiennes et caet. ne peut avoir lieu que pour les dissolutions d'or par l'Ether mais en précipitant les autres et délayant les précipités lavés avec une matière gommeuse on pourrait les appliquer avec un pinceau ou les imprimer et les réduire ensuite comme je l'avais proposé.

Je ne puis m'empêcher de vous dire combien j'ai trouvé votre extrait bien fait, n'en doutez pas je préfère pour mon usage l'extrait à l'ouvrage lui-même. Je ne croirai pas que les animaux qui ont respiré quelque temps le gaz oxygène vivent plus longtemps par l'action de ce gaz sur leurs muscles dans une atmosphère méphitique ou résistent davantage par cette raison aux effets de la submersion, mais je crois que cela vient plutôt du gaz oxygène qui reste dans les bronches de leurs poumons.

J'ai eu un catarrhe à la tête qui m'a interdit toute espèce d'occupation pendant sept ou huit jours, mais Dieu merci je suis mieux et j'espère que cela continuera. Les expériences faites avec le gaz hydrogène et le gaz hydrogène carboné, l'azote et le gaz acide carbonique confirment une théorie relative à ces airs que des expériences sur les végétaux avaient fait naître ce qui m'a fait un grand plaisir; elles donneront lieu à d'autres expériences sur ce sujet infiniment curieux que je me propose de faire le printemps prochain et qui éclairciront je pense les affinités de ces gaz.

J'ai l'honneur d'être avec considération, Monsieur

Votre très humble et obéissant serviteur

Senebier

Vous me feriez un grand plaisir si vous pouviez me procurer un passeport de Monsieur le Résident pour moi, pour ma femme et une Domestique ou servante afin de pouvoir aller à Genève quand je le voudrai; présentez-lui mon respect et dites-lui que j'aurais eu l'honneur de lui écrire si j'avais cru qu'il se ressouvînt de la lettre infiniment honnête qu'il me fit l'honneur de m'écrire il y a quelques années.

— Jean Senebier to Marc-Auguste Pictet, 7 January 1798, Rolle, (PR:C2), *Correspondance De Marc-Auguste Pictet (1752-1825), Tome I: Les Correspondants Genevois*, 2016, pp. 642-644

Marc-Auguste Pictet to Elizabeth Fulhame

22 February 1798

Madam,

I am on two accounts particularly indebted to you. As a lover of Science I most sensibly felt what she owed to your ingenious patient and successful labours, and I endeavoured to do my best towards making them known as far as the circulation of our periodical performance goes. I am besides personally obliged to you Madam for the map you favoured me with; it is a very elegant specimen of your handsome discoveries, and a token if not of a friendship I am not so bold as to bespeak, at least of a consideration I shall ever be proud to deserve.

I take the liberty of forwarding to you by a friend who sets off for London the two numbers of our Bibliotheque Britannique in which the extract of your work is to be found. I wish it may be as acceptable to you as it has been to the scientific world here and I may say to the public at large. Every reader felt a peculiar interest in seeing a woman so deeply proficient in chemical knowledge and applying to the slow and difficult pursuit of science a stock of talents and ingenuity but seldom thus employed by the fair sex. Were you Madam to follow any farther the carrier you are so well qualified to pursue, I should be very happy for such communication of your performances as you would favour me with. The Revd. Mr Prevost n^o [8] Mount Street Berkley Sq. will forward to me any thing you think proper to trust him to that purpose.

I have the honour to be [etc.]

[Pictet]e

— Marc Auguste Pictet to Elizabeth Fulhame, 22 February 1798, (PR: j. corr. I/5, 1795-97), *Correspondance De Marc-Auguste Pictet (1752-1825), Tome III, Les Correspondants Britanniques*, 2015, p. 213





dignes d'attention ; mais en poursuivant ces recherches je réussis enfin à faire des piéces d'étoffe d'or, aussi grandes que mes finances pouvoient le permettre (1). »

» Je découvris, quelque temps après, que cette invention étoit applicable à la peinture & qu'elle contribueroit aussi à faciliter l'étude de la géographie ; car je l'ai appliquée à quelques cartes dont je représentois les riviéres en argent & les villes en or. Ces apparences plaisent à l'œil & lui épargnent la recherche, quelquefois pénible, du cours & de l'origine des riviéres, dont les plus petites branches sont représentées ainsi d'une maniere très-visible. »

L'auteur raconte dans la suite de sa préface ses succès & ses revers, qui furent comme alternatifs ; & elle s'abandonne trop peut-être à la susceptibilité de son sexe, dans les plaintes ameres qu'elle exhale contre les plagiaires, les envieux, les stupides, dont elle a eu à se défendre tour-à-tour. Elle eût pû faire un cours utile d'expériences morales en s'exerçant à neutraliser en silence ces élémens si nuisibles à son repos.

(1) L'un de nos amis, Docteur en Médecine dans l'Université d'Edimbourg, a vû & mapié chez Mistrifs Fulhame un morceau d'étoffe qu'elle avoit préparé, grand comme un mouchoir, parfaitement souple & qui sembloit un tissu d'or pur. (R)





CHAPTER II

Experiments on Light: Reenacting Mary Somerville

So numerous are the objects which meet our view in the heavens, that we cannot imagine a point of space where some light would not strike the eye; - innumerable stars, thousands of double and multiple systems, clusters in one blaze with their tens of thousands of stars, and the nebulae amazing us by the strangeness of their forms and the incomprehensibility of their nature, till at last, from the limit of our senses, even these thin and airy phantoms vanish in the distance.

— On the Connexion of the Physical Sciences (M. Somerville 1834)









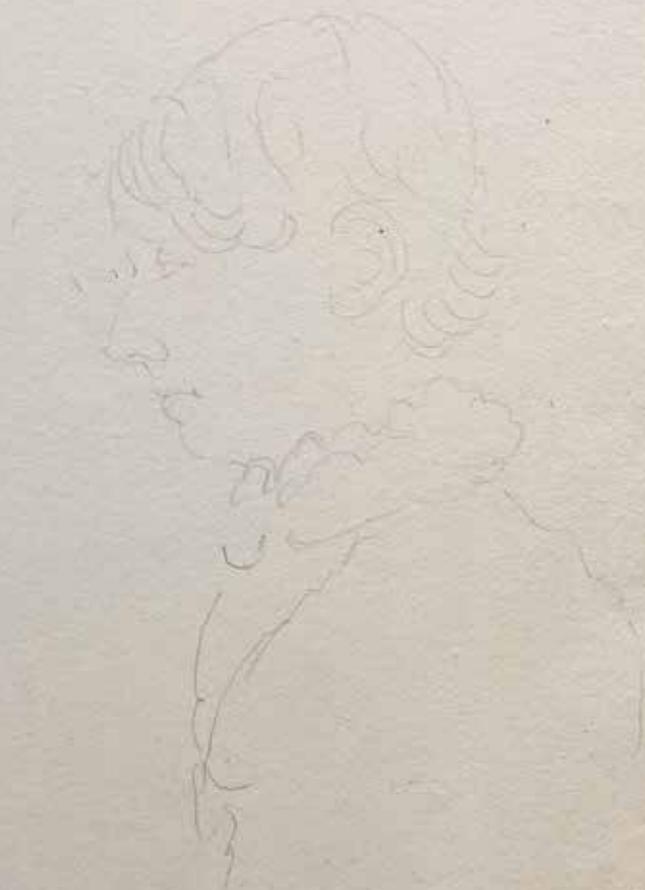


This is the Prism mentioned in
my Autobiography with which
Dr. Wallaston discovered "dark lines"
in the solar spectrum. N. S.

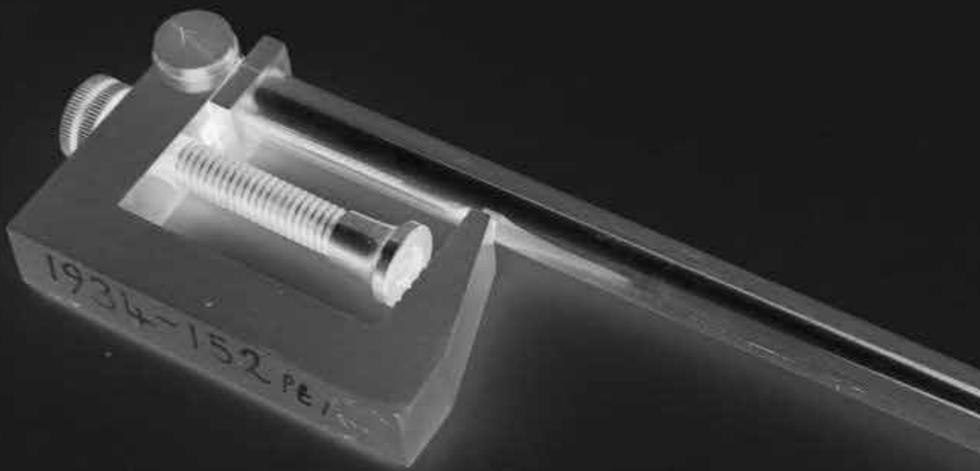


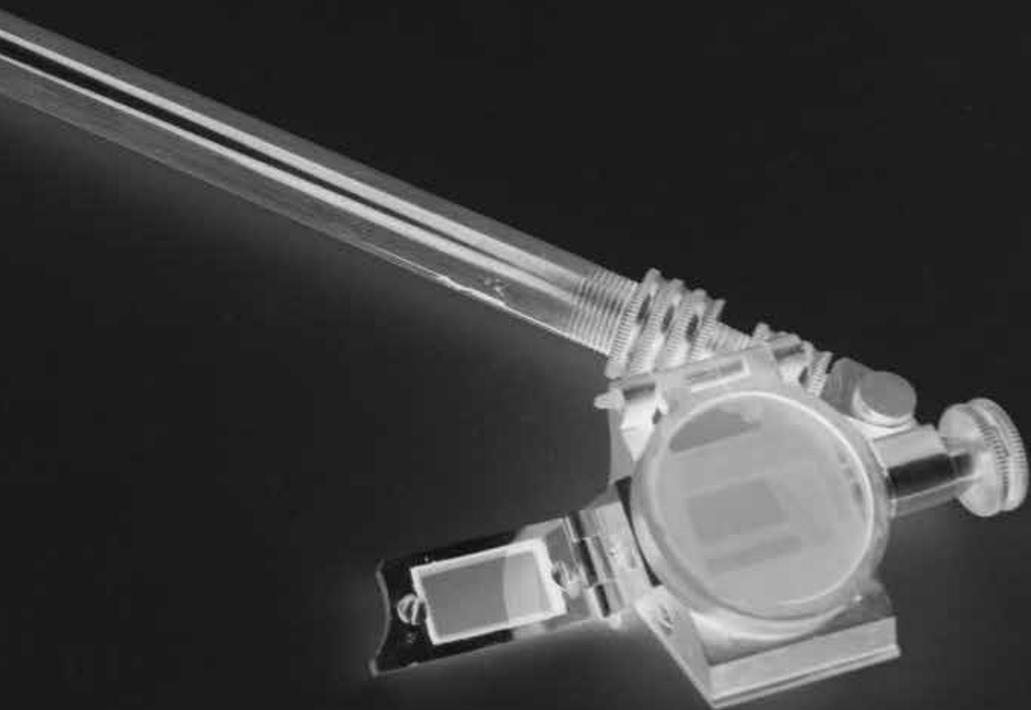
MS. 1170





Mary Somerville of London





First Experimental Paper:

1826 On the magnetizing Power of the more refrangible Solar Rays
Philosophical Transactions, The Royal Society, London
(Somerville 1826)

Kind friend Sir John He
imagined I had succe
et published my exper
of the Royal Society.
having done so as
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separately, & that is
a surprising m

Second Experimental Paper:

- 1836 Expériences sur la transmission des rayons chimiques du spectre solaire, à travers différents milieux, Comptes Rendus III, Paris (Somerville 1836)
- 1837 Translation of 1836 experiment: Extract of a Letter from Mrs Somerville to M. Arago, detailing some Experiments concerning the Transmission of the Chemical Rays of the Solar Spectrum through different Media, The Edinburgh new philosophical journal, Edinburgh (Somerville 1837)



state Allow me to suggest that
when you refer to and apply it
to paper for your experiments
you do so in a dark place or by
candle light only & thus you
may keep it for a long time in
good condition

I need also But's report
for your inspection

Ever Yours faithfully

W. Faraday

Ms. A. 1. 11

Michael Faraday to Mary Somerville

12 October 1835

Dear Mrs. Somerville

I have been making some experiments with the papers but do not succeed in obtaining so good & regular a result as I wished & believed I might obtain I[.] In the first place the precipitates made upon the paper are not so sensible or regular as that first found & washed & applied in the normal way the excess of the muriate or nitrate used & the resulting salt formed interfering with action of light by retarding more or less the change and that in an irregular manner[.] Chloride produced on the paper is therefore nothing like so regular in its change as chloride previously precipitated & well washed[.]

In the next place I do not find that I can lay a more regular coat of the substance on the method I mentioned than by using the moist precipitated chloride & a camel hair pencil[.] I suspect your chloride is a good deal discovered[.] I will therefore precipitate & wash some and send it to you in the moist state[.] Allow me to suggest that when you refer to and apply it to paper for your experiments you do so in a dark place or by candle light only & then you may keep it for a long time in good condition[.]

I send also Biots report for your inspection[.]

Every Your faithful Servant

M. Faraday

— Michael Faraday to Mary Somerville, 12 October 1835, *Oxford, Bodleian Libraries* Dep c. 370, fols. MSF-1 .

Mary Somerville to Michael Faraday

25 October 1835

How truly I am obliged to you my dear Sir for your kindness. The chloride of silver answers perfectly, and I took advantage of the last sunshine to make experiments upon a variety of substances with success. There were some curious results, but time will be required & brighter weather to confirm them. I beg my best regards to Mrs Faraday

and remain yours

very Sincerely

Mary Somerville

R.H Chelsea | 25th Oct

— Mary Somerville to Michael Faraday, 25 October 1835, Royal Institution, RI MS F1 H09. Faraday0824 in *Epsilon: The Michael Faraday Collection* accessed on 8 March 2023).

I had almost forgotten that by a letter
Astronomical Society I saw how clear Mr.

Dr. Brewster, Mad
Military Academy
Kilbuck
and London



... as a colleague Pray make my compliments to her
Cousin and tell her that I hope to meet her
some future season. Let it derive you joy in
congratulations and in all good wishes & kind
to yourself and your young ladies & well
remember all
Ever your friend
David
your ever friend
D. Brewster

as a colleague

Capacity and Skill
Some further Special
Congratulation, and
to yourself and
members will

ACADÉMIE DES S

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CIENCES — PARIS

Octobre 1836

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Volume de 17 Cahiers
1836

COMPTES RENDUS

REUNION DES

DES SEANCES

DE L'ACADEMIE DES SCIENCES

COMPTES RENDUS
DES SEANCES
DE
L'ACADEMIE DES SCIENCES

PAR M. LES SECRÉTAIRES PERPETUELS



SECOND SEMESTRE

PROFANE

N. 16.

PROFANE

PARIS,
RICHÉLIEU, IMPRIMERIE DE M. LAFITTE

3

JULIET-DÉCEMBRE

1836

Extract of a Letter from Mrs Somerville to M. Arago, detailing some Experiments concerning the Transmission of the Chemical Rays of the Solar Spectrum through different Media.

IN the account of the meeting of *L'Academie des Sciences* on the 21st of December 1835 (*Compte Rendu*, p. 508), it is stated that M. Arago, after having repeated what was most essential in those experiments by which M. Melloni proves that the solar rays, while preserving all their luminous properties, may be deprived of their calorific power, remarked, that there was another point of view in which the subject might be investigated. He said it would be important to inquire if the means employed by M. Melloni, or other analogous ones, would not enable us to deprive the solar rays of their chemical properties also; or, in other words, if, of the three properties which light possesses when it reaches us from the sun,—1st, That of illuminating; 2d, That of heating; and, 3d, That of destroying or exciting chemical combination, we could not separate the latter two, and retain its simple illuminating power. This experiment, remarked M. Arago, would probably lead to curious results, and I last week almost yielded to the temptation of undertaking the investigation. But, as possibly M. Melloni may have himself thought of it, though quite silent about it in his memoir, I think I had better not prosecute the subjects till after consulting the learned Italian philosopher.

The motives which I had in 1835, said M. Arago, at the meeting of the Academy on the 17th of October 1836, not to interfere in researches which so directly conducted M. Melloni to these beautiful discoveries, still subsist. I shall, therefore, abstain from stating some results to which I have arrived concerning the absorption or interception of the chemical rays. Every

one, however, will understand that the same reserve cannot be imposed upon Mrs Somerville; and I cannot, therefore, withhold the interesting experiments of this illustrious lady from the Academy, and the public.

In my experiments, she remarks, I employ the chloride of silver, which Mr Faraday was so kind as to prepare for me, and which, accordingly, was perfectly pure and white. It was liquid, and might be uniformly spread over paper. Although this substance is exceedingly sensible to the action of the chemical rays; yet as we have no precise means of appreciating the changes of colour produced by their action, some uncertainty as to the result might remain were we to compare only those tints which differ but little from each other; but the results which I shall furnish on this occasion shall be chosen from among those which were in no degree doubtful.

A piece of glass, of a light pale green colour, which was perfectly transparent, and less than $\frac{1}{20}$ th of an inch in thickness, did not permit any of the chemical rays to pass; after exposure for half an hour to a very hot sun, the chloride of silver behind the glass exhibited no change of colour whatever.

I have repeated this experiment with many pieces of green glass, which differed both in their tint and thickness, and I have always found that they were all nearly impervious so far as the chemical rays were concerned, and even after they had been subjected for a much longer period than that above stated to the solar influence. As M. Melloni has already found that glass of this colour arrests the most refrangible calorific rays, by associating his results with mine, we are led to conclude, that glass of this colour has the power of wholly intercepting the most refrangible portion of the solar spectrum.

Laminæ of mica, of a deep green colour, are also nearly impervious to the chemical rays; however, when they are very thin, and the solar action is continued for a very long time, then it appears that they do not completely arrest these rays. I fixed, with a little wax, to a sheet of paper which was covered over with the chloride of silver, a sheet of pale green mica from Vesuvius, the thickness of which was not more than the thirtieth of an inch, and I exposed the whole to the rays of a powerful sun; after a time the sheet of mica being removed, it was found that that part of the paper which it covered retained all its ori-

Chemical Rays of the

one, however, will understand
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hold the interesting experiment
Academy, and the public.

In my experiments, she rem
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which, accordingly, was perfect
and might be uniformly spread
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might remain were we to comp
but little from each other; but
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so kind as to prepare for me, and
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Third Experimental Paper:

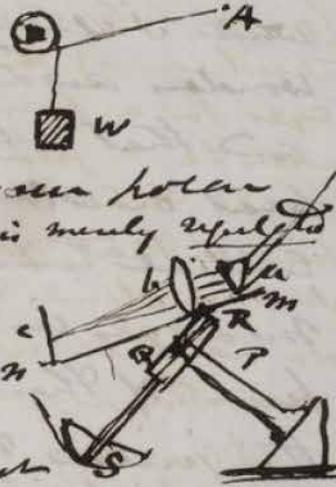
- 1846 On the Action of the Rays of the Spectrum on Vegetable Juices,
The Royal Society, London
(Somerville 1846)

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 of the mirrors favours the one or the other. - Pray go
 to these delightful experiments. I wish
 I could save yourself the fatigue of watching
 reading your sunbeam by a clock work
 near at your elbow I could rig your
 hope quite sufficient with the aid of
 a common wooden clock. All that is needed
 take off the hands and apply on the minute
 axis a small grooved wheel
 which a packthread is wrapped
 making one turn. The weight
it does the work of driving your polar
 (which the clock weight is not adapted) is merely regulated
 by the clock.

The rest of the apparatus is in my
 - P is a polar axis ending in
 the cone on which is fitted a wood
 plate turning on it with little
 friction (Q). - a hinge on this at R carries a
 on which is fixed a your Prism, b the
 and c the paper to be tried, in the focus of the
 To drive it an arm properly adjusted in
 to the little wheels diam^r (Rad: rad:: 24:1)
 a wooden sector S round the edge of which
 string A is wrapped, so as to give a hold upon
 it on a constant leverage.





















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Experiments on Light

Rome 1845

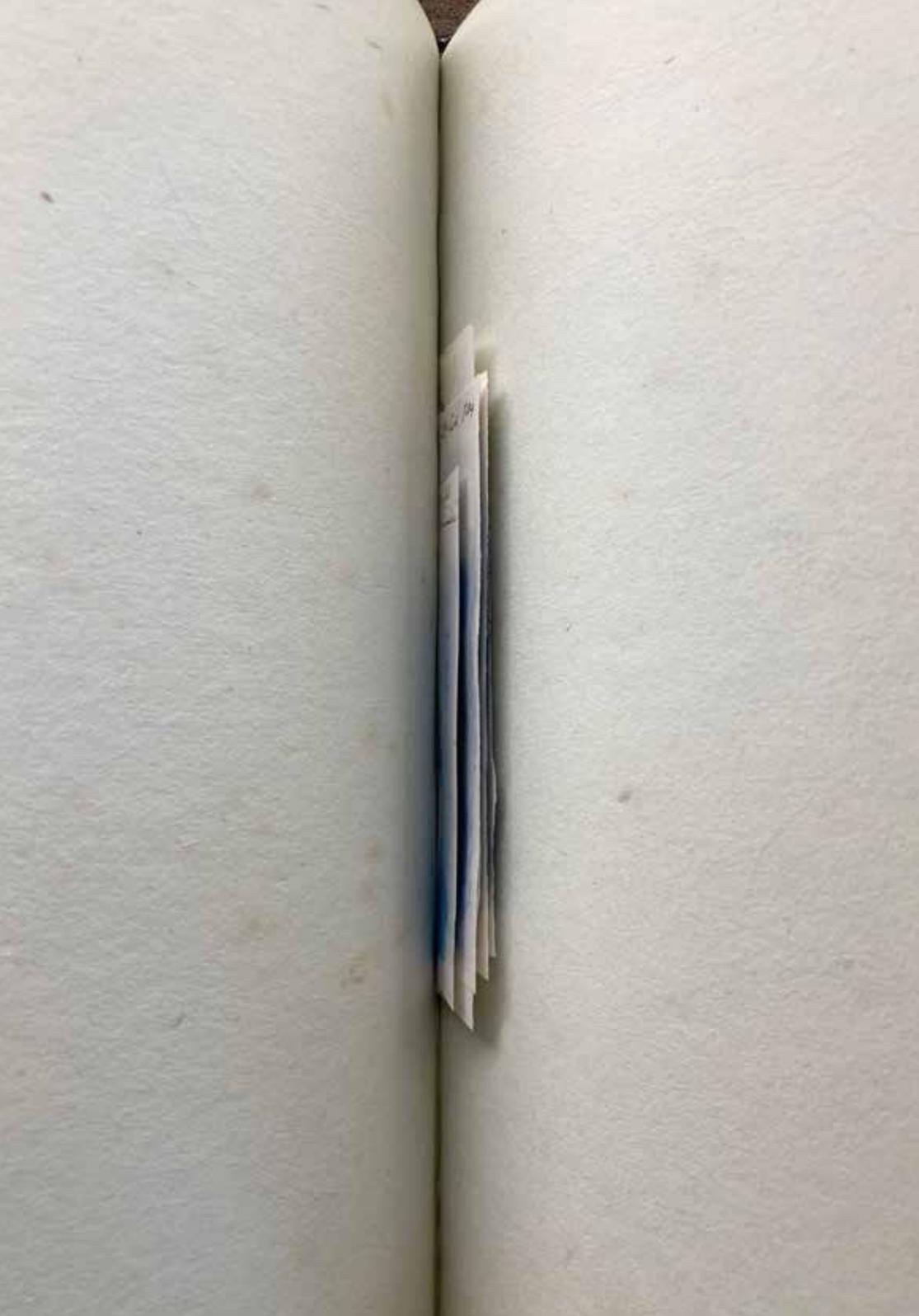
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— Lowest edge of red

— First heat spot

— Second heat spot









CHAPTER III

The Woman Who Was Alive There: Elizabeth Johnston Hall

Subject and Subjectivity

I think you find that we have, in Scotland, found out the value of your invention not before yourself, but before those to whom you have given the privilege of using it.

— David Brewster, letter to W. H. F. Talbot, 3 July 1843

What wonderful things they are!...these clean, sonsy, caller, comely, substantial fishwives, - what a refreshing sight! As easy, an unconfined, as deep-bosomed and ample, as any Grecian matron. Indeed, we have often been struck, when seeing them sitting together round their oyster creels, with their likeness to those awful and majestic women, the Fates of the Elgin Marbles.

— Exhibition of the Royal Scottish Academy, *The Witness*, April 22, 1846







Memoirs of Lady Eastlake
12 August 1843

JINNY WILSON, THE FISHWIFE

Aug. 12 - Went down to look at Jimmy Wilson – a tremendously hot day, and she with as heavy a load of petticoats as of fish: a lovely blooming creature, with a complexion of that transparent kind which our aristocracy are most proud; her eye laughing, her hair, without any figure of speech, golden – such a colour as an indoor life never permits. She was laden with clothes, petticoat over petticoat, striped and whole colour, all of the thickest woollen material, and one of a kind of dreadnought frieze; also a tremendous serge coat with long sleeves, that hung flat upon her back, over it a striped butcher's apron 'to wipe ma haunds' – and she made a graceful gesture over her shoulder with a fine pair, full in the palm and slender in the fingers – perfect pictures. Altogether, guessing roughly, I should say she was carrying to the amount of five ordinary box-coats, or fifteen conventional flannel petticoats. She wore, she told us 'sax on common days, four at hame, and twa of a Sunday, and nae cheap, thirteen shillings the pair,' and she had 'sax pair.' One petticoat was evidently not accounted worth the putting on or pulling off: hers were chiefly blue and white. I asked if she did not wear the red – she blushed and laughed and looked ineffably sly and silly, and owned 'she didna like them so weel soomhow, she didna ken why,' I could have told her – they were evidently not so becoming. She told me that this quantity of apparel was necessary to prevent the creel from hurting her back, and I suggested a pad for the necessary part, and a little less weight of material, and expenditure of shillings upon the rest; but Jinny had an unanswerable reason: "It was verra true – a piece upon the bock might be better, but ye ken it's juist the fashion o' the place."

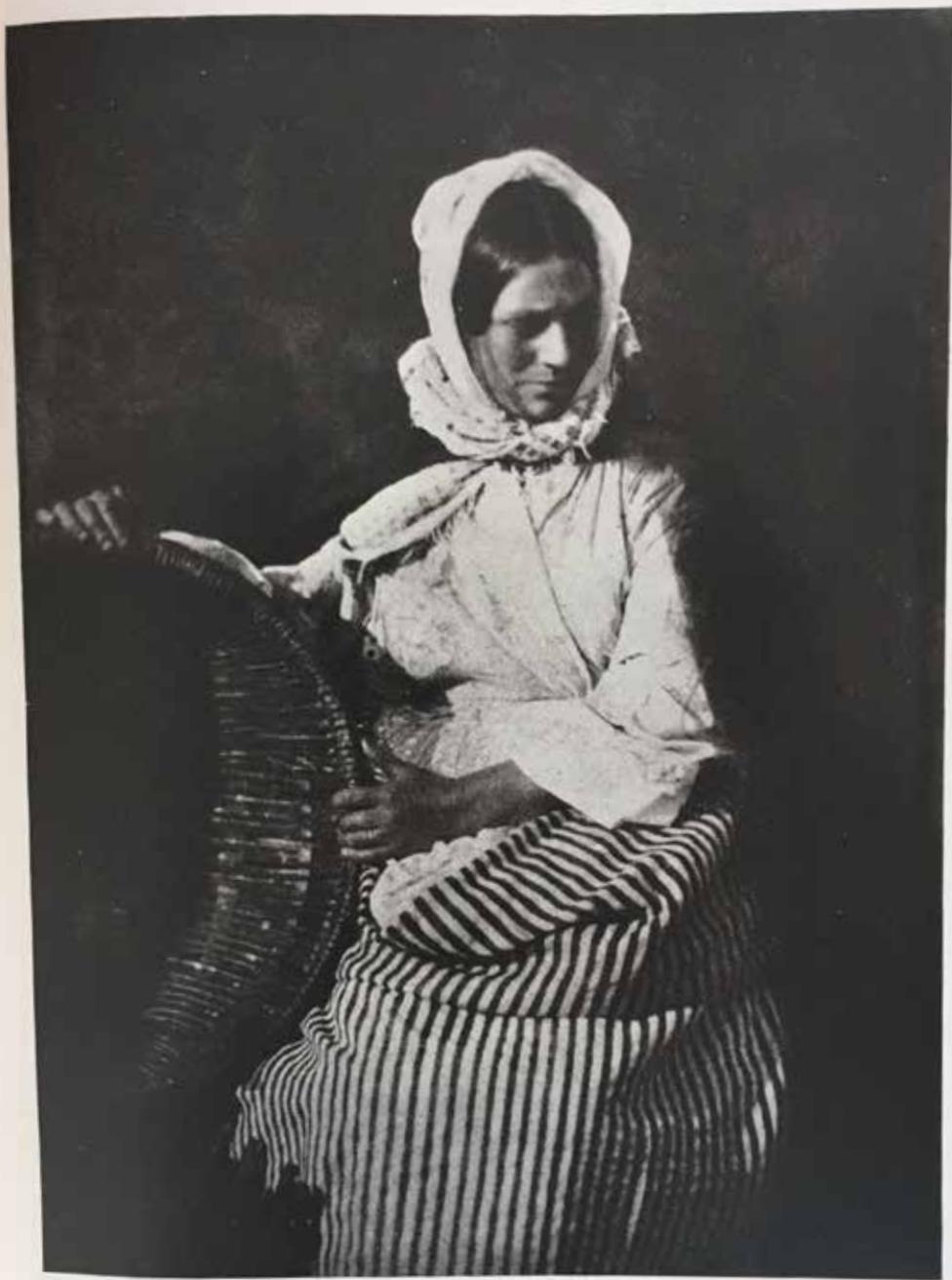
— Elizabeth Eastlake, 'Jinny Wilson, The Fishwife Aug 12 1843', *Journals and Correspondence of Lady Eastlake*, London, John Murray, 1895:93

riage again, all coming down from
the Castle, proceeding the same way as be-
fore. The crowd was enormous & the squeeze
quite alarming, so that both Albert & I were
quite terrified but the Guard of Archers,
who were having a hard time of it, might
get hurt, but they were of the greatest use.
They all carry a bow in one hand & have
the arrows stuck into their belts. Unfortu-
nately as soon as we got out of Edinburgh
it began to rain, & this continued the whole
of the afternoon, without interruption. We
reached L^{ds} Rosebery's place, Dalmeny, at
about 2. The Park is beautiful, with the trees
growing down to the edge of the sea, & command-
ing a splendid view of the Forth, the Isle of
May, the Bass Rock, & Edinburgh. The grounds
are charming, being hill, & dale, & wood. The
house is quite new, having been built by Lord
Rosebery & it is very pretty & comfortable.
It is in a sort of castellated style. We lunched
there, & the Roseberys were all civility & attention.
We left again at about ½ p. 3, returning through

Leith. The view of Edinburgh, before entering
Leith is quite enchanting, & only what one could
imagine & dream of, or see in a picture. The
Guard of Archers met us again there. It is not
a pretty town, but the people were most enthusias-
tic & there were large crowds. The Porters, all
wearing curious Scottish & caps, & mounted on
horses, decorated with flowers, had a very sing-
lar effect, but the Fishermen, are the
most striking looking people, & are generally
big & pretty. They look very clean & some-
what Dutch like, in their snowy white caps &
dark coloured shirts. I have tried to make the
usual little sketch.† We got back at 6, — rather
tired. — Rested, & we played over the piano. —



Our dinner party consisted of L.^d & L.^d Dalrymple,
L.^d & L.^d Bellhousie, the L.^d Justice Clerk, the L.^d
Nugent (brother of Dundas), the L.^d Advocate, the Solicitor,
the L.^d Justice General, Col: White, & Col: Hill,
besides those in the house. We were seated as
usual. —



26. Fischweib aus Newhaven

Baptisms in 1822.

M. Kenzie	Isabella lawful Daughter of John M. Kenzie Labourer Coladell & Isabella Lincer was born the 25 th of August & baptized the 1 st of Sept. 1822
Johnston	Elisabeth lawful Daughter of James Johnston Fisherman, Newhaven & Elisabeth Lincer was born the 19 th of August & baptized the 1 st Sept. 1822
Wason	Thomas lawful Son of James Wason Fisherman in Newhaven & Isabella Lincer was born the 5 th of August & baptized the 6 th of September 1822,
Noble	Maron lawful Daughter of Alexander Noble Fisherman Newhaven & Hannah Wilson was born the 5 th & baptized the 6 th of September 1822.
Masterton	William lawful Son of William Masterton Labourer in Windladrawie & Agnes Gray was born the 27 th of August & baptized the 8 th of September, 1822.
Burt	Floa lawful Daughter of David Burt Carpenter N. Leith & Grizzel Marshall was born the 11 th of August & baptized the 8 th of September 1822,
Masterton	Jane lawful Daughter of John Masterton, Shopman Bathfild & Jane Greig was born the 30 th of August & baptized the 8 th of September 1822
Wemyss	Janet Morrison lawful Daughter of John Wemyss Excise Officer, Albany Street & Margaret Morrison was born the 11 th of August & baptized the 18 th of Sept. 1822





1895

1895



1895
 Mrs. J. J. [unclear]
 [unclear] (1895)



1895



11 4c said Suody and Asher and the
said David Bruce Mitchell — By authority
of the above named and designed Mrs
Elizabeth Johnston or Hall who declares
that she cannot write never having been
taught I William Asher of Leith Solicitor
before the Supreme Courts of Scotland Notary
Public subscribe these presents for her she
having authorized me for that purpose
and the same having been previously
read over to her all in presence
of the Witnesses before named and designed











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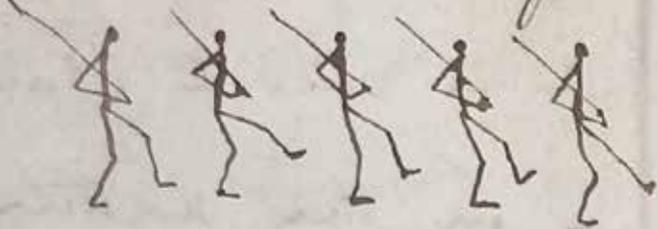
Handwritten text at the top of the page, possibly a title or reference, which is partially obscured and difficult to decipher. It appears to contain the words "C. M. S. 5" and "D. A. P. 100".



My Dear Friend

What an age it seems
to me or have you
so I take me up my
I have produced the
both your Dear little
divine solar art? and
Mr. Adams the author
the art of light and dark
means that work shall
you must excuse me
questioning of that kind
on your so cleave can

Fire Side . Patricroft



27. 1847

... I had the happiness either
! I can stand it no longer
watching you of steel and "ere
follow" how are ye and how
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CONCLUSION

















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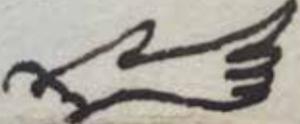
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IMAGE TITLES / COLLECTIONS

COPYRIGHT

Most of the images included in this thesis were taken by me. Those downloaded from museum and gallery websites have been credited and are used with permission. The images published here are for research purposes only. Some will be redacted for the digital thesis depository.

COVER

Cover Blue fabric covered notebook. Website description: 'Folder MSSW-13: experimental notes, *Investigation of Effect of Sun Light on Vegetable & Flower Colours & Juices*, part dated Geneva, 1851, in Mary's hand', approx. 210 x 148mm
Folder MSSW-13 Dep.c 354
Collection: Bodleian Libraries
Copyright: Somerville College

CONTENTS

Page 2 Inside Mary Somerville's notebook, approx. 210 x 148mm
Folder MSSW-13 Dep.c 354
Collection: Bodleian Libraries
Copyright: Somerville College

Page 11 Cropped detail of faded salt print with lilac cast. Website description: 'Calotype depicting Miss Melville Adamson, positive calotype, part of an album of calotype photographs compiled by Dr John Adamson'
Museum reference: T.1942.1.1.18
Collection: National Museum of Scotland

PROLOGUE

Page 14-15 Website description: 'Album containing camera lucida drawing of the Villa Melzi by William Henry Fox Talbot', approx. 146 x 228 x 15 mm, 1833.
Item Reference 1937-2537
Collection: Science Museum Group Collection
Credit: The National Media Museum, Bradford

Page 16 Detail. Website description: 'Camera lucida drawing of the Villa Melzi, Lake Como, drawn by William Henry Fox Talbot, dated 5th Oct 1833', approx. 146 x 228 x 15 mm, 1833.
Collection: Science Museum Group Collection
Item Reference: 1937-2537/6
Credit: The National Media Museum, Bradford

Page 19 Negative image of instrument component and optical drawing aid, the camera lucida, photograph, 10x8", Caroline Douglas 2024

Source: Wollaston type camera lucida, 1865-1875, by William Ladd, London, England, c. 1870, 320 x 92 mm, 1.005kg, metal (unknown), copper (alloy) , brass (copper, zinc alloy) and glass
Object Number: 1872-16 Pt1
Collection: Science Museum Group

To view a camera lucida belonging to Talbot, see National Trust Collections: <https://www.nationaltrustcollections.org.uk/object/1525276>

Page 21 Website description: 'Blank page, previously holding cut-out silhouette, from a scrapbook of calotype photographs compiled by Dr John Adamson'
Museum reference: T.1942.1.2.45.2
Collection: National Museum of Scotland

INTRODUCTION

Page 24 Cropped detail of faded salt print with lilac cast. Website description: 'Blank page, previously holding cut-out silhouette, from a scrapbook of calotype photographs compiled by Dr John Adamson'
Museum reference: T.1942.1.2.45.2
Collection: National Museum of Scotland

Page 25 My gloved hands handling calotypes and salt prints in archival polyester clear pockets, Early Photographic Collections, Special Collections, University of St Andrews Libraries and Museums, 2017.

Page 27 Cropped detail of faded salt print with lilac cast. Website description: 'Calotype depicting a woman, from a scrapbook of calotype photographs compiled by Dr John Adamson', 1842
Museum Reference; T.1942.1.2.5.2
Collection: National Museum of Scotland

CHAPTER I

Page 33 1794 Edition of Fulhame's book, Special Collections Reading Room, bound by white tape, bookmark reads 'Pressmark M.33.d FRAGILE HANDLE WITH CARE', 2018, Caroline Douglas

Source: *An essay on combustion, with a view to a new art of dying and painting.* ... By Mrs. Fulhame, London: printed for the author, by J. Cooper, and sold by J. Johnson; G. G. and J. Robinson; and T. Cadell, Jun. and W. Davies, 1794
Collection: National Libraries of Scotland
Item Reference: M.33.d

- Page 34 Cover page, *A vindication of the rights of woman: with strictures on political and moral subjects*, Mary Wollstonecraft, Printed for J. Johnson, London 1792,
Source: New York Public Library, Carl H. Pforzheimer Collection
Image ID: ID PS_CPS_CD7_097
- Page 35 Retouching the title page of Fulhame's 1794 Edition of *An essay on combustion*, Special Collections, The University of Edinburgh, 2018, Caroline Douglas

Source: *An essay on combustion, with a view to a new art of dying and painting*. ... By Mrs. Fulhame, London: printed for the author, by J. Cooper, 1794
Collection: Edinburgh University Library Catalogue
Item Reference: JA3146/3
- Page 36-37 Title page marked with an X: *An essay on combustion, with a view to a new art of dying and painting*. ... By Mrs. Fulhame, London: printed for the author, by J. Cooper, and sold by J. Johnson; G. G. and J. Robinson; and T. Cadell, Jun. and W. Davies, 1794
Collection: National Libraries of Scotland
Item Reference: M.33.d
- Page 38-41 Details of Herschel's notebook containing 'Herschel notebook James 510, *Note on the Art of Photography, or the Application of the Chemical Rays of Light to the Purposes of Pictorial Representation*, Communicated March 14 1839'
Collection: St John's College, Cambridge
Source: James 510

By permission of the Master and Fellows of St John's College, Cambridge. With thanks to Special Collections Assistant, Adam Crothers.
- Page 42-49 Documentation of silk coated with silver nitrate subjected to various levels of exposure to sunlight, *A View to the new art of dying [sic] and painting (samples)*, small silk silver nitrate trials in metal frames, 6x4", *Flight Mode*, School of Arts & Humanities annual post-graduate research show, 28 June 2018, Assembly Point, Peckham, Caroline Douglas
- Page 50 Detail from Fulhame's Preface, captured from the Wellcome collection digital copy, *An essay on combustion, with a view to a new art of dying and painting*. ... By Mrs. Fulhame, London: printed for the author, by J. Cooper, 1794
Collection: Wellcome Collection
Reference Note: ESTC T116351

Source: <https://wellcomecollection.org/works/c72ghf66>
This copy was formerly owned by William Morris.

- Page 51 Peggy McPherson, Female Servant Tax Rolls, Maters/Mistresses Names and Designations Dr. [Doctor] Fulhame, No noted children under 14, entry dates 15 June 1790, Crown Copyright
Record: E326/6/22/28
Collection: National Records of Scotland
- Page 53 Thomas Fulhame's dissertation titled: 'Puerperal Fever 'Hibernus' ... subject to the examination of learned Thomas Fulhame, Irish, Society. Phys. Edin. Soc. Hon. and the President of the Year.' University of Edinburgh Library Centre for Research Collections, Thomas Fulham University of Edinburgh
Volume: Matriculation 1762 1785, ESTC T11877
Collection: The University of Edinburgh
- Page 54-55 Tenement buildings on Bristo Street, now demolished. Website description: 'Bristo Street - looking south, showing buildings demolished in 1897', Photography, 1897, Andrew Hamilton Baird (a member of the Edinburgh Photographic Society), 19.7 x 13.4 cm, Capital Collections Item no 5745
Collection: Edinburgh Libraries and Museums and Galleries
- Page 56-59 Photograph of Chemical Society 1785, written in Black's hand 'A List of the Members of the Chemical Society' dated 1795. This has been refiled within the Black Correspondence, the old reference was GEN 875 Vol II-246-7 53.
Item: Gen 875 F (oversized)
Collection: The University of Edinburgh Special Collections
- Page 60 Ticket photographed at Wedgwood Archive Stoke on Trent Website description: 'Admission ticket, Tom Wedgwood, to a lecture on chemistry by Joseph Black, 1786, Book 7 Pdf Catalogue
Item: E11-30037
Collection: V&A Wedgwood Collection
- Page 61 Letter from Alexander Chisholm to Thomas Wedgwood, Wedgwood Archive Stoke on Trent, dated December 23 1786,
Item: E44-28903 (2)
Collection: V&A Wedgwood Collection

Thank you to archivist Lucy Lead at the V&A Wedgwood Collection for taking this photograph for me.
- Page 63 Photograph of selection of white silks in fabric store, Stoke Newington High St, 2018, Caroline Douglas
- Page 64-65 Documentation applying light sensitive emulsion to silk, Royal College of Art communal darkroom, red safety lights, 2018, Caroline Douglas

- Page 66 Photograph of Joseph Black Indigo trails, written in Black's hand 'Samples of Tape dyed in comparative Trials of different kinds of Indigo', June 1789.
Item: Coll-16/III/131
Collection: The University of Edinburgh Special Collections
- Page 68-75 Video Documentation, *A View to the new art of dying [sic] and painting, Flight Mode*, School of Arts & Humanities annual post-graduate research show, Asylum, Caroline Garden's Chapel, London, 2018, Caroline Douglas

See video documentation in full here: <https://www.carolinedouglasphotography.co.uk/works/a-view-to-a-new-art-of-dying-sic-and-painting>
- Page 76 Website description: 'Tray of Queen's ware trials, by Josiah Wedgwood and sons, 1765', Stoke-on-Trent, England.
Museum number: WE.4119-2014
Collection: V&A, London
- Page 77 Website description: 'Tray of Jasper trials, by Josiah Wedgwood and sons, 1773', Stoke-on-Trent, England.
Museum number: WE.7599-2014
Collection: V&A, London
- Page 78-79 Documentation of silk coated with silver nitrate subjected to various levels of exposure to sunlight, *A View to the new art of dying [sic] and painting (samples)*, small silk silver nitrate trials in metal frames, 6x4", *Flight Mode*, School of Arts & Humanities annual post-graduate research show, Assembly Point, Peckham, 2018, Caroline Douglas
- Page 81 Documentation, *A View to the new art of dying [sic] and painting, Flight Mode*, School of Arts & Humanities annual post-graduate research show, Asylum, Caroline Garden's Chapel, London, 2018, Caroline Douglas
- Page 82 Original letter from James Watt to Josiah Wedgwood dated Thursday (1799) acknowledging directions for silver pictures. James Watt to Josiah Wedgwood Collection: Science Museum Group Collection

Please note, the letter has not been digitised. The assistant curator Saquib Idress kindly took this photograph for reference. This photo is only shared for the research purposes of this project.
- Page 84-85 Map Detail, 'Town Plans / Views, 1580s-1940s, Plan of Edinburgh City and Suburbs, [Edinburgh: Thomas Aitchison, 1794 to 1795], 1 map; 215 x 257 mm. Shelfmark: RB.s.1205
Collection: National Library of Scotland, Maps Division
- Page 86-87 Entry for Fulhame's text at Stationer's Hall. Text reads 'Eliz. Fulhame', Company Registers, Entry Book Copy 1794
Collection: The Stationers Company

With thanks to Dr Ruth Frenedo for assisting my visit in 2019.

- Page 89 Detail of page ix, 1794 Edition of Fulhame's book, 2018, Caroline Douglas
- Source: An essay on combustion, with a view to a new art of dying and painting. ... By Mrs. Fulhame, London: printed for the author, by J. Cooper, and sold by J. Johnson; G. G. and J. Robinson; and T. Cadell, Jun. and W. Davies, 1794
Collection: National Libraries of Scotland
Item Reference: M.33.d
- Page 90-91 Letter, Jean Senebier to Marc-Auguste Pictet, 24 December 1797, Rolle, (PR:C2), Correspondance De Marc-Auguste Pictet (1752-1825), Tome I: Les Correspondants Genevois, 2016, pp. 642-644
- Page 92 Letter, Jean Senebier to Marc-Auguste Pictet, 7 January 1798, Rolle, (PR:C2), Correspondance De Marc-Auguste Pictet (1752-1825), Tome I: Les Correspondants Genevois, 2016, pp. 642-644
- Page 93 Marc Auguste Pictet to Elizabeth Fulhame, 22 February 1798, (PR: j. corr. I/5, 1795-97), Correspondance De Marc-Auguste Pictet (1752-1825), Tome III, Les Correspondants Britanniques, 2015, p. 213
- Page 94-95 A View to the new art of dying [sic] and painting, silk, silver nitrate, after 6 years in home wardrobe, London, 2024, Caroline Douglas
- Page 94-95 A View to the new art of dying [sic] and painting, silk, silver nitrate, after 6 years in home wardrobe, London, 2024, Caroline Douglas
- Page 96 Un essai sur la combustion, avec des vues sur un nouvel art de teinture et de peinture, dans lequel on prouve que les hypothèses Phlogistiques et Antiphlogistiques sont erronées, Bibliothèque Britannique, Vol 6, pp. 125.
- This book is part of the collection held by the Bodleian Libraries and scanned by Google, Inc. for the Google Books Library Project.
Source: Bodleian Libraries
- Page 97 Documentation, A View to the new art of dying [sic] and painting, Flight Mode, School of Arts & Humanities annual post-graduate research show, Asylum, Caroline Garden's Chapel, London, 2018, Caroline Douglas
- Page 99 Cropped detail of faded salt print with lilac cast. Website description: 'Calotype depicting a woman in a plaid dress, from a scrapbook of calotype photographs compiled by Dr John Adamson'.
Museum reference: T.1942.1.2.7.2
Collection: National Museum of Scotland

CHAPTER II

- Page 104-105 Photograph of a fragment of ceiling from Mary Somerville's childhood house, 30-21 Somerville Square, Burntisland. The panels depicting painted representation of the planets and stars were found during renovation work by Fife Council in 1960s, 2021, Caroline Douglas.
Collection: Historic Environment Scotland
- Thanks to Senior Paintings Conservator Damiana Magris for facilitating this special visit, South Gyle Conservation centre back in 2021.
- Page 106-107 Composite photograph, made up from landscape paintings by Anne, Charlotte and Jane Nasmyth and Mary Somerville, 2023, Caroline Douglas.
- In this image, I have created a composite of landscapes painted by Mary Somerville, Anne Nasmyth (1798-1874), Charlotte Nasmyth (1804-1884) and Jane Nasmyth (1788-1867). Presented upside down, this is a gesture as to how landscapes would be viewed on location when using the camera obscura.
- Page 108 Negative image of optical prism gifted to Mary Somerville from William Hyde Wollaston, photograph, 10x8", 2024, Caroline Douglas
- Page 109 Mary Somerville's handwritten stored with Fraunhofer prism 'This is the Prism mentioned in my Autobiography which Dr Wollaston discovers the dark lines in the solar spectrum M.S.', photographed in Swindon, 2022.
Source: © The Board of Trustees of the Science Museum
Collection: Science Museum Group
- Source image. Website description: 'Original prism by Joseph von Fraunhofer', glass and sealing wax, 26 x 39 x 30 mm, 05kg
Object Number: 1927-969/1
Collection: Science Museum Group
Credit: Ramsay-Fairfax, W.G.A.
- Page 110 Photograph, Somerville College Archives, Reading Room, Somerville College, 2023, Caroline Douglas
- Page 111 Camera Lucida portraits of Mary Somerville and William Somerville by Giovan Battista Amici, June 1818, Modena
Reference: SC/LY/SP/MS/3
Collection: Somerville College
- Page 112-113 Negative image of instrument component and optical drawing aid the camera lucida, similar to Mary Somerville's camera lucida, designed by Amici, photograph, 10x8", 2024, Caroline Douglas
- Source: Amici Camera Lucida, made by Cary, London, England, c. 1830, 335 x 60 x 40mm, .1555kg, metal (unknown), copper (alloy) , brass (copper, zinc alloy) and glass
Object Number: 1934-152 Pt1
Collection: Science Museum Group

Page 116-117	Somerville detail of draft manuscript 'committed to the flames'. Draft manuscripts of Mary Somerville's Recollections, Bodleian Libraries Dep c.555,5,MSAU-3: p.104. Collection: Bodleian Libraries
Page 121	Michael Faraday to Mary Somerville, 12 October 1835, Oxford, Bodleian Libraries Dep c. 370, fols. MSF-1.
Page 122	Transcription of letter Michael Faraday to Mary Somerville, 12 October 1835, Oxford, Bodleian Libraries Dep c. 370, fols. MSF-1.
Page 123	Transcription of letter from Somerville to Faraday, 'Mary Somerville to Michael Faraday, 25 October 1835, Royal Institution, RI MS F1 H09. Faraday0824"
Page 124-125	In 1835, when Somerville and Caroline Herschel became Honorary Members of the Royal Astronomical Society, John Herschel wrote to Thomas Somerville, 'I can now claim Mrs Somerville a colleague', Royal Society (J. F. W. Herschel 1835), photographed 2021. Ref: JH/A/1026/4 Collection: Royal Society Library
Page 126-127	Academie des Sciences, Institut de France, 17 Octobre 1836 Collection: Archives De L'Academie Des Sciences, Paris
Page 128-129	<i>Comptes Rendus</i> , containing Somerville's letter to Arago 'Expériences sur la transmission des rayons chimiques du spectre solaire, à travers différents milieux', Academie des Sciences, 1836 Collection: Archives De L'Academie Des Sciences, Paris
Page 130-133	Detail, Edinburgh translation of 1836 experiments, <i>The Edinburgh New Philosophical Journal: Exhibiting a View of the Progressive Discoveries and Improvements in the Sciences and the Arts</i> , 1837. Item: SERIALS S 445 Collection: Natural History Museum Library
Page 135	Lumen print, 'The chloride of silver answers perfectly', light-sensitised paper, coloured glass and sunlight, digital scan, 2024, Caroline Douglas
Page 136-137	Lumen print, 'The chloride of silver answers perfectly', light-sensitised paper, coloured glass and sunlight, digital scan, 2024, Caroline Douglas
Page 138-141	Documentation of Installation and Exhibition (before and after exposure to ambient light), <i>The chloride of silver answers perfectly</i> , 25 October 1835, unfixed lumen print, Chasma, School of Arts & Humanities annual post-graduate research show, Beaconsfield, Vauxhall, London, 2024, Caroline Douglas.

- Page 142 The chloride of silver answers perfectly, light-sensitised paper, coloured glass and sunlight, unfixed print, digital scan, 2024, Caroline Douglas
- Page 143 The chloride of silver answers perfectly, light-sensitised paper, coloured glass and sunlight, unfixed print, digital scan, positive from negative image, 2024, Caroline Douglas
- Page 147 John Frederick William Herschel, Letter, from Sir John Herschel to Mary Somerville, dated at Collingwood, 2 November 1845, HS/16/352, The Royal Society Archives, London

https://makingscience.royalsociety.org/items/hs_16_352/letter-from-sir-john-herschel-to-mary-somerville-dated-at-collingwood
- Page 148-149 Making of anthotypes at home, using red cabbage and outgrown baby clothes , 2022, Caroline Douglas
- Page 150-151 Preparing of beetroot canvas at home, making of 'Magenta' anthotype, 2021, Caroline Douglas
- Page 152-154 *Experiments on Light*, anthotypes on paper, red cabbage, turmeric, beetroot and sun bleaching on paper, steel and glass frame, *Unruly Encounters*, School of Arts & Humanities annual post-graduate research show, Lake Gallery/Dilston Gallery, London, 2022, Caroline Douglas
- Page 156-157 Antyope test strips, for making of *Experiments on Light*, 2022, Caroline Douglas
- Page 158-159 Details from notebooks, anthotype test strip for cyan, for making of *Experiments on Light*, 2022 and 2024
- Page 160-161 Inside of Mary Somerville's scientific notebook used to create her work *On the Action of the Rays of the Spectrum on Vegetable Juices* (M. Somerville 1846), written in Somerville's hand 'Experiments on Light, Rome 1845', photographed in the Bodleian Library before works sent for preservation, 2022, Caroline Douglas

Image Source: MSSW-13 Dep.c 354
Collection: Bodleian Libraries
Copyright: Somerville College
- Page 163-165 Mary Somerville's scientific notebook used to create her work *On the Action of the Rays of the Spectrum on Vegetable Juices* (M. Somerville 1846). Anthotypes photographed in the Bodleian Library before the works sent for preservation, Caroline Douglas, 2022

Image Source: MSSW-13 Dep.c 354

- Page 183 Elizabeth Johnson Hall Baptism Record, Old Parish Register Births, Crown Copyright
Record: 692/1 80 145
Collection: National Records of Scotland
- Page 184-185 *Newhaven's Last Working Fishwife / Queen Victoria's Funeral Procession*, Video work, 1:30 minutes, 2018, Caroline Douglas

Source colour, original format: 8mm cine film. Source: YouTube Newhaven Heritage Centre (Liston, n.d.) and Black-and-white footage, Queen Victoria's Funeral, 1901 © British Pathé.

Credit: special thanks to Newhaven Heritage (Scotland) and Dr Jeff Liston for the sharing of the colour cine film footage of Esther Listonn, Newhaven Heritage (Scotland).

See video documentation in full here: <https://www.carolinedouglasphotography.co.uk/works/newhavenslastworkingfishwifequeen victoria>
- Page 186-187 *Elizabeth Johnston Hall (after Benjamin)*, The Library and Print Room, Scottish National Portrait Gallery, Edinburgh, Caroline Douglas, 2021

With many thanks to Anne Lyden and Louise Pearson for accommodating my multiple visits.
- Page 189 Deed for property sale, March 1896, stating 'Mrs Elizabeth Johnston or Hall who declares that she cannot write on account of never having been taught'
Record: RS108/3046/96.
Collection: National Records of Scotland
- Page 190 'Marion Finlay, Mrs Margaret (Dryburgh) Lyall and Mrs Grace (Finlay) Ramsay. Called 'The Letter', 1843-1847, Robert Adamson and David Octavius Hill, 20.80 x 15.70cm.
Accession number: PGP HA 298
Collection: National Galleries of Scotland
- Page 193 Retouched negative, removal of fisherwoman's head clamp. Website description: 'Two unidentified women', Calotype negative, Robert Adamson and David Octavius Hill, 1843-1847, 30.1 x 23.2 cm.
GUL Number: HA0629
Collection: University of Glasgow Library
- Page 195 Retouched negative. Website description: 'Rev. Dr Robert Smith Candlish, (1807 – 1873) of St George's, Edinburgh; Principal of New College [b], probably 1843', 15.70 x 11.90 cm
Accession number: PGP HA 485
Collection: National Galleries of Scotland

- Page 196-197 Retouched negative. Website description: 'Unknown woman 18. Possibly a Mrs Bell', Calotype negative, Robert Adamson and David Octavius Hill, 1843 – 1847, 20.80 x 15.90 cm
Accession number: PGP HA 2447
Collection: National Galleries of Scotland
- Page 198-199 Retouched negative. Website description: 'Unknown women and men [Newhaven]', Calotype negative, Robert Adamson and David Octavius Hill, 20.80 x 15.70 cm, 1843 – 1847,
Accession number: PGP EPS 75
Collection: National Galleries of Scotland
- Page 200-201 Retouched negative. Website description: 'Group of five unknown people and a baby [Newhaven]', Calotype negative, Robert Adamson and David Octavius Hill, 1843-1847, 20.80 x 15.70 cm.
Accession number: PGP EPS 31
Collection: National Galleries of Scotland
- Page 203 Photography of Calotype Printing Frame, Special Collections room at the University of Glasgow, 2018, Caroline Douglas

With thanks to Sarah Hepworth for accommodating this special access.
- Page 205 *She Probably Just Had The Sun In Her Eyes I*, Calotype, 5x7",
2019, Caroline Douglas
- Page 207 Detail, *She Probably Just Had The Sun In Her Eyes II*, Calotype, 5x7",
2019, Caroline Douglas
- Page 209 Detail of letter from James Nasmyth to David Octavius Hill about the assistant work of Jessie Mann, 27 March 1847
Item: ROE AA9.423
Collection: Royal Observatory, Edinburgh

Transcription:
'My Dear Friend, What an age it seems since I had the happiness either to see or hear from you! I can stand it no longer so I takes me up my scratching pen of steel and "ere I arose produced the following" How are you and how doth your Dear little Lass Chattie? And how goes on the divine solar art? And how does that worthy artist Mt Adamson the authentic contriver & manipulator in the art of light and darkness? and thrice worthy Miss Mann that most skillfull [sic] and zealous of assistants.'
- Page 211 Inverted image made calotype negative of Mrs Elizabeth (Johnstone) Hall, Mrs Hall, Newhaven, 1843-47 (Digital positive made with permission from University of Glasgow), Robert Adamson and David Octavius Hill, 20.9 x 14.8cm,
Source: GUL Number: GUL763
Collection: Archives & Special Collections, University of Glasgow Library

- Page 212 Detail of calotype of 'Annie Linton', 1843-47, Calotype, 19.9 x 14.5 cm, Robert Adamson and David Octavius Hill
Source: GUL Number: HA0764
Collection: Archives & Special Collections, University of Glasgow Library
- Page 215 Portrait depicting my distant family members. Website description: 'Group of Newhaven Fishermen, possibly William Ramsay, Alexander Rutherford and a boy, Robert Adamson and David Octavius Hill, (Modern Calotype Print by Michael and Barbara Gray)', 2002, 21.30 x 15.70 cm. Accession number: PGP HA 2343
Collection: National Galleries of Scotland
- Pages 216-219 Details from 'The Letter', I have assembled a collection of close ups of the hands of distant family members.

Source: 'Marion Finlay, Mrs Margaret (Dryburgh) Lyall and Mrs Grace (Finlay) Ramsay. Called 'The Letter'', Robert Adamson and David Octavius Hill, 20.80 x 15.70 cm, 1843 – 1847
Accession number: PGP HA 298
Collection: National Galleries of Scotland
- Page 221 Cropped detail of faded salt print with lilac cast. Website description: 'Calotype depicting a woman, from a scrapbook of calotype photographs compiled by Dr John Adamson'
Museum reference: T.1942.1.2.7.1
Collection: National Museum of Scotland

CONCLUSION

- Page 225-230 Documentation of *The Sublime Truths of Science are no longer confined to the wealthy and the learned*. Installation of camera obscura, Old Observatory House, Collective, Edinburgh, 2021, Caroline Douglas
- Page 232-237 Details from installation 'Cyan, Magenta, Yellow, Experiments on Light (after Mary Somerville), Anthotypes and photographic reproduction of a manuscript from Mary Somerville Experiments on Light, Rome 1845', *La Couleur est la Lumière, Inventions historiques, expérimentations contemporaines*, Le Point du Jour, 2024, Caroline Douglas
- Page 238 Installation view, Hippolyte Bayard and Caroline Douglas, *La Couleur est la Lumière, Inventions historiques, expérimentations contemporaines*, Le Point du Jour, 2024
Image: Le Point du Jour

Page 240-243

Details of Herschel's notebook containing 'Herschel notebook James 510, *Note on the Art of Photography, or the Application of the Chemical Rays of Light to the Purposes of Pictorial Representation, Communicated March 14 1839*'

Collection: St John's College, Cambridge

Source: James 510

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Page 244-250

Details of Herschel's daughters' hands. These are the figures Mary Somerville left her cabinet of crystals to. Website description: 'Constance Anne (née Herschel), Lady Lubbock; Caroline Emilia Mary (née Herschel), Lady Hamilton-Gordon; Margaret Louisa Marshall (née Herschel); Isabella Herschel; Francisca ('Fancy') Herschel; Matilda Rose Waterfield (née Herschel),' Circa 1860, Albumen Print, 145 x 147 mm, Unknown photographer

Reference: x44697

Collection: National Portrait Gallery, London NPG

BACK

Blue fabric covered notebook. Website description: 'Folder MSSW-13: experimental notes, *Investigation of Effect of Sun Light on Vegetable & Flower Colours & Juices*, part dated Geneva, 1851, in Mary's hand', approx. 210 x 148mm

Folder MSSW-13 Dep.c 354

Collection: Bodleian Libraries

Copyright: Somerville College

First Supervisor: Professor Gemma Blackshaw
Second Supervisor: Professor Rebecca Fortnum

Supported by *techne*, AHRC Consortium
Doctoral Placement: Victoria & Albert Museum, London
Doctoral Placement: Collective Gallery, Edinburgh

