

Sketch of the life of James Keir, Esq., F.R.S. : with a selection from his correspondence.

Contributors

Moilliet, A.
Royal College of Physicians of London

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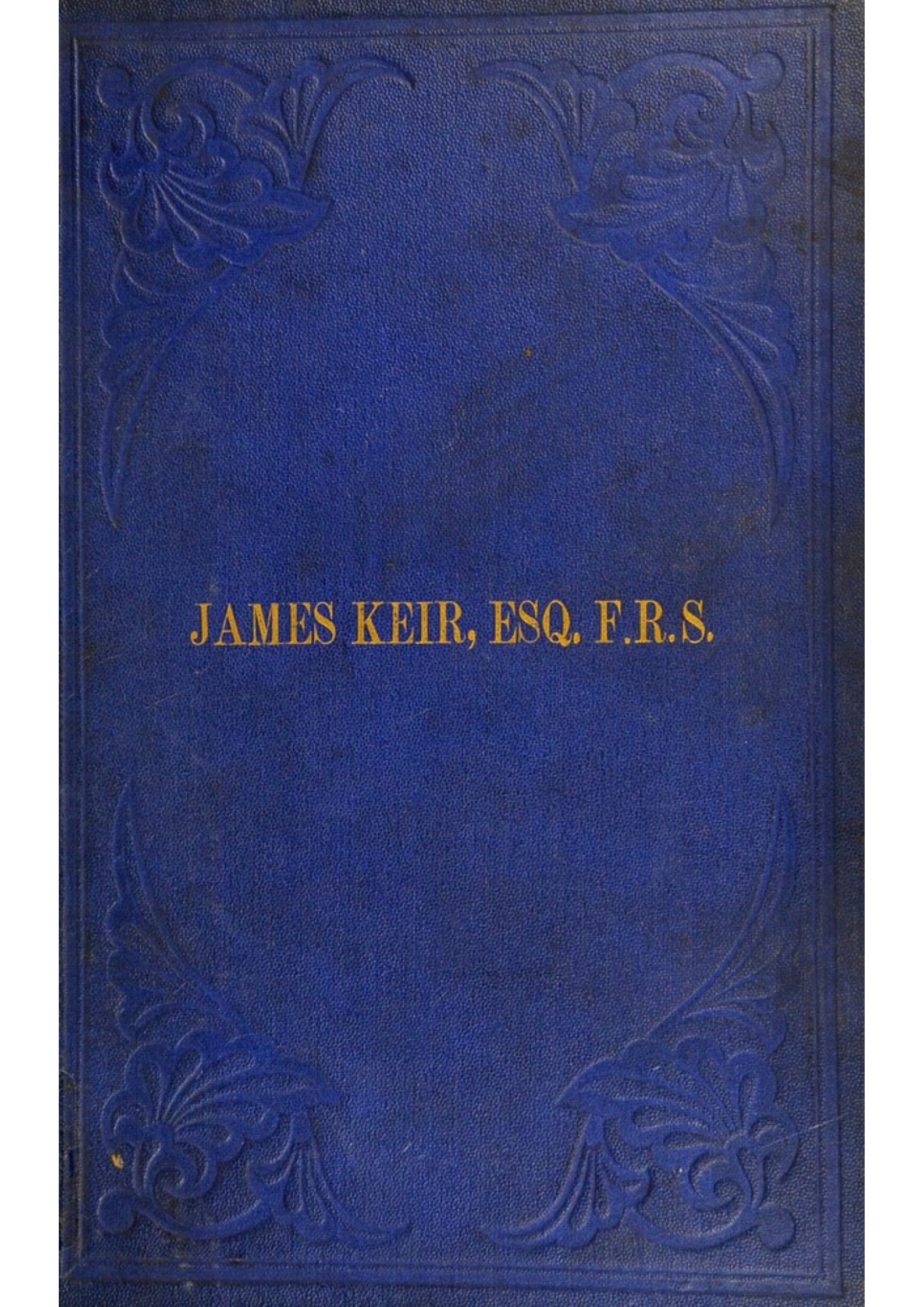
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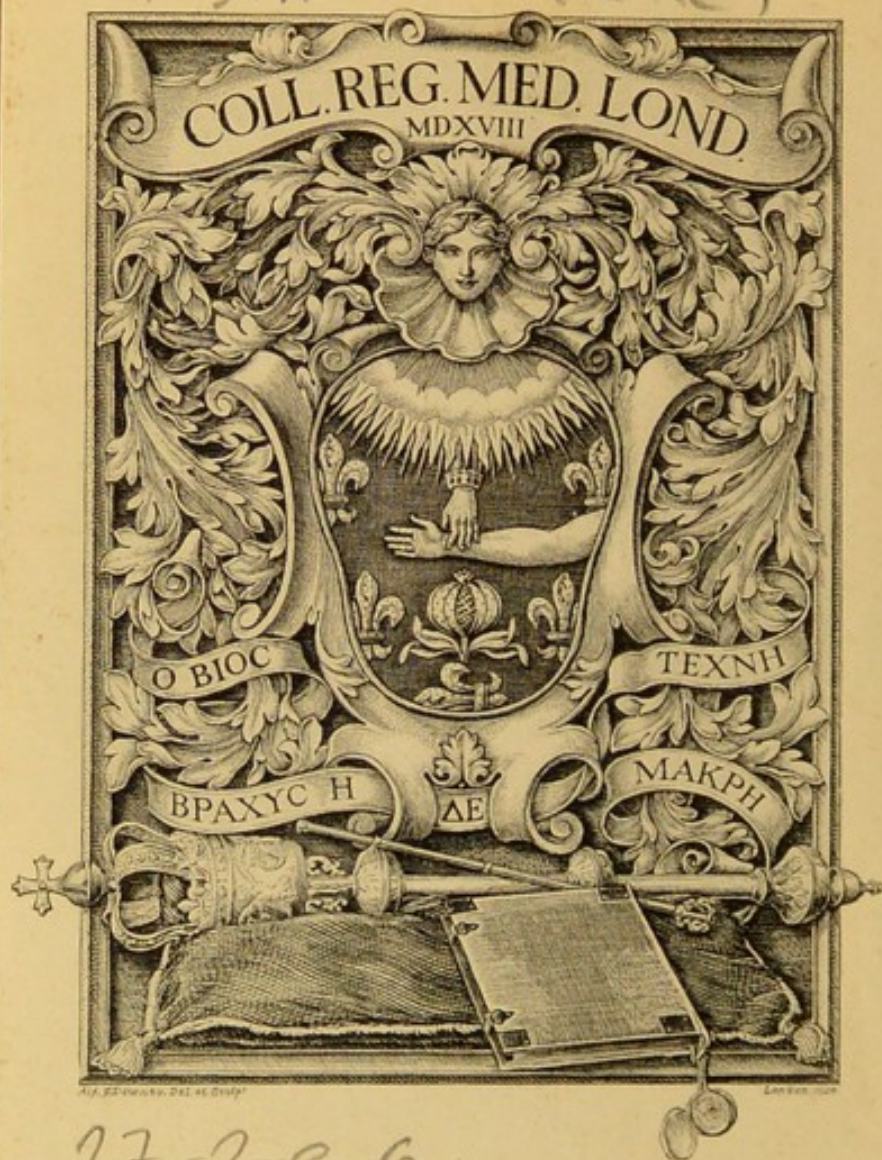
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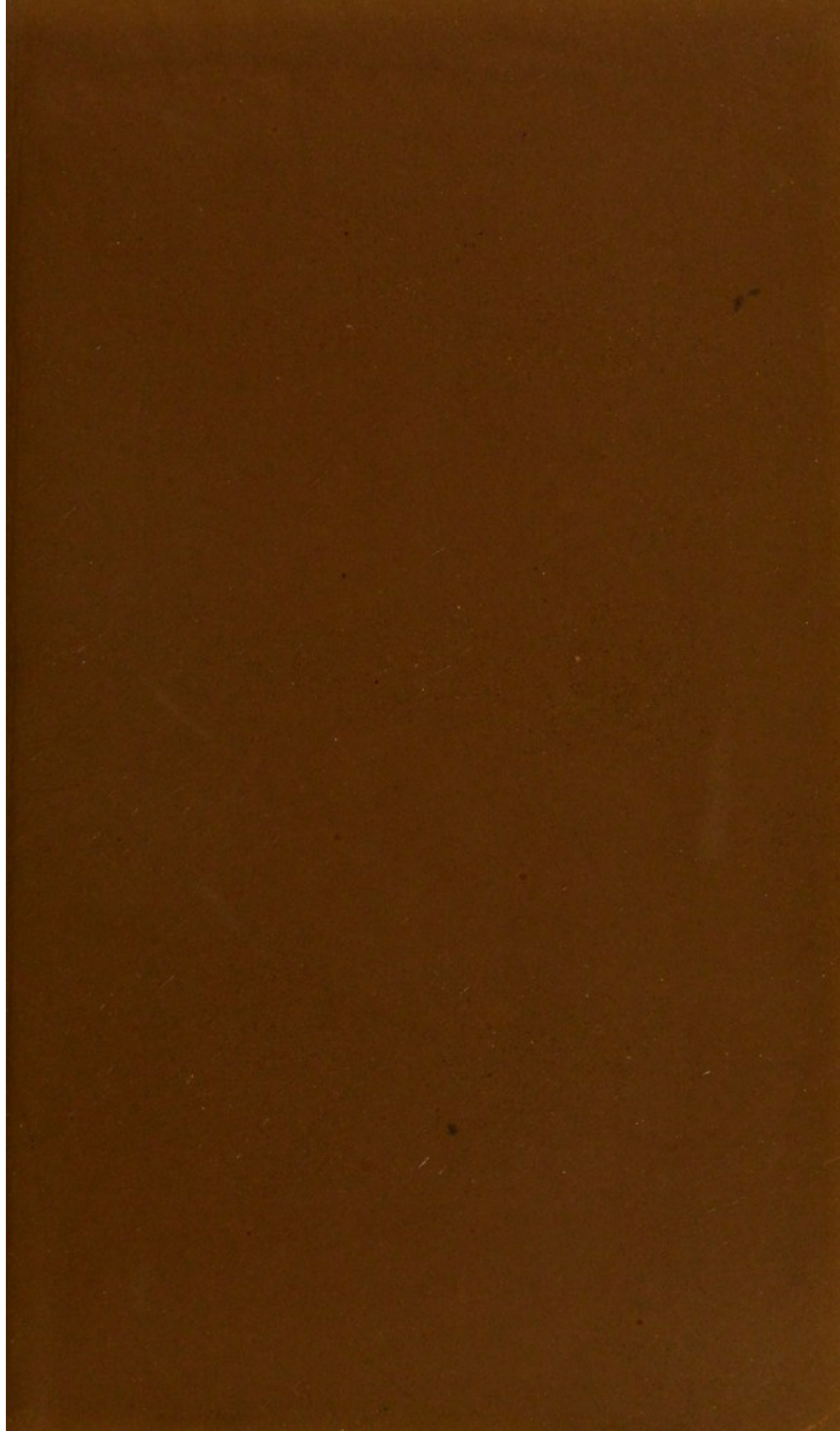
The image shows the front cover of a book. The cover is a deep blue color with a fine, pebbled texture, characteristic of leather or a high-quality faux leather. In each of the four corners, there is an embossed decorative motif. These motifs are symmetrical and feature stylized, swirling acanthus leaves and floral elements, creating a classic, elegant frame for the central text. The text is centered horizontally and vertically on the cover.

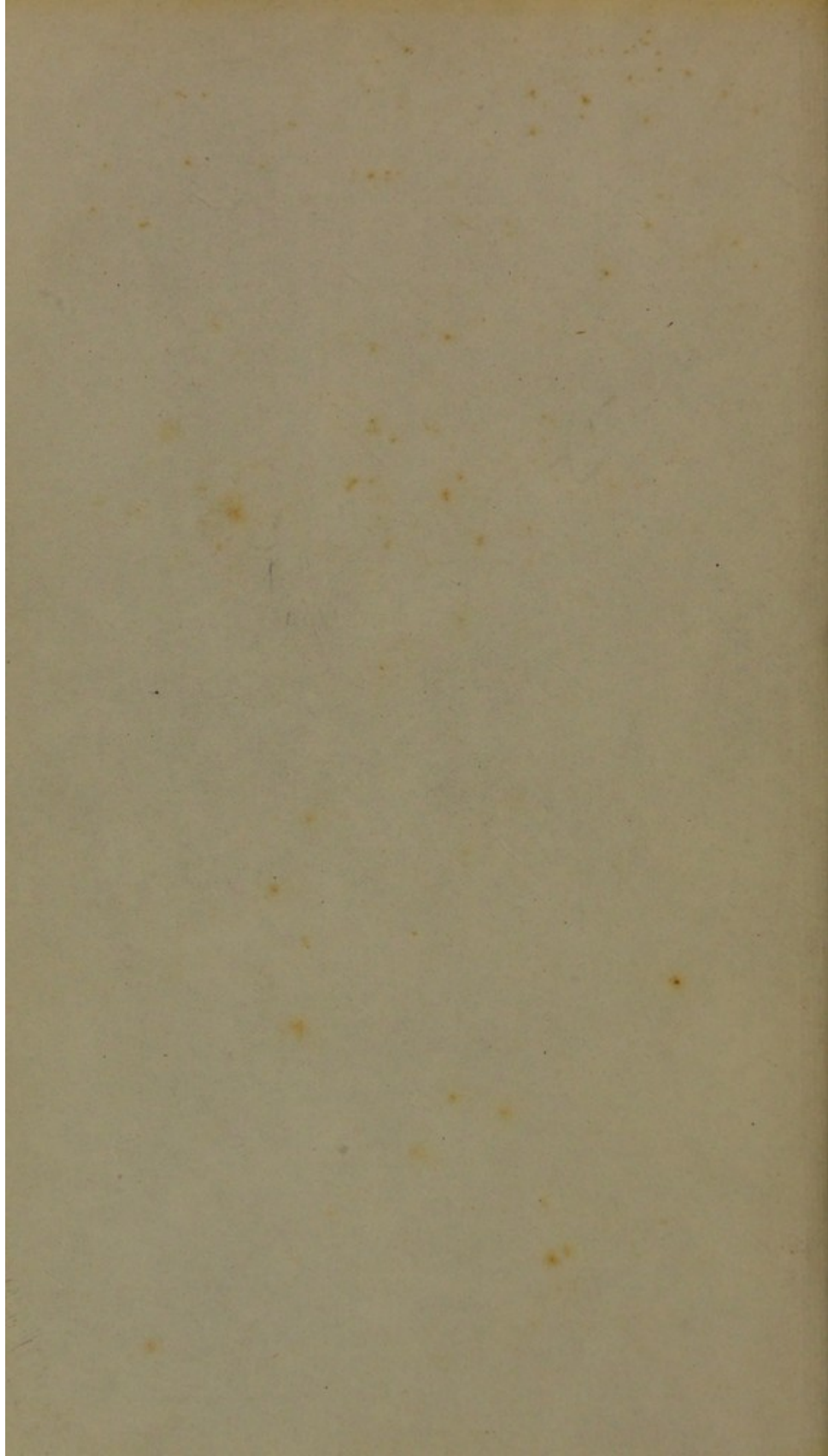
JAMES KEIR, ESQ. F.R.S.

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92 KEI







James Keir

Born 1735

Became acquainted with Darwin while
studying medicine at Edinburgh Univ.
Medical Univ.

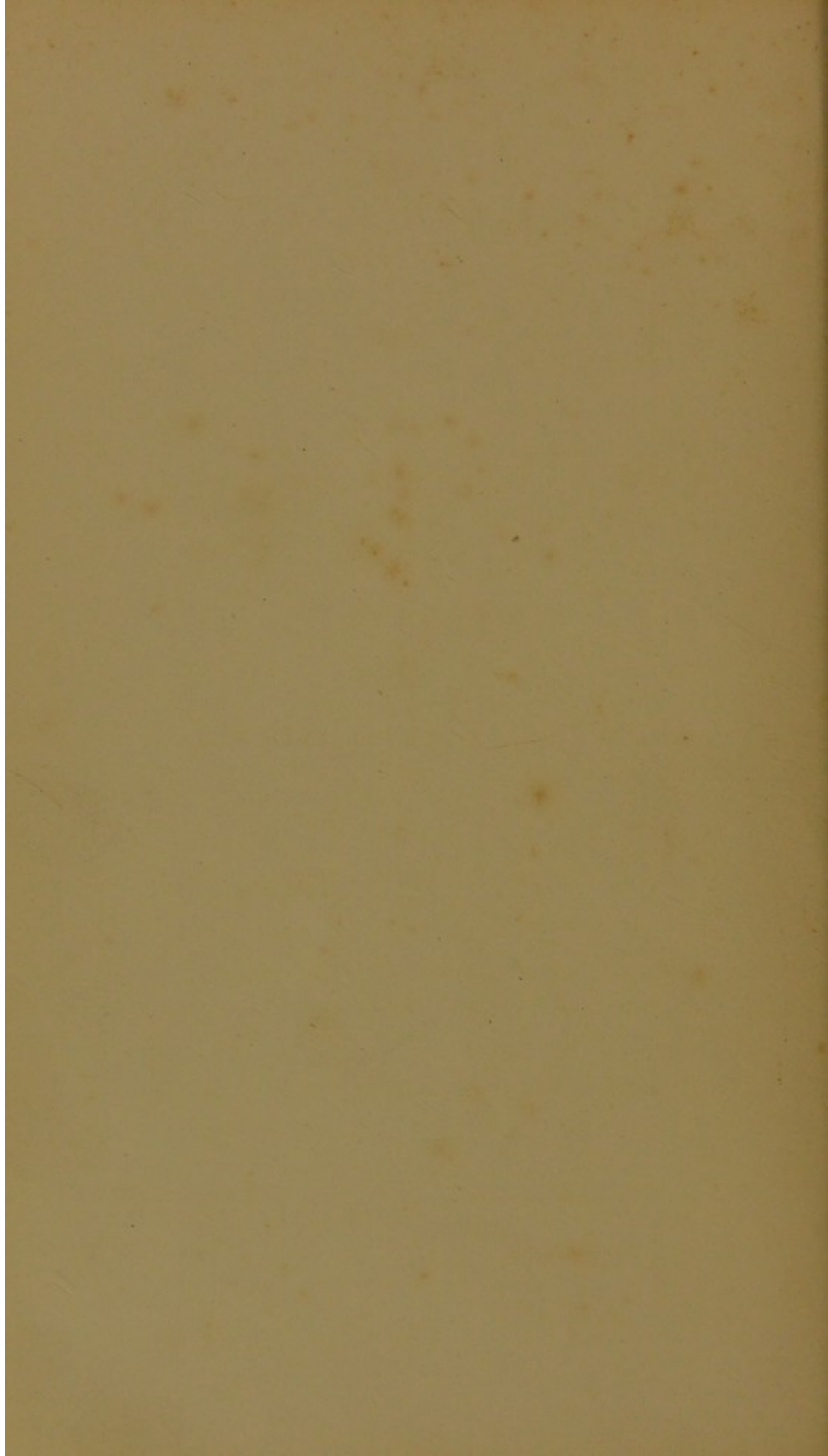
Became Soldier in 61st Reg. Bandow. Ireland

1775 Commenced business as a glass Manufacturer

Wrote a paper for the Phils Trans.

Met Watt. 1768

(See note in Dobell's Privately
Printed Hist.)



MOULLET. A. 1901
S K E T C H

OF THE LIFE OF

JAMES KEIR, ESQ., F.R.S.,

WITH A SELECTION

FROM HIS CORRESPONDENCE.

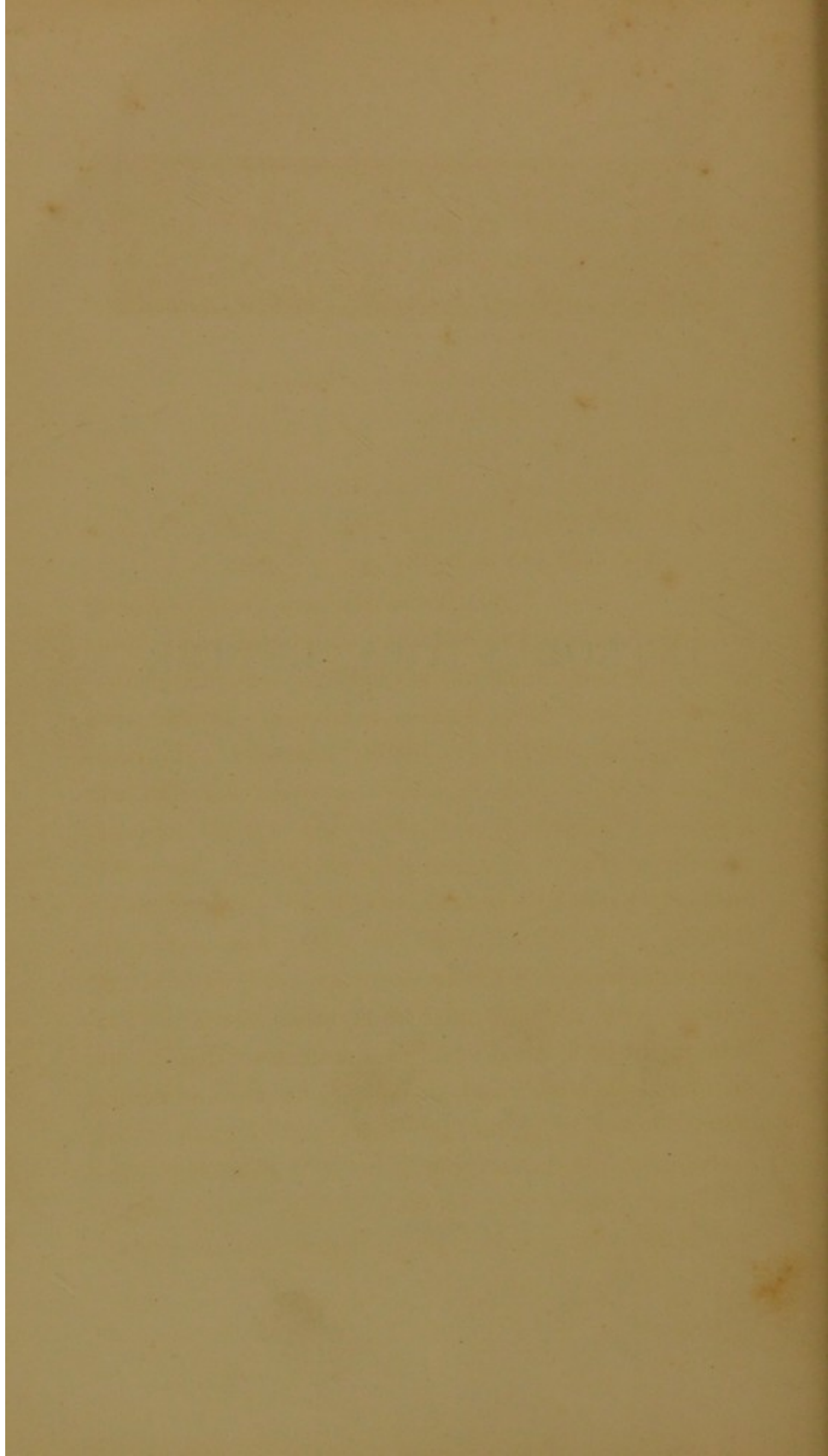
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INTRODUCTORY LETTER.





UPPER SKILTS,

21st September, 1859.

TO JAMES KEIR MOILLIET, Esq.

My dear JAMES KEIR,

You know that my late dear friend, your Father's excellent Mother, employed many hours of her last long illness in the filial duty—as she felt it—of putting into form some remembrances of her own loved and revered Father's life and character. To yourself, in whom his line is directly continued and who bear his name, this little domestic Memorial was affectionately addressed. But within her own family, and beyond it amongst friends of old time, were many who would, she believed, both from regard for him whose worth she commemorated, and for his own sake, read these Recollections with a kindly and thoughtful interest. That they might be enabled to do so, she designed having her Memorial Sketch printed for her private use and intended giving copies of it through that selected circle. She entrusted to me the carrying of her wish into effect—and placed her Manuscript for this purpose in my hands; with it, some Letters containing particulars of her Father's

family and of himself. On reading these over, I found one old anecdote differently told; and much that I thought might in one way or another be interesting, if added to her own Record. She agreed to my representations, and the Manuscript was recalled from the printer. Whilst the required alterations were still under consideration, the end that we had all long feared, and she had long desired, came suddenly, and she was taken from us.

Her wish, in regard to the Family Record, remained confided to me. Many causes have interfered hitherto with my discharge of a dear and sacred trust. This I am now able to acquit, so far as regards yourself, by placing before you, at full, THREE OF THE LETTERS of which I have spoken, and the MEMORIAL SKETCH itself, such as after much retouching, from time to time, by the venerated writer, she, at last, left it.

By a letter from Mrs. MOILLIET's Cousin, Miss MAGDALENE MOWBRAY, dated Edinburgh, *April 5th*, 1820, to your Grandfather, Mr. MOILLIET, then living at Smethwick Grove, I see that Mr. MOILLIET, at that time, contemplated printing a Memoir, towards which he had asked of Miss MOWBRAY details of information concerning his Wife's family. She in this answer says, that in an enclosed paper she sends "all the information respecting our relatives which I could remember from conversations with my Mother and Aunts, or which I have been able to collect from other sources," excusing the scantiness of the additional information, "as the whole

of the old generation is gone." She then requests that she may be allowed the opportunity of revising the Memoir before it finally leaves the press; but on the specific design of the Memoir the letter throws no further light. The letter of Mr. CUNNINGHAM to which Miss MOWBRAY refers is addressed to her Sister, Mrs. CAMPBELL, then living with her in Edinburgh. Still in reference, I conceive, to the same intention, further information, as the ground of a Genealogical Table, was asked and given. Whatsoever the particular purpose of this Memoir may have been—perhaps a Life of your Great Grandfather, Mr. KEIR, preceded by some account of his family—the project appears to have been abandoned. I find, at least, no further trace of it.

Many years later, when Mrs. CAMPBELL was on a visit to your Grandfather and Grandmother at Hamstead Hall, some particulars mentioned in conversation by Mrs. CAMPBELL with regard to your Great-Great-Grandfather, Mr. JOHN KEIR, had so much interested Mrs. MOILLIET that she requested to have them committed to writing. Her wish was gratified by her Cousin.

You will see, in Miss MOWBRAY's paper, mention made of the profession for which your Great Grandfather, Mr. KEIR, was educated, and of the use which he made of the knowledge so acquired in the emergencies of a very different profession. In the Memoir which this letter accompanies you will find the same subject again touched upon. But in another manuscript paper of your Grand-

mother's I find that the use came home to himself under singular circumstances. I do not resist the temptation of transcribing what I am sure will for many reasons interest you. She has mentioned that her Father, soon after entering the Army, was ordered with his Regiment to a station in the West Indies, and being there attacked by the endemic plague of the region—the yellow fever—was conveyed on board a Hospital-Ship. I quote from the manuscript:—“*From the little window of the cabin where he lay he saw the sharks tearing to pieces the bodies of his companions, who had died of the same disease with which he was suffering. The sea was tinged with blood, and their mangled limbs were seen floating on its surface. He had no friend to console him in this situation. The Army-Surgeon paid him a daily visit; and once, upon entering his cabin and observing that he was deprived of the power of speech and of motion, he exclaimed in a sorrowful voice—‘He is gone too,’—and immediately left him. My Father however revived a little, and when a person came in some time after, probably with the intention of throwing his body overboard, he made a sign that he wished to write, and a pencil being presented to him, he wrote a request to have a certain quantity of Antimony, which was granted only from the persuasion that his state was hopeless, but to the surprise of every one he recovered. The use of Antimony as a Medicine was not then generally known.*” I have heard your Great

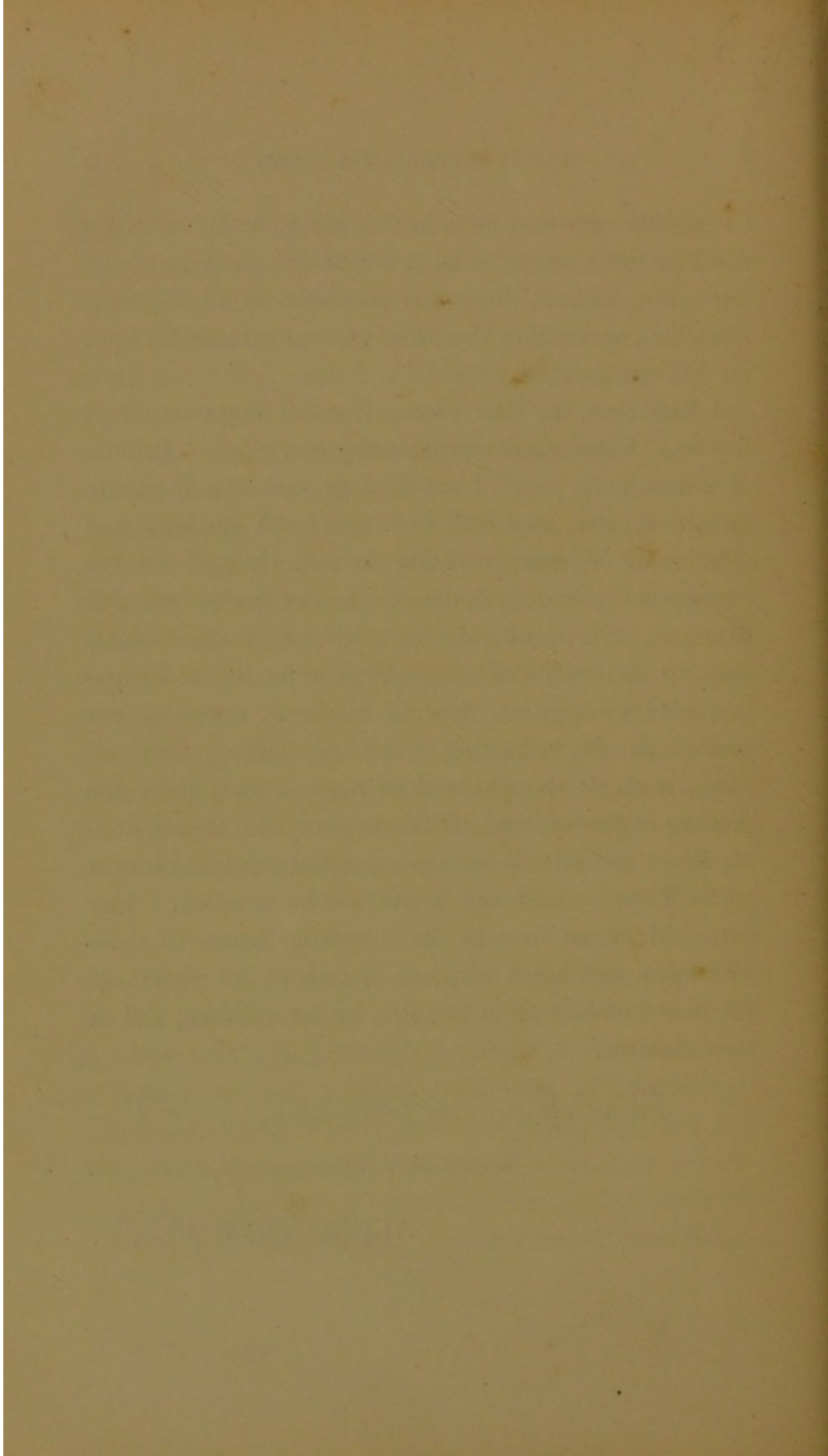
Grandfather mention how, in that illness, he lay with his mind perfectly awake to all that was said or done about him ; but, without the power to move, whilst knowing from the conversation that went on, that without the sign, the life was doomed.

I stand now, my dear young friend, I hope, acquitted to you. Some words remembering her, whose "Tribute of a daughter's love" I am sending you, should rightly go with it ; but who shall find them ?—A life-long and affectionate intimacy revealed to me, through all the changes and changing duties of life, her spirit—wise and strong in love, meek, obedient, self-forgetting, studious only for the welfare of others, large in intelligent sympathy, glad to approve, slow to condemn, searching out grounds for the mitigating of censure, desiring above all things truth of thought and of heart ;—and, under the pressure of sorrows and afflictions, many and severe, finding solace and calm in her aspiration towards that Heaven where Love endures and Truth will be unveiled. Her better Memorial lives in the cherishing hearts of those who knew and loved her, and in such of her virtues as yet flow onwards from her life, in her children, and in their children.

Believe me, my dear JAMES KEIR,

Your's very affectionately,

ALEXANDER BLAIR.



THE IMPERFECT
TRIBUTE OF A DAUGHTER
TO
THE MEMORY
OF
A BELOVED AND REVERED FATHER.

“ Like leaves on trees the race of Man is found,
Now green in youth, now withering on the ground ;
Another race the following spring supplies,
They fall successive, and successive rise ;
So generations in their course decay ;
So flourish these when those are past away.”



ABBERLEY HALL,

January, 1857.

DOCTOR DAVY, in his Life of Sir HUMPHRY DAVY, mentions, at page 78, the introduction of his brother to your Great Grandfather, Mr. KEIR, at that time residing at Hill-Top, West Bromwich; and the few words in which this is related, whilst they attest the quick-sightedness of his young and gifted visitor, are deeply touching and gratifying to me, showing as they do a high and just appreciation of my dear Father's richly endowed and cultivated mind, kindliness of heart, and that independence of character which is the natural offspring of inflexible integrity.

My Father was the youngest of eighteen children, and was born eight years before the death of his Father, who also was a man greatly respected for his talents and independent spirit. He carried this principle of independence so far that, when a candidate for a seat in Parliament, he lost his election by a single vote, from his determination not to solicit any. His Widow, to meet the expenses of bringing up so large a family, was obliged to have recourse to the sale of his landed property. My Father

was educated at the High School of Edinburgh, and studied medicine at the University there, but selected the Military profession for the sake of satisfying an early and strong desire to see foreign countries. Whilst in the Army, he was disappointed not to meet with more sympathy from his brother officers in his taste for reading and self-cultivation; and with *one* only he formed a friendship, which however lasted to the end of his days. This was with Mr. BLAIR, and it continues to glow in the hearts of their descendants, soothing the trials of life to the present hour.

My Father, with the constancy of purpose which was a marked feature of his character, used at this time to rise at four every morning, and thus gain many hours for study, without interfering with his daily duties, or the pleasure or convenience of others. He read over again the ancient classical authors and translated many passages from the Greek military historian, Polybius. He also wrote a treatise on the Art of War, but the M.S. was unfortunately burnt at his Publisher's. It had however been seen by some person high in position, and promotion was assured to him in consequence had he chosen to remain in the Army; in which he only rose to the rank of Captain. He preferred the tranquil pursuit of scientific studies to a profession which was never in itself congenial to his tastes. He was devoting himself chiefly to the sciences of Geology and Chemistry at the time referred to in Sir HUMPHRY DAVY's letter. He shrunk from

celebrity ; and when some of his discoveries in Chemistry were given to others, he did not claim them as his own, saying to his friends—" Knowledge is important ; but whether the discovery is made by one man or another is not deserving of consideration." The instance which I especially recollect was the discovery of the acidity of carbonic acid gas, at that time called " fixed air."

His conversation was not confined to scientific subjects, for the love of classical literature continued to the close of his life, and cheered his solitude during its decline. He retained the vigour of his mind to a very late period ; and his society, sought by the eminent men of his day, was equally pleasing to the young from the characteristic urbanity of his manner, his never-failing cheerfulness, and the vein of wit with which he often enlivened a grave subject. To the more intelligent of his youthful hearers, the interest which he took in their curiosity, and the singular clearness with which he laid open the varied stores of his own information, was peculiarly attractive. As life advanced, the taste for the quietude of home naturally grew upon him, and his thoughtful mind seemed more than ever to retire into itself. Only his own nearest relations knew the strength and depth of his affections, for they seemed in him to have called forth a corresponding strength of self-command, such as I never saw exceeded.

I have touched upon some points of my Father's character, in the belief that even so slight a Memorial will be interesting to his descendants. I do not attempt, for I am

not able to express in words my own full remembrance of what he was.—“ *The strong and clear understanding which guided himself and counselled others ;—the caution in undertaking and the resolution in acting ;—the uprightness of conduct, the promptness to oblige, and the self respect, jealous of incurring an obligation ; the devoted and indefatigable pursuit of knowledge ; the reverent love of truth ; the candour, the humility, and the respect for others,—were apparent qualities, and impressed all who came around him. It was this union of the more energetic and the gentler virtues that constituted him, as Sir Humphry Davy has truly described him, ‘an amiable and a great man.’*” *

In his last illness, when himself no longer able to read, he used to call upon his faithful servant to read to him out of the New Testament “to instruct him.” This expression was characteristic of his mind.

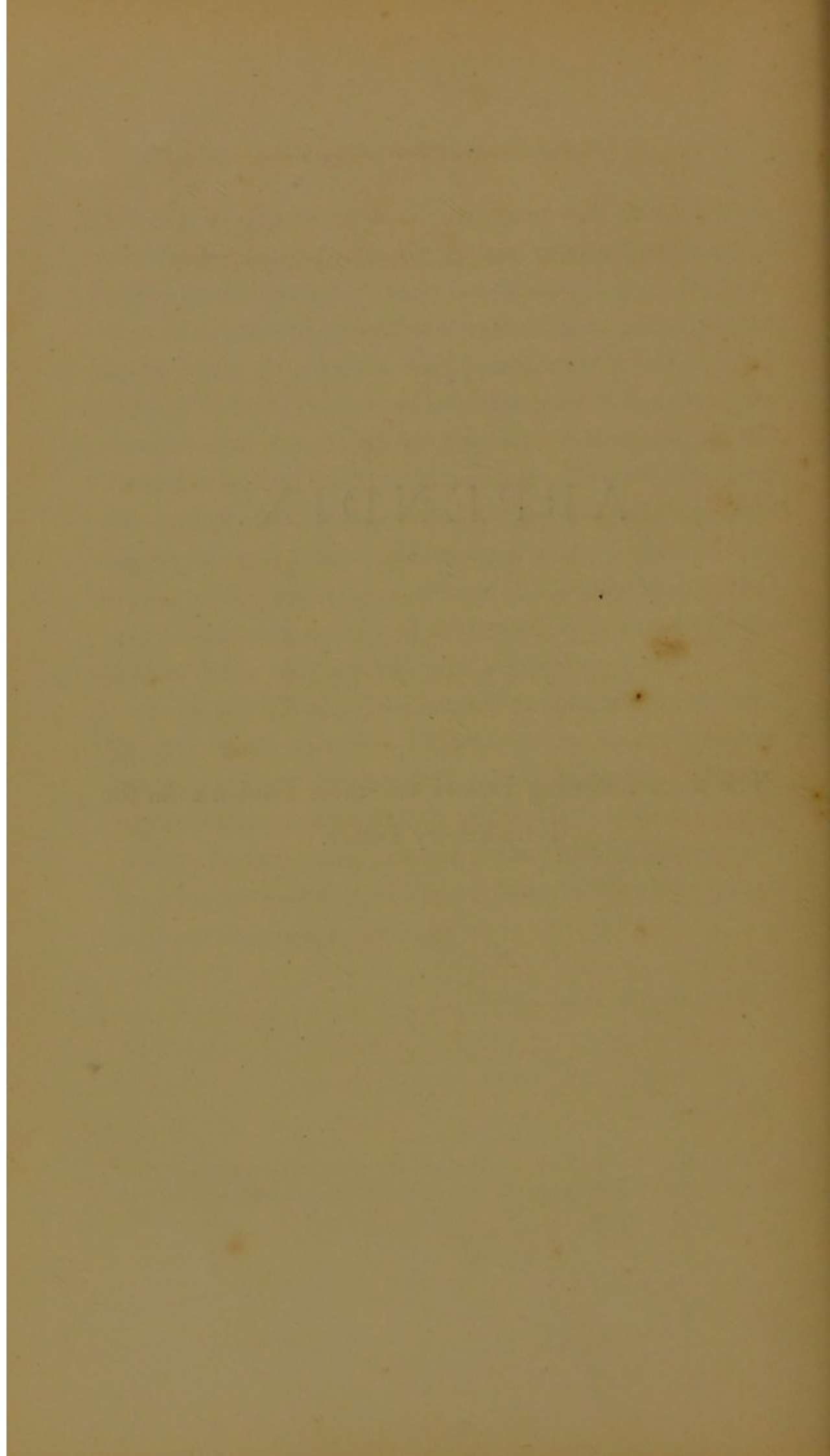
May he remain an example to his youthful descendants, studying to mould themselves ! May his worth live again in them and in their children !

AMELIA MOILLIET.

* This sentence was written by DOCTOR BLAIR, bursting through the slight veil that reverence and affection throw over near relationship. It speaks what I felt.—A.M.

APPENDIX.

The three following Letters are those alluded to in the
Introductory Letter.





FIRST LETTER.

MR. C. CUNNINGHAM TO MISS CAMPBELL.

14, HERIOT ROW, EDINBURGH,
3rd April, 1820.

Dear Madam,

Mr. JOHN KEIR, of Muiston Baxter, Burgefs of Edinburgh, was at various times a Member of the Town Council of Edinburgh. He was Convener of the Trades in the years 1729 and 1730. While Trades Councillor in 1727 he was a candidate for representing the City in Parliament, and he loft his election by one vote only, as appears by the Records of Council. He must have been a person of confiderable consequence; and it is plain, from the last-mentioned circumstance, that he was held in high estimation among his fellow citizens. I have not had time to ascertain whether Mr. KEIR was oftener a Member of the Town Council than at the periods above mentioned. He was never Convener of the Trades except in the years above specified.

I am always, dear Madam,

Yours faithfully,

C. CUNNINGHAM.

To Miss CAMPBELL,
Edinburgh.

SECOND LETTER.

MISS CAMPBELL TO MRS. JOHN LEWIS
MOILLIET.

22nd July, 1837.

My dearest Cousin,

I with pleasure comply with your request, to note down the circumstances I mentioned to you relating to our Grandfather, Mr. KEIR, of Muiston, in the County of Stirling. This Gentleman resided in Edinburgh in the early part of the last century, and was so much respected by his fellow citizens as to induce them to request that he would allow himself to be brought forward to represent them in Parliament. He accordingly did so, and it was fully expected that he would have a majority of the Town Council of the City, who were then the electors; but to his surprise he was visited early in the morning of the election by a party of his friends, who expressed their astonishment that he should be sleeping so late when all Edinburgh was in a bustle about him. He expressed great surprise, and assured his friends that he had never slept more calmly in his life. They then told him that he must lose his election as one of the

voters had been bribed over by the opposite party last night ;—so by this man's treachery he lost his election. When it was all over, the Duke of ARGYLE, who headed the opposite party, invited Mr. KEIR and his friends to dine with him. After dinner, the Duke requested leave to give a toast, and gave Mr. KEIR's health; upon which Mr. KEIR, who was naturally eloquent, made a speech which gave such satisfaction that the Duke of ARGYLE in reply assured Mr. KEIR that had he known his sentiments as well before the election as he did now he never would have opposed him, and concluded by offering him his interest in future, adding that should Mr. KEIR or his family require any favour of Government he should always feel most happy to second his wishes with all his influence. Mr. KEIR made a reply to the following effect : "My Lord Duke, I feel much gratified by your Grace's good opinion and very handsome offer. I became a candidate at this time at the request of my fellow citizens, who thought me qualified to serve them in Parliament, but for myself I had nothing to ask. I have maintained myself and family with all the comfort I could wish, and I hope by God's blessing to be able to do so to the end ; but feel not the less obliged by your Grace's condescension and unexpected offer of patronage, and for which I beg your acceptance of my humble thanks."

Mr. KEIR was as good as his word, he never asked any favour ; but a gentleman of the name of KERR, a

fellow citizen, soon after applied for some situation under Government which he immediately got ; and it was generally thought he owed his success, at the time, to his being mistaken for Mr. KEIR, whose name is usually pronounced KERR in England.

The person who accepted of the bribe was never able to hold up his head in Edinburgh afterwards. I was assured, my dear Madam, by a gentleman who had the best access to know, that the fact of this election being lost by the villany of one man is recorded in the books of the Council of the Magistracy of Edinburgh to this day.

Believe me always,

Yours affectionately,

JEAN CAMPBELL.

P.S.—^{S^{or}}. JOHN MADENI was the name of the artist who painted the portraits of our Grandfather and Grandmother, Mr. and Mrs. KEIR.—J.C.

THIRD LETTER.

MISS MOWBRAY TO JOHN LEWIS
MOILLIET, Esq.

EDINBURGH,

5th April, 1820.

The immediate forefathers of Mr. JAMES KEIR were for several generations Burgeſſes in Edinburgh, and from connections, reſpectability of character, and opulence, were juſtly conſidered as belonging to the firſt claſs of citizens there.

They were deſcended from a reſpectable family of that name in Perthſhire, whoſe lands bore the ſame name.

His Father, Mr. JOHN KEIR, was born in 1686 and died in 1743. He was eſteemed a man of uncommon abilities and of great integrity. He and his brother—WILLIAM—were both for many years Members of the Town Council of Edinburgh, and were in high eſtimation for independent principles and rectitude of conduct. JOHN KEIR, at the earneſt ſolicitations of his fellow citizens, ſtood candidate for Member of Parliament for the City.

He was possessed of two estates—Muiston and Queenshaugh—both of which were sold after his death. He married in 1708 MAGDALENE LIND, eldest daughter of GEORGE LIND of Georgie, by whom he had eighteen children, of whom JAMES was the youngest.

Mrs. KEIR was of a lively temper, affectionate disposition, and performed every domestic duty from strict and steady principles. Perhaps the most striking feature in her character was *active benevolence*, in which she was equalled by few. I still remember her with tenderness; and persons more aged, in whose memory she lives, speak of her with a degree of esteem and veneration which nothing but superior worth could call forth. She died at the age of eighty-six, in full possession of all her faculties.

Mr. JAMES KEIR was born 29th September, 1735. As his Father died when he was very young, the care of forming his mind devolved on his Mother. In directing his studies she was no doubt advised by her two brothers, ALEXANDER LIND, of Georgie, Sheriff of the County, and GEORGE LIND, Lord Provost of Edinburgh and Member of Parliament for that City. He was educated at home, as was the custom in Edinburgh, and attended the High School, but under what master I have not been able to learn. Intended for the Medical profession, he attended the different Professors in the University, but at this distant period I cannot ascertain their names. Having an ample patrimony and several near relations in the learned professions, there is no doubt he received every advantage

of education that Edinburgh could afford; and he was early distinguished for singular love of probity and truth, love of learning, and constant application to study. Having completed his medical studies, he went into the Army, but what were his views in making this change is not known. During the French war he was in active service in the West Indies, where his medical skill in times of sickness and difficulty was of service to the troops.

The pamphlet you mention was a letter addressed to the Marquis of GRANBY, signed "An Officer." I have read it, and according to my recollection he argues in favour of the sales of commissions, as he says if that plan were annulled it would deprive a man declining in health, or advancing in years, of retiring from his profession, and would throw too great patronage in the hands of the Minister. I hope this pamphlet will be found among my Uncle's other papers, for I remember Mrs. KEIR telling me that he had laid aside a copy of every one of his publications for his daughter when she should come of age. I sincerely hope these did not suffer in the destructive fire which there is so much reason to lament.

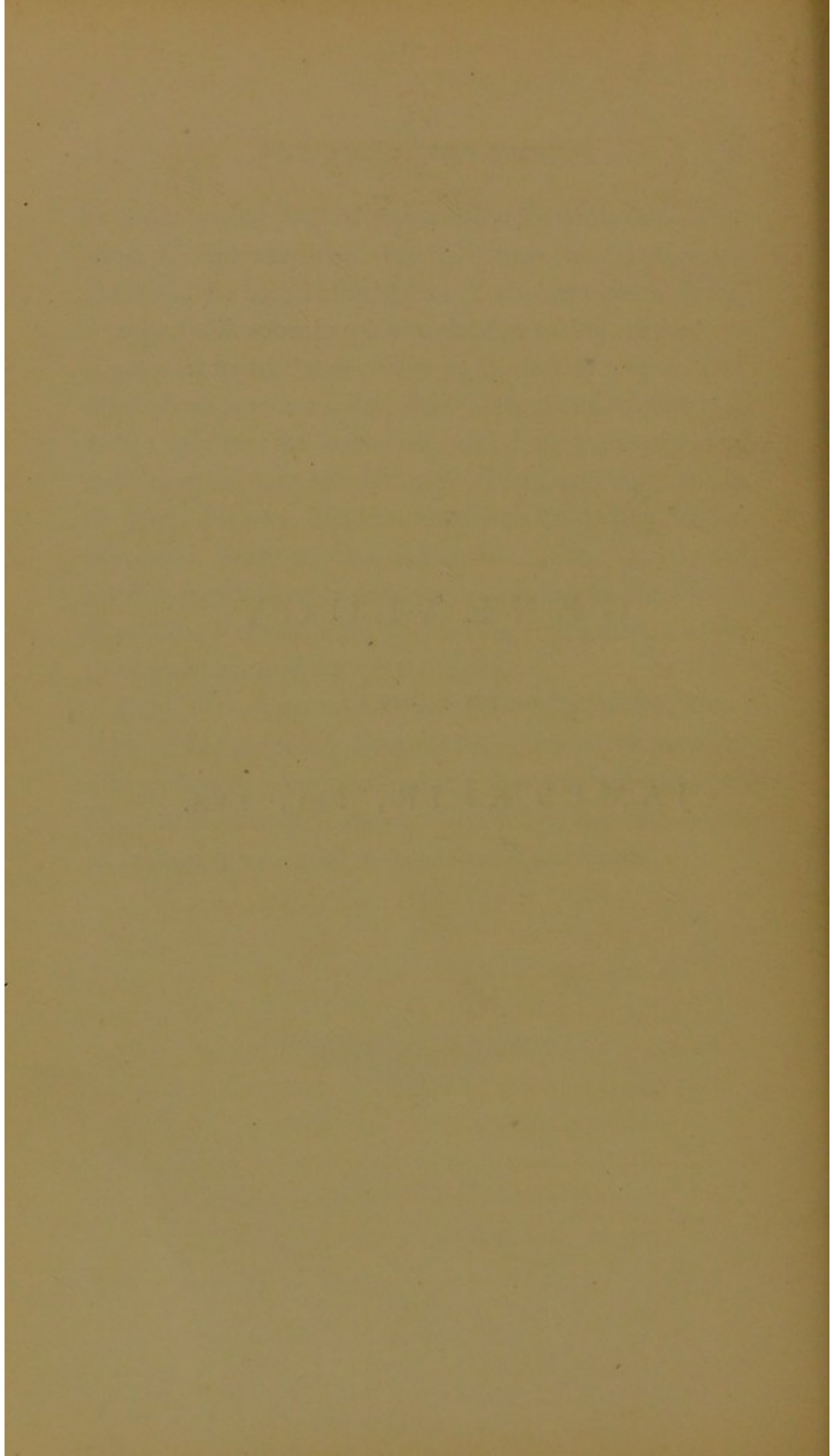
You will now naturally expect me to give some account of the other branches of so large a family merely for the information of Mrs. MOILLIET and your children. Alas! with the exception of my Uncle (JAMES, the youngest of the family) they are all gone; and of the second generation there remain only Mrs. MOILLIET, my sister, and myself. My other Uncles all died un-

married, indeed few of them reached middle life. My eldest Uncle, who was bred a Banker, died before his Father at the age of twenty-four; another died in India. One died when attending his medical education. FRANCIS, Lieutenant in the Navy, born 1733, died in 1794. My eldest Aunt married first to Mr. DAWSON, Clergyman of Saint Cuthbert, had one child, who died in infancy. She married again,—to Mr. NISBET, Writer, and Grandson to Sir JOHN NISBET, of Dean, to whom she had no family. My other Aunts all died unmarried. Your family, and my late brother's only child lately married to Mr. HALL, Counsellor in Dublin, are now the only descendants of the third generation of Mr. JOHN KEIR.

From Mr. WILLIAM KEIR (the brother of Mr. JOHN KEIR) there are many descendants. One of his Sons left a large family, who are all in this country, and in genteel life. His other Son, ARCHIBALD KEIR, left General Sir WILLIAM KEIR, now in India, and Miss KEIR.



THE
G E N E A L O G Y
OF THE FAMILY OF
J A M E S K E I R, Esq., F.R.S.





GENEALOGY OF THE KEIRS.

The first of the KEIR family that we have on record is JOHN DE KEIR, mentioned in a parchment register formerly in the possession of Sir WILLIAM KEIR, and which also gives the armorial bearings.

“To all and fundry whom these presents do or may concern, JOHN CAMPBELL HOOKE, of Bangaston, Esquire, Lion King of Arms, doth hereby certify and declare that the Ensign Armorial belonging and pertaining to ARCHIBALD KEIR, Esquire, at Calcutta, in the Kingdom of Bengal, descended of the family of KEIR, of Whitmore, in the County of Berwick, a cadet of the ancient family of JOHN DE KEIR, who, with most of the nobility and gentry of Scotland, were compelled to submit to King EDWARD THE FIRST of England, Anno 1296, is matriculated in the public Register of the Lion Office, and is blazoned as on the margin thus:—Argent, on a cross ingrailed sable three lozenges or between four roses gules; above the shield an helmet befitting his degree, with a mantle gules doubling argent; and on a wreath of his colours is set for crest a man upon an elephant, &c., &c.” *

* Pont's M.S. Nisbet, ch. 25 :—Crest, a horse's head, with bridle; motto, “Virtute et Valore.”

- I. From JOHN DE KEIR was lineally descended ADAM KEIR who married the daughter of a Mr. MICHELL, by whom he had two Sons, WILLIAM and JOHN.

ARCHIBALD KEIR, the Son of WILLIAM KEIR, married the daughter of Mr. BRUCE, of Kinlock, and was succeeded by his Son, General Sir WILLIAM KEIR, who added the name of GRANT to his paternal surname.

General Sir WILLIAM KEIR GRANT was born in 1771; entered the British Army in 1792; received the honour of the Order of MARIA THERESA, as one of the eight officers who saved the EMPEROR OF AUSTRIA from being taken prisoner by the enemy on the plains of the Cateau Cambresis, in 1794; he joined the Russian and Austrian Army in Italy in 1799, and participated in the campaigns of that and the two following years, including the battles of Novi, Rivoli, and Marengo; he was subsequently fifteen years in India as Adjutant General. He was Major General on the staff, and Commander of the forces in Java; he was also second member of the Government of that island; he commanded four different armies employed in India, on each of which occasions he received the thanks of the Indian Government, and on one of these occasions the thanks of Parliament also; he was made a Knight Commander of the Bath in 1822, and a

Lieutenant General in 1825; he became a General in 1841; he was a G.C.H., a Grand Cross of the Order of the Lion and Sun, and a Baron of Austria; he married in 1811 the daughter of Captain JACKSON of the Royal Navy; at the time of his death, May, 1852, he was Colonel of the Scotch Greys. *

- II. JOHN KEIR, of Muiston and Queenshaugh, the second Son of ADAM KEIR, was born 28th August, 1686, and died 5th May, 1743. He married MAGDALENE, the eldest daughter of GEORGE LIND of Georgie, near Edinburgh, who was Lord Provost, and Member of Parliament for that City. She was married the 21st April, 1708, by Mr. R. SANDELENS, Minister of Hadow's Hall, in Edinburgh, from her Father's house at Georgie. They had eighteen children, eight sons and ten daughters, of whom—

(1.) CHRISTIANA was the eldest. She was born 28th August, 1709, and died 24th March, 1710, being Friday betwixt 8 and 9 o'clock at night, and was buried in the Greyfriars upon the 25th. †

(2.) JEAN KEIR, born 12th September, 1710, baptised on the 19th in the High Church of Edinburgh by Mr. JAMES WEBSTER, Minister in

* Illustrated London News, 22nd May, 1852.

† From a M.S. book of Dates, &c., by Mrs. Moilliet, the daughter of Mr. James Keir.

the Tolbooth Church in Edinburgh. Witnesses, GEORGE WARRENDER, GEORGE LIND, ADAM KEIR, &c. Married to Mr. DAWSON, June 1st, 1732, and had one Son, born 30th May, 1733. Mr. DAWSON died 22nd January, 1735, and his Son on the 3rd February following. His widow married Mr. NISBET in March, 1742.

(3.) ADAM KEIR, born on the Lord's day, being 13th January, 1712, baptised the same day, departed this life and was buried in the Greyfriars.

(4.) GEORGE KEIR, born 17th February, 1713. He died 26th August, 1737; buried in Greyfriars Churchyard.

(5.) MAGDALENE KEIR, born 6th August, 1714. Died of the small-pox.

(6.) GRIZEL KEIR, born 2nd October, 1716. Baptised on the 7th, being Sabbath, in the old Church, by Mr. MITCHELL. Witnesses, Sir GEORGE WARRENDER of Lochhead, GEORGE LIND of Georgie, &c., &c. Died 24th December, 1788.

x (7.) JOHN KEIR was born on the 18th May, 1718, being the Lord's day; baptised by — CHALMERS, Minister in Canphier. Witnesses, Sir G. WARRENDER, &c., &c.

(8.) MARGARET KEIR, born 21st August, 1719; baptised; same witnesses. Died 16th December, 1792.

(9.) ELIZABETH KEIR, born upon the Lord's day, 6th November, 1720; baptised; same witnesses. Died 31st December, 1802. With this Aunt I corresponded many years, for she lived to an advanced age.

(10.) MAGDALENE KEIR, born 27th July, 1722. Died 20th October, 1724; baptised previously; same witnesses. Buried in Greyfriars.

(11.) WILLIAM KEIR, born 7th March, 1723 or 4. Died in the East Indies in May, 1760. He was extremely loved by his family. A young man of promising talents, lively, and who lived much in society. He arrived at Bencoolon, 30th September, 1757. He lived at Fort Marlboro' 2 years 7 months.

(12.) ALEXANDER KEIR, born 7th July, 1725; died 7th January, 1731.

(13.) KATHERINE KEIR, born 19th October, 1726; married to Mr. MOWBRAY, second son of J. MOWBRAY, Esquire, Fifeshire. Died in 1808.

(14.) ANNA KEIR, born 30th September, 1728; departed this life 19th January, 1731.

(15.) ADAM KEIR, born 24th February, 1730, died 24th May, 1748.

(16.) HELEN KEIR, born 23rd October, 1731; she departed this life 17th October, 1733.

(17.) FRANCIS KEIR, born 26th June, 1733, was baptised upon the 27th by Mr. JAMES

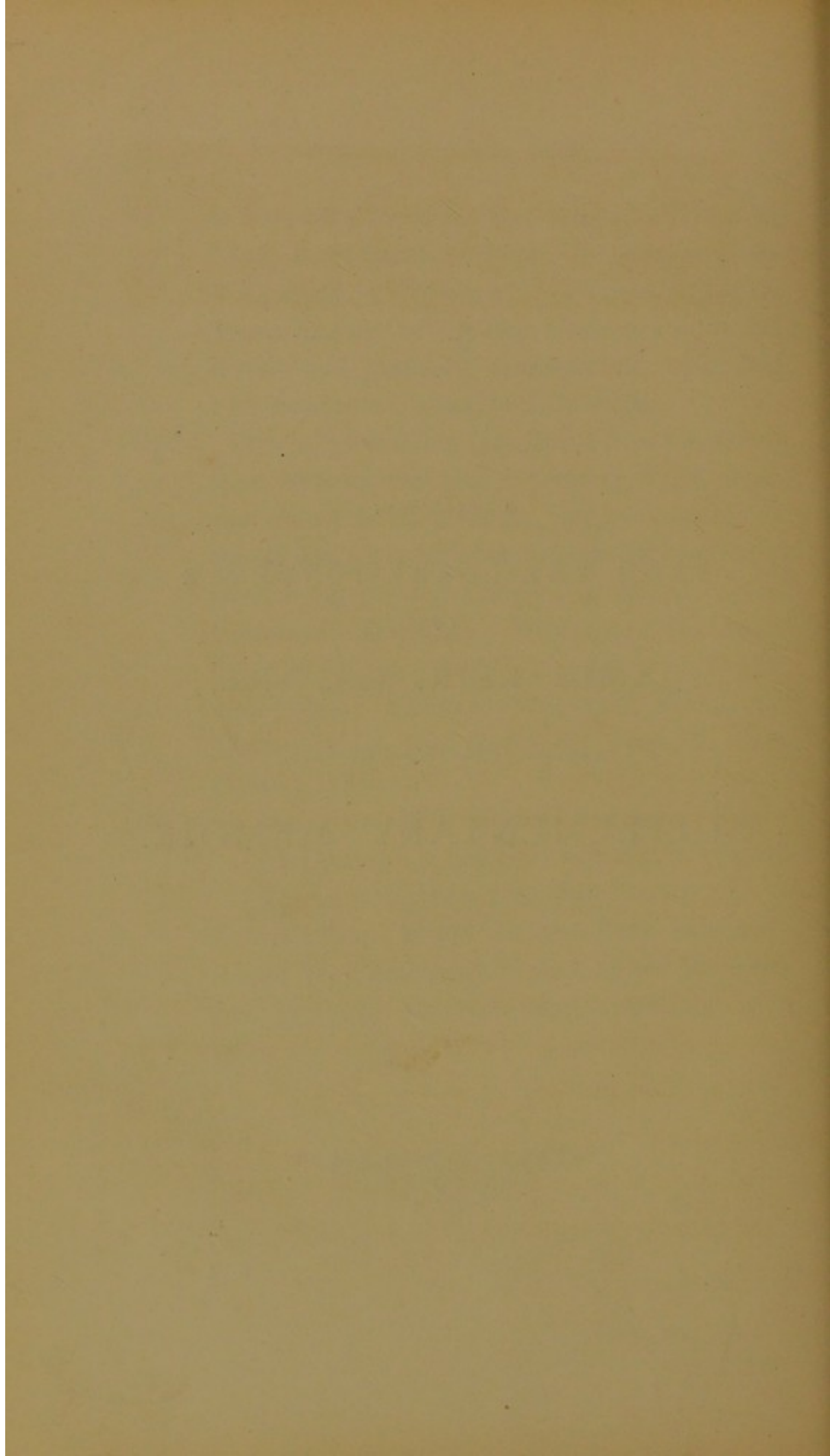
DASON, Minister of the West Church. Witnesses, ALEXANDER LIND of Georgie, ARCHIBALD DUFF of Drummoor, Esquire, &c. The kind and affectionate manners of my dear Uncle to me are still vividly and gratefully remembered. He died 15th September, 1794, at Edinburgh.

- III. (18.) JAMES KEIR (my dear Father) was born upon Monday the 29th September, 1735, about nine o'clock in the morning, and was baptised in the old Church in Edinburgh on the Sabbath thereafter, being the 5th October, by Mr. PATRICK CUMMING, Minister. Witnesses, ALEXANDER LIND of Georgie, ARCHIBALD DUFF of Drummoor, JOHN DICKIE, WILLIAM KEIR, and GEORGE KEIR (his brothers). Died the 11th October, 1820.

- IV. CHILDREN OF JAMES AND SUSANNA KEIR:
- (1.) FRANCIS, a fine boy, who died in infancy.
 - (2.) AMELIA, born 17th July, 1780. JOHN LEWIS MOILLIET and AMELIA KEIR were married at West Bromwich Church by the Reverend Mr. JESSE, on the 19th May, 1801, and have issue.



A SELECTION
FROM THE CORRESPONDENCE
OF
JAMES KEIR, Esq., F.R.S.,
ARRANGED CHRONOLOGICALLY AS A
SUPPLEMENTARY MEMOIR.





PREFACE.

It having been determined that the foregoing pages should be printed for private circulation, in accordance with the expressed wish of the late Mrs. MOILLIET, it became desirable to increase the interest of the Work by adding thereto a selection from among the letters which passed between Mr. KEIR and his friends.

That the letters here given are but few in number is owing to the fact that the largest and most valuable portion of them were consumed at the destructive fire which occurred at Abberley Hall, Worcestershire, the residence of my Grandmother, the late Mrs. MOILLIET, on the 25th day of December, 1845 ; when also a singularly beautiful silver coffee-pot, the gift of Mr. BOULTON to Mrs. KEIR, was unfortunately destroyed.

These letters, which are selected as the least personal of those now existing,—but which, nevertheless, are of a strictly private nature,—are here arranged according to date; and I have added a few connecting remarks or notices in such places as seemed to need a little consecutiveness or elucidation.

I have only to add that there are several curious fragments of Works of Mr. KEIR in manuscript, on Philosophical, Literary, and Political subjects, of which no mention has been made in the following pages, as they were left by him in a very incomplete form, and have no relation to the circumstances of his life.

J. KEIR MOILLIET.

Cheyney Court,

August, 1868.





THE LATE JAMES KEIR, ESQ., F.R.S.

Miss MOWBRAY mentions that Mr. JAMES KEIR was born the 29th September, 1735, and that, as his Father died when he was very young, the care of forming his mind devolved on his Mother, who was assisted by her two brothers, ALEXANDER and GEORGE LIND. In another manuscript it is said that Doctor MICHELL (a near relative through his Grandmother, who was a Miss MICHELL) also assisted in his education. Doctor MICHELL appears to have discovered in him, at an early period, the promise of great intellectual ability ; and to have taken every opportunity to cherish his thirst for knowledge. He died on the 28th October, 1751 ; and in the hope, probably, of further awakening the zeal of his young friend, he bequeathed to him, then only sixteen years of age, many of his valuable manuscripts, which were said to have been very remarkable for the great research "and industry in collecting information" which they exhibited.

Whilst studying medicine at the Edinburgh University, Mr. KEIR became acquainted with Mr. DARWIN—afterwards the celebrated Doctor. The friendship between them seems to have been mutual, and to have been maintained unbroken from boyhood to the close of life.

Alluding to Mr. KEIR's having ultimately selected the Army in preference to the Medical Profession, Miss MOWBRAY says: "What were his views in making this change is not known," but in Mrs. MOILLIET's sketch of Mr. KEIR's life this point is cleared up in the following words: "My Father was educated at the High School of Edinburgh and studied medicine at the University there, but selected the Military Profession for the sake of satisfying an early and strong desire to see foreign countries;" and this statement is corroborated by a passage in a Latin letter which Mr. KEIR himself wrote, when a youth of nineteen years of age, to his friend Mr. DARWIN, who was at that time a Bachelor of Medicine. The passage alluded to is, in the following transcript of the letter, printed in italics.

MR. KEIR TO MR. ERASMUS DARWIN.

Viro multis nominibus mihi charissimo Erasmo Darwin, M.B.

S. P. D.

JACOBUS KEIR.

Amicissimas tuas non ita pridem lubens profectò accepi, acceptas diligenter perlegi, atque perpendi. Quæ verò super tuis

observanda habeo, benigno accipe animo. Sed de Causis priùs, quæ me literis latinis uti ut mallem impulerunt, quædam dicere liceat quum quò in his exercitatione frequenti peritiores futuri fimus, tum et quod quæ nobismet ipsis nos impertiamus (impiorum, fortè, et nimis piorum conspectu haud quidem violanda) linguâ minùs notâ velata melius laterent. Quanta enim et quousque tendat, apud mulierculas præfertim, aliena sciendi cupido. Sed hisce hactenus parùm diligentia adhibui. Et quoniam fert animus, ut medicam aliquandò carperem Lauream; dissertationem inauguralem scripturo, istis incumbere acriùs omninò est necessarium. Sed ad epistolam. Nulla sunt, quæ novi, experimenta Hallesii, quibus corpora, aëre resorpto, solidiora evadere constat. Attamen, ex nupero quodam invento, CALCEM, aëre modò orbatam, in VIVAM verti pro comperto habet Dr. BLACK, inde autem fit, ut Calcem vivam sine ignis ope unquam parare possit Vir ingeniosus. Hæc verò Calx (viva) soliditate perinde atque aëre est orbata. Etiam si fit extra rem, haud tamen abs re erit, quædam de viribus proferre, quibus usa est Aqua Calcis, ut Calculum humanum solutum reddat. Bina quæ fecit experimenta Halesius primùm perpendi 1 cretæ albæ $\frac{3}{4}$ 1, pari copia affuso oleo Vitrioli, aërem statim multum generavit. 2 Eadem tamen Creta in Calcem versa, eodem affuso, aëra haud parvâ quidem copiâ hausit, atque absorbuit. Inde, ni fallor, liquido satis apparet, Calcem vivam vim quandam aëra hauriendi, quâ antea non fruebatur, acquirere. Sed constat ex experimentis, quæ idem instituit Halesius, Calculi tum molem, tum et soliditatem ex aëre, maximam partem pendere.

Sed è diverticulo revertamus in viam. Argumenta vestra, quæ particulas frigidas existere probarent, evertere jam conamur, mutatis enim partibus, tu nostram tenes sententiam, vestram ego. 1^{mo}. 'Si lenta congelatio aquæ fiat in vasculo,' inquit Muschenbroehius, 'tum circa CIRCUMFERENTIAM vasis orbiculariter incipit, ab hac medium versus emittuntur subtilissima quædam filamenta. Si quidem sæviente gelu, subito congeliat aqua, oritur primum in

superficie lamella tenuis à pariete ad medium extensa.' Inflat. Phyc. p. 396. Inde fit, ut si particulæ sint tales, adeo debent esse subtiles ut vitrum permeare faciliè possent. Deinde, RIVOS OMNES AD FUNDUM PRIMUM CONGELARI, vel piscatoribus, similibusque animalibus aquaticis benè notum est. Attamen, paludibus cæterisque aquis stagnantibus idem nequaquam usu evenit. (Dr. Plot's History of Oxfordshire, HALE'S Statics, vol. 2, p. 349). Præterea, quod solum sufficere posset, 'Aqua aëre orbata, positaque sub vacuo, vel in phialâ sub dio, citius congelatur, aqua vulgaris tardius.' (Musch. p. 390). Glaciem specificè esse aquâ leviolem ita explicat noster Reimarus. Aër aquæ intimè mistus, et in eâ quasi solutus, parum molei incrementi adfert, uti vas aquâ plenum, salis tamen cujuscunque copiam quandam nihilo feciùs recipere possit. Si verò frigidæ particulæ aëreas ex suâ cum aquâ unione intimâ expellant, in bullas tum colligitur aër, ac molem majorem, et specificè leviolem totam massam efficit. Hæc utcunque ingeniosissima, quoniam parum veritatis continent, ex Muschenbroehii ejusdem observationibus subverti faciliè possunt. At piget me quidem subvertere. Quæ enim aqua aëre orbata, et in vacuo posita, sine bullis congelaverat, est etiam et hæc specificè levior; sese vi ingenti expandit, et vitreas diffringit Phialas, Inst. Phys. p. 399. Plus fortè quam satis jam hæc de re. Attamen, quoniam de particulis frigidis sermo inciderit, non prætereundum esse mihi videtur, glaciem plus frigere aëre ambiente. Id se Petropoli observasse prodit Kraaftius. (Musch. 399). Nullam in ultimis meis de modo fervandi per hyemem plantas exoticas mentionem feci; quoniam num aqua viribus electricis repleta congelescere posset, experiendi non fuisset occasio. Inventionem equidem laudo. Experimentis, quæ proposuisti, teste Reimaro, repetitis comperi auram electricam per vitrum vires suas exerere posse, perindè ac vis magnetica per corpora nullo sibi commercio juncta, ferrum adtrahit. De adversariis, aptius quidem, ut opinor, sequenti modo possunt dividi 4 Volumina. 1. De re practicâ. In eo tum mor-

borum symptomata, si quæ sunt mirabilia, tum observationes curatoriae, tum et medicamenti cujusdam vires sunt notanda. 2. In hoc non modò Physiologia cum theoretica tum experimentalis, sed etiam Chémia atque Anatomia agitentur. 3tio haud absurdè nomen imponas de Re Clinica ; in quo Morborum Historiæ, quæ tibi ipsi occurrant, vel et quas mirabiles legas, sunt omnes perscribendæ. Ex hisce Historiis, quotquot sint observationes seu de symptomate quodam parùm vulgari, seu de singulari medicamento cujusdam eventu, vel aliud quicquid memorabilius in adversaria practica transferri debent. 4. Miscellanea. Quæ experimenta facere statuas, factis nequaquam commisce. Hæc deinde omnia Volumina, tria certè priora. Indice uno generali ornas. Attamen sit liberus, nullo affixus, ita enim erit haud parùm commodior. Titubantis amici Uxor uti plus pecuniæ quam antea retuli (nescio quantum) marito affert, ita et plures annos.

In proximis tuis quo tempore nobis Londini conveniendum moneas. *Cupiditate enim quàm maximâ alienas invifendi terras ardeo. Tædet me patriæ, urbis præsertim natalis.* Ipso fortè temporis momento, quo hæc exaro, medicos aucuparis honores, et quoniam nullus dubito quin consecutus eris, tibi de honoribus gratulari liceat. Gratulor et generi humano, te in medicorum numerum esse receptum. Doctor amicissime, vale, et salutis humanæ prospice.

Dabam Edinæ, Die Junii 25, 1755.

The result of this change in Mr. KEIR's profession was a voyage to the West Indies, where he was smitten with the yellow fever, and escaped his death by a medicine of his own prescribing, as mentioned in the introductory letter.

On his return home he was stationed with his Regiment, the 61st, at Bandon, Ireland; and in a letter to

Mrs. DARWIN he gives a humorous description of the people. The letter concludes thus:—

“If they were more luxurious, that is, had a greater number of wants to be supplied, they would be more industrious. Another reason of the want of industry in Ireland is mentioned by Sir WILLIAM TEMPLE; that is, the richness of the soil; for, in general, the soil is richer and requires less culture than the soil of England, by which means their necessities are supplied with less labour than in England, where (even to procure the necessaries of life) more industry is requisite.

“I am afraid, Madam, I have tired your patience. I find, too late indeed, that I have undertaken a subject too extensive for a letter; but I must not however forget to mention the most agreeable part of every description, where they enter,—the ladies. To say they are more or less handsome than the English ladies, as many do, would show prejudice, considering that they both are nearly of the same climate. As the men of this country have a certain impetuosity in their dispositions, which perhaps may be the cause of their making so many blunders in conversation, so the women have a certain vivacity which influences their behaviour. All women, says Mr. POPE, are fond of pleasure, and perhaps so much the fonder as they are the more restrained. Here they indulge themselves in their favorite passion perhaps more than in England. The manners of the country allow a greater freedom. They have not so much of that delicate reserve for which the English women are remarkable amongst foreigners, and which makes them better wives, if less agreeable.

“This town (where I now am), secluded by its situation from the rest of the kingdom, retains a character peculiar to itself. Gaming seems to be not so much the amusement as the business of *all* sorts of people. In this, the morning; in this, the evening, is daily consumed. For this purpose alone they meet, and, that they may

never want an opportunity of indulging their favorite passion, they have a public card-meeting every night for the better sort of people of both sexes ; and this in a town not so big as Lichfield. It would be well if this spirit of play were confined to a people of no employment, but it infects the tradesman and the farmer. I am told that at a fair in a neighbouring town it is not unusual for two farmers to sit down to play a party at piquet for a stake of a hundred bullocks. I need not say much more of the character of people devoted as they are to play, nor of the influence which that close and jealous attention to their own interest, at the expense of others, which constant play makes habitual, must have on their minds. They are strangers to that hospitality for which the rest of this kingdom is famed ; but instead of this hospitable disposition they have been many years remarkable for another one of an opposite kind, which is an inclination to quarrel. The Irish gentlemen value themselves much on a false and mistaken sense of honour, which inclines them too readily to take offence. Hence there are many more duels fought here than in England. In this town in particular, they have been fond of showing their courage in the duelling way, and I am told that some years ago this quarrelsome spirit was very troublesome to strangers ; now it has much abated, and I believe one may live among them without fear of his life. By this time, Madam, I fancy you are as tired of the people of Galway as I am. But our fortunes are so far different : I, though tired, am obliged to live amongst them ; you too are tired of them and—‘ blefs your stars,’ that you’re in Lichfield. I am, with much esteem and regard, Madam,

Your most faithful and obedient Servant,

JAMES KEIR."

The following letter addressed to DOCTOR DARWIN was probably written at the same time:—

BANDON,

20th August, 1766.

My dear DOCTOR,

I have delayed writing to you from month to month for at least this half year past in expectation of being able to tell you that I should soon make you a visit; but I have not yet had it in my power to give myself that pleasure. But to convince you that my delay of writing did not proceed from any forgetfulness, I heard about a year ago of an extraordinary medicine that I have ever since kept in my memory that I might acquaint you of it. For I never hear of any thing curious of the scientific kind but I wish I could communicate it to you. The medicine I mean is no other than *arsenicum album*, which a gentleman of the Faculty told me he had several times administered with entire success in old and inveterate epilepsies, as also in *old* rheumatisms. It was given from gr. fs. to gr. i. finely levigated with flower of sulphur. The person that told it me is one that has travelled a great deal, talks much, and loves to raise admiration, but is with all that a very honest man. I remember I mentioned to you when I saw you at Lichfield what I had heard concerning the heat in Georgia, that the thermometer rose considerably above the degree of human heat, and that it sunk upon its application to the human body. If you have not had an opportunity of seeing that paper of the Phil. Trans., I acquaint you that I have since read it, and find it to be exactly as I had related. Does this seem to prove that there is a refrigerating principle in the human body, or could it proceed from the cold which may be supposed to be produced by the great perspiration, in the same manner as it is by all sorts of evaporation according to the experiments of CULLEN? Have you seen Doctor McBRIDE's book lately published on the Nature and Properties of

Fixed Air? If you have, it is only *my labour lost*, which is not worth much. He proves, or attempts to prove by experiments, that putrefaction ensues as soon as that vapour (called) fixed air escapes from animal or vegetable substances (though I know not why it has been called fixed air, since it suffocates animals and has not any property of air that I remember), and that by the re-admission of this vapour they recover their sweetness,—for instance, a piece of putrid meat suspended so as to receive and imbibe the vapour of a fermenting mixture of animal and vegetable substances, or of acid and alkali fermenting together. Upon this he supposes all antisepticism to depend. The bark, for instance, generates a great deal. He has a curious method of dissolving camphor and resins in lime water, and afterwards, by precipitating the lime by means of this vapour, he procures a solution of the resin in simple water. He supposes the gout to proceed from too great a quantity of fixed air, and prescribes for it lime water, which is highly absorbent of it. He found likewise the petrifying waters to contain an earth absorbent of fixed air, and therefore recommends it for the stone. You say that a man's disposition depends upon his food. Sir W. TEMPLE observes that all courageous animals are also carnivorous, and that greater courage is to be expected from a people such as the English, whose food is strong and hearty, than from the half-starved commonalty of other countries. But on the other hand, the Swedes, as well as other nations who eat little meat, are not inferior to any in point of courage; and then how fierce the gamecock is, and all animals of pasture in the rutting season, or even the most timid in defence of their young! That is, they are courageous when any strong desire impels them. But that desire seldom affects the graminivorous in comparison of the carnivorous animal, who is daily exposed to the impulse of hunger which cannot be satisfied without the exertion of courage. Therefore the question seems to remain doubtful. If you have any particular facts or reasonings upon this subject I should be glad to be informed of them.

You see what long letters I write by emptying my budget of all the scraps of science I can pick up, steal, or borrow ; while you, from your too great abundance, are at a loss what to choose.

Your picture of yourself in your last letter is so exact, that if ever you happen to be "stolen or strayed," I make no doubt of finding you again by advertising it. I am no painter, else you should no longer have that excuse for short letters ; but I am in some hopes I shall be able to show you the original in a short time. I shall certainly be with you in a month or two, or else next summer. If I come now, my principal, or rather sole inducement will be a visit that I have long been desirous to make to you. Pray let me hear soon from you, as I shall certainly not long remain here, and your letter may have some difficulty in catching me. Direct to Captain KEIR of the 61st Regiment, at Bandon, Ireland. I have lately purchased a company, but was obliged to borrow so round a sum, that I know not but I shall find it most expedient to sell out on half-pay some time hence, except Mrs. DARWIN can recommend to me some Lichfield *fair* that has more money and love than wit. Please to make my best compliments to Mrs. DARWIN,

And I am, my dear Doctor,

Your affectionate friend,

JAMES KEIR.

About this time Mr. KEIR seems to have written his Treatise on the Art of War, but which was never published, the manuscript having been accidentally burnt by the publisher.

He probably left the Army at the time of or soon after his marriage with Miss HARVEY (in 1770, though it is impossible to fix accurately the date), and subsequently lived at Birmingham.

The following letter appears to have been written to Mrs. DARWIN before his marriage; but the original manuscript is without date or address.

MR. KEIR TO MRS. DARWIN.

I expected to have had an opportunity before this of sending you my thanks for your letter by the Doctor, but he has not yet favoured his friends at Birmingham with a visit.

The note you were so obliging as to enclose was—nothing less than what you conjectured—a *billet doux*. It is so elegantly written and I am so little accustomed to such favours, that I cannot forbear indulging my vanity. I therefore send it to you for your perusal and amusement; and although you can have no occasion to write upon that subject, yet perhaps you may not be displeased to see the very quintessence of love-letter-writing. You see what reason I have to regret my misfortune in being absent when that note was sent to your house, as I fear that I shall never discover the fair author of it; and particularly as she appears to be possessed of such uncommon qualities that I despair of having my loss compensated. For besides the good taste and discernment she shows upon the present occasion, and which my modesty will not allow me to praise sufficiently, although I might here give her the preference to all the ladies of my acquaintance, whose want of taste and discernment in this instance, though otherwise not deficient in those qualities, I have often wondered at, and lamented;—besides these, I say, it appears from her writing in verse that she is endowed with a superior genius, and disdains to convey her elegant sentiments in humble prose like ordinary mortals. From the mystic characters that adorn the margin of her epistle,—and which I suppose to be possessed of some magic influence to excite a mutual passion (the effect of which I already feel), I conclude that my innamorata is

deeply skilled in the occult sciences. It appears also from the scantiness of the paper employed, in an affair of no small consequence, that her economy and prudence are not inferior to her learning and genius; and her ingenuity is no less to be admired in discovering that method of making me acquainted with her economy, knowing that to be a virtue particularly agreeable to persons of my country. As to the trifling mistakes in spelling and other inaccuracies, I impute all these to the *force* of her passion and *agitation* of her mind, which prevented her from bestowing attention upon small matters.

Whoever they be who chose to amuse themselves by writing it will be more than recompensed for their trouble if they had half the pleasure in their conceit, as I have had from the opportunity it gave me of hearing from you and of assuring you that

I am with, &c., &c.,

JAMES KEIR.

The next letter, which we insert here, is also without date, but was probably written soon after his marriage. (177)

MR. KEIR TO DOCTOR DARWIN.

Dear Doctor,

I rejoice exceedingly that you study chemistry so eagerly. I expect soon to see a copper-plate representing the forms of the first principles of bodies. I shall send you to-morrow, or next day, Vogel, Brownrigg, and the *Essai sur la Putrefaction*. The remaining two books which I have of yours, Kunckel and Falconer, I shall keep some time longer, with your leave, as the

former is merely a collection of receipts, and the latter, because I suppose you have read lately, and contains little to your present purpose.

The books which I think are of most consequence in the study of chemistry are—

(1.) *All Stahl's Works*. They are large. The principal work is *Fundamenta Chymiae Dogmaticae et Experimentalis*, 2 vols. 4to. Norimb. 1746. In his Commentary upon Beccher you have the foundation of the modern theory of chemistry. Much genius appears in his writings.

(2.) *Junkeri Conspectus Chymiae*, 2 vols. 4to. I never saw it, but from the frequent quotations, and from the character given by other authors, I believe it to be a very good book.

(3.) *Wallerius Mineralogie*, 2 tomes, 8vo., in French, is a very good book.

(4.) *Wallerii Chymiae Physica*, vol. 1st., 8vo. The other vols. are not yet published.

(5.) *Differtations Chimiques de Mr. Pott*, 4 tomes., 8vo.

(6.) *Memoires Chymiques de l'Academie de Stockholm et d'Upsal*, 2 tomes, 8vo. Many excellent memoirs of Brandt, Wallerius, and others.

(7.) *Memoires de l'Academie de Berlin*, 7 tomes, 8vo. These contain Margraaf's most excellent differtations and also some very curious ones by Mr. Eller, together with much medicine, surgery, &c. Price £1 1s. unbound.

(8.) *Opuscules Chimiques de M. Margraaf*, 2 tomes, 8vo. All these are contained in the former, excepting two small differtations on lapis lazuli, and on a method of purifying regulus of antimony.

(9.) *Cramer's Art of Affaying*. This, I believe, you have.

(10.) *Gellert's Chymie Metallurgique*, 2 tomes, 8vo. Nothing new in it but a method of affaying ores, which I have inserted in

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the notes to the Dictionary. He has also a large table of affinities. The processes are told more concisely but not more accurately than in Cramer. It contains also some experiments to show the different densities of some metallic alloys, how much they exceed or are less than the intermediate density of the compound metals.

(11.) *Swedenborgii Principia Rerum Naturalium*, 3 tomes, folio. I never saw any of this voluminous book but his Treatise on Iron, which contains a most minute and accurate description of the methods used in most parts of Europe of smelting iron ore, and of forging iron, of conversion into steel, and everything relating to it which is known. If he is as copious upon other subjects, it must be a treasure of knowledge.

(12.) *Schluter's Traité de Mines*, by Hellot, 2 tomes, 4to. This book contains descriptions of the methods used in Germany for smelting ores of lead, silver, copper, and gold, with plates of furnaces, &c. It is very valuable to commercial metallurgists. Is very dear,—at least £2 2s.

(13.) *Henkel's Pyritologie*, in French, 4to. A large tedious book.

(14.) *Teychmeyer's Institutiones Chemicæ*. Contains many curious experiments on *Mercurification*.

* * * * *

Other subjects commonly supposed to be alchemical, but I believe you will have them all in Junker.

I shall send you some bismuth, and some zaffre, from which you may extract regulus of cobalt, by fusing it with alkaline salt and a little charcoal dust, by which you will get a blue glass, similar to the smalt of the shops, a regulus of cobalt, and probably a regulus of bismuth adhering to the upper or under surface (I forget which). Nickel is not to be got for love or money. I am glad that you propose soon to be here.

In 1775, or before, Mr. KEIR appears to have commenced business as a glass manufacturer, at Stourbridge, near Birmingham. A paper of his "On the Crystallizations observed on Glass" was communicated to the Royal Society by his friend, G. FORDYCE, M.D., F.R.S. It is published in the Philosophical Transactions on 23rd May, 1776. The following letter alludes to it :—

MR. KEIR TO MR. CHARLES DARWIN.

STOURBRIDGE,

2nd May, 1776.

My dear Sir,

I received your epistle and should have longed much to hear from you before, if I had not frequently seen your Father, who assured me to my great joy that you were alive and well.

I was in London when your letter came, and have since most unfortunately mislaid it. I have been searching for it this week past, with a view to answer it, amongst my most valuable and curious papers, but in vain. I am afraid of delaying longer, lest you should be setting out upon your return home, which I was very happy to hear was your intention, as I hope to be feasted with the golden sentences of the Philosophers of the North. I have given a paper to the Royal Society concerning the crystallization of glass, which the Philosophers of the South were pleased to think a very curious fact. I am inclined to think that it is not a precipitation or separation of peculiar parts, as you say it appeared to be to Doctor BLACK, because the *whole* quantity of the glass is capable of being thus crystallized, by a sufficiently long continuance of

heat, *excepting* about $\frac{1}{8}$ th part which is evaporated during the time necessary to convert the whole of the glass into a white opaque substance ; and because this white opaque substance is, by violent heat, convertible into transparent glass, which may be again crystallized, and so on.

Your godson increases in dimensions, and shows daily such proofs of sagacity as surprise his Father and Mother, &c.—I suppose nobody else. You may soon expect to be required to administer some of those pious instructions which you are in duty bound to give. I wish you may be able to infuse into him some of your thirst for knowledge.

Mrs. KEIR desires her compliments and good wishes. I long to see you, and am,

My dear CHARLES,

Yours most affectionately,

JAMES KEIR.

Mr. CHARLES DARWIN,

Student of Medicine in the College of Edinburgh.

Early in 1776 Mr. KEIR completed his translation of M. Macquer's "Dictionnaire de Chimie," with additions, notes, &c. A copy was forwarded to the author, of which the following is a reply :—

Monfieur,

J'ai reçu dans son temps un exemplaire en 2 vol. in 4to. d'une traduction en Anglois du Dictionnaire de Chimie, avec des additions et des notes ; j'ai eu l'honneur de vous écrire à ce sujet ; mais comme je ne savois pas bien votre adresse, il est possible que ma lettre ne vous soit pas parvenue. Ne sachant malheureusement pas la langue Angloise, je ne puis vous dire d'après moi-même si la

traduction est comme vous la desiriez, mais j'ai fait traduire toutes les notes qui contiennent les additions et je puis vous assurer d'après la lecture que j'en ai faite avec le plus grand plaisir, qu'il n'est pas possible que la traduction du texte ne soit parfaitement bien. Les notes étoient l'objet qui m'intéressoit le plus à cause de l'avantage que j'en pouvois tirer pour l'amélioration d'une nouvelle édition : je travaille en effet présentement à cette nouvelle édition qui est sous presse ; elle fera beaucoup corrigée et augmentée et vous verrez Monsieur que des observations aussi sensées et aussi intéressantes que sont les vôtres peuvent contribuer infiniment à la perfection d'un ouvrage.

J'ai l'honneur de vous prévenir qu'il y a cependant un assez grand nombre de notes que je n'ai point employées, pour ne point trop grossir la nouvelle édition. Ce sont celles qui m'ont paru avoir plus de rapport à l'histoire naturelle et à celle des drogues simples qu'à la chimie, à l'égard de celles qui sont plus intimement liées à cette science, je m'en fers avec reconnaissance et en vous citant, comme cela est bien juste. Nous concourons en cela, vous et moi, au même but, et vous me donnez Monsieur une nouvelle preuve de votre estime à laquelle je suis bien sensible en me proposant de traduire la nouvelle édition, à laquelle vous avez vous-même une très bonne part. Vous vous êtes acquis des droits sur cet ouvrage et en vous donnant toutes les facilités qui dépendront de moi pour la traduction que vous vous proposez de faire je ne ferai, à proprement parler, que vous rendre une partie de ce qui vous appartient.

Je ne manquerai pas de vous envoyer les feuilles de la nouvelle édition, à mesure qu'elles seront tirées ; mais nous aurons quelque temps pour cela car l'impression, quoique commencée il y a déjà quelque temps, est encore très peu avancée à cause de différentes circonstances qui l'ont retardée. Je vais me concerter avec mon libraire (le Sr. Didot le jeune, Quai des Augustins) pour vous faire un premier envoi le plus tôt qu'il sera possible, mais ce sera à con-

dition que vous en userez librement, en traduisant, que vous voudrez bien y joindre vos propre remarques et m'en faire part à fin que j'en puisse profiter d'une manière ou d'une autre même pour cette nouvelle édition. J'ai l'honneur d'être avec toute l'estime et la reconnaissance que je vous dois, Monsieur,

Votre très humble et très obéissant serviteur,

MACQUER.

à Paris, le 28 Mars, 1776.

P.S.—Comme vous n'avez pas mis votre nom à la première édition, je n'ai pu vous nommer, mais simplement vous désigner en vous citant ; faites moi le plaisir de me mander, si vous trouvez bon que je vous nomme soit dans l'avertissement, soit dans les citations, qui ne sont point encore imprimées.

Mr. KEIR was on terms of great intimacy with Mr. BOULTON, of Soho, who made Mrs. KEIR a very handsome wedding present when he and his wife finally settled in Birmingham. This is alluded to in the following letter which was written on the 1st March, 1777 :—

MR. BOULTON TO MR. KEIR.

Dear Sir,

I sent you about a fortnight ago some gilt scraps and some plated scraps, which are so regular and uniform in their goodness as to afford the means of making accurate comparisons of different modes of refining. We have now a large quantity upon hand of both gilt and plated scraps, and therefore should be glad, if your

method answers to your satisfaction, to send them to you. Mr. JACKSON's report of the plate is, if I remember right, $8\frac{1}{2}$ of silver in the pound.

About a week ago I sent in a box directed for you a silver coffee-pot and lamp, which I beg you'll do me the favour to permit Mrs. KEIR to so far indulge me to accept as a token of my love—I believe I had better say—for her husband; and yet, in spite of the *mischievous* graces, Mrs. KEIR is so good a woman that I cannot see any impropriety in her receiving it as an offering made by me to *all the female virtues*.

Pray, where were you the last full moon? I hope you were not influenced by any influenza to stay at home. I saw DARWIN yesterday, at Lichfield. He desires to know if you will come to Soho on Sunday, the 3rd March, in which case he will not fail to meet you, although he says he has inoculated some children which will probably be ill about that time. Yet if you will come he will be at Soho by eleven o'clock, when I propose to make several motions to the members. Pray God bless your fire-side, and preserve it from smoking and falling chimneys, and every other terrestrial evil.

I am, dear Sir,

Yours sincerely and affectionately,

MATTHEW BOULTON.

JAMES KEIR, Esq.

Mr. KEIR first became acquainted with Mr. WATT in the autumn of 1768. In Mr. MUIRHEAD's "Life of WATT," page 173, it is said that when Mr. WATT came for the first time on a visit to Mr. BOULTON's house, near Birmingham, where he stayed a fortnight, Dr. SMALL, Dr. DARWIN, and Mr. KEIR, were asked to meet him;

and Mr. MUIRHEAD adds, that Mr. KEIR was the "wit, the man of the world, the finished gentleman, who gave life and animation to the party," and whom Mr. WATT calls "a mighty chemist, and a very agreeable man." The correspondence between Mr. WATT and Mr. KEIR was in all probability both large and of a very interesting character, and it is much to be regretted that none of it can be here furnished.

Mr. MUIRHEAD, writing on the 31st July, 1868, to the Author of this Supplementary Memoir, says :—

Dear Sir,

I am sure no apology was necessary for your letter of the 28th inst., received here this morning, and I rejoice to hear of the good work you are undertaking in editing, for private circulation, the correspondence you mention. I wish much that it had been in my power to have aided your purpose by any letters or other documents ; but it is not so, as I will at once more particularly explain to you. (1.) It is true, as you say, that in my Life of JAMES WATT I have frequently mentioned Mr. KEIR ; but, as you may also have observed, the notices are short and slight, and are so because I could find no materials for making them more important. A note at p. 92 of my translation of "Arago's Eloge of WATT," 1839, you probably also know ; and those few lines really embody all that I could find sufficiently peculiar and characteristic to require notice. Neither do I recollect any letters from Mr. KEIR being among those gone over by me while engaged in writing Mr. WATT's Life, although the few occasional expressions I have given show the high esteem Mr. KEIR's neighbours and friends had for his abilities and kindly disposition. But (2.) had such letters existed, and been

ever so numerous, among Mr. WATT's papers, they could not at present have been made available for your use, or even inspection ; for Mr. JAMES GIBSON WATT, the tenant for life of the late Mr. WATT's large estates, has objected to pay the legacy duty on his succession (!), and because his trustees had to do so on his behalf to avoid the usual threatened prosecution in Exchequer, he has filed a bill in Chancery against them, praying that the legacy duty on his succession may be disallowed to the trustees in their accounts. In consequence of this strange proceeding the whole of the papers connected with Mr. WATT's estate are now deposited in Chancery, and of course it is impossible for any one to say when they will be released. Wishing you every sort of success in your interesting scheme,

I remain, dear Sir,

Truly yours,

JAMES P. MUIRHEAD.

In the year 1765 Dr. WILLIAM SMALL went to reside in Birmingham, leaving America on account of ill health. He was introduced to Mr. BOULTON by the celebrated BENJAMIN FRANKLIN, and became one of Mr. KEIR's most intimate and honoured friends. Mr. KEIR speaks of him with a high and critical appreciation in his "Account of the Life and Writings of THOMAS DAY, Esq.," published some years after. In this volume, which is now out of print, are also to be found many interesting biographical notices of this most singular man, which are quoted as follows :—

(P. 3). "Dr. SMALL was born in the year 1734, at Carmylie, in the county of Angus, in Scotland, of which place his Father was Minister. He was appointed Professor of Natural Philosophy in the University of Williamsburg, in Virginia, where he resided a few years. He died in 1775 at Birmingham, where he had practised medicine several years, and where he had acquired great reputation and esteem. He, as also Mr. DAY, died at the age of 41."

(P. 29). "While Mr. DAY was thus following, according to his own expression, 'the extravagancies of a warm heart and of a strong imagination,' he became acquainted with a gentleman of very uncommon merit, who being, by the singular accuracy of his ideas, and of his knowledge of men and things, peculiarly adapted to correct the romantic bias of a youthful imagination, had certainly, during the intimacy and friendship which gradually took place between them, great influence on his opinions. This gentleman was Dr. WILLIAM SMALL, a physician in Birmingham, who, to the most extensive, various, and accurate knowledge, in the sciences, in literature, and in life, joined engaging manners, a most exact conduct, a liberality of sentiment, and an enlightened humanity. Being a great master in the exact sciences, he seemed to carry their regularity and precision into his reasonings and opinions on all other subjects. This correctness of judgment placed Dr. SMALL as the very antipode of ROUSSEAU, by whom all objects were seen through a medium of enthusiasm, which disturbed their forms and falsified their colours with some prismatic tinge. On the other hand, Dr. SMALL leaned perhaps somewhat to the opposite extreme, and too strictly analysed human affairs; so that, although they were reflected by his mind with the most perfect and exact outlines, the pictures were too void of colour. '*Nil admirari*' was his favourite motto; which however he afterwards, as his health and spirits declined, changed to one of a darker cast, *μη φυναι*, the two first words of a line of EURIPIDES, expressing that it would have been better not to have been born. Mr. DAY had, indeed, at this early period

of his life, enthusiasm to spare ; and Dr. SMALL thought he could not do his younger friend more service than by controlling his imagination and correcting his views ; although it may be considered still as a problem, not very easy of solution, to determine what portion of a virtuous enthusiasm may be extinguished with benefit to mankind. For although our exertions may not equal our wishes or expectations, yet probably we shall not attain the greatest height at which we are capable of arriving unless we aim at a still higher quarry. The eagle can never reach the sun, yet by the boldness of the attempt he may acquire a strength of flight peculiar to himself. On the other hand, too much divested of enthusiasm, Dr. SMALL, although possessed of various and eminent talents to instruct mankind, has left no trace behind of all that store of knowledge and observation which he had acquired, and from which his friends never left him without drawing fresh information. He lives only in the memory of those friends who knew his worth, and of the poor, whom his humane skill was ever ready to rescue from disease and pain."

(P. 92). "So strong was his (Mr. DAY's) affection, that notwithstanding the fortitude with which he resisted all ordinary occurrences, a loss which he sustained in his youth, by the death of a highly valued friend, Dr. SMALL, left a gloom on his mind which a period of two years did not dispel, and which yielded only to a more tender connection, which then happily began to engage all his affections, and which not only restored but also secured his serenity and cheerfulness during the remainder of his life. Mr. DAY was at Brussels in 1774, when he heard that Dr. SMALL was seized with a fever. He flew with anxious haste to England, and arrived in Birmingham a few hours after his friend had expired. The following pathetic lines, in which he afterwards gave vent to his sorrow, will show the sensibility with which he regretted the loss of this valuable man, whom he venerated as the friend and guide of his youth, and

whose death he considered as the severest stroke that fortune could then have inflicted :—

Beyond the rage of Time or Fortune's power
 Remain, cold stone ! remain, and mark the hour
 When all the noblest gifts which Heaven e'er gave
 Were centered in a dark untimely grave.
 Oh, taught on Reason's boldest wings to rise,
 And catch each glimmering of the opening skies !
 Oh, gentle bosom ! Oh, unfulfilled mind !
 Oh, friend to truth, to virtue, and mankind !
 Thy dear remains we trust to this sad shrine,
 Secure to feel no second loss like thine."

(P. 111). "Dr. SMALL'S memory was honoured not only by the very pathetic epitaph written by Mr. DAY, but also by the following lines which the physician, who had attended him in his last illness, and who had strove to save his life with all the skill which the art of medicine affords, and with a zeal which friendship and esteem inspired, inscribed in a grove that another friend had dedicated to the memory of the deceased :—

Ye gay and young, who, thoughtless of your doom,
 Shun the disgusting mansions of the dead,
 Where melancholy broods o'er many a tomb,
 Mould'ring beneath the yew's unwholesome shade ;
 If chance ye enter these sequestered groves,
 And day's bright sun-shine for a while forego,
 O leave to Folly's cheek the laughs and loves,
 And give one hour to philosophic woe !
 Here, while no titled dust, no fainted bone,
 No lover bending over beauty's bier,
 No warrior frowning in historic stone,
 Extorts your praises or requests your tear ;

Cold contemplation leans her aching head,
On human woe the steady eye she turns,
Waves her meek hand, and sighs for Science dead,
For Science, Virtue, and for SMALL she mourns.

A better testimony cannot be given of Dr. SMALL's great worth than the praises bestowed on him by such men as Mr. DAY and the author of the above lines, who, by the composition of these, and more especially of that exquisite poem, "THE BOTANIC GARDEN," in which the Graces themselves seem to decorate the Temple of Science with their choicest wreaths and sweetest blossoms, appear to give a sanction to the ancient mythology, which made the same Apollo the god of physic and of song."

Mr. KEIR gave up all connection with the glass manufactory at Stourbridge early in the year 1778; and this for the purpose of joining partnership with Messrs. BOULTON and WATT. The latter part of the plan however fell through; for Mr. KEIR, who had lately married and did not therefore feel himself open to engage in any great risk, declined the connection. Mr. SMILES, in his "Lives of BOULTON and WATT," mentions how, in the month of October, 1778, the Soho firm was in a state of great embarrassment. Mr. WATT was at that time absent, and it became necessary for Mr. BOULTON also to leave, so that by his personal presence he might secure from his friends the help he stood so much in need of. In this emergency, with no one to attend to the business, Mr. KEIR undertook the sole charge of these extensive works. With a fuller acquaintance of the position of the firm came a greater disinclination

to take upon himself a share of their general liabilities. He therefore limited his connection with the firm to the Letter Copying Machine business. This was an invention of Mr. WATT in 1778, which was not patented till the year 1780; and Mr. KEIR undertook the management of it. Mr. SMILES says: "The Letter Copying Machine gradually and steadily made its way, until at length there was scarcely a house of any extensive business transactions in which it was not to be found."

In 1777 Mr. KEIR had published his "Treatise on the different kinds of Elastic Fluids or Gases." It appears to have been very highly thought of, and in 1779 a new edition of it was called for. Of this new edition mention is made in the following letter, which however bears no date:—

JAMES KEIR, ESQ., TO DOCTOR DARWIN.

Dear Doctor,

The best method of getting the animal, that is the phosphoric acid is that lately discovered by Mr. SCHEELE, a Swedish chemist, and is as follows:—

Dissolve the powder of calcined bones in weak nitrous acid. Add to the saturated solution some vitriolic acid till no more selenites is precipitated. Pour off the liquor from the selenitic powder, and evaporate it in glass vessels by heat to the consistence required. By this evaporation the nitrous acid will be expelled and the phosphoric acid will remain in the liquor. If charcoal powder be added to this phosphoric acid and distilled with a strong heat, in close vessels, with water in the receiver, a phosphorus will be obtained.

If your apothecary cannot prepare it, I will ; but if the disease is considered merely in a chemical light, does it not proceed rather from a superfluity of acid than a deficiency of it, since we know that any acid softens bones (?) and is not the most probable method of cure to give such substances as combine with acids and destroy their power? Of these substances, oils and alkalies seem the fittest, and may be given jointly in soap. Egg-shells cannot be burnt to lime till they have been dissolved in an acid, and precipitated by an alkali. If the alkali is caustic, the precipitate will be caustic ; and if mild, the precipitate may be burnt to lime. When the animal acid is separated from bones, the remainder is mere calcareous earth. The acid obtained from bones, although it certainly consists principally of phosphoric acid, yet I believe it also contains some of the vitriolic or nitrous acid employed in the operation, because it is more deliquescent than the acid collected from burning phosphorus.

Mr. BOULTON set out this day on a journey to Cornwall, where he will probably remain three weeks. He has been so much absent from home, and when at home in such a whirlpool of business, that there has scarcely been even a Sunday which could be devoted to *Philosophy and Doctor Darwin*.

I long much to see you. I have two spare beds in my house, and should be happy to see Mr. BOB whenever the rules of his school permit. I can tell you a good deal of philosophical news when we meet. Pure air may be obtained from a variety of substances, as turbith mineral, green vitriol, manganese, lapis calaminaris, wolfram, &c. A substance is discovered which, when applied to a given quantity of air, devours the air, and makes a perfect vacuum, as I will show to you when you come to Winton Green.

I am just publishing a new edition of my "TREATISE ON GAS." If you have read it with attention enough to discover its faults, I shall be much obliged to you for your remarks. When I was last at Lichfield I left with you the last vol. of Rozier, which I had not

looked into, and I should be obliged to you to send it to me, as it may contain something relative to my subject.

Adieu,

Yours affectionately,

J. KEIR.

P.S.—Mrs. KEIR desires to join in best compliments to you and Mr. ERASMUS, and to Mr. BOB, and promises Mr. BOB, if he will come to Winsor Green, that he shall have the pleasure of Soho, without being lectured.

In 1779 Mr. KEIR invented and took out a patent for a metal "*capable of being forged or wrought when red-hot or cold, and more fit for making bolts, nails, and sheathing for ships, than any other metals previously applied for the purpose;*" and this metal has been said to be almost identical with that now called "Muntz-metal."

A volume printed in 1866 "at the request of" the Committee (Local) of the British Association has given rise to a discussion on this subject.

In this volume of "Reports on the Industrial History of Birmingham," an article appeared entitled "Yellow Metal Sheathing, Bolts, Nails, and Wire," from which we take a few extracts:—

"The late GEORGE FREDERICK MUNTZ, Esq., M.P., has hitherto enjoyed the reputation of being the inventor of this mixture.
* * * If, however, the merit of introducing a large per centage

of zinc with copper, for the purpose, is to be regarded as forming a claim to protection, Mr. MUNTZ's claim to be considered as an original inventor is of the most shadowy character imaginable. * * * Its (KEIR's metal) component parts were one hundred parts of copper, seventy-five parts of zinc, and ten parts of iron. The copper and iron were first melted and mixed with charcoal and pounded glass, and the zinc then added. * * * The merits of Mr. MUNTZ are therefore reducible to the resuscitation of a dead process, or mixture, only. As the reviver of an old patent, Mr. MUNTZ is entitled to consideration, and on these grounds only. Now, with the printed specifications for consultation, such a patent could not have stood the test of a Court of Law, and no patent agent would have been justified in taking it out." *

In an address delivered at the Birmingham and Midland Institute on the 30th September, 1867, by MATTHEW DAVENPORT HILL, Q.C., the following remark was made upon this passage:—

"Against one passage of the work however I must enter my protest, namely, that which treats of the new manufacture created and established by the late GEORGE FREDERICK MUNTZ. * * * This treatment bears all the more hardly on the reputation of Mr. MUNTZ, that it appears in a book, not only of great intrinsic value, but of peculiar interest to the people among whom he lived; and which must, as regards its general character, secure their respect by the soundness of its judgments."

* By W. C. AITKEN.—Extracted from a work "The Resources, Products, and Industrial History of Birmingham and the Midland Hardware District."—Published by ROBERT HARDWICKE.

In the Local Notes and Queries of the *Birmingham Journal*, December 21st, 1867, further notice was taken of KEIR's inventions :—

"KEIR, in addition to his researches in science, cultivated other pursuits of a more practical kind. He was the earliest of two pre-inventors of a metal akin to MUNTZ's, which, so far back as the year 1779, he patented, which could be, and was worked at a low red heat. It was composed of 'copper, zinc, and a small portion of iron, to be used for the making of ships' bolts, nails, and sheathing; more fit for the purposes named than any metals heretofore used.' He clearly demonstrated the economic principle of working it by the manipulation of the metal when in a heated state. I am also of opinion that the *scientific prescience* of KEIR's mind quite comprehended the implied quality included in the specification of the latest patentee, *i.e.*, 'to make the metal oxidise sufficiently to keep the ships' bottoms clean.' The iron, 10 per cent., KEIR well knew was so small in quantity and so low in price, as not materially to influence cost, as regards reduction in price. For what purpose then was the iron introduced? For its known property of oxidation.

"As 'Este,' in his enquiries as to Birmingham celebrities, doubtless is anxious to know what they did, having examined KEIR's specification, it is here introduced, as contrasted with the more recent one for producing a similar kind of alloy, fifty-three years thereafter :—

1779—KEIR.

1832—MUNTZ.

Wide Claim.

Copper.....	100—divide by 2 = 50	50 to 63	Copper.
Zinc	75— „ by = $37\frac{1}{2}$	37 to 50	Zinc.
Iron	10— „ by = 5	—	

Q."

On the 8th February, 1868, another article appeared in this paper on the same subject :—

“JAMES KEIR AND MUNTZ'S METAL.—‘Senex’ does not concur in the opinion expressed by me, that JAMES KEIR was ‘prescient’ of an alloy of copper and zinc to ‘perform the function which the specification first showed it to possess.’ I shall hold the contrary. We will agree to differ.

“‘Senex’ raises what he considers a practical difficulty in the production of KEIR'S metal which is very easily answered. He says : ‘To melt the iron the mixture must be raised to a temperature which would send off the zinc in vapour, and probably much of the copper would follow it.’ Now, ‘Senex,’ if he had given the matter due consideration, must have found out that no metallurgist would attempt to first melt a metal so volatile, and fusing at so low a temperature (773°), as zinc, and therefore attempt to melt in it copper, which fuses only at $1,996^{\circ}$, and iron which is only fusible at $2,736^{\circ}$. I am afraid ‘Senex’ is sadly in want of ‘technic knowledge.’ JAMES KEIR was a ‘better metallurgist,’ and he just reversed ‘Senex’s’ method of melting his metals. He says : ‘First melt the iron and copper together in the presence of charcoal and pounded glass, then add the zinc by degrees.’

“‘Senex’ makes me say, ‘it was because iron possesses great oxidating and corroding power’ that it was added to the mixture ; and again, ‘Iron being a cheaper metal than either copper or zinc, its introduction would lessen the cost of the alloy.’ What I said was : ‘The iron 10 per cent. KEIR well knew was so small in quantity and so low in price as not materially to influence cost as regards reduction in price.’ I also said, ‘For what purpose was the iron introduced but for its known property of (corrosion or) oxidation.’ These were my words. ‘Senex’ says the iron would of all things aggravate that which it was important to avoid. If ‘Senex’ says no corrosion is necessary (not the exaggerated corrosion which, by

his exceedingly free use of my words, he would mislead your readers to suppose), I refer him for information to an Address,* recently delivered, in which MUNTZ's metal is alluded to, and in which it is stated, 'some corrosion is indispensable,'—the necessity for which is rendered apparent by the overdone protection devised by Sir HUMPHRY DAVY, whose 'sheathing became quickly covered with barnacles and seaweeds.' Now KEIR undoubtedly was, as I have shown, a scientifically educated man, conversant with chemistry and metallurgy. It is not therefore too much to assume that his 'preference' detected a limited corrosion as an essential in ships' sheathing.

" 'Senex' says, 'We have no evidence that KEIR ever made a single sheet of his metal;' and further, 'If KEIR was in possession of such a valuable secret, why did his patent not come into use?' My reply is, it matters little whether he *made* his metal or not. Recorded in the Rolls Chapel Reports stands revealed (no 'secret') the specification of JAMES KEIR's invention of 'a compound metal, to be worked at a *low red heat*, or when cold, more fit for the making of bolts, nails, and sheathing for ships, than any metals heretofore used or applied for these purposes.'

" JAMES KEIR was therefore the inventor of an alloy, and was the first to call attention to the property which copper more largely alloyed with zinc than any previous alloy of copper produced; and that the said metal could be *worked at a low red heat*. Now how much this property aided the commercial success of MUNTZ's metal we are told in the 'Address' alluded to. It says: 'It was highly important to the success of Mr. MUNTZ's patent that he should be able to roll the plates of his sheathing in a *heated state*, for when cold the power required to produce the necessary expansion of the metal is so great as to make the process costly.' Was this 'highly important' element to the success of MUNTZ's metal,

* Address delivered at the Birmingham and Midland Institute, on 30th September, 1867, by MATTHEW DAVENPORT HILL, Q.C.

i.e., rolling hot, invented by Mr. MUNTZ? I have shown it was not. Whose invention was it then? It was that of JAMES KEIR! Why did his (KEIR'S) patent not come into use? I need not tell 'Senex' that inventors make inventions before the time comes for them to be appreciated. Ninety years ago, a half-century before the date of the invention of MUNTZ'S metal, public opinion leaned towards the use of things they knew. More important still, the amount of shipping was much smaller than at present, and not nearly so large as at the period of the introduction of MUNTZ'S metal in 1832. KEIR resided in an inland town; if he failed to get his metal introduced it is not to be wondered at, nor does it derogate from the importance of his invention that 'promoters of new inventions were not then in existence.' A higher tone of morality prevailed, and cheapness was then seldom taken into consideration as a recommendation to the introduction of the new material. So much, then, as regards the 'prescience' of JAMES KEIR, a 'prescience' arising out of scientific knowledge, founded upon true principles. That he was a 'remarkable' man we gather from the 'Address' already twice alluded to. What says the writer of it? This:—"Grouped around the father of Pneumatic Chemistry (PRIESTLEY) were several *remarkable* men who then resided in Birmingham, or frequently met there, MATTHEW BOULTON, JAMES KEIR, &c., &c." Will any one, after these quotations, have the hardihood to doubt that JAMES KEIR comprehended the necessity for corrosion to a limited extent in ships' sheathing?

Q."

"Birmingham, 30th *January*, 1868."

On the 16th May, 1868, another letter appeared in the same journal from "Senex":—

"KEIR AND MUNTZ'S METAL.—Some weeks or months ago one of your correspondents, whose signature I forget, broached the

theory that the late Captain KEIR had anticipated by 'prevision' MUNTZ's discovery of a sheathing which would resist corrosion. KEIR's metal was to consist of copper, zinc, and iron. This hypothesis has rather amused the metallurgists, one of whom has just sent me the following extract from the *Times* of May 7:—

" 'The Elk, 2, twin screw (composite-built) gunboat, 465 tons, 120-horse power, launched during the past winter from Portsmouth Dockyard, and subsequently fitted with her engines and boilers, was placed 10 weeks since in the old shipping basin of the yard, to wait there the finishing of her pair of screws, which were ordered to be cast from enlarged patterns. On Tuesday last she was taken out of the basin again and docked to receive her screws, which had in the meantime been completed for her. On attempting to clean the ends of the shafting, however, to receive the screws, it was discovered that galvanic action had been at work to such an extent that the 'key' pieces on the shaftings were reduced to plumbago, and other parts of the metal 'honeycombed.' The fact appears to be that the small area of water in the old ship basin is but seldom opened to the admission of the tide, has always three or four copper-bottomed vessels floating upon it, and is therefore a chemical bath, whose power has been so unexpectedly, yet convincingly, displayed upon the screw shafts of the Elk.'

" My friend adds: 'This report shows a remarkable instance of the destructive galvanic action of copper on iron in sea water; and what (he adds) would have become of Mr. KEIR's patent sheathing-plates, with their iron ingredient?'

" Captain KEIR was a man of great merit and originality; but if the 'prevision' with which your correspondent has endowed him ever existed (of which there is not a tittle of evidence), the method he proposed for reducing his theory to practice would have landed him farther from his object than he would have remained had he been content to abide by the use of the old sheathing made of copper alone.

SENEX."

On the 30th May this was replied to as follows:—

“[124.]—KEIR *v.* MUNTZ'S METAL.—On the above subject I observed in yours of the 16th inst. another letter from ‘Senex,’ which, however, does not attempt in any way to answer the contents of my letter inserted in the *Birmingham Journal* of the 8th February last. ‘Senex,’ therefore, admits that he was in error as to his idea of the *modus operandi* in mixing KEIR's metal. Secondly, that KEIR was the first to produce a sheathing composed of copper largely alloyed with zinc (with a small portion of iron therein). Thirdly, that KEIR's metal possessed the property of being worked at a low red heat, the two last features being distinguishing characteristics of MUNTZ's metal. Previous to KEIR's invention, all sheathing was composed entirely of copper; the merit, therefore, of producing a composite sheathing, with the quality of its being worked at a low red heat, are not original features in MUNTZ's metal, while they are those of KEIR's (invented and specified fifty-three years before the enrolment of the specification of MUNTZ). KEIR was, therefore, as I stated, ‘one of two pre-inventors of a metal or sheathing akin to MUNTZ's.’ ‘The hypothesis’ suggested by the extract from the Naval and Military intelligence correspondent of the *Times*, of the 7th instant, furnished to ‘Senex,’ by his friend, ‘one of the amused metallurgists,’ and adopted by ‘Senex,’ simply proves that iron is acted upon by other metals, that the *iron* keys of the shafting, and the *iron* shafting of the ‘Elk’ composite-built gunboat, was destroyed or partially injured by the action of the old sea water in the ‘ships’ basin at Portsmouth;’ it does not tell us that any portion of MUNTZ's metal was present, or if present that it was uninjured. The inference desired to be drawn by ‘Senex’ is, that if KEIR's metal had been present, because it contained a fractional portion of iron, as a necessary consequence it must have been destroyed. What is proved by ‘the extract’ is simply this, that *iron* pure and simple was destroyed; it does not prove that MUNTZ's metal, under similar conditions,

would have resisted corrosion, or that because KEIR'S metal contained a fractional portion of iron in its composition, as a consequence it must have been destroyed. But the truth is that 'Senex' and his friend (one of the 'amused metallurgists') are ignorant of a fact well known by manufacturers of yellow metal sheathing, that 'the old sea water' in ships' basins, not operated upon by tidal influences or changed by the transfusion of fresh sea water, becomes an active agent of corrosion. According to MILLAR, the water is full of 'fulphuretted hydrogen;' according to the *Times'* correspondent 'galvanic action' ensued—the water became a 'chemical bath,' and in the case alluded to 'the copper sheathing of the vessels floating in the old ship basin' aided in completing the destruction of the *iron* keys, and partially destroyed the *iron* shafting of the Elk.' The fact of the increased action of the old sea water in docks is, I think, proved by the following extract, which I quote from an authority—viz., 'that some time ago the manufacturers of yellow metal sheathing were so impressed with the belief of the extremely corrosive nature of the water in the London docks that they jointly agreed to refuse their usual guarantee for the durability of their sheathing metal during a certain term, in case of vessels entering and lying in these docks.' The matter stands thus: 'Senex' and the 'amused metallurgist' have quoted an *extreme case*, as unfair to be considered the test of MUNTZ'S metal as of KEIR'S, and they have injured their case thereby.

"It forms no part of my duty, as exponent of KEIR'S merits, to decry MUNTZ'S metal, but simply to show, as has been done by me, that two elements in MUNTZ'S patent taken out in 1832—*i.e.*, the production of a composite sheathing, formed of copper very largely alloyed with zinc, and that the same could be worked at a 'low red heat'—were included in KEIR'S specification, taken out in 1779; also that, even as regards the quantities of copper and zinc, the quantities specified by KEIR are included within the

limits of the specification of MUNTZ (the latter, however, making a wide claim for the purposes of experiment). With a knowledge of these facts before me, I submit what has been stated by me in previous letters has been proved, viz., 'that JAMES KEIR was one of two pre-inventors of a metal akin to MUNTZ'S.'

"In conclusion, I may add that recently KEIR'S metal has been revived in Germany. It is extensively used for general purposes; largely 'for sheathing bolts and nails in shipbuilding; it is much stronger than copper, and is said to resist the action of sea water satisfactorily.' Probably 'Senex' and his friend, 'one of the amused metallurgists,' will be more careful in future in the use of an 'hypothesis,' which cuts not in the way it was intended, but against them; and as a refresher to the memory of 'Senex,' let me remind him that my signature was simply

Q."

"Birmingham."

At a date which cannot be accurately assigned, but apparently about the year 1780, Mr. KEIR engaged in a business with Mr. BLAIR. Mr. BLAIR was the only brother officer in the Army whose friendship Mr. KEIR had the good fortune to secure. They established works at Tipton, near Dudley, for the manufacture of alkali, for the use of the soap-makers, from the sulphates of potash and soda. The method of extraction proceeded on a discovery of Mr. KEIR'S, contradicting a point in the doctrine of elective affinities held by the Chemists of the day. Their experiments seemed to show a stronger affinity of sulphuric acid for either of the two fixed

alkalis than for lime. Mr. KEIR found that—by presenting the salts in an exceedingly weak solution, and by calling in the aid of a chemical agent (for which he always professed the highest respect, and the functions of which in natural operations were, he thought, greatly underrated) *Time*—the rule of election was reversed. By passing the weak solution *slowly* through a thick body of lime, the sulphates were decomposed; the sulphuric acid uniting with the lime, and leaving the alkalis disengaged. The liberated alkali had then only to be brought into a concentrated form for sale.

After a time it was considered that much labour and expense would be saved by using the products on the spot, and the *Chemical Works* became *Soap Works* also.

For many years, whilst Chemistry slowly made its way into the arts, the sulphates—the neglected refuse of other manufactories—were at a *low* price in the market; and the secret of the decomposition by lime remained so long exceedingly profitable.

On the same ground was carried on the manufacture of red lead, for the glass-houses,—of litharge—and, on a principle which was patented later (1806), of white lead, for the *Staffordshire Potteries*, the lead being first converted into a muriate and the muriatic, then displaced by the carbonic acid gas for this purpose. Whether there were any business relations between Mr. KEIR and Mr. WEDGWOOD in the matter of white lead is not

known; but it is clear that Mr. KEIR had for many years been acquainted with him. In Miss METEYARD's "Life of WEDGWOOD" it is said that Doctor DARWIN introduced them to each other by a letter dated 8th *November*, 1767.

DOCTOR DARWIN TO MR. WEDGWOOD.

Dear WEDGWOOD,

I have the pleasure to introduce to your acquaintance Captain JAMES KEIR, an old friend of mine, a successful cultivator of both arts and arms. He begs the favour of seeing your elegant manufactory, and hopes to meet our common friend, the philosopher, Mr. WHITEHURST, at your house. The civilities you show Captain KEIR will be received by,

Dear Sir,

Your affectionate humble Servant,

E. DARWIN.

Miss METEYARD adds:—

"From this date the acquaintance ripened, and both at the house of Dr. SMALL, at Birmingham, and at Soho, Mr. WEDGWOOD occasionally met KEIR, who, in the opinion of WATT, was 'a mighty chemist, and a very agreeable man.' The experimental track WEDGWOOD was, at that time and subsequently, engaged upon, must have made his occasional intercourse with KEIR singularly interesting, as it was from Macquer's

Dictionary in its French form that he had derived, through Bentley's translation of the necessary passages, some portion of his knowledge relative to the *spaiith fusible*, or *terra ponderosa*."

DoctOR DARWIN was engaged at that time in writing his celebrated poem "The Botanic Garden." It would appear from the next letter we have selected that he sent the second part of his work to Mr. KEIR for his perusal and opinion as to the propriety of publishing it.

MR. KEIR TO DOCTOR DARWIN.

September 1st, 1787.

Dear DoctOR,

I return with this your exquisite Poem, with many thanks for the indulgence of showing it to Mrs. BLAIR, who has read it with more pleasure, she says, than she recollects to have received from any piece of poetry for years. She desires me to give you her very best thanks for the high entertainment she has received, and longs for the publication of it that she may also see the first part.

For my part, I am confirmed in the opinion I always had, that you would have been the first Poet of the kingdom if you had not suppressed your talent. You certainly possess the power of giving reality to the images you exhibit. The touches of your poetic pencil, to bring forward the circumstances on which this effect depends, are fine and delicate. Nothing can be more ingenious than the thought of personifying the plants and sexual parts of plants, and animating them with such passions, actions, and character, as

the figure, qualities, and other circumstances suggest. And much invention and ingenuity are shown in the execution of this thought. I can have no doubt that the poem will please both the reader and the bookfeller, and also the author, whenever you publish it; and as you desire my opinion on the propriety of publishing, I not only give it as above, but also the reasons on which I ground my opinion, that you may not suppose it given as a customary courtesy between an author and his friends. The sale will probably not be so great at first, as it will be lasting and increasing; and this, I conjecture, from the subject of Botany not being understood generally sufficiently to make people relish it. I think great advantage in this respect might be derived from prefacing a very short introduction, in which you will explain in the easiest manner possible as much of Linnæus's system as is sufficient for understanding the poem and the notes, and no more than is sufficient and necessary; and, for the greater facility of giving this first idea to persons ignorant of Botany, I would advise a print, by way of vignette to the introduction, of some flower, the fittest for your purpose. You might also prefix and post-fix vignettes to each part of the poem, representing some of the principal plants mentioned, for the benefit of many readers who do not know them. Your readers will not be confined to botanists, but I doubt not many of them may be enticed by the poem to become botanists; and as this is your express intention, to promote the study of Botany, you ought to do everything you can to facilitate the admission of the first ideas of it. (Upon recollection, your first part, which I have not seen, will be a preparation for understanding the second.)

You tell me you expect some criticisms, otherwise you will not believe we have read it. The number of beautiful passages are not to be noticed, for they are without number, and I therefore found it would be a shorter method of convincing you that I have read the poem if I could find faults:—

1. I do not approve of the part of your advertisement which

says that the design of the poem is to apprise the publication of a translation of Linnæus. The poem is too good for this humble design, which may be communicated in other words.

2. The person who has copied for you has committed many errors in spelling, which you had need beware of if you send this copy to the press—Holologe for Horologe, Hydrometer for Hygrometer, page 63. I suppose the words *led* and *bad*, in lines 32 and 33, ought to have been *ledst* and *badst*.

3. Does the epithet *leathern* added to the ears of the incubus-demon give so distinct an image as some word expressive of form or position,—as, *with ears erect*, *pointed ears*, *bending ears*, *quivering ears*, and which give also the idea of the pleasure with which the demon hears the painful cries of the woman.

4. Line 779, “and turns her *wheel* the *while*,” does this sound please your better ear?

5. Line 837, “marking her solar and sidereal day.” Is this idea philosophically accurate? Your note informs that the *equinoctial* flowers open and shut at determinate hours, which seems as if they regarded time and not the sun. Are these flowers capable of flowering at any but determinate seasons; and if they are, has their uniformity of expanding and closing at the same hour been well ascertained? For my part I cannot conceive any possible connexion between plants and *true time*. They seem to me under the dominion of the sun, and his light or warmth makes them expand. The tropical flowers evidently obey the sun. If in the word *sidereal* you did *not* mean to mark the distinction between solar and sidereal time, you must be sensible that it must however bring up the idea of the distinction into every person’s mind who has been used to hear of it. Certainly if the plants mark sidereal time, they make better watch-makers; but I doubt whether you would not have had as great advantage in poetry, by making them *priests of the Sun*, worshipping him successively at different hours, and drawing your episode either from ancient or Mexican mythology.

6. Line 1146, "*electric* lustre plays." I cannot conceive, with WILCKE, that this light can be electric. The torpedo and eel produce electricity by some violent exertion, which cannot be supposed to exist in vegetables. It seems much more probable that it is *phosphoric*.

7. Mrs. BLAIR thinks you have sacrificed the philosopher to the poet when you speak of MONGOLFIER, "Urge thy venturous flight high o'er the moon," &c. Considering especially the poem as a philosophical one, fancy ought not to fly quite so high.

I have criticised enough to show that I have read the poem, although you will perhaps say "to little purpose." I had forgot to say Mrs. BLAIR was much pleased with the interludes, which she thinks very ingenious; and I think they contain just criticism, and are a pleasant addition. Mrs. KEIR desires to join in best compliments to Mrs. DARWIN and yourself. I have had the pleasure of making her forget a violent toothache by reading part of your poem to her.

Yours affectionately,

JAMES KEIR.

The celebrated Doctor PRIESTLEY came to Birmingham in the year 1780. He it was who, after M. MACQUER had discovered the existence of inflammable air or hydrogen, demonstrated that there was another gas, oxygen, or, as it was called by him, dephlogisticated air. And it was from an observation of his experiments, rather than from those of Mr. CAVENDISH and M. LAVOISIER, that Mr. WATT was ultimately led to the grand discovery of the composition of water.

Doctor PRIESTLEY in his researches was assisted, and that not a little, by Mr. KEIR, who, it will be remem-

bered, had discovered that the properties of fixed air, or as it is now called carbonic acid gas, were such as to distinguish it and separate it from atmospheric air ; and this previously to Doctor MACBRIDE, and independently of him.

DOCTOR PRIESTLEY TO MR. KEIR.

FAIR HILL,

Wednesday morning.

Dear Sir,

I write to apprise you that *time is*, but that very soon *time will be past*. But, to speak without allusions, my volume will be nearly printed off this week ; and if the article you were so good as to promise, and by which I shall think my work much honoured, does not come the end of this week or the beginning of the next, it will be *too late*. I earnestly beg therefore that you will be as expeditious as possible. If you should happen to have it now ready, and could come and spend an hour or two with me, I should like to read to you a section I have composed on the theory of the experiments on air, but it will be in the hands of the printer on Friday or Saturday. I have also made several new experiments since I saw you, which I wish to talk to you about.

At all events I must, if possible, have your article, and I should think you might write it without repeating the experiment, if you have no doubt with respect to the general fact. Hoping to see or hear from you very soon,

I am, dear Sir,

Yours sincerely,

J. PRIESTLEY.

JAMES KEIR, Esq.,
Winson Green.

DOCTOR PRIESTLEY TO MR. KEIR.

FAIR HILL,

Tuesday, 18th August, 1784.

Dear Sir,

I fend for your general inspection, not for your reading, the first book of my work, and also the introduction. I have to peruse it once more before it goes to the press. The last article (MS.) contains the result of the experiments you saw going on in my laboratory.

I wish to see you before we begin to print, which may be in a week or ten days.

Yours sincerely,

J. PRIESTLEY.

To JAMES KEIR, ESQ.,
Smethwick.

MR. KEIR TO DOCTOR PRIESTLEY.

SMETHWICK,

January, 1788.

Dear Sir,

You will receive with this the second sheet of my Dictionary. You will find in it my strictures on Mr. KIRWAN'S investigation of the quantity and density of real acid in acid liquors, which, I think, is founded on false principles, but from which he has drawn numberless conclusions, and others have also reasoned from them as admitted truths, and consequently abundance of false reasoning introduced. In treating of the subject I could not avoid

taking notice of Mr. KIRWAN's papers, and, convinced of their errors, I could not speak candidly of them to the public without dissenting and showing my reasons for the difference of opinion. It is not a pleasant task, and it would give me much pain to find that I had misrepresented his doctrines in any respect ; therefore, although what I have said is to the best of my judgment and conviction, yet I am extremely desirous you would read what I have said and compare it with Mr. KIRWAN's papers, and that you would point out any faults you may observe, or doubts you may have. I know the value of your time, and would not ask this favour for I am sensible it is a subject that will require some attention) if it were not to use every precaution I can not to do the slightest injustice to another, while at the same time I fulfil my pretensions to the public. I have desired ROLLASON to forbear casting off this sheet for two or three days ; and I hope, if you can spare time, you will favour me with your thoughts, either by a line, or by letting me know when I could call on you, or meet you at ROLLASON's. I scarcely need mention that whatever discussion may happen between Mr. KIRWAN and me, I shall not lead into the scrape a friend who is so kind to me and just to both parties as to give his real opinion.

I am ever, dear Sir,

Yours most sincerely,

JAMES KEIR.

DOCTOR PRIESTLEY TO MR. KEIR.

FAIR HILL, Thursday.

Dear Sir,

I have always forgot to tell you that I have not the account of the DUC D'AGEN's experiments that you once asked for, my *Memoirs* not reaching further than 1778.

I send a letter I have just received from Mr. KIRWAN, by which you will see that he is about to publish before he is sufficiently master of facts.

I am working like a horse at the new arrangement of my 6 *vols. of Experiments*. It is a tedious business.

What do you think of an attempt to dedicate this work to the PRINCE OF WALES? The KING I shall never think of in any such light, nor the PRINCE, unless it be possible that he will be a real patron of science, and could look upon it in some other light than that of an honour to myself.

Yours sincerely,

J. PRIESTLEY.

On the 3rd of May, 1787 (see vol. 77 of the Philosophical Transactions), a paper entitled "Experiments on the Congelation of the Vitriolic Acid, by JAMES KEIR, Esq., F.R.S.," was communicated to the Royal Society by HENRY CAVENDISH, Esq., F.R.S.; and an article on Fossil Alkali, by Mr. KEIR, was published on the 2nd of September, 1788, in the sixth volume of the Transactions of the Society for the Encouragement of Arts, Manufactures, and Commerce, of which Mr. KEIR was a member.

It may be here mentioned that Mr. KEIR was elected a Fellow of the Royal Society on the 8th December, 1785, and admitted into it on the 26th January, 1791. We observe that on the 1st of May, 1788 (see vol. 78 of the Philosophical Transactions), a letter of Mr. KEIR's

to the Rev. Doctor PRIESTLEY was read to the members of the Royal Society. The letter was on the principle of acidity, decomposition of water, and phlogiston. The following to Doctor DARWIN is principally upon this subject :—

JAMES KEIR, ESQ., TO DOCTOR DARWIN.

SMETHWICK,

November 26th, 1788.

Dear Doctor,

I have not been able to get you a paper of the hospital before yesterday, the waiting for which occasioned my delay in writing. But about a week ago I sent you WITHERING'S Botany, a Birmingham Directory, and also a book belonging to you which I have had in my possession (to my shame be it spoken) ever since I saw you last in Lichfield, SWEDENBORGIIUS on Copper.

I perceived, on reading the letters you showed, that things are gone too far to think of reconciliation.

I have at last finished my article "*Nitrous Acid*," at the end of which you will see a short sketch of *my* theory of phlogiston, which is very different from STAHL'S, KIRWAN'S, &c. Calcination does not necessarily imply deprivation of phlogiston, but consists in union of metal with air, as LAVOISIER says, and in some cases a part of the phlogiston is expelled, as in calcination of iron with water, because the water does not like phlogiston, but when pure air is applied it does not expel phlogiston, being very fond of it. Manganese and minium do not yield all their air by heat, only that part which they have more than calxes have, which are formed by strong heat. When litharge is exposed to *less* heat than made the litharge, it takes more air and becomes minium. When heated

beyond this degree it yields its *superfluous* air and becomes litharge again. The marine deph'd acid is a compound of marine acid and pure air, as LAVOISIER says. The anti-phlogistic doctrine cannot stand without the theory of the composition of water, but the anti-phlogistians have made great improvements in chemistry, which will stand independently of that theory or the theory of phlogiston. That part I adopt and adapt to the phlogistic theory. I shall write no more theory, I hope, till I have finished my book.

Adieu,

Dear Doctor, in haste,

JAMES KEIR.

MR. KEIR TO DOCTOR DARWIN.

* * * be magnified, although, as it is probable that he believed in the judgment he gave of the case, he is not much more culpable in one case than the other.

I am in great hopes, and much inclined to believe, that the affair will ultimately turn out to your son's advantage.

Mrs. KEIR joins me in wishing you, and Mrs. DARWIN and all yours, many happy new years, and

I am, dear Doctor,

Yours affectionately,

JAMES KEIR.

I received Doctor WITHERING's paper only yesterday, but upon observing that it is dated December 31st, I take it for granted it is unnecessary to send it to you, as I suppose you must have seen it.

When you have read my article "Nitrous Acid," I shall then be glad to know your opinion of phlogiston. Hitherto all the modern discoveries have been directed against that doctrine, and been

wove into the opposite system. I have attempted to make a *new* system from the good parts of all the systems that have been proposed, and by giving up all the bad parts.

To Doct^r DARWIN,

Derby.

LETTER FROM MONSIEUR BERTHOLLET.

PARIS,

19 Mai, 1789.

À Monsieur KEIR,

Monsieur,

J'ai reçu votre article Acide Nitreux que vous avez eu la bonté de me communiquer, ainsi qu'à M. LAVOISIER.

Nous avons l'honneur l'un et l'autre de vous en faire nos remerciemens.

J'ai lû cet article avec un véritable intérêt ; cependant je ne vous deguiferaï pas que je n'y ai point trouvé de motifs pour changer d'opinion ni sur la formation de l'eau, ni sur la nature de l'azote ou air phlogistique, je désirerais, Monsieur, que sur le premier objet, vous eussiez fait usage des résultats les mieux établis sur les quantités proportionnelles ; vous auriez peut-être été étonné vous même de l'opinion que vous défendez. C'est un peu vague de dire que l'air peut tenir beaucoup d'eau en dissolution ; mais une partie peut-elle en tenir deux ou trois cents parties ?

J'espère, Monsieur, que vous ne trouverez pas mauvais que j'insère dans nos annales chimiques quelques observations sur cet article de votre dictionnaire, ainsi que sur les dernières expériences du célèbre PRIESTLEY ; vous n'aurez certainement point à vous plaindre du ton de ma réponse ; nous désirons également le progrès des lumières, et si nous différons d'opinion sur quelques objets, c'est dans le même esprit que nous cultivons les sciences.

Relativement à la nature du gaz azote et conséquemment à celle de l'acide nitrique, ayez la bonté d'observer que le point qui nous divise c'est que vous prétendez connaître la nature de ce gaz, et que nous difons qu'aucune expérience, telle qu'on doit les adopter actuellement, ne prouve encore quelle est sa composition : nous attendons donc et vous nous devancez. Vous vous appuyez principalement sur la diminution du gaz hydrogène exposé et agité sur l'eau par M. de la METHERIE, et moi je me flatte de prouver par les calculs établis sur les observations les plus rigoureuses que, ou l'observation est fautive et de pure imagination (ce qui pourrait bien être) ou que le gaz hydrogène n'a pû être converti en azote en se combinant avec l'air vital contenu dans l'eau, ainsi que vous le prétendez.

Vous relevez fort bien à la fin de votre article une erreur qui nous est échappée dans notre réponse à Mr. KIRWEIN sur la réduction de l'oxide de fer par le gaz hydrogène opérée par Mr. PRIESTLEY ; mais il me paraît que la véritable explication de ce fait est facile à trouver et qu'elle ne laisse rien de favorable à ceux qui veulent conserver indéfiniment les explications du phlogistique.

Ce n'est pas la seule instruction que j'aye puisée dans votre article.

J'ai l'honneur d'être, avec beaucoup de considération et d'estime,

Monfieur,

Votre très humble

et très obéissant serviteur,

BERTHOLLET.

De l'Académie des Sciences de Paris.

Comme j'ignore l'adresse de Mr. KEIR, j'ai pris la liberté d'adresser cette lettre à Mr. WATT, auquel j'ai l'honneur de présenter mes compliments.

LETTER FROM MONSIEUR DE LA METHERIE.

PARIS,

9 Janvier, 1789.

À Monsieur KEIR,

Monsieur,

Je reçois dans l'instant les feuilles de votre dictionnaire que vous m'adressez, je les ferai traduire pour en insérer une partie dans le cahier de Février, et la seconde partie dans celui de Mars. Recevez mes remerciments sincères de la mention honorable que vous faites de mes ouvrages ; le suffrage d'un savant aussi distingué que vous me flatte infiniment. Je ne suis pas moins charmé de vous voir persister ainsi que Mr. PRIESTLEY dans ce que je crois la bonne doctrine ; nous sommes ici inondés de *carbonate* de *sulfate*, de *nitrate*, &c. Quoique le plus grand nombre de nos savants s'en moque, je suis néanmoins presque le seul qui ose élever publiquement la voix contre des innovations aussi dangereuses pour le progrès de la science que ridicules en elles mêmes. L'amour propre choqué ne me pardonne pas, on met en jeu toutes les petites cabales ordinaires ; mais sans m'écarter du ton d'honnêteté qu'on n'a pas toujours eu avec moi, je persiste à soutenir ce qui me paraît être vrai.

M. BERTHOLLÉT a lu un mémoire à l'Académie, dans lequel il prétend prouver l'existence d'acides métalliques dans le plomb, l'argent, &c., mais on m'a dit qu'il n'apporte pour le prouver d'autre expérience que celle-ci ; il fait bouillir ces chaux ou *oxides* métalliques dans l'eau de chaux, filtre, et ensuite verse dans la liqueur une dissolution de foie de soufre ; la liqueur devient brune. C'est l'expérience que j'ai faite et que je rapporte, page 385, tome ii., de mon *Essai sur l'Air* ; mais une des petites vengeances de ces messieurs est de ne me jamais citer, au reste je suis bien éloigné de croire que cette expérience prouve l'existence d'un acide

développé dans ces chaux métalliques. Je crois bien qu'elles contiennent un acide, mais que nous ne l'avons pas encore pu dégager.

Tout ce que je vous dis sur ce mémoire est d'après le rapport qu'on m'en a fait, car je ne l'ai point lu.

J'ai l'honneur d'être, avec la plus haute considération,

Votre très humble

et obéissant serviteur,

DE LA METHERIE.

Paris, 9 Janvier, 1789.

Je vous prie de présenter mes respects à Madame KEIR, et d'assurer la savante Société Lunaire des sentiments d'estime et de respect que j'ai pour elle. Si le dernier mémoire de Mr. PRIESTLEY était imprimé, je vous prierais de lui dire de me l'envoyer; il pourrait le faire remettre à Mr. WOLFE, Barnard's Inn, Holborn Street, London. Si vous pouvez détacher de temps en temps des articles de votre dictionnaire semblables à celui que vous m'avez envoyé, je me ferai un plaisir de les insérer.

LETTER FROM MISS DE LUC.

HARPER'S HILL,

Monday morn.

En attendant que je puisse avoir le plaisir d'aller rendre mes devoirs à Monsieur et Madame KEIR, je veux au moins leur témoigner ma reconnaissance de leur obligeant souvenir! et leur présenter les amitiés et compliments de mes Parens; Mon Père a reçu le mémoire de Mr. KEIR, dont il le remercie sincèrement; il n'a pas pu le lire encore avec toute l'attention qu'il mérite, et par conséquent n'a pas complètement formé son opinion; je crois qu'il y fait quelques objections, sans savoir *quelles elles sont*? Il y a un point sur lequel on ne saurait être cependant plus parfaitement

d'accord ! Savoir sur la critique de la nouvelle nomenclature des françois ! que mon Père regarde comme un exemple de la folie la plus présomptueuse ; et en la lisant il n'a pu s'empêcher de prendre la plume pour y répondre ! Il croit d'ailleurs que tout tend dans ce moment à amener quelque grande et importante découverte ! et cela très promptement.

With my best love to Mrs. KEIR, and thanks for her kind letter,

I remain, dear Sir,

Your most affectionate humble servant,

F. DE LUC.

I beg not to be forgot to my dear Amelia !

DOCTOR PRIESTLEY TO MR. KEIR.

BIRMINGHAM,

10th *January*, 1788.

Dear Sir,

Doct^r WITHERING finds the acid I have lately procured to be, in all the cafes, nitrous, even when the air was procured from the *red lead*.

With what you were so obliging as to furnish me with formerly, and the stock I found I had of other red lead, I have now made a fresh and very large quantity of air, which I am decomposing in a tin tube. The liquor is colourless, but the quantity of dark-coloured matter it brings off from the tin would astonish you. I wish much to see you, and am,

Dear Sir,

Yours sincerely,

J. PRIESTLEY.

To JAMES KEIR, Esq.,
Smethwick.

DOCTOR PRIESTLEY TO MR. KEIR.

Tuesday.

Dear Sir,

I enclose a letter from Doctor BLAGDEN which you will be glad to see. I here send a corrected copy of my paper, in which I enlarge a little on the subject of phlogiston. I think the doubts concerning it cannot subsist a year longer. The question will be determined one way or the other.

Yours sincerely,

J. PRIESTLEY.

To JAMES KEIR, Esq.,
Smethwick.

JAMES KEIR, Esq., to DOCTOR PRIESTLEY.

Dear Sir,

I return you Doctor BLAGDEN's letter, with thanks for the pleasure of reading it. When you write to him, be so kind as to give him my thanks for his obliging communication respecting the freezing of the vitriolic acid.

The more we discover of Nature, the further we are removed from the conceit of our being able to understand her operations.

I wish M. BERTHOLLET and his associates would relate their facts in plain prose, that all men might understand them, and reserve their poetry of the new nomenclature for their theoretical commentaries on the facts.

I have wished much to call on you to hear of the progress of your experiments, but have been much indisposed with the rheumatism. I long to know what acids you get with the other inflammable airs. If you get different acids from the inflammable

air made from sulphur and water, that made from marine acid and copper (for I would avoid iron on account of its plumbago and carbon), and that made from charcoal and water:—I say, if these acids are different (suppose, according to my notions, vitriolic, marine, and fixed air), then, will you not be obliged to admit that there is not one inflammable but many inflammables, which opinion you now think as heterodox as the Athanasian system. However, there are wonderful resources in the dispute about phlogiston, by which either party can evade, so that I am less sanguine than you are in my hopes of seeing it terminated. One consolation remains, that in your experiments you cannot fail of discovering something, perhaps of as great or greater importance to us to know.

DOCTOR PRIESTLEY TO MR. KEIR.

FAIR HILL,

Friday.

Dear Sir,

I wish very much to see you, having got a quantity of *green liquor*, by air from the *lead ore*, which I wish you to examine with me. I have also other things to *show* and to *tell* you, especially what I think a *coup de grace* to the new doctrines.

Yours sincerely,

J. PRIESTLEY.

JAMES KEIR, Esq.,
Smethwick Grove.

Mr. KEIR seems to have finished and published the two first volumes or parts of his Chemical Dictionary during the years 1788, 1789, and 1790. This Dictionary, which is only a fragment, is not the translation of M. MACQUER's Dictionnaire de Chimie, of which mention

has been already made in these pages, but is differently arranged and founded on a very different theory of phlogiston than any that had then been proposed. Mr. KEIR however discontinued this great undertaking when he became convinced that his theory would not fully explain some of the many curious facts which were afterwards discovered during the rapid progress which then occurred in experimental chemistry, and to the promotion of which in England perhaps his own writings and personal character, reflected through the distinguished Members of the Lunar Society, mainly contributed.* It is to the preface of this Dictionary, afterwards discontinued, that reference is made in the letter from Doctor DARWIN here transcribed.

DOCTOR DARWIN TO MR. KEIR.

BAR, at MR. GALTON'S,

12th September, 1789.

Dear KEIR,

I wrote you a hasty letter yesterday, before I had had time to peruse your very ingenious and excellent preface, which

* Mrs. SCHIMMELPENNINCK (in her Autobiography) mentions that Mr. KEIR was the *Man of Wit*, and the *Man of the World*, who maintained the accord of the Members of this Society. But Doctor DARWIN was as great a necessity to its existence. Probably the secret of its origin and success may be found in the firm friendship, dating from boyhood, subsisting between these two men of independent, original, and different characters, acting in concert with each other for the accomplishment of one purpose, viz., that of drawing to a single focus the enlightenment and genius of the scientific men of the age.

I have not now time to admire, but only to mention what I think an error of the flying pen.

Page 8, at the bottom line, you seem to say that common *attraction or gravitation* is the property of matter, by which its quantity has been always ascertained. Now I always understood that it was the *vis inertiae* that measures the quantity, and not the gravity. Gravity is variable in different parts of the earth, as here or at the line ; *vis inertiae* is everywhere the same, as the different lengths of pendulums necessary to measure the same portions of time, here and at the line, evince. Is it too late to alter this ?

You have successfully combated the new nomenclature, and strangled him in the cradle, before he has learnt to speak.

Adieu,

From your affectionate friend,

E. DARWIN.

J. KEIR, ESQ., TO DOCTOR DARWIN.

I am very happy to find my predictions fulfilled concerning your poem, that it would yield both fame and profit, but the former greatly exceeds the latter.

I am much obliged to you for mentioning the remark on an expression in my preface. I am very sensible that a number of oversights must have got into my book, the subject is so very copious and my attention much distracted. The remark was too late for correction. However, I believe I have spoke the common language of philosophers. Sir ISAAC NEWTON has a chapter in his "Principia" to prove that *gravity is proportional to the quantity of matter*. If, by gravity, you mean the effect produced, it is, as you say, different in different latitudes. But if it be considered as the cause of that effect, or as a general property of matter, it is the

same in all latitudes, and the difference of the effects on pendulums arises only from the different distances at which the gravitating bodies (the pendulum and the centre of the earth) are placed, and not from any difference in the gravity or attractive property. By comparing the attraction of a mountain of a known quantity of matter with the attraction of the earth, an investigation has been lately made of the quantity of matter contained in the earth, and of its density, as its magnitude was before known.

DoCTOR PRIESTLEY is now printing a new edition of his work on Air, which will show more clearly his discoveries, as all that he has done on any one subject will be contained in one chapter. As far as I remember, the most important are—

(1.) The discovery of pure or dephlogisticated air; and it is undoubtedly very curious that man should be able to manufacture an air that is more capable of sustaining life and flame than our atmosphere.

(2.) The property of nitrous gas to swallow up pure air, and no other gas.

(3.) The power of vegetables to meliorate the atmospherical air.

(4.) The production of nitrous acid by burning pure and inflammable airs. Mr. CAVENDISH did indeed observe the fact, but he imputed it to another cause, and DoCTOR PRIESTLEY ascertained it by experiment; it therefore as much belongs to DoCTOR PRIESTLEY as the discovery of the production of nitrous acid from pure and phlogisticated airs belongs to Mr. CAVENDISH, for DoCTOR PRIESTLEY has discovered this fact, but imputed it to fixed air, and therefore loses the merit of it. You believe in the formation of water, and therefore this last must not go into your list.

(5.) I consider the casual fact observed by DoCTOR PRIESTLEY, of air passing through bladders and other membranes by means of moisture, although the bladders themselves are impervious either to air or moisture separately, to be probably a very important fact in the animal and vegetable economy, and is necessary in the

explanation of respiration. I think you do not believe in the meliorating power of vegetables to purify the air, because animals vitiate it, and you consider vegetables and animals as the same kind of beings. I also am of this latter opinion, considering them as organised and sensitive creatures, and also of the same chemical principles, but very different in the proportion of these principles, so that some of them may require a purer air and others a less pure air than the rest. Animals in general and the plants that give volatile alkali in distillation, as onions, require pure air, and vitiate the air respired. Insects, and plants in general, thrive in air not very pure, that is, a good deal phlogisticated, and meliorate it. But fixed air kills all.

DOCTOR PRIESTLEY has discovered a great number of detached facts, besides these more important ones, such as the acid and alkaline gases.

The compliment you mean to pay the Doctor is a very elegant one, and he deserves it greatly for having maintained the English credit in natural philosophy, which, without him and CAVENDISH, would have sunk low. Since you desire me to criticise the lines, I proceed. Between the 4th and 5th lines I would insert to the following purpose: "What though to vulgar eyes you are invisible and pellucid, having neither colours nor constant form to indicate your presence, but, Proteus-like, take the shape of every vase you enter, and elude common observation, yet to his favoured sight you willingly appear, or pour your secrets in his raptured ear."

The next six lines are excellent, the two following not sufficiently clear, nor should I have understood the meaning unless you had said below in prose that one degree of heat unites calces with vital air, and another degree with inflammable matter disunites them. The difference of these effects does not consist in the different degrees of heat, which are not determinate for either effect, but often the same degree will do for both. The difference depends on the presence or absence of inflammable matter, and therefore I

would substitute the following thought: "And how you sometimes insinuate yourselves into your earthly cells (lime, &c.), where you lurk imprisoned and confined by the chains of chemical attraction, and might for ever remain unnoticed, if fire, acids, or fermentation did not give you strength enough to break your fetters, and the elastic gas explode, mount on resounding wings, and rush abroad. Thus gunpowder exerts its destructive force, and fulminating gold makes hills re-echo."

DOCTOR DARWIN TO MR. KEIR.

DERBY,

17th January, 1793.

Dear KEIR,

I have much availed myself of your observations, and have corrected my work accordingly. If you will be at the trouble of reading some more of the work I shall have time to send you a part, as I have not yet absolutely begun to print. Pray give me a line on this head; I mean whether you have leisure to read any more of it at present.

I hope Miss KEIR continues well, and am, with Mrs. DARWIN'S united compliments to the ladies,

Yours affectionately,

E. DARWIN.

On the 20th May, 1790, a paper (vol. 80, part 2, of the Philosophical Transactions) was communicated to the Royal Society by Mr. KEIR. It was entitled "Experiments and Observations on the Dissolution of Metals in Acids, and their Precipitations, with an account of a new

compound Acid Menstruum, useful in some technical operations of parting metals." In this paper there are two very important and curious sections, which probably contributed in no small degree to the future discovery of the electro-plate process. The one section is headed—"On the precipitation of Silver from Nitrous Acid by Iron," and the other—"On the alterations which Iron, or its surface, undergoes by the action of a solution of Silver in Nitrous Acid, or of a pure concentrated Nitrous Acid."

Among Mr. KEIR's most devoted friends was Mr. DAY, already mentioned as the friend of Doctor SMALL, and whose life Mr. KEIR published. The following letter alludes to that most popular of children's books, "Sandford and Merton," the third volume of which Mr. DAY concluded in 1789.

MR. KEIR TO MR. DAY.

29th September, 1789.

Dear Sir,

I was very happy in hearing from you some weeks ago such good accounts of your health and of Mrs. DAY's. I was then going to write to you to inquire, for I am always distrustful of an ague, knowing from my own experience that it is a guest which, when once admitted, will not lose the slightest opportunity that is given of renewing his visits. I know not whence the proverb came, that "An ague in the spring is physic for a king," but I know that it weakens the constitution much, and leaves an aguish tendency

long afterwards. My health was once much broke by repeated agues, against which I found bark but a temporary remedy. In that state, a chalybeate water operated upon me like a charm, and in a few days I recovered my strength and appetite, both which had been much impaired. I mention this, lest the remains of the ague should affect you in the same manner. I suppose any other chalybeate would have the same effect. I was highly entertained with your mother's surprise at your diet in your illness. I thought I saw the good old lady full of anxiety and emotion, while you, with perfect tranquillity, were devouring your breakfast of hashed goose. In her time it was the fashion to cure all diseases by fasting and mortification, which do not seem to agree with the constitutions of the present age. Possibly they might have done better with our sturdy ancestors. But thanks to Doctor BROWN, a more genial system seems likely to be introduced. I see from the reviews that his book is published. It is surprising that so simple and obvious an idea as that of giving a principal attention in diseases to the degrees of strength or debility should now be published as a novelty; and yet the fact is, that it is a novelty in practice, for I verily believe that, at least since the time of BOERHAAVE, who was a true Sangrado with respect to bleeding and hot water, the general effect of medicine has been to weaken the patient and consequently to strengthen the disease; whereas, in fevers especially, for which no specific remedies have been discovered, the only chance of recovery is to keep up the strength of the patient, that nature may do her best to fight the disease, since the Doctor cannot. This seems as simple a truth as the barber SUTTON's grand improvement in the treatment of the small pox, "that when a patient is too hot he ought to be cooled." Both these propositions would have been assented to in general terms by everybody before SUTTON or BROWN existed, and yet the whole force of either proposition was not understood nor felt till the experience of these singular men made them obvious and irresistible;

for SUTTON's method has been adopted by all the faculty without exception, and although one Doctor (DIMSDALE) has been made a Baron for inoculating the Imperial family at Petersburg, and another Doctor (INGENHOUSZ), for having inoculated another Imperial brood at Vienna, decorates his picture in the front of his book with a laurel crown suspended over his head, with the inscription "Ob Cefaream prolem fervatam," yet the truth is, these laurels and honours belong justly to the old barber ; and although the faculty may rail at BROWN, yet I doubt not they will adopt his method so far as to leave off starving their patients. He seems, however, if the reviewer's description of his system be just, to have carried his idea too far, and simplified too much his theory and practice, by reducing all diseases to merely different degrees of strength or privation of strength, and all remedies to stimuli and sedatives.

I have sent you a copy of my "Dictionary of Chemistry" by M. de VERDIEU. I am very glad to hear that your third volume is about publishing. It is much wished for, and I really believe that book is more likely to be of solid service than any that has been published. It is of little use to write for grown-up people ; their acquired habits will generally prevail ; but young unformed minds may be influenced into action and habit.

Your former letter, giving the history of your late visitor, surprised me ; but your last, in which you enter more particularly into circumstances, really astonish me. I doubt whether there is another man living that would have carried his friendship so far as you did, not only in the most unremitting attention and attendance, but particularly in encountering the censure of the world in following your own reason in opposition to the faculty, which censure would have been inevitable if the patient had not been cured. I doubt whether many of the faculty themselves, armed as they are with the prerogatives of life and death, would have ventured so decisively, and consequently so effectually, in pursuing their judgment. From

what you mention I think it not improbable that the father had come to you with prejudices received from his physician at home ; but he certainly changed his opinion, for he expressed clearly when he was here that his daughter's recovery was owing to your management. I had wrote to him, upon his first informing me of his daughter's illness, my opinion of your medical skill, and expressed myself pretty strongly with a view of making his mind easy. Upon recollection I believe he left Scotland before my letter arrived.

Doctor DARWIN tells me that his poem sells so fast that he is encouraged to finish the remainder of it.

I am, dear Sir,

Yours most affectionately,

JAMES KEIR.

THOMAS DAY, Esq.,

Annesley, near Chertsey, Surrey.

P.S.—We are happy to hear of the excellent effects of exercise on Mrs. DAY's health and strength. It is the want of a sufficient quantity of exercise or labour in this civilized state that makes almost every body either ill or not quite well.

Mr. DAY never received this letter. He had died suddenly the day before it was written. The accident which terminated his life is thus recorded by Mr. KEIR in his life of DAY:—

(Page 97). “On the 28th day of September, 1789, as Mr. DAY was riding from his house, in Surrey, to his mother's seat at Barehill, an end was at once put to his valuable life, at the age of forty-one

years. His horse, having taken fright at the sight and motion of a winnowing vane, started suddenly across the road, by which his balance was so disturbed that his spur happened to flick in the flank of the animal, which thereupon, exerting all its strength, threw its rider to a considerable distance, with his head foremost, on a stony road. By this fall his brain suffered such a concussion that he never afterwards spoke; but being carried to a neighbouring house, he died before the surgeon, who was sent for, could arrive. His wife and mother, hearing of his fall, but ignorant of the event, flew to the fatal spot, and were going to enter the house where he had lately expired, when they were stopped by the surgeon, whose troubled aspect, expressive silence, and waving hand pointing to them to return, informed them too clearly that no hope remained."

When the news of this sad event was sent to Mr. KEIR, who was not appointed executor as has been stated by some writers, he contemplated writing a Memoir of his friend. It appears that the same idea had occurred to Mr. EDGEWORTH, who was also a friend of Mr. DAY; but Mr. KEIR sent an extract of his work to Mrs. DAY, who was much pleased with it and would not hear of its being abandoned. The extract is as follows:—

(Page 16). "That much of Mr. DAY's constitutional character was derived from his mother appears clearly to those who knew the singular strength of mind of that venerable lady, to whose steady and judicious management of him in his infancy, as well as to her exemplary conduct in life, he was also indebted for his earliest good impressions, and for the first bias and direction of his mind to honourable pursuits. A small anecdote will show how much of his fortitude he may have inherited from this parent:—When she

was yet a young unmarried woman, while she was walking in company with another young lady through a field, a bull came running up to them with all the marks of malevolence. Her friend began to run towards the stile, but was prevented by Miss BONHAM (the maiden name of Mr. DAY's mother), who told her that as she could not reach the stile soon enough to save herself, and as it is the nature of these animals to attack persons in flight, her life would be in great danger if she attempted to run, and would be inevitably lost if she chanced to fall; but that, if she would steal gently to the stile, she herself would take off the bull's attention from her, by standing between them. Accordingly, turning her face towards the animal with the firmest aspect she could assume, she fixed her eyes steadily upon his. It is said by travellers that a lion itself may be controuled by the steady look of a human being, but that no sooner a man turns his back than the beast springs upon him as his prey. Miss BONHAM, to whom this property of animals seems to have been known, had the presence of mind to apply it to the safety of her friend and of herself. By her steady aspect she checked the bull's career; but he showed the strongest marks of indignation at being so controuled, by roaring and tearing the ground with his feet and horns. While he was thus engaged in venting his rage on the turf she cautiously retreated a few steps without removing her eyes from him. When he observed that she had retreated he advanced till she stopped, and then he also stopped and again renewed his frantic play. Thus, by repeated degrees, she at length arrived at the stile, where she accomplished her safety; and thus, by a presence of mind rarely seen in a person of her youth and sex, she not only saved herself, but also, at the hazard of her own life, protected her friend. Some days afterwards this bull gored its master."

This is the story of the bull mentioned in the following letter to the Son of Doctor DARWIN:—

MR. KEIR TO ERASMUS DARWIN, ESQ.

Near BIRMINGHAM,

27th February, 1790.

My dear Sir,

You will receive, along with this, exact copies of the poems you gave me. I received yours of the 22nd, and am much concerned to hear you have been indisposed. What you propose respecting the mode of settlement is perfectly consistent with my ideas of propriety, and with my wishes, and I am much obliged to you for your giving so much thought on this matter, and very highly so for your acceptance of the trust. Along with the other papers I have sent you a copy of what I sent to Mrs. DAY, relating to Mrs. PHILLIPS the story of the bull; and Mrs. DAY seems very much pleased with what I have said concerning her Mother, and tells me that she perceives Mrs. PHILLIPS is much pleased with it too, and says my method of telling the story of the bull has given her a quite different opinion of it. Mrs. DAY, with her usual goodness, seemed very desirous of some compliment to the old lady, and indeed she highly deserves it. Mr. EDGEWORTH has sent me a packet of letters from Mr. DAY to him, which he proposes to publish in the Miscellany, and a few anecdotes, but of not much consequence. He tells me that he intended to have published a good many more letters, and as much history as would have made a handsome volume. I have written him a long letter, to show that he may still pursue his intention, since he has so many materials, that his publication of such a work will not at all interfere with mine, that nothing is more frequent than two or more publications on the same life, that my plan being, as he himself says, quite different from his, mine being more a general account, his being a collection of anecdotes, they do not preclude each

other, and I have therefore asked him to reconsider the matter. You would be much entertained with these letters of Mr. DAY, but I dare not let them go out of my possession. I expect from you and from your Father many anecdotes and assistance to complete my work. I labour much under the want of materials. Pray assist me, as well as your memory enables you, with facts and *bons mots*, of which Mr. DAY said abundance, but had not so faithful a recorder as Doctor JOHNSON had in Mrs. THRALE.

I am, my dear Sir,

Yours affectionately,

JAMES KEIR.

ERASMUS DARWIN, Esq.,
Derby.

The next letter alludes to Mr. DAY's curious attempt to educate "Sabrina" into a model wife for himself. The circumstances, as given by Mr. KEIR in his "Life of Mr. DAY," were these :—

(Page 27). "The most singular of these projects was an experiment on female education, in which he proposed to unite the purity of female virtue with the fortitude and hardiness of constitution of a Spartan virgin, and with a simplicity of taste that should despise the frivolous vanities, the effeminate manners, and the dissipated pleasures which, according to ROUSSEAU's declamation, constitute the female character of the present age. With this view he received into his guardianship two female children, whom he intended to educate himself according to his pre-conceived system. And he actually proceeded, during some years, in the execution of this project. The experience, which had at first been wanting to him, at length gave him convincing proofs of the impracticability of this

mode of education, while his acquired knowledge of mankind suggested doubts of its expediency. Finding himself obliged to relinquish his project of forming ROUSSEAU's children of nature in the centre of England, he nevertheless continued these children under his protection and maintenance, and gave them such education as this kingdom affords. It is not improbable that at the time when Mr. DAY undertook to educate, according to his own ideas, these two female children, being himself but young, he might entertain some expectation of marrying one of them; but when he had relinquished that scheme, and had delivered them up, while they were yet children, to a boarding school, they were then no longer *children of nature*, but of *the world*, and they could retain none of the specific differences which distinguished them from others, and on which any expectations that he might have originally formed could have been grounded. Here we cannot avoid remarking the contrast in the conduct of Mr. DAY and of ROUSSEAU, although the former had been inclined to think favourably of the writings of the latter on the subject of education. Mr. DAY received two orphans under his protection, while the celebrated philosopher of Switzerland placed five of his own children in a foundling hospital at Paris."

The letter which alludes to this curious experiment is as follows:—

MR. KEIR TO DOCTOR DARWIN.

SMETHWICK,

15th March, 1790.

Dear Doctor,

I am greatly obliged to you for your letter. What you say relating to the propriety of mentioning Mr. DAY's experiment

of education as being characteristic is unquestionably just, and strikes me strongly, but how to execute? What you propose is too well known *not to be the accurate state*; and it could be easily contradicted, and thus the credit of the whole history brought into question. Another difficulty is to reconcile the making mention of this affair with the delicacy of Mrs. DAY and of Mrs. B * * *, for I would not say anything of it without their consent. Nevertheless, what you have said to me (and I am glad you have recommended it) has determined me to attempt it, and I will send you a copy of what I shall propose. I am glad you approve in general of my method; but I hope, when I have finished it, that before it goes to the press you will examine it a little more critically. As I have so little matter, the *manner* becomes of more importance, and I know your feeling with regard to elegance of composition to be very fine. The great difficulty is to know how far a man may go in oratory. A man of acquired reputation can go farther than is allowed to a new man. I shall desire my clerk to call upon you for the manuscript when he comes to Derby, which will be in about a fortnight, and I shall send it again when it is completed, and shall request you to be so good as to read it over. I endeavoured to persuade Mr. EDGEWORTH to resume his intention of writing anecdotes of Mr. DAY, which I assured him was nowise interfering with my plan, but he seems altogether to decline it. He talked at first of "our joining our forces" in writing an account of Mr. DAY. I conceived that to be impossible in such a work as mine, which is a continued discourse and must be in *one* manner from beginning to end, and therefore could not be done by two authors with a sea between them. If it had been a collection of anecdotes it might have been possible, as I told him. Nevertheless, I am afraid he was not quite well pleased, although in his letters to *me* he does not show any displeasure. I was very sorry to hear from him that he has lost his favourite Daughter, HONORA, the image of her Mother, but, as he says, superior both in beauty and understanding.

I am much obliged to you for your advice to me to be converted to the true faith in chemistry ; your principal argument in favour of which however is, not that it is *true*, but that it is becoming *fashionable*. This argument is of great consequence to an author, I grant, more than its truth. But I believe this is not an age in which any hypothetical system (for both the phlogistic and antiphlogistic are greatly hypothetical) will be adopted exclusively. Besides, in order to be a convert of any consequence, a man must have first sinned egregiously. Now I do not think I have yet persecuted oxygen sufficiently to make my conversion a thing of any éclat. In fact, I neither believe in phlogiston nor in oxygen, nor in any other of LAVOISIER's metaphysical principles ; but I look upon the supposition of phlogiston to be a mere mode of explanation ; and as to the existence of it, I do not by any means pretend that it is proved, and I am certain that it never can be disproved. What I dislike in the antiphlogistians is their pedantry and presumption, in pretending that their system is proved, notwithstanding it is much more hypothetical than the other, in which there is *one* assumed matter, whereas in LAVOISIER's there are oxygen, hydrogen, caloric, and carbon, all which are imaginary or at least hypothetical beings, and yet they are continually talking of demonstration, &c. As to their language, it is formed on the supposition of their system being certain. I use the old language, not because I approve of it (for being founded on theory I disapprove of it), but because there is no other, excepting another formed also upon theory. Now I may use the *old* language, although I doubt of the theory on which it is founded, being old and once received, but I cannot use another theoretical language without taking for granted that the theory is true. The old language will be known and understood whatever theory prevails. The principal discoveries and facts of chemistry are recorded in that language. But if the new theory should be exploded, as I doubt not it will, its language will fall for ever. In considering LAVOISIER's theory we should distinguish between the physical and metaphysical

parts: the latter respects supposed beings; on this the language is founded. This can never be proved, nor, in such an age as this, has any man authority enough to establish a creed in any system of metaphysical chemistry. The physical part is perhaps the only one worth considering. I have adopted the greatest part of it, but Dr. BEDDOWE's book will show that it is a hundred years old. They have adopted the composition of water. This may be determined some time; I have not denied, nor do I deny it, but I think it is not proved. The experiment of electrifying water will be decisive when the whole quantity of water will be converted into airs. It is not a new discovery that water absorbs every kind of air, and gives out some by boiling, but more by a red heat or by electricity. The proof of the composition of water, though necessary for LAVOISIER's system, does not at all disprove the theory of phlogiston. Your shaving can furnish an argument that inflammable air comes from the iron and not from the water, for why else should it stink? I hope it will remind you of this every time you smell it. You are such an infidel in religion that you cannot believe in transubstantiation, yet you can believe that apples and pears, hay and oats, bread and wine, sugar, oil, and vinegar, are nothing but water and charcoal, and that it is a great improvement in language to call all these things by one word, oxyde hydro-carbonneux. Your hint about giving explanations of these words in the Dictionary is good, and I will certainly follow it. I will enter personally but little into theory in my book, only showing the two different modes of explanation of the different parts of chemistry, whereas the anti-phlogistians never deign to speak of any but their own, so that mine will have the advantage over theirs in that respect. BERTHOLLET, in the Chemical Annals, gives me the praise of candour, and of not being a partial adversary, but an adopter of their notions when I approve of them, &c.

Yours affectionately,

JAMES KEIR.

W. SEWARD TO MR. KEIR.

3rd March, 1791.

Dear Sir,

I'm as dissatisfied with the engraving as you can be ; yet remember BOVI was many days after his time, and you appeared anxious to have it as soon as possible. I cannot at present take the plate to Mr. BOVI to be corrected, as Mrs. DAY has been this morning with STOCKDALE, and expressed a desire that your book should appear without the plate, and that the plate should be destroyed. Mais J'attends vos ordres toujours. I beg my compliments to Mrs. KEIR, and remain,

Dear Sir,

Your most obedient Servant,

W. SEWARD.

MR. KEIR TO DOCTOR DARWIN.

Near BIRMINGHAM,

April, 1791.

Dear Doctor

My book has been ready for publication, printed, &c., these two months, but waited for an engraving of Mr. DAY, which was at last produced, but with such a perfect destruction of the likeness, that it has been thought, by Mrs. DAY and myself, better to destroy it than publish a head in which no soul seems to reside. The picture was as like as it could stare ; but the engraver, an Italian, and pupil of the celebrated BERTOLLOZZI, has spoiled all. As soon as it was determined to publish it, I ordered copies to be sent to you, Mr. DARWIN, and Dr. ROBERT, all in one parcel directed to you. I hope you have received it.

I am very glad to hear the progress of your first part. Immortality will be your sure reward, but I am also glad to hear that you have likewise another reward, which poets in general stand as much in need of—ready money.

DoCTOR PRIESTLEY's experiments show that he can at pleasure produce pure water, or water mixed with nitrous acid, by burning the purest dephlogisticated and inflammable airs. The production of the acid depends (as I have maintained in my Dictionary—Nitrous Acid) on the proportion of dephlogisticated air being sufficient. When this air is in too small quantity to produce acid, the matter of the acid forms *phlogisticated air*, which is known to be one of the elements of this acid, and which is always produced in this combustion, but in a larger quantity when the acid is not produced. The production of phlogisticated air is also given by me (page 118) as the reason why the acid does not always appear. There is therefore nothing in DoCTOR PRIESTLEY's experiments but what was consistent at least with my former notions; but he has proved this appearance or non-appearance from the proportion of the airs more distinctly than had been done before, although in fact the same observation occurred to CAVENDISH, and from this observation I inferred my reasonings. The experiments therefore tend to prove that something is always produced besides pure water, when these airs are burnt. PRIESTLEY has found that air from red ppte. Q is perfectly pure, and therefore he sets aside the supposition of the anti-phlogistians that his acid always came from phlogisticated air being mixed with his dephlogisticated. The experiments also accord with, but do not prove, my theory, that phlogisticated air consists of pure air and phlogiston in a certain proportion, and that nitrous acid consists of the same elements with a larger proportion of pure air. But I can neither prove this theory nor the existence of any hypothetical principle, as phlogiston, hydrogene, carbone, &c., &c.; but I think I can easily prove that those who affirm the existence of any of them do not understand logic, in which science the anti-

phlogisticians are particularly deficient, although they recommend it in their prefaces.

Please to make Mrs. KEIR's and my best respects to Mrs. DARWIN and your family, also to your Son, Mr. DARWIN, when you see him. I am obliged to conclude, dear Doctor,

Your affectionate friend,

J. KEIR.

MR. W. SEWARD TO MR. KEIR.

Monday.

Dear Sir,

I was very sorry I was not able to come to Mrs. DAY's yesterday evening.

My house is at your service, to authenticate the account of Mr. DAY's juvenile life.

Mrs. DAY has, I trust, accepted of the dedication. I expect BOVI this morning about the engraving, which I will endeavour to have done *au plus vite*.

I am glad that you are satisfied with the likeness Mr. WOOD has made of our old friend.

I beg my compliments to Mrs. KEIR, and remain,

Dear Sir,

Your very obedient servant,

W. SEWARD.

P.S.—Mr. BOVI promises to have the engraving ready by the fifth of March, and will abate three guineas of the price, which we suppose to have been that of 15 guineas.

Mr. KEIR completed the work in March, 1791, and it was provided with the engraving of Mr. DAY, which was well executed by Mr. BOVI from the drawing of Mr. WOOD. A copy of it was accepted by the Royal Society on the 12th of May, 1791. *W*

Mrs. DAY did not long survive the loss of her husband, as appears from a letter addressed to Mr. KEIR from Mr. JOHN STOCKDALE, of London, who was the publisher of Mr. DAY's numerous works.

MR. JOHN STOCKDALE TO MR. KEIR,

June 15th, 1792,

Half-past 4 o'clock.

Dear Sir,

I've this instant received your favour of the 14th inst. All that I can say at present is, that Mrs. DAY got up and drank coffee at 10 o'clock in the morning, was taken ill, and expired immediately. I think with you that she died of a broken heart. I can say from my own knowledge that she has not enjoyed one day's comfort or health since our ever to be lamented friend's accident; I am very certain, from a long conversation that passed between her and me alone, that she wished death, preferable to life. She expressly assured me that all comforts in this life were at an end with her. She is now gone, and I trust is happy. She was one of the most amiable and sensible women that I ever had the honour to converse with. I have had many friends since I began business; the best are gone, and it appears to me as if I must lose them all.

How far it may be prudent to print a new edition of Mr. DAY's Life I have my doubts, in point of profit, or without running some risk, as the present edition has been some time in going off. It has

flood in catalogues that I have printed not less than 30,000 in different forms, so that it has had every possible chance that I could give it; yet, was it my property instead of yours, it never should be out of print in one form or another while I lived. I mention this merely to show you my opinion, but I do not now speak as a bookseller.

Mrs. STOCKDALE desires her kind respects; she and daughter are distressed at our second loss beyond description, as they were rather favourites, or at least vain enough to think themselves so.

I am, dear Sir,

Your greatly obliged and sincere well wisher,

JOHN STOCKDALE.

In the Autobiography of Mrs. SCHIMMELPENNINCK, the eldest daughter of Mr. GALTON, a descriptive account is given of the effect produced on the philosophers of Birmingham by the news of the approaching Revolution in France.

"It was wonderful to me," she says, "to see Doctor PRIESTLEY, Doctor WITHERING, Mr. WATT, Mr. BOULTON himself, and Mr. KEIR, manifest the most intense interest, each according to his prevailing characteristics." This was in the summer of 1788.

At the time when the estates of the Church were being secularized and put up for sale for paper money, which

had become depreciated in value from £100 to five shillings, Monsieur DE LA METHERIE, the great French chemist, wrote from Paris to Mr. KEIR on the 1st July, 1790:—

“Depuis votre dernière, nos opérations politiques ont fait bien du chemin ; et malgré tous nos ennemis extérieurs qui peuvent tant, les choses vont on ne peut mieux. Car, ne croiez pas tous les mensonges qu'ils font repandre dans toute l'Europe, ce que ce Calonne propage, surtout en Angleterre. Excepté les malheurs excités à Nîmes et à Montauban les autres mouvements font bien peu de chose. Nous coupons le mal dans sa racine ; toute distinction aristocratique, toute noblesse, vient d'être détruite. Le clergé est depouillé de ses immenses revenus, et il fera salarié comme tous les autres fonctionnaires publics. Par ce moyen, ces grands corps, toujours les ennemis du bien public, parcequ'ils ne cherchent que le bien particulier, ne pourront plus nous nuire. J'avais présagé toutes ces opérations dans mes *Principes de la Philosophie Naturelle*. Nous espérons que vous corrigerez aussi bientôt les vices de votre constitution. Veuillez me rappeler au souvenir de tous les membres de votre Société, Messieurs WATT, BOULTON, PRIESTLEY, et WITHERING. Vous connoissez les sentiments distingués d'estime avec lesquels j'ai l'honneur d'être,

Monsieur,

Votre très humble,

et très obéissant serviteur,

DE LA METHERIE.

Monsieur JAMES KEIR, de la Société Royale de Londres.”

Mr. SMILES remarks that "the impressible character of Doctor PRIESTLEY was moved in an extraordinary degree by the pregnant events which followed each other in quick succession at Paris. * * * * *

His chemical pursuits were, for a time, forgotten, and he wrote and preached, like one possessed, of human brotherhood and of the downfall of tyranny and priestcraft."

It may be interesting to give Mr. KEIR's opinion of the French Revolution. Writing on the 19th March, 1791, he says:—

"The Revolution of France is the sole *triumph of reason*, having been the effect of the gradual illumination of the human mind over a whole nation, by *philosophy*, showing that the true end of government is the happiness of the *many*, and dispelling those baneful *prejudices* which established the tyranny of the *few*, and which were the relics of the ignorance of barbarous ages.

"Happily the same necessity does not exist in this country. For although our government may not be the best possible, it is certainly too good to risk any public convulsion, in hopes of a better, or to attempt any other change than such as may naturally follow from progressive advancement and extension of knowledge among the people, by which our constitution may be rather restored to its true principles, which are excellent, and further improved and adapted to the cultivated genius of the age, than altered or overturned."

A public dinner on the 14th July, 1791, furnished a pretext for the Birmingham Riots, which commenced by

the destruction of Doctor PRIESTLEY's house and of the two Meeting houses ; but the cause of these disturbances has been shown to have arisen from a religious rather than a political excitement. Doctor PRIESTLEY, having on the destruction of his house gone immediately to London, wrote several letters to Mr. KEIR. These letters, and Mr. KEIR's replies, are highly characteristic, and give a true view of the origin of these riots.

DOCTOR PRIESTLEY TO MR. KEIR.

LONDON,

22nd July, 1791.

Dear Sir,

I am very happy to see a copy of your letter to the printer of the *Birmingham Chronicle*, and in return inclose copies of my *Address to the Inhabitants of Birmingham*, and of Mr. RUSSEL'S *Account of the Proceedings on July 14th*. Both these have been in the London papers, and I have just sent yours to the printer of the *Morning Chronicle*.

I am happy to hear that all is quiet with you now, but when it will be proper for me to come to you I cannot tell. I fear not before the next Lunar Society. Whether I shall ever have it in my power to collect another apparatus for experiments is quite uncertain, as indeed is, in a great measure, my settling again at Birmingham, though there is no place in the world that I should prefer to it.

The extra copies of my last paper for the *Philosophical Transactions* are printed, and I shall soon send some to Mr. GALTON

to be presented to each of the members of the Lunar Society. I beg my compliments to them, and as long as I live, I shall, with much satisfaction, think of our many happy meetings.

I am, in haste,

Dear Sir,

Yours sincerely,

J. PRIESTLEY.

DOCTOR PRIESTLEY TO MR. KEIR.

LONDON,

29th July, 1791.

Dear Sir,

I thank you for your kind letters. One Quaker at least, I find, did attend the Revolution dinner in London. One of the company told me there were more. This, however, I did not hear till I had got the correction you sent inserted in the *Morning Chronicle*.

I never thought of returning to Birmingham till my friends there should think it safe, and on other accounts advisable; and this, I now begin to fear, will not be so soon as you intimate. However, I am ready to attend the first summons, and earnestly wish it may be before the next Lunar Society. But your meeting must not depend upon this event.

With this I send each of you a copy of my late, and I fear *last*, paper for the Philosophical Transactions. I shall always recollect, with peculiar satisfaction and regret, our many cheerful and improving meetings; and, if not a constant, shall indulge the hope of being an occasional attendant.

You were certainly a better judge than I was of *the spirit of the times*. But even you could not have expected such brutal excesses as have taken place ; and yet I am willing to hope much from *time*, from your seasonable letter, and the representations of the more calm and reasonable members of the Church of England, if not from the interposition of government and the execution of the laws, in which I wish for moderation.

I lately dined with Mr. SHERIDAN, who said I should meet Mr. FOX. He, however, was prevented from attending, but desired Mr. SHERIDAN to say that he wished to take the matter up in whatever manner we should think proper, by motion in the House on the subject. They conceive that the encouragement given to this High Church spirit by the Court arises from their willingness to crush Mr. FOX, who has taken our part, and that they hoped by these measures to intimidate us into silence. This I can hardly think to be the case, and I am unwilling to connect our cause with that of any political party ; since, upon the face of it, as you have clearly shown, it is wholly of a religious nature. However, I said there would be time enough to take our measures before the next meeting of Parliament.

I am, with my best respects to Mrs. KEIR,

Dear Sir,

Yours sincerely,

J. PRIESTLEY.

To JAMES KEIR, Esq.,

West Bromwich.

In November, Doctor PRIESTLEY wrote very elaborately an Appeal, which however he did not feel justified

in publishing without the knowledge of his friends, giving rise to the following characteristic and interesting correspondence :—

MR. GALTON TO MR. KEIR.

Dear Sir,

Three sheets of DoCTOR PRIESTLEY's *Appeal* were given me by DoCTOR WITHERING and Mr. RUSSEL, and have been perused by Mr. BERRINGTON. I have taken the liberty of sending them to you, hoping that you will do DoCTOR PRIESTLEY the favour of reading it and making such remarks as you may think proper, and afterwards returning it to DoCTOR WITHERING.

You will doubtless discover that it has neither beginning nor end. I wish it could be returned to-morrow, if you could make it convenient, and that you would meet DoCTOR WITHERING, Mr. RUSSEL, and Mr. BERRINGTON, either at DoCTOR WITHERING's in the Square, or at Steelhouse Lane, to morrow morning about 11 o'clock, in order that no time may be lost in transmitting to DoCTOR PRIESTLEY the united sentiments of his friends on the propriety of suspending the publication and altering some passages.

With compliments to Mrs. KEIR, in which Mrs. GALTON unites,

I am, dear Sir,

Your obliged friend,

S. GALTON, JUNR.

Friday,

18th November, 1791.

MR. KEIR TO DOCTOR PRIESTLEY.

WESTBROMWICH,

18th November, 1791.

Dear Sir,

Mr. GALTON sent me a few sheets of your *Appeal* to peruse, and wished me to meet him with Mr. BERRINGTON and Doctor WITHERING next day, which I did.

We seemed each of us to have formed the same opinion, which we communicated to Mr. RUSSEL, who was also present, and whom we asked to inform you, but he requested us to write to you ourselves.

The point on which the expediency of your publication turns is, I think, whether it will have good or bad effects. With regard to yourself, I doubt whether it be necessary, as you have already asserted your innocence and you have received, in the several addresses sent to you, the most ample and honourable testimonies of respect to yourself and of abhorrence of your late persecution that I believe were ever given to any man. Your character appears to me to rest with more firmness and dignity on these testimonies than it can on anything which a man can say of himself. By bringing the subject into question again you remove it from this ground of testimony to that of your own defence, and will open a field for a perpetual controversy in which the simple facts will be overwhelmed in altercation. As your cause is just, the closer you keep the attention of mankind to facts the better. If you have any new ones to communicate they will perhaps come with more effect and with less ill will to yourself if they should be introduced into an historical narration of the whole affair by another person, which I am happy to hear is intended to be done by one eminently capable.

With regard to the *general effects* which the publication of your *Appeal* may have, I should think myself inexcusable if I did not give the opinion that I have been asked, freely, and I trust to your usual candour in receiving it ; for I must say that the effects which I think may be apprehended from it are not favourable.

That it will irritate your professed enemies may not be considered of so much consequence ; but I think it is of great consequence not to give them fresh handles to keep and stir up the animosity of the multitude, and of the most moderate of their party, against you and your friends, the dissenters. There are expressions there *too* fit for their purpose ; and you very well know that fairness of representation would not be attended to. In Birmingham they wish much for a subject to stir up the people against the dissenters, and to terrify them from the prosecution of the magistrates. But the prudent silence of the dissenters has given no handle, and therefore they are obliged to harp on the old nonsense of Mr. RUSSEL's list of toasts, and conversation with DUDLEY, master of the Hotel, things of no consequence whatever. But your *Appeal* will furnish them with a new source of abuse. They will from thence represent, or misrepresent, the dissenters as declared enemies to the Church and disaffected to the State. The generality of your observations upon the clergy cannot fail of giving offence to the more moderate clergymen and lay-churchmen. You have, indeed, mentioned that some of them behaved well ; but I think you mention them rather as exceptions to the general rule. It is impossible almost to prove anything against a large body of men so dispersed ; and individuals might say that they were unjustly accused. The instances that have come to your knowledge are of the more violent, who could not restrain their sentiments. I am thoroughly convinced many of their numbers, I should hope the greater part, were sorry for your persecution. I should think it more just and more politic to fix the odium on the most guilty individuals, and let the rest come off as easily as possible under the

plea of delusion or misconception. This conduct might draw off the most numerous and honest of the Church party and leave the violent men to stand by themselves, whereas general reflections can only tend to unite them more closely. I beg you not to think me an advocate for tame submission to gross personal injuries and flagrant violations of law and liberty. I think it is a duty which the dissenters owe to their country to do everything they can to bring offenders of all ranks to justice, and their conduct to public light; but, in doing this, I would confine myself to judicial inquiry and to the publication of authenticated facts, as being the only mode in which the opinion of impartial men can be influenced. Your reflections on the magistrates may be true, but may not be easily proved; and whether true or false may possibly be the subject of prosecution for a libel or action of damages. As their conduct is to come before a Court of Justice, the propriety of prejudging them may be questioned. I should fear also another effect, that government would become more remiss in prosecuting the magistrates and in protecting the dissenters in future if they should meet with any passages that should give them offence. These are the effects which I fear might result from the publication of your *Appeal*.

I do not presume to give you advice on the general propriety of publishing it, but only state my opinions of the effects and tendency. I may be mistaken, and you may have other and superior considerations of which I do not pretend to judge. It gives me the greatest pleasure to hear that you are preparing to recommence your philosophical pursuits, which I hope will be attended with all the good effects as the former. I sincerely hope that you and Mrs. PRIESTLEY may find Hackney an agreeable and tranquil residence, and that you both may enjoy much health and happiness.

I am, dear Sir, with great respect and regard,

Most sincerely yours,

JAMES KEIR.

Mr. KEIR, not receiving any reply from Doctor PRIESTLEY for some weeks, seems to have forwarded a copy of his letter to Doctor WITHERING, mentioning at the same time the rather singular fact that he had received no answer to it.

DOCTOR WITHERING TO MR. KEIR.

16th January, 1792.

Dear Sir,

I thank you for the perusal of the enclosed. It certainly deserved an answer, as being evidently the result of close thinking and fair reasoning upon a subject of some importance; but perhaps you may have had a letter before this time. I intended to have sent you the Doctor's letter containing his reasons for publication, but cannot lay my hand upon it.

The *Extinguisher Maker** is much approved, and those who have taken it up, expecting something like the *Button Burnisher*, have been agreeably surpris'd at finding the marks of a masterly hand.

On account of the absence of B. and W., I think to let the 31st January pass by, and particularly as there is reason to expect Doctor PARR at our next meeting, on which account I would wish it to be a full one.

I remain, dear Sir,

Very faithfully yours,

W. WITHERING.

* A Political Pamphlet by Mr. KEIR.

DOCTOR PRIESTLEY TO MR. KEIR.

CLAPTON,

12th January, 1792.

Dear Sir,

Though I have not before found leisure to write to you, I was not insensible to your kindness and friendship in giving me your opinion with respect to my *Appeal*. Had I not been actually pledged to publish, it would have had considerable weight with me ; but this was a circumstance of which you were not apprised. I have, however, cancelled *eleven leaves*, in order to strike out passages that were thought to be unnecessarily offensive, and I am willing to hope that you will not find much to object to at present, especially as some other publications will have preceded it and made way for it, particularly *T. Soberfides** in the humorous, and *High Church Politics** in the serious way. Both these publications I greatly admire, and where they are read they must do much good. With respect to myself, I cannot help thinking that my silence, considering my *aptness to write*, would have borne an unfavourable construction, as would my writing with less spirit, or in any other manner than I had been used to do. You will receive a copy of the *corrected Appeal* about the same time that you receive this.

An ingenious young man, Mr. * * *, who lectured on Experimental Philosophy in the New College, is at Birmingham as my successor, and, I hear, gives great satisfaction. He will think himself happy in being noticed by any of my philosophical friends. I have undertaken to give his lectures, and some others, *gratis* ; and this will be of some use to myself in obliging me to attend to the whole course of chemistry, with several branches of which I was but little acquainted. But having no substances to exhibit or to

* Political Pamphlets by Mr KEIR.

work upon, I shall long be at a loss and disabled from appearing to advantage. May I trouble you to furnish me with small quantities of the articles you used to supply me with, as fossil alkali, minium, &c., &c., or anything else that you can conveniently spare. I now want *everything*, and wish to get to work again as soon as I can.

I shall soon send you a copy of what I can recollect of the contents of my laboratory, &c., and shall beg the favour of some of you to attend at Warwick as witnesses of what you remember of them. But if *strict proof* be required, I must go without indemnification.

I am, dear Sir,

Yours sincerely,

J. PRIESTLEY.

MR. KEIR TO DOCTOR DARWIN.

DERBY, near BIRMINGHAM,

23rd March, 1793.

Dear Doctor,

I have this day sent your books to go by the next coach to Derby. I have had great pleasure and instruction in reading them. They contain so much new and ingenious theory that they cannot fail of making impression; but as they are so deep in medical learning, especially as the work advances (and I understand from you that there are still more volumes, in which you will enter still more technically into the penetralia of medicine), you cannot expect to have a great many readers out of the profession, and I think you must wait for the next crop of Doctors from the

nurseries of medicine before you will have full justice done to your work. I see the work is so profound in medical science as to render superfluous my remarks which I formerly made upon the expediency of rendering the language more popular and easily intelligible, that you might have a greater number of readers ; for as your plan extends to particular diseases you cannot perhaps do this. I will, however, suggest to your consideration another proposal, which is to make two works of it instead of one. The first to contain all those volumes which I have seen, which, with a few alterations, might be rendered fit for popular philosophers. Thus you would have a great many more readers, more candid ones, and more willing to give the due praises and fame. They will also render it necessary for the faculty to read it at least for the sake of conversation. Whereas the subject of classes of diseases and operations of medicines will give the idea of its being merely a professional book. Suppose you were to publish the first part by itself under its present title, and at the end of it give an advertisement that speedily will be published—a work, giving its title, applying the above principles to the classification and cure of diseases and operations of medicines, and accordingly publish it soon after, but not immediately. Give the world a *little* time to read the first. I think that you will by this procedure get more money and fame, more quickly at least, though perhaps neither more nor less fame ultimately, which I think must follow in any mode of publication. I suppose you have seen Doctor BEDDOE's publication, in which he mentions his desiderium of your work. He has sent me a copy for Mr. EDGEWORTH, whom he saw at my house. If you know whether Mr. EDGEWORTH is still at Bristol, and how to send this book to him, be so good as acquaint me. I called at the glass house, but could not then know certainly whether they can make a glass bell of the sort wanted ; they will be able to inform me when they see the one that you have sent back. Your patient continues in good health and has recruited

both strength and spirits. We all look with pleasure to the paying our respects to Mrs. DARWIN and you, some time this summer.

I am, dear Doctor,

Your affectionate friend,

JAMES KEIR.

Has Doctor JOHNSON returned from France to Derby?

Doctor LIND, of Windsor, who sailed round the world with Sir JOSEPH BANKS and Doctor SOLANDER, was a Cousin of Mr. KEIR's; and on the death of Mr. FRANCIS KEIR, who died on the 15th September, 1794, wrote the following letter of condolence to his Brother.

DOCTOR LIND TO MR. KEIR.

ISLINGTON SPA,

3rd October, 1794.

My dear Cousin,

I was favoured with yours of the 27th yesterday, and most sincerely condole with you on the loss of your good Brother; a worthier, sincerer, and better man never lived, and whom everybody esteemed and must regret.

I had heard of his death by the TROTTERS, who had the melancholy account from Edinburgh about ten days ago. I then wrote to my Brother and Sister and acquainted them of the event.

I have been very ill, but thank God am at present something

better. I am glad to hear Mrs. and Miss KEIR are well; my best compliments and wishes. I saw by the last paper that old Mrs. BLAIR died a few days ago at Beaconsfield; and am, with great esteem,

My dear Cousin,

Yours most affectionately and sincerely,

J. LIND.

ARCHIBALD KEIR, ESQ., TO MR. KEIR.

September 30th, 1794.

My dear Cousin,

How much I am concerned at the loss of your Brother, whom I long valued and esteemed as one of the best of men, and most affectionate friend, I shall not here pretend to tell you. I feel for you very sincerely on the occasion, as I do for his Sister, and for all those who enjoyed the happiness of his acquaintance. He was in truth a good man, friendly and amiable in his manners. I had heard of his death from Mrs. CAMPBELL, and it affected me greatly I assure you.

I am happy to find that you and your family are all in good health, and would fain hope that you will think of paying a visit to London in the course of the winter, when I should be so glad to see you.

We are now busy moving our furniture to the next door, No. 13, in the same street; and though this be so near at hand, yet the trouble and bustle of changing is far from being agreeable to one who is now old.

My Son WILLIAM, who has now got a troop, was with us for a few weeks and returned to his regiment on Friday last. He seems to like the war, as much as I detest it and wish it at an end. He

has been very lucky indeed, and has been a good deal taken notice of by the DUKE, Sir WILLIAM ERSKINE, and others, which is very flattering to a young man.

My Wife and Daughter desire to join with me in their best compliments to Mrs. KEIR and the lovely EMILIA; remaining ever with sincere regard,

My dear Cousin,

Yours most affectionately,

ARCHIBALD KEIR.

MR. TROTTER TO MR. KEIR.

SOHO SQUARE,

7th October, 1794.

Dear Sir,

I believe it is not the usual practice to reply to such letters as your last to me, but I must beg leave to deviate from custom in this instance where I feel myself so peculiarly concerned. Suffer me therefore, my dear Sir, to lament with you the loss of your poor Brother, for whom I have long had the warmest attachment and friendly affection, formed on the perfect knowledge of his most excellent character for goodness of heart, high sense of honour, and great manliness of deportment in every situation.

I beg my most respectful compliments to Mrs. and Miss KEIR, in which my Mother, Sister, and Brothers, desire to join me.

And am, my dear Sir,

Your affectionate Cousin,

JOHN TROTTER.

P.S.—I am but just returned from the country, or would have wrote to you sooner.

CAPTAIN LIND TO MR. KEIR.

LONDON,

23rd November, 1794.

Dear Sir,

I was only favoured with your letter of the 27th September on my arrival in town last week. The death of your much respected Brother was communicated to us by Miss K. TROTTER some time ago. We were, I assure you, greatly concerned at it. I had the satisfaction of being frequently in his company while at Edinburgh, and esteemed myself happy in being related to so worthy a man. He was highly respected by my Wife, who regrets his death exceedingly, and the more so on account of the heavy loss sustained by his good Sister. Mrs. LIND had a letter from her yesterday mentioning that she was in tolerable health.

Should any of our excursions bring us near you, we shall, with great pleasure, avail ourselves of the opportunity of paying our respects to you and family. We shall be very glad to see you in town, which we hope will be this winter.

Mrs. LIND unites with me in best wishes to you, Mrs. and Miss KEIR.

I am, dear Cousin,

Affectionately yours,

FRANCIS LIND.

About the year 1794 (if one may assign a date on probabilities only) Mr. KEIR and Mr. BLAIR purchased land at Tividale on which they established the Tividale Colliery. Mr. KEIR had long given his attention to the

subject of the mineralogy of Staffordshire, and on the 14th June, 1798, he wrote an article upon it for Mr. SHAW, who was about publishing his "History of Staffordshire." In the preface of this important work Mr. SHAW professes to be "inexpressibly indebted for the most valuable information respecting the mineralogy and manufactories, &c., to the very excellent pen of JAMES KEIR, Esq., author of the 'Chemical Dictionary,' &c., whose superior knowledge in that science has enabled him to establish at Tipton a large and curious manufactory of soap and white lead upon new principles."

Some of Mr. KEIR's observations as a glass maker gave him an unexpected insight into the nature of the basalts of Rowley Regis. Mention has already been made of the paper on the "Crystallizations on Glass" furnished by him to the Royal Society in 1776. In that paper he says: "Perhaps all homogenous bodies in their transition from a fluid to a solid state would, if this transition were not *effected too hastily*, concrete into crystals, or bodies similarly figured. Instances of such crystallization have occurred to me in glass which had passed very slowly from a fluid to a solid state. * * *

Does not this discovery of a property in glass to crystallize reflect a high degree of probability on the opinion that the great native crystals of *basalts*, such as those which form the Giants' Causeway or the Pillars of Staffa, have been produced by the crystallization of a vitreous lava rendered fluid by the fire of volcanos." Then he points

out an analogy between the columnar or prismatic forms in the crystallized basalts and in the vitreous crystals; and concludes by showing that "the stone on which the columns of basalts generally rest, and which sometimes is supported by these columns, being of the same nature and texture as the columns themselves, seems to be a mass irregularly crystallized, analogous to the irregularly-shaped masses in the specimens of glass No. 1 and No. 2."

In the article to Mr. SHAW, written twenty-two years after, he returns upon this argument, ascribing the origin of the *basaltic* Rowley Hills to the volcanic eruption of matter in igneous fusion. He says:—

"The formation of basaltic rocks has lately been the subject of a controversy which has been agitated with great zeal by mineralogists, some of whom consider them as lava thrown out of volcanos, and others as the produce of watery deposition; and the advocates for these two different opinions have been distinguished by the names *Vulcanists* and *Neptunists*. The celebrated BERGMAN ascribes the basaltic matter to ejection from volcanos, but he does not consider this matter as a lava melted by fire, but a mass of earthy particles softened and diluted with water, which afterwards has become dry and consolidated; and in fact considerable ejections of watery mud have been seen from Vesuvius, and in such immense quantities from the volcanos of the Andes as to have overflowed and ruined large provinces. This controversy seems to have derived additional importance and interest from the striking property which this basaltic stone possesses of assuming sometimes a columnar, and frequently also an articulated form, which it exhibits, to the admiration of mankind, in those magnificent and

stupendous structures, the Giants' Causeway in Ireland, the Island Staffa, the extinct volcanos of Auvergne, and in many other parts of the earth, and which have lately been traced in Vesuvius and Etna, as also in the basaltic rocks of this country. The subject is too large, and the controversy too intricate for this place. I have elsewhere shown the analogy which subsists between the columnar and spherical basaltic stones and the artificial crystallizations which I had observed in glass, and thence inferred the possibility of the formation of the former by fusion and very gradual cooling. But I now confine my attention to the local appearances, and to deductions from them. I must not venture into the extensive field of comparison and illustration which the mineralogy of other countries would afford, and which would show that the same analogy and relation that subsist here between coal, limestone, and basalts, extend very generally, though with considerable variation of circumstances. I will only add one further observation on the basalts of this country, which is likewise generally applicable; namely, that the spontaneous decomposition or gradual destruction of this stone is no less worthy of attention than its formation. For basalt, like lava and other stones of a similar composition, is remarkably subject to be decomposed by the action of water and air, and to fall into a powder or coarse clay, called *roach*, consisting, like the stone itself, of argillaceous, siliceous, and ferruginous particles. These particles, by further exposure and decomposition, and by different mechanical and chemical action, may have been separated and converted into the various clays, more or less pure, rocks, clunch, and ironstone, with which this country abounds. When we see the alteration on the surface of this stone which the exposure of a few weeks produces we cannot doubt that the continued effects of many succeeding ages must have been very great, and that much of the circumjacent ground must have been derived from this source; while the different beds of coal seem to show the successive periods of vegetation and alluvion."

Doctor BLAIR, who, with his Brother, carried on the Tividale Colliery some years after the death of Mr. KEIR, alluding to this point, says:—

“That which gives, curiously, a personal touch to the question is, that in the Tividale Colliery, which lay at the foot of the hills, the last pit, opened long after, towards the hills, showed the basalt lying *above* the coal. The shaft had to be sunk many yards *through* the basaltic rock ; and—what was more to the purpose as a gain to science, though very far from one to the workers of the coalfield—the coal when reached afforded *the most satisfactory confirmation* of Mr. KEIR'S Vulcanian theory. The bituminous or combustible part of the coal had been so completely expelled by the immense heat of the basalt in fusion at many yards distance above it that it would not burn, but lay like a stone in the fire.”

On the 18th February, 1811, Mr. KEIR forwarded to the Geological Society “An account of the Strata in sinking a Pit in Tividale Colliery, near Dudley,” also a number of specimens.

Mr. KEIR was in frequent correspondence with the Genevese Philosopher, Monsieur DE LUC, and with the celebrated French Chemist, Monsieur BERTHOLLET.

It was Monsieur DE LUC who, it will be remembered, as Reader to QUEEN CHARLOTTE, was pitilessly condemned to stand when reading in her presence, notwithstanding his infirmity ; QUEEN CHARLOTTE being forgetful, it would seem, of the lesson of Queenly courtesy taught by her great predecessor ELIZABETH, who addressed Lord BURLEIGH with “Sit down, my Lord ; it is your *good head* that we want, and not your *bad legs*.”

It was to Monsieur BERTHOLLET that the EMPEROR BUONAPARTE addressed himself for a precautionary antidote to poison, and from whom he received the simple if ingenious prescription—to spit out whatever had a peculiar taste.

Mr. YOUNG, the well-known Greek Professor at Glasgow College, seems to have been on very friendly terms with Mr. KEIR, judging from the following letter :—

GLASGOW COLLEGE,
2nd February, 1804.

My dear Sir,

I write this as a line of introduction to Mr. BOYLE, who will get to Hill-Top, I think, in less than a week. It gives me much pleasure—in any shape, on any subject, and for any time, even a very short time—to perform any act that amuses me into the idea that I am again holding converse with you. None of us will ever forget the few pleasing days we spent under your hospitable roof. But on this subject I dare not much enlarge. * * * Mrs. YOUNG begs to be remembered to you, and your Son and Daughter,* with much regard and esteem. You will scarcely doubt that ELIZABETH would join in the expression of these affections if she were here. * * * I have the pleasure to be, my dear Sir,

Your faithful humble servant,

JOHN YOUNG.

To JAMES KEIR, Esq., F.R.S.

* Mr. KEIR's only Daughter, AMELIA, had lately married Mr. JOHN LEWIS MOILLIET, of Geneva, afterwards Merchant and Banker of Birmingham.

MR. KEIR TO MRS. MOILLIET.

Friday Evening.

My dear AMELIA,

I received yours of this morning. You say you sent me a letter by BETTY SACHEL. She brought me a letter from GREGORY WATT, which had been left at your house for me, but she brought me none from you, and upon sending to her now to inquire, she says she received only that one.

I am sorry to hear that you are hysterical and that you have an oppression at your chest, which I hope is only hysterical, which is disagreeable enough, tho' not dangerous.

I am sorry you find it so difficult to be a stoic, for truly there is much occasion for stoicism or fortitude of some sort in this life; but hysterics are a bad preparation for stoicism. Does not CASSIUS, in the Play of JULIUS CÆSAR, say that this great man became cowardly when he had a fit of the ague, or some such thing? So I hope, when you recover more strength, you will quit your hysterics and take in exchange the stoic philosophy, and be like to—

“That man divine whom Wisdom calls her own;
Great, without Title, whom fortune blessed,
Rich ev'n when plunder'd; honoured while oppressed;
Loved without youth; and followed without power;
At home, tho' exiled; free tho' in the Tower;
In short, that reasoning, high, immortal thing,
Just less than JOVE and much above a King;
Nay half in heaven—except (what's mighty odd)
A fit of vapours clouds this demi-god.”

So says POPE in imitation of HORACE. In these lines it is evident that POPE alluded to his friend ATTERBURY, Bishop of Rochester, a man of great abilities, who, after a long confinement in the Tower, was banished in his old age, and died in banishment.

You have read the elogium of MARCUS AURELIUS, the stoic Emperor, by THOMAS. It would entertain you to read a little of the book written by the good Emperor himself, called *The Meditations of Marcus Antonius*. It is in the Birmingham Library, No. 2541, 8vo. I do not recommend to you to tire yourself with reading it all, only a little, to show you his manner of considering all human things.

EMMY is perfectly well, and I am better while the wind is still in the north; and I do not expose myself to it, as I still have some pains lurking about me. Two days before I was taken ill, I was telling Mr. JEWETT that I always had an attack every March, the winds being of a peculiar nature in that month.

ALEC translated SOPHOCLES' play called *Edipus Tyrannus*. I hope to hear to-morrow that you are better.

In the above letter mention is made of Mr. KEIR's having received a letter from Mr. GREGORY WATT. Mr. GREGORY WATT had, when a young man, become acquainted with Sir HUMPHRY DAVY, who appreciated the great genius which his young friend possessed, and while visiting him in Birmingham was introduced to Mr. KEIR.

The following article on this subject was published in the *Birmingham Journal* on the 15th February, 1868:—

“An additional gleam of light is reflected on KEIR through the instrumentality of Sir HUMPHRY DAVY (one of the most scientific and poetic of Chemists, originator of many of the most important discoveries made in Chemistry, author of *Salmonia*, and *The Consolations in Travel*), on the occasion of a visit paid by him to

GREGORY WATT, Son of *the* JAMES WATT, that beloved Son, whose life gave such promise of future greatness, the brilliancy of which was hidden in an early grave, and whose death occasioned to the tender Father the most poignant grief, and every association with which was cherished with paternal love and affection. When the 'garret' at Heathfield was opened, long years after the mortal remains of the bereaved Father had been deposited in the Church at Handsworth, amid the results of his marvellous inventive skill and genius, his 'sculpturing machine,' (the last work of his hands) philosophic instruments, tools, and implements, there was found a hair-covered travelling trunk. This occupied a position in close proximity to where WATT sat and worked. It contained no model, no marvel of human genius, but simply all poor GREGORY'S school books, his first attempts at writing, his boy's drawings of battles, his first school exercises, his college themes, delectuses, grammars, dictionaries, and class books.

"'One touch of nature makes the whole world kin.' The transcendent genius of WATT, amid all the triumphs of mechanical science achieved by him, acknowledged his humanity; and in the solitude of his studio-garret these relics of his beloved GREGORY were doubtless often looked at by a Father's eyes, bedimmed and suffused with tears; like the Hebrew King of old, his words in all probability were, 'My Son, would to God I had died for thee.'

"In life, this memory-cherished Son of 'the great improver of the steam engine' was visited by Sir HUMPHRY DAVY, at Birmingham. When there, he was introduced to KEIR; the result and the impression made by him, DAVY thus records in one of his letters to his Mother:—"I was particularly sorry to leave Mr. KEIR, for he is both an amiable and a great man." This tribute from the great Chemist is an additional evidence as to the position KEIR occupied socially and scientifically. In the biography alluded to of Sir HUMPHRY DAVY it is stated he was 'an able Chemist, and distinguished for much originality and independence of mind.'"

Mr. MUIRHEAD, in his "Life of WATT," tells us that "in 1804, Mr. WATT's favourite Son GREGORY, the charm of whose presence and extraordinary talents was the ornament and pride of his race, languished and died of that insidious disease which so often destroys the most accomplished and the most lovely." Mr. KEIR, who greatly valued Mr. GREGORY WATT, wrote the following short but pathetic elegy on his decease:—

"A youth with every grace and virtue crowned,
Loved and deplored, lies here in hallowed ground ;
With manners gentle, kind affections joined,
Beauty of form, and energy of mind.
Early, in lists of fame, appeared his name,
Striving to emulate paternal fame,
No stranger, he, to every willing muse ;
But chief to *Nature's* lore he bent his views ;
By Science led, he climbed the mountain's brow,
And marked *Her* awful footsteps firm though slow ;
Her various changes from primæval birth,
From chaos rude to flowery fertile earth.
But vain his eager toils ! His tender frame
Was soon consumed by mind's too ardent flame.
And vain all human hopes ! a traitor Fate
Within youth's opening blossom lurking sat.
Mount then, oh WATT ! Explore some new-born world :
Whence and by what Almighty Fiat hurl'd :
How, from convulsive efforts, Order rose :
From jarring Elements, emerged Repose :—
Volcanos rend from Centre to the Pole,
And raging Tempests *harmonize* the whole."

In 1793, Mr. KEIR had written and published a Pamphlet, entitled "The Martial Character of Nations," in which he seems to have foreseen that the change in the government of France, from the Monarchical to the Republican, would be very far from rendering her more pacific to her neighbours; and hence the necessity which he saw for exciting a more warlike spirit in the English nation to resist any attempts at invasion. The Pamphlet concluded with the following passage:—

"The late invasion of America, and the later invasion of France by the Prussians and Austrians, give confirmation to this doctrine; and if ever France, under her present or any future system of government (for republican or monarchical she will always be hostile), should ever put her threats of invasion of this island into execution, let us trust that the British spirit of liberty will kindle the martial ardour necessary for our defence. The prudential measures taken by QUEEN ELIZABETH to array the people of England for the protection of her kingdom against the Spanish invasion deserves much attention. A superior Navy gives important advantages, yet we ought not to rest our defence on that alone; for first, this superiority is precarious; and secondly, our fleets cannot guard our extent of coast in all circumstances of adverse winds and of the necessity of refitting, against a numerous enemy, stimulated by strong passions, and determined to risk much upon a daring enterprise of brilliant expectation. * * * Nothing then is wanting to guard against the danger of invasion but a martial spirit of defence in the people. It would be well worth consideration, whether the virtue and patriotism of our people are equal to the purpose of a martial spirit and national defence; whether their character has not, within these few years, rapidly degenerated, in consequence of the vast increase of our manufactures, into selfish-

ness, corruption of morals, licentiousness, and disposition to popular tumults and riot ; and whether it is not necessary to check these evils and recover a better temper by new institutions and by some more regular discipline. To expect patriotism in a people without morals, is to expect that heavy bodies will ascend ; neither can the constitution of a government remain long the same after the character of a people has changed. * * * If therefore the *martial character* should, by its very existence, *preclude* the necessity of its being called into exertion (for the best security for peace is readiness for war ; and, as a great Prince remarks, ‘A drawn sword often keeps others in their scabbards’), it cannot surely be deemed an unnecessary preparation ; but, like the burnished arms that hang round the hall of an ancient mansion, it will, by its presence, though unemployed, serve at once for ornament and protection.”

Ten years after the date of this publication, the crisis, which Mr. KEIR had foreseen, took place ; and BUONAPARTE having declared his intention of invading Great Britain in the year 1803, provoked the extraordinary outburst of patriotic feeling which followed. Mr. KEIR published another Pamphlet, “Reflections on the Invasion of Great Britain by the French Armies ; on the Mode of Defence ; and on the useful application of the National Levies,” the preface to which commences :—

“The writer of the following pages, being incapable of giving personal service in this momentous crisis, is desirous to offer to the consideration of the public the result of the meditations of a man who, to some military experience (of which the invasion of an enemy’s country made a part) has added also some study and reflection. If anything is here suggested which may contribute to

public utility, his end and aim will be completely answered ; he claims no merit ; he is not within the sphere of military ambition, nor does he desire literary fame. His only wish is to serve his country, and to see its proud liberties, external and internal, transmitted with undiminished lustre to posterity. He has seen with joy the great display of public spirit in the multitude of voluntary offers. He knows that this spirit exists strong in those ranks where there is property to be defended, and where education has taught to estimate the value of the singular happiness which we enjoy under our admirable form of government. And though many of the inferior class are said to have offered their volunteer services in some measure, perhaps, from the fear of being placed in regular regiments, yet he has not the smallest doubt that there is a sufficiency, both of strength and spirit, if well applied, to repel the formidable invasion with which we are threatened."

The following fragment of a letter was probably written at the very commencement of the crisis, and before the spirit of the English nation had made itself manifest :—

MR. KEIR TO DOCTOR DARWIN.

* * * * *

opportunity of hearing from you and the pleasure of knowing that you and Mrs. DARWIN, and I hope all the DARWINIAN race, are well. I am very happy to find that in these lowering times, &c., &c.

* * * I suppose, like ARCHIMEDES when Syracuse was taken and soldiers rushed into his house, you will tell the French, *when* they come to Derby, not to disturb your meditations ; and that you are just on the point of catching the *matter* of electricity by the tail, and the *matter* of heat by its whiskers.

Now, in my opinion, these *matters* have nothing more material, substantial, or solid, than the Bank of England will have after Mr. PITT has sent all the gold in it to the Emperor, which I have no doubt is the reason of his emptying our purses of their gold and silver, and filling them with paper;—no more solidity than Mr. PITT's sincerity, Mr. DUNDAS's disinterestedness, Mr. BURKE's moderation and good temper, and, last and worst of all, than the sense and spirit of the people of England.

You ask me why I do not write Chemical Dictionaries:—Because, I suppose, nobody would at this time read them. I am sure you would not; and, what is worse, nobody I fear would buy them. * * * * *

With best wishes to Mrs. DARWIN and your fireside, in which Mrs. KEIR and my Daughter join heartily.

JAMES KEIR.

MR. TROTTER TO MR. KEIR.

SOHO SQUARE,
29th July, 1803.

My dear Sir,

I am really sorry that circumstances have unavoidably happened to prevent my giving immediate attention to your wishes in respect to Mr. MOILLIET, but being from home (I was at the time in Suffolk and Essex) at the time, and since that unremittingly engaged in business which could not for a moment be laid aside, will I trust operate sufficiently with you to excuse any appearance of inattention, which towards you is the thing the most distant from my meaning. Had I had the good fortune to have met with Mr. MOILLIET, we would have entered upon the business to which you allude, but that not being the case, may I beg you will request of him to detail a few circumstances by letter, and if it should

prove in my power to advance his interest in the line of his business, without interference where I am already engaged, it will give me real pleasure to do so.

These are serious and alarming times, but I trust that, by conduct such as we may glory in, we shall subdue those who threaten to disturb our tranquillity.

I beg my best compliments to all your family, and am,

My dear Sir,

Most sincerely yours,

JOHN TROTTER.

MR. KEIR TO MR. TROTTER.

My dear Sir,

I have received your friendly letter, and have only to thank you for your good disposition to serve my Son-in-Law, if you can with propriety.

It gives me pleasure to hear again from yourself after so long an interval. You are assisting, I suppose, in preparing for the grand work of defence, which in my opinion cannot fail of terminating to the honour of the country and destruction of the enemy, if the commanders have half as much wisdom as the nation has spirit.

How happy I should be to shake hands with you if good fortune should ever lead you this way. For my part, I am old, and never stir from home. Yours was the last house I stopt at in London, ten or twelve years ago.

Adieu, my dear Sir. May your prosperity continue in all respects, and believe me to be ever, with regard and affection,

Yours sincerely,

JAMES KEIR.

On the 19th May, 1801, Mr. KEIR's only child, AMELIA KEIR, was married to Mr. JOHN LEWIS MOILLIET, of an old Genevese family, by the Rev. Mr. JESSE, at West Bromwich Church; and about a year and a half after this event she had the misfortune to lose her Mother, who died on the 20th November, 1802. The following notice is extracted from a M.S. Book of Dates and Memoranda which she wrote :—

“On the 20th November, 1802, my dear Mother suddenly departed this life, aged 55, a few days after the solemnization of the christening of my first-born child, AMELIA. This was the first and heaviest affliction which had then fallen upon me, and occurred at a time when I peculiarly felt the want of a Mother's tender guidance in the fulfilment of my new duties. My dear Mother had always expressed a dread of lingering illness, and wished that her life might be preserved until I should become a Wife and Mother; these wishes were accomplished, and then she departed from this world of sorrow.

“My Father was happy in his married life, my Mother being gifted with remarkable beauty in her youth, simplicity of manner, sensibility, sincerity, and truth, a noble spirit of generosity, and an extensive liberality of disposition, which well accorded with his taste. In her youth she had been so remarkably beautiful that an eminent painter applied to her Father for permission to take her portrait, a request which was decidedly refused. With this beauty she united a sweetness of disposition and a mind remarkably free from vanity and every useless thought of self, which rendered her very lovely.

“She carried out conscientiously her opinions regarding my education, or towards me; both parents uniting to restrain their

tendernefs of feeling, not to awaken an undue degree of fenfibility in their only child.

“The felf-control of my dear Father was, for a moment, overcome by the fuddenefs of her death, and he uttered a cry of grief. This was the only time I faw my Father overcome with forrow. He wore her wedding ring fufpended from his neck till nearly the clofe of life.

“My dear Mother received the Sacrament, fhedding many tears, a few Sundays before her death, at Weft Bromwich Church, where her mortal remains now lie buried.”

The following is from the pen of Doctör BLAIR :—

“The habit of Mr. KEIR’s life whilft I knew him was to fleep at home. He *reluctantly* fleep out. But on the 19th December, 1807, he had been perfuaded to fleep at the houfe then in my Father’s occupation, Hilton Park, on the Wolverhampton country fide. In the morning a meffenger came over with the intelligence that his houfe at Weft Bromwich had been burnt to the ground in the night. The origin of the accident was this :—The perpetual drive over to Tipton had of late years become fatiguing to him, and for fome time paft, that he might have the general fupervifion of the bufinefs at home, he had eftablifhed a counting houfe in a room on the ground floor of his dwelling houfe. The two clerks employed were chilly, and kept up, as I well remember, a remarkably large fire, which at night, for *fafety*, was raked out on to the hearth-ftone. This refted upon a beam in the cellar beneath, which had long been charring unobferved, and that night broke into flame. The two maid-fervants, who remained in care of the houfe, perceiving a fmell of the fire yet fmouldering, had opened a window, and having let the fmell out, went to bed. I was at my Father’s when the news came. Mr. KEIR, informed that no harm had happened to life or limb, took it with furprifing compofure. My Brother and myfelf were, at the time, his inmates ; and as I

drove over in the chaise with Mr. KEIR to the scene of the disaster, (for Richard, the horseman, rode), I had full occasion of witnessing the continuance of this tranquillity unbroken till he slept out. One little trait of pleasantry he risked as we drove: one of the clerks had, as it happened, a nose of the igneous quality celebrated in one of Sir JOHN FALSTAFF's companions, and fed up with the same fuel. Mr. KEIR suggested the possibility that the flame which consumed his house might have been caused by a spark from *this* fire. His own books and papers were at the other end of the building and had been mostly saved. Mr. KEIR drew from the accident the conclusion, that the safest place for a fire is—*the grate.*"

Miss EDGEWORTH, in a letter written from Edgeworthstown, February, 1808, to Mrs. RUXTON, says:—

"Mr. KEIR's house at Hill Top has been burnt down, and he is now forced to live in a little farm-house, in which, however, he says he is perfectly contented. He told us this *incidentally* in one of the most polite and kind letters I ever read, which he wrote to my Father on the chapter on *The Education of Princes.*"

Many interesting letters were written by Mr. KEIR to his beloved daughter at this time, from which we select a few of the least private.

MR. KEIR TO MRS. MOILLIET.

My dear AMELIA,

I mentioned in my last letter that I should send some grave remarks upon education, &c.,* not for their present entertainment.

* Mr. KEIR had a curious theory on the universality of education, as including Physics and Metaphysics.

The foundations of knowledge afford no entertainment to the mind, but are painful and laborious both to children and grown-up people. It is only by parental or other authority, and various contrivances of small punishments, rewards, examples, &c., that a child can be made to conquer the first elements of reading and writing. The labour is the same in grown-up people, so that if they have been neglected in their early education they cannot afterwards recover it or go through the necessary drudgery. OMAH was a native of Otaheite, and in England was instructed; but though he was a man of lively parts and exceedingly desirous to read, yet he never could conquer the difficulties, and was too much amused by his curiosity, and by society. It is the same with the first parts of literature, grammar, language, &c., which are by no means such as would induce any young person to go through the labour, but by some artificial motive.

But the artificial motive would be ineffectual unless we were to employ a master-stroke of policy, which has been more or less successfully employed at all times and places, and which consists in keeping the mind sufficiently disengaged from other interests or pursuits, so that it may admit those dry and unentertaining elements of literature. * * * The French ladies were educated in convents and have been greatly distinguished for literature, especially for epistolary; such were Mesdames SEVIGNY, MAINTENON, LAMBERT, &c. I remember Mrs. BLAIR's Mother told me that her Daughter studied so closely as never to be seen, but in the evening, by any visitor.

It is very evident that as nothing can be less entertaining than grammatical exercises, it seems necessary (in order to secure some admission for these, or such as these, into the mind) that it must be vacant, or disengaged, from all interests of amusement, passion, &c. For the affections do not admit of different, and especially contrary interests at the same time. When the one is irksome and the other pleasant, it is easy to see which will prevail. The person who

thinks, by persuasive authority or other artificial means, to alter the affections, must be very ignorant of human nature. People deceive themselves if they think that their children being obedient enough to turn their lessons from plays (charades) to grammar, that their minds are also turned.

A great fault of masters, mothers, and young mothers especially, is that they think so highly of their own powers of governing children by their various methods, as if children were machines to be acted upon as their governors choose. But they ought to think differently of a human being, that has by nature a will of its own, likings, and dislikes. These you cannot *alter*; but you may *present* to his acceptance such things as you wish him to choose and prefer; and you may keep from his sight or power such things as you wish him not to have, or to like.

Thus the *Art of Managing Children* consists in the proper choice of what things ought to be offered for their acceptance or doing, and of what things ought to be put out of their sight or power. This rule is applicable to children, both great and small, or rather to parents, what they ought to give or permit, and what they ought to abstain from. Their address and management ought to be employed in preventing what they disapprove of; but, by no means, by any artifice or deceit, which would be *ruinous*, without recovery. Though a parent will not deceive, he need not inform the child of all his motives of *action*, or of *abstaining*, of which the child is not the judge.

My dear AMELIA,

I am happy to hear that you are so well and that your little boy performs the duties of his present life, sucking and sleeping, with so much reputation to himself and satisfaction to his friends. But I am very sorry to find, from your and Mr. MOILLIET's letters, that a conspiracy had been formed against my

little Grandson, notwithstanding his good behaviour, to burthen him during the whole of his future life with an unnecessarily long awkward name, JAMES KEIR MOILLIET. If, indeed, while my name was thus stuck to his own, a large estate had been stuck to the name, he and his good-natured correspondents might excuse the trouble of writing three words instead of two; but as that is not the case, they will undoubtedly think that a shorter and less puzzling name might have done for him. Though parents have the power of choosing a name for their child, they should consider, as it will be principally his affair, whether it will be convenient and agreeable to him when he is grown up. For surely nobody would be so ill-natured as to christen their child *Nebuchadnezzar*, or *Beelzebub*, or *Tom-Tit*. They ought to consider that the poor child will never have it in his power to alter his name and correct the fault of his parents, but that it is an original sin which is never to be expiated unless indeed he gets himself adopted into the family of the *Alias*es, which is not the most reputable in the world. If you are of opinion, with TRISTRAM SHANDY'S Father, that the choice of a name influences a child's fortune and prosperity, I cannot advise you to take mine with that view, by any means, but rather to choose some of the following,—*Good-luck*, *Felix*, *Faustus*, *Prospero*, *Fortunatus*. But the name which, above all others, is most respected and will gain more credit in the world, and which I therefore particularly recommend for my Grandson, is ABRAHAM NEWLAND MOILLIET. This name is particularly applicable to the present and probably future times. For, as gold and silver are getting more and more scarce, it is probable that before little ABRAHAM becomes a man there will be no money but paper, and it is evident that no other signature will look so well at the bottom of a guinea, or five-guinea note. But there is some danger of giving a name that has a meaning or allusion to some predecessor; for even ABRAHAM NEWLAND might become a bankrupt. An Architect in London called his Son MICHAEL ANGELO, but so far from

emulating the genius which built St. Peter's at Rome, young MICHAEL never attempted to build a hut. Some Painters have given the name of RAPHAEL to their Sons, who were never fit for anything but cleaning their Father's brushes. I remember a person of the name of JULIUS CÆSAR. How he came by that name I do not know, as it is not mentioned in history that JULIUS, when he invaded Britain, had any amour with the British Princesses and left posterity in this island. Happily this gentleman was a foldier and became a General ; but had his lot been that of a Parson, how oddly it would have founded that JULIUS CÆSAR had preached an excellent sermon against War and Ambition ! However, his name might have suited one subject very well ; for if his parishioners were unwilling to pay tithes, he might choose his text—"Give unto CÆSAR the things that are CÆSAR'S."

To be serious,—I know, my dear AMELIA, that the name proposed is intended as a compliment to me, and I am therefore much obliged to you, Mr. MOILLIET, and the good ladies whose kindness have suggested this proposal ; but it would be lost on me, as unfortunately I have not the smallest desire that my name should be continued beyond my own existence. The little boy will, I hope, pass well through the world with a name that is easily remembered and requires no explanation. His Father's name JOHN and JACK is more manly and sounds better than JAMES and JIM and JIMMY, and therefore preferable. Whatever he is called, I hope he will always have *a good name* in the world, that is, that his own conduct will make it good. * * * *

JAMES KEIR.

I wish your Husband's business did not come upon him by starts, as it obliges him to work so hard at particular times. But we can have nothing in this world exactly as we could wish. There are two ways of considering everything—one to wish that things were better, and the other to rejoice that they are no worse.

Perhaps the last philosophy is the best suited to the affairs of life. You certainly say true, if industry were the *certain means* of wealth, your Husband would be entitled to riches; and it is undoubtedly a more sure method than any other; but besides that, much depends on good fortune. Prudence will also come in for a good share. In short I believe it never was so difficult to get rich as at this time. The stoical philosophy was a good one: their maxim was, to do their utmost endeavours of industry and courage to obtain what was right, but they were not over solicitous about the success or event; they were equally tranquil whether successful or unsuccessful. They consoled themselves with having done their duty, and they left the result to the gods, or Providence, to determine as it pleased them.

MR. KEIR TO MRS. MOILLIET.

I am extremely glad to hear that Mr. MOILLIET is better after his journey to Warwick, as I was and am still fearful that his complaint is not merely indigestion or weakness of stomach. I remember BEDDOES has published in one of his books Mr. MOILLIET's case, which is there attributed to the long-continued pressure upon the pit of the stomach by leaning upon the desk. Now it seems to me that nothing is more likely to injure the parts upon which that pressure acts, and of these parts the diaphragm is the most immediate, and it is the diaphragm and not the stomach that by its action produces vomiting, to which he is so subject. It is evidently not mere indigestion or weakness of stomach. For the medicines that are called stomachics have never been of use. If ever he consults any medical man, he should mention the circumstance which he told BEDDOES, otherwise the case may be mistaken and mischief may be done. I am persuaded medicines will not do much or any service. To abstain from the original cause

of the evil would be the true remedy. For this purpose a clerk should be got at any price, who should execute his orders in writing letters or posting. Long fasting, and writing after dinner, must be detrimental. The most important maxim in medicine is to take things in time, before they become inveterate, as it is said.

I am glad that EMILY is well in all respects. I thank you for the hare. I have made three dinners from it, and shall make a fourth to-morrow.

My dear JOHNNY,

I thank you for your letter, and am glad that you have been so well entertained with the things you have seen in Wales.

When you bathe, desire the person who goes into the water with you to teach you to swim and to take hold of you and keep your head above water, while you let go your feet and strike with your arms and legs. Strike very slowly and without being in a flutter, and you will soon learn to swim, which is a very pleasant exercise, and may perhaps sometime save your life, or that of others. Once when I was bathing, I saw a child fall into the water, which would have been drowned if I had not swam to it and saved it.

I hope, when you are not walking or bathing, that you employ all your time in doing something useful, and learning some of the lessons your Mamma gives you. I hope to receive more letters from you and EMMY. Farewell.

JOHN LEWIS MOILLIET, junr., to whom this letter was addressed, afterwards Officer in the 13th Light Dragoons, saved his Father's life while they were both swimming in the Lake of Geneva, Mr. MOILLIET being seized with cramp.



A PHILOSOPHICAL POEM
ON
THE PERIODS OF HUMAN LIFE.

A Dialogue.

BY

JAMES KEIR, Esq., F.R.S.

(In his 82nd Year.)

THYRSIS.

Say, ancient shepherd, from thy neighbouring plain
Has some stray'd lambkin mingled with my store?
The search I'll make, thy favourite to restore,—
But, sure! that face I've seen, and thou no stranger swain.

While yet a boy, and thou in manhood's prime,
The prowling wolf I've seen thee fearless dare,
And win sweet garlands from the listening fair;
But now, how wan! how deep the print of Time!

MELIBŒUS.

Tis true, O gentle swain, my lamb has stray'd;
And true that age has shrivell'd up my strength;
Then let me lay awhile my weary length,
And seek repose beneath thy friendly shade.

THYRSIS.

Welcome, thrice welcome, to my humble door !
 My ewes their sweet refreshing draught shall yield,
 Rich with the fragrance of the flowery field.
 The gods have given enough, and lent me more.

Here all is still,—save through yon pendent wood
 The mountain torrent whirls its foam amain,
 Mid bleating flocks, along the pebbly plain,
 Or wood-doves cooing o'er their callow brood.

Since age gives wisdom, reverend shepherd, say—
 Why gods, so bounteous in our life's bright morn,
 Afflict the man with age and furrows worn,
 Darkening with cheerless gloom his setting ray ?

MELIBŒUS.

Blame not the gods ! Unknown to us their ends !
 The *snail* that creeps upon the temple's base,
 Can he *Palladio's* grand design embrace ?
 Why rears the column ? Why the dome extends ?

We are but tenants of a little day,
 While the bright orb runs endless through the skies
 Heedless of kings' and empires' fall or rise.
 Oh not for us the deep designs of Heav'n to weigh !

Though not the *ends*, we Nature's *paths* may trace,
 And mark the appointed period of each stage
 Through which the beings pass from youth to age,
 Till Time's unwearied wings each mark efface.

The emblems of their passing state behold !
 The purple Spring pours forth her bloomy hopes ;
 Autumn matures, and fades ; but, kindly, drops
 Succeeding races in their wombs of gold.

Thus Nature, studious that each *kind* remain,
 (While mortal things complete their destiny—
 To breathe, to grow, to leave their like, and die,)
 Each *species* binds with an immortal chain.

To this eternal law *Man* too must bend ;
 His short-liv'd period of existence bear ;
 His cheerless entrance ; manhood's toilsome care ;
 And view in *me* his never failing *end* !

THYRSIS.

Ah ! luckless end of this our mortal strife !
 Why then, Oh tell, since each returning day
 Brings some new ill, and takes some joy away,
 Do men so wish for long protracted life ?

MELIBŒUS.

Deceitful wishes ! Men too idly deem
 That added days will added pleasures bring ;
 But vain to touch a lyre's out-stretched string !
 Or cheer the blind-struck eye with solar beam !

The crimson stream creeps flow the veins along
 Of torpid age, and wakes not passioned joys ;
 Unheeded glow ambition's glittering toys ;
 Unheeded floats the fyren's liquid song.

Thrice happy they who close this earthly scene
Ere grief and care the anxious mind opprefs ;
Ere dire mishaps the rising thought reprefs,
Or vigour palsied by disease and pain.

But happiest he who meets an honour'd grave,
Courts glorious danger in the front of death—
With trophies crown'd gives up his willing breath—
Falling exults, " My country thus I save ! "

Him let the patriot youths and virgins mourn,
Scatt'ring sweet violets on his hallow'd hearse,
Extol his virtues in the deathless verse,
His bright example glowing on his urn.

Death's not an ill. Blest be the gods who gave
The living blood, the animating breath ;
But doubly blest who gave the peaceful death ;
From human ills, the sanctuary, *grave*.

Come then ! not arm'd with darts, a fabled *fiend* ;
Better, with poppies cull'd round Lethe's stream—
Shedding oblivion on life's misty dream,
A messenger of grace, man's latest *friend*.

And, when the fibres of this woven clay
Shall break to dust, let the thin essence mount,
With new fledged wings, to that perennial Fount
Divine, whence erst it hail'd its new-born day.

Let no memorial mock my humble lot,
Nor grace with verdant hues a fallen leaf ;
No friend bedew my turf with ill-timed grief ;
All blame, and aught of praise, alike forgot.

No vain regrets of fortune false I deign ;
Nor yet for wrongs does my resentment burn ;
Nor yet for kindness shown, the base return ;
Of nought from kindred man do I complain.

For so of life, Creation's Lord ordains,
That to preserve and move, the passions urge
With ever-varying force, as ocean's surge,
Through ebbs and flows, one equal poise maintains.

Excess, defect, show Vice in each extreme ;
Between is placed fair Virtue's golden mean ;
From all, results life's active changeful scene ;
And all consent t'obey the will supreme.

Fair Virtue's throne a fourfold power secures ;
Eternal Justice equal scales upholds ;
Her sparkling goblet Temperance withholds ;
Prudence foresees ; and Fortitude secures.

Yet not for self alone the passions glow ;
Does danger threat a friend ? Thy arm defends.
Does grief assail ? Thy soothing tear descends.
Each bosom throbs for others' joy, for others' woe.

As distant chords, spontaneous, turn again
The notes symphonious of a trembling lyre ;
To mutual aid so sympathies conspire,
And fellow-feelings link the social chain.

Man, know thy faults ! Thy charities refine :
To Youth grant time—Oh spare the gentle breast
Whose love rewards, and kindness soothes to rest.
"To err is human ; to forgive divine."

Still, hapless *Age!* Not for the frame's decay,
The faltering steps that hasten to the tomb ;
These only mark th'inevitable doom,
Where weary Nature points to rest the way.

But that the finer tissues, where expand
The powers of intellect, should—callous, lose
Their mystic energy—time-worn, refuse
To act obedient to the will's command !

That pictur'd images from Memory's store,
So dimm'd as scarce to own a friend or son ;
Imperial Reason waver on his throne,
And Fancy, peacock-wing'd, forget to soar !

So fades the landscape at the approach of night,
Which erst was burnish'd by the golden day ;
With lessening lustre steals each parting ray,
Till shapeless mist obscures the uncertain light.

And can the mind expire, too, like the frame ?
Whither, Oh Heaven-touched sage, that genius fled,
Which through the burning sky thy comet led ?
Say, meteor-like, is darkened all thy flame ?

Go then, ye earth-born ! Swell with crested pride ;
With rich and noble dust emblaze your name ;
Sound it through senseless crowds, and call it Fame ;
Wealth, Power, and Beauty, flaunt your measur'd tide ;

Boast of heroic deeds of thousands slain ;
Let your art paint the battle's horrid form ;
Show how you trample on your brother-worm ;
And all the earth with crimes and blood disdain.

Or, proud of science, teach the bee her comb
To mould by labour'd geometric rules ;
Instruct the silk-worm, in your learned schools,
To wind her golden thread around her tomb.

But *not to die*, she thus herself enshrines :
For soon she'll mount and glisten in the ray ;
So the free'd soul, as holy Poets say,
Spurns the dull earth, and, robed in glory, shines.

Let Poets sing, whene'er a sacred muse
Inspires the lay, and hallowed be the theme :
The voice celestial rings through all our frame,
And God-like hopes of promised bliss infuse !

How shadowy, fleet, all human care and joy !
So emmets, toiling with a patriot-zeal,
By arms and arts, to rear their public weal ;—
One gust divides their fate with mighty Troy.

Friends of my youth ! Where are ye ? Fled from hence ;
And I a stranger in my native plain !
A breathing monument of man remain !
Joy, hope, and passion, cease to rouse my sense.

To gladden those I love, I can no more ;
The fond throb struggling with the parting sigh ;
Slow drop the dark'ning lids across mine eyes ;
Life's period past ; I hail the destined shore.

Farewell, vain world ! The mortal race is run !
Roll on, bright Sun ! and lead thy choral throng,
Hymning the Fiat in perpetual song !
“Great Nature's Law's obeyed ! The Eternal Will is done.”

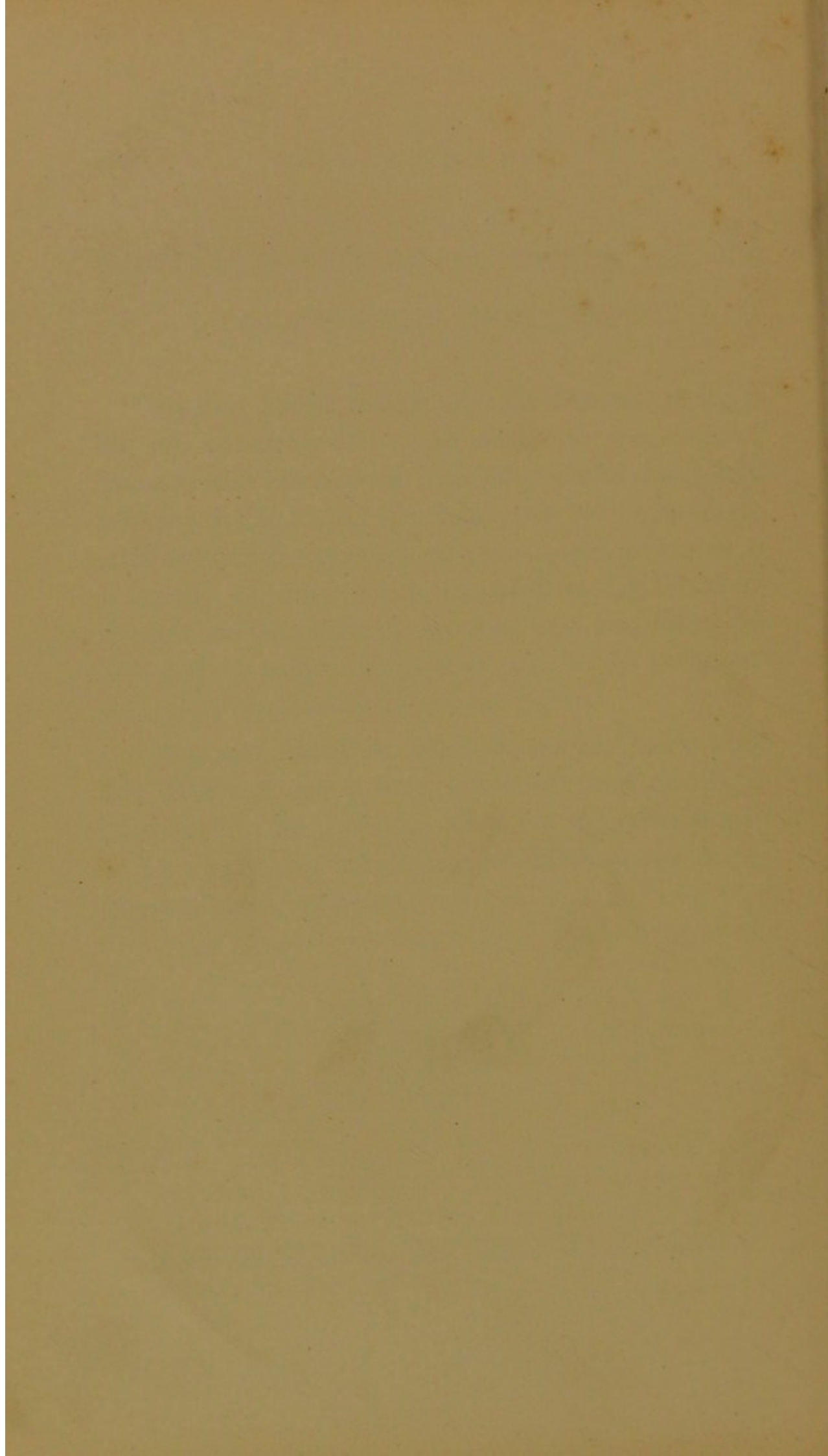
FROM A M.S. BOOK OF DATES, &c., BY
MRS. AMELIA MOILLIET.

“My dear Father expired on 11th October, 1820, at the age of eighty-five. Although he had suffered feverely, and often from irritability caused by bodily infirmity during his last illness, he preserved a remarkably calm and benign expression of countenance, arising from a serenity of mind which increased as his life drew towards its termination; he then often expressed the wish that he might die, without pain, in his sleep, and this prayer was mercifully granted to him.

“He was buried in West Bromwich churchyard. My Husband and I were precluded from erecting a monument by his particular desire, but the remembrance of his virtues, his talents, and his affection, are deeply engraved upon our hearts.”

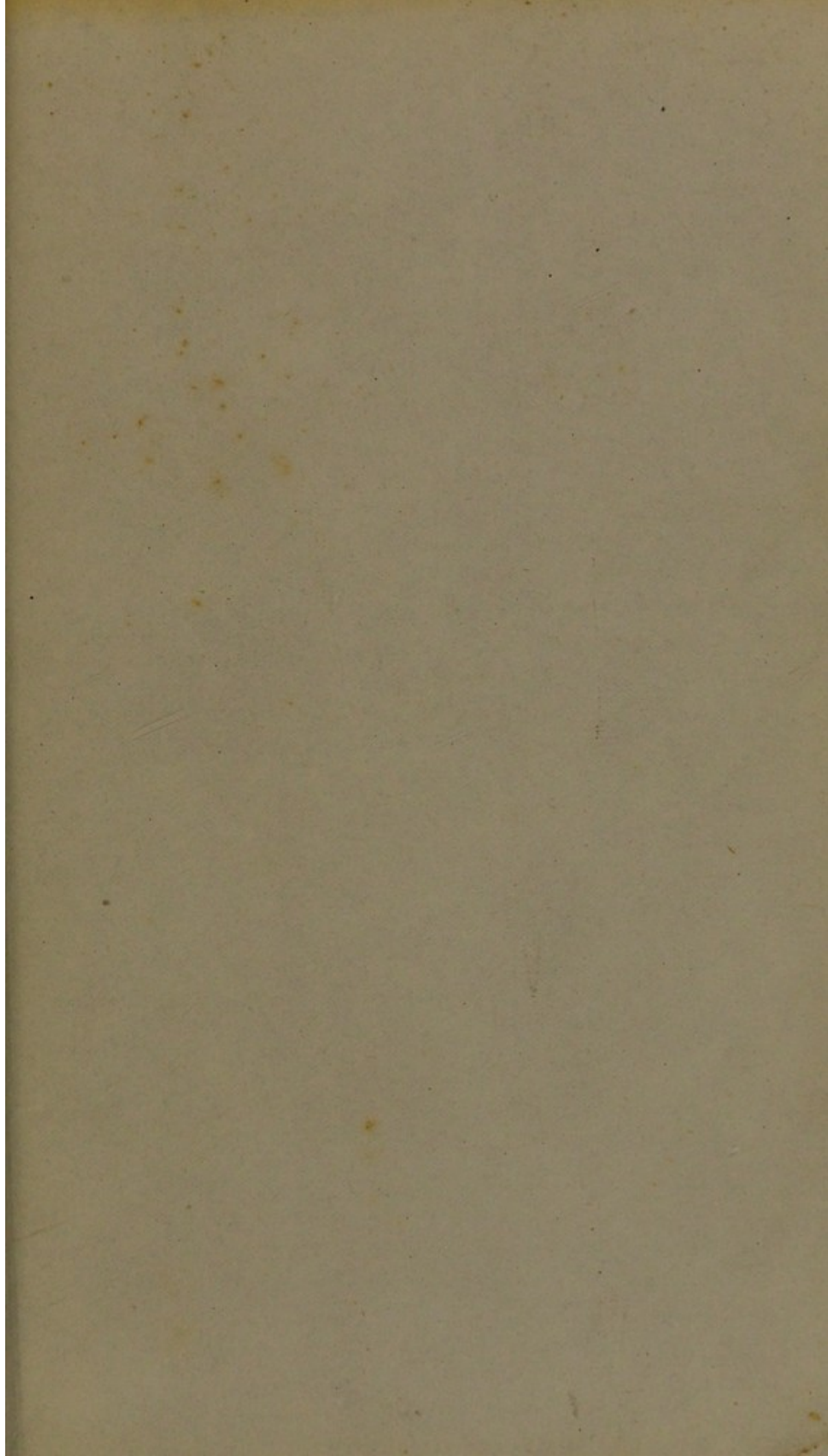














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