Cornelius Varley’s Narrative written by himself

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In the summer of 1805, the 22-year-old Cornelius Varley sat in the Vale of Llanllyfni, with Snowdon some seven miles to the east of him, and contemplated the sky. Visiting Wales in the middle of a prolonged rainy spell, Varley, a watercolourist and maker of scientific instruments, was trying to understand the workings of the clouds he could see moving and shapeshifting over Snowdonia. He turned to a theory of electricity in order to do so, proposing that clouds, and rain, were governed by a system of charged electrical particles.

Varley was born in Hackney in 1781, a younger brother to John Varley (1778-1842), who as an artist would turn out to be the better-known of the two men. The early death of their father resulted in John Varley being apprenticed to a painter, while Cornelius Varley was raised by and in turn apprenticed to his uncle, Samuel Varley, a watchmaker, maker of scientific instruments and scientific lecturer. Varley describes this background, and his precocious skill in making his own scientific apparatus – especially lenses and microscopes – in the early part of this undated tour-memoir. By 1811 he would have invented and patented the graphic telescope, a drawing aid in the form of a device that magnifies the subject to be drawn and projects it onto paper.[1]

Varley’s 1805 visit to Wales was one of several Welsh tours he made just after the turn of the century in the company of his brother and other artists, including Joshua Cristall (1767–1847) and William Havell (1782-1857), almost certainly in order to sketch landscapes from real life. Little information survives about the Varley brothers’ 1802 tour but drawings and watercolours dating from this year, including of Llangollen, Barmouth and Conwy Castle, suggest a typical itinerary for this period. Several undated sketches, including a view of Llanberis (fig. 1) that shows Cornelius Varley’s spare and sensitive view of landscape, almost certainly date either from this tour or those that followed it in 1803 and 1805.



Fig. 1. Cornelius Varley, 'Sunlight over a Lake near Snowdon, Llanberis, North Wales' (1800-1810), watercolour, Rijksmuseum

Varley's grey washed 'Carnarvon Castle' (fig. 1), which is clearly dated 1802, is characteristic of many of the images he produced in this period: naturalistic and meteorological in its depiction of atmospheric conditions, with a curiously flattened quality to the building and parts of the background. The capacity of clouds and mists, especially as they interact with light, to thicken, obscure or empty out the subject of a painting is a frequent theme in Varley's work. His interest in light and weather is evident in his 1803 tour, which includes an episode on Cader Idris in which he encounters a Brocken Spectre in the company of Joshua Cristall:

golden Vapour began to play on our Mountain, but on looking Eastward that end of the mountain was coverd [sic] by a luminous fog or Cloud on which we saw # $^{\text{in perfection}}$ (what has been mysteriously described as the Spectre of the Brocken) a bright halo or ring of light with our distinct Shaddows [sic] within… (f. 3r)



Fig. 2. Cornelius Varley, 'Caernarfon Castle' (1802), watercolour, Yale Center for British Art

Varley's explorations on and off the page of landscape and weather in Wales directly coincide with attempts by other observers to understand atmospheric science, among them the chemist and meteorologist Luke Howard, who classified the clouds in a lecture of 1802.[2] In the early nineteenth century, Howard was also attempting to explain atmospheric phenomena by means of electrical theory. When Varley returned to Wales in 1805, the science of clouds in relation to electricity was much on his mind. This tour represents a different kind of visit from the earlier tours in several ways: this time Varley travels alone, and in extreme weather ('the whole season was so rainy that in most places I was the only traveller' – f. 2r). He was also on a scientific expedition as well as a painting one: 'having been familiar with the known Electrical experiments I was better prepared & more at liberty to observe and understand what I saw' (f. 2r).

Varley's Welsh tour is by no means a typical home tour for the period. Part retrospective travelogue written some time after the events it describes, and part autobiography, it is also an example of the scientific first-person narrative, often slanted towards (self-)experimentation, employed by contemporaries such as Thomas Beddoes and Humphry Davy.[2] The text reproduced in this edition is presented with a four-page manuscript Appendix, which is closely related to the expanded account of atmosphere and electricity Varley published in the *Philosophical Magazine* in 1807. In this account clouds appear structured by electricity; ball-like particles, each one orbited by electricity is what holds them together, he suggests. 'The remarks which I offer', he later wrote in the 1807 published article, 'are founded on actual observations, which any person may easily verify, and on the known and admitted laws of electricity.' While his researches in prose aim at rational explanation, the emptied scenes of his most enigmatic Welsh watercolours suggest no such easy resolution.

Note on the source text:

The manuscript source for this edition is a fragmentary autobiographical text in Cornelius Varley's hand. In the source text, Varley frequently leaves space on the page in the page in place of standard punctuation. Aiming at a readable text, this edition substitutes full stops for spaces on the page where the text may otherwise be difficult to follow. This edition also reproduces a further manuscript as an appendix: this text, titled 'A Theory of the Atmosphere shewing the formation of Clouds' is a draft of the scientific paper Varley published in 1807 as 'On Atmospheric Phænomena: particularly the Formation of Clouds' (see explanatory notes on the text for further details of the relationship between these two versions).

Notes

[1] For an example and further explanation of Varley's graphic telescope, see here.

[2] Richard Hamblyn, *The Invention of Clouds: How an Amateur Meteorologist Forged the Language of the Skies* (London: Picador, 2001).

[3] See Tim Fulford, 'Science and Poetry in 1790s Somerset: The Self-Experiment Narrative, the Aeriform Effusion, and the Greater Romantic Lyric', *English Literary History* 85: 1 (Spring 2018), pp. 85-117.

Further reading:

- *Cornelius Varley: The Art of Observation*, exhibition catalogue (London: Lowell Libson Ltd., 2005)
- *Drawings and Watercolours by Cornelius Varley*, exhibition catalogue (London: P. & D. Colnaghi & Company, 1973)
- Charlotte Klonk, 'Varley, Cornelius (1781-1873)', *Oxford Dictionary of National Biography*, Oxford University Press
- Charlotte Klonk, *Science and the Perception of Nature: British Landscape Art in the Late Eighteenth and Early Nineteenth Centuries* (New Haven: Yale University Press, 1996)

[1r]

Cornelius Varley's Narrative written by himself

Our Family were all born at Hackney in a large house that had been the Blue post Tavern with large garden & Fruit trees & Grounds with some large trees. I was born on the 21st of November 1782. When about 4 yr. old I fell head foremost out of a first floor window I was soon afterwards taken to see the deep impression of my head the softness of the ground saved me from any harm that I can remember (Gall the Phrenologist attributed to such a fall the starting into activity of his intelect) our mothers name was fleetwood regular descended from Genrl. Fleetwood who married Cromwells daughter).

We lost our Father before I was quite 10 yr. when near 12 My Uncle S.l Varley took charge of me he had always been progressing in Mechanical & Scientific knowledge

It was my good fortune to be with him during the most important of his ^experiments in Philosophical & Chemical ~~progress~~ science having to help him in every thing & so had to put my hand to all kinds of work When I was first there he was engaged in watch & watch escapment[1] making & in Jewelling them & had several pupils from the country Male & female learning those arts. It was there I first saw the wonders of Science & became eager to make some lenses then that my practice in polishing might be profitable I was set to work the jewels for jewell'd holes of watches. These ^are made of rubies the diamond is for ornament not for use, a thin polished ruby disk is under it to touch the pivot end. Thus I made many sets & fitted them accurately into their respective watches. ^ my Uncle having made excellent tools for that purpose Whilst soldering diamonds into their steel mountings with a blow pipe I saw one take fire a small flame rose from it (this was confirm'd some yrs after when I saw diamonds purposely burnt under the Oxygen blow pipe).[2] After this I made lenses & the microscopes for them

Bees wax harden'd by much polishing powder[3] in it was used for polishing all our lenses it is not strong enough to scratch & has no springing or yielding but fits perfectly close to the lens & so secures a perfectly continuous surface & a perfect figure to the very edge

The very deepest lenses required shell lac[4] strengthened with polishing powder

With this I made ^many lenses 1/30 focus ^several lenses 1/60 of an inch focus & three of the 100th. I used lenses of 1/10 & 1/20 focus to examine this very small work such lenses bear the largest apperture from being so finely perfect in surface & figure. When 14 ^ys. I made for myself a pocket microscope lenses brass work & all

In 1794 when my Uncle was 50yrs. he began adding Chemistry to his many pursuits & afterwards gave me many courses of lectures he contrived much of the apparatus which has continued in use.[5] In all these I had to help & to work at Philosophical & Chemical apparatus Electrical & Galvanic

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My Uncle held ^musical parties & also microscopic parties[6] on one of these a lens of my making 1/30 focus was declared to greatly excel all the other Microscopes.^that were brought together on that occasion The longer a lens is being polished on the usual cloth surface the more is its figure spoil'd besides having a superfine wavy surface invisible to all but the most careful optical examination.

[1v]

[2r]

(2a)

I had to make large quantities of Oxygen & other gases both for his lectures & Patients he cured by Gas very many maladies that had baffled every other aid.[7] I was eager after all the Chemical knowledge that were then opening on the world & had learnd that knowledge is no burden but it lightens all other burdens

In 1800 I commenced drawing & sketching from Nature taught myself & was soon engaged to teach others^ the Earl of Essex recommended me & told me what to change & in so doing I became acquainted with some of the most amiable & excellent of the human race. In ^June 1801 I was invited to a happy mansion in Norfolk to sketch from Nature The ladies[8] coming to sketch with me when ever they liked, here the hardest work I cou'd ^have perform'd was Glorious holiday ^so closely following ~~compar'd with~~ the former indoors occupation tho' ^that was among the wonders of science. The pure air the sense of liberty to ramble any where among the works of creation & when indoors to be amidst the most cultivated & amiable kindness that removed care & brighten'd hope, has left an impression that nothing will efface. I remain'd in Norfolk & then in Suffolk [9] till Midwinter sketching out of doors in frost & snow, whilst in Town I was engaged in teaching drawing & perspective ^this I learned by having to teach it till June ^1802 when I went into North Wales & was soon join'd by My Brother ^John & Webster.

In 1803 ^ [illegible] ~~me &~~ Cristall ~~went~~ ^ [illegible] into Wales [10] & was join'd by Havel. In 1804 I went to S^{t} Albans to sketch[11] I was one of the Party who held several meetings & determined on forming the Water Colour Society[12] & on their first Exhibition had Pencil drawings & Colour'd sketches ^from Nature of S^{t} Albans Abbey..[13]

In 1805 I travelled in North Wales quite alone, for the whole season was so Rainy that in most places I was the only traveller.

This apparent solitude amidst Clouds & Mountains left me more at large "To hold converse with Natures Charms & view her stores untold".[14] For having been familiar with most of the known Electrical experiments I was better prepared & more at liberty to observe & understand what I saw. But To keep a little order I will return to 1803 when I ascended Cader Idris from from Dolgelly with Cristal, Havel, & several others.[15] When evening approached all the party except me & Cristal descended for prudence sake while there was light enough to ^see their way but the increasing grandeur & brilliancy of the scene ^above detain'd us (thro' all risks) to enjoy the splendour ^we were much higher than the surrounding mountains the Sun surrounded by small bright & lofty clouds ^illum'd the whole heavens & was spreading his beams over ^a bright ocean of lower clouds

[3r]

(3a)

which in one great sheet spread over all the lower Mountains causing a gloomy ^dark & early night in all ^the valleys, & ^distant cottage light cou'd be seen feebly glimmering.[16] Thus night below & glorious sun shine above, then golden Vapour began to play on out Mountain, but on looking Eastward that end of the mountain was coverd by a luminous fog or Cloud on which we saw ^in perfection (what has been mysteriously described as the Spectre of the Brocken)[17] a bright halo or ring of light with our distinct Shaddows within we were on the highest brow ^of the mountain the shadow of which intercepted the lower part of the ring & on it stood our whole shadows the head of my shadow was ^in the center of his ring & my shadow beside his we threw up our hats & moved about the shadow did the same & when we ^moved rather far apart ^each others shaddow quickly lost distinctness ^& faded away but not our own for each of us had a perfect shadow & concentric ring around it. These shaddows appeared to be distant & therefore gigantic (the only cause of mystery). The suns rays penetrated into the cloud quite as far as any vapour cou'd receive our shadows ^& as cloud light spreads laterally it therefore rendered our shaddows pale & the only light on the shadows was from the blue sky consequently they appeard exactly of the same pale milky grey as only the most distant clouds & mountains can appear this gives the notion that they ^also must be far off but their distinctness ^& their size is the real corrector of that error.

The sun at 10y.^ds – from our eyes measures 3 inches ^diameter consequently our shadows at that distance has 3 inches of penumbra all round ^causing just so much softening ^or indistinctness of their margin. but at 60y.^d the sun is 18 ^inches which is about the width of our body.

Consequently the two penumbra meet & soften the whole Shaddow leaving scarcely a bur[18] to indicate its place. Therefore I conclude that our shaddows were not more that 10y.^{d} distant altho' their pale grey colour impress'd us

with a notion of their being 100 or more y^{ds} distant & exactly gigantic in that proportion. also appeared on the same angle which can be known & our shadows ^remain of one size keep to our size so measure the radius by our shadow its real diameter & its real distance may be known

This bright vision & the sun gradually disappeared leaving us in grey twilight

Clouds ^at such time are not visible when you are close to them so whilst we were being glad at the absence of clouds ^keeping from us we were sudden^{ly} enveloped in ^them ~~clouds~~ & they became so dense that at arms length our finger ends touching, we cou'd not see each other we then hastend down lower to get below these clouds & endeavord to find the horse ^track ~~road~~ but we cou'd not so we return'd close round the summit & hasten'd down the natural slope of many fallen stones sometimes sliding midst a number & having to jump aside to avoid the loosen'd ones which rolld after us I had stiff boots on so cou'd risk more

[4r]

(4a)

& being in advance of Cristal had to avoid the stones which he loosen'd some of which we heard splashing into the pool below the light from it being our only guide. This slope was certainly dangerous in the dark & with a hurried descent but having escaped it we were fairly below the clouds & cou'd see about tho the darkness was rapidly increasing we then hasten'd to see the second lower lake & groped our way down to its margin with ^its light being our only guide no track to lead us but ^when then we follow'd a track which led us along its outlet till we found ourselves in a road & here we were lighten'd of our anxiety tho it was ^so very dark ^that we coud se but little before us this road led our really weary steps into Dolgelly were we arrived after 12 O clock nearly overcome by anxiety & fatigue (^having spent a day of 18 hours) but to our delight we found a hot substantial supper on the table to which (tho' scarcely able to keep awake) we set to in good earnest*[1]

A Commencement of Clouds & then of Rain

In 1805 whilst seated on the North bank of the Vale of Llanllyfni [19] Snowden seen ^on my left hand over the East.^{n} end the Sky was clear ^pale blue except a little line[2] of small clouds sailing above the southern range & keeping their path over those summits proceeded ^eastward towards Snowdon over whose highest peak they all ^in succession passed but here they paid particular respect ^each cloud as it approached & passed ^over the peak or highest part took a very determinate & stratified form, but when passed & clear of its attraction they resumed their unshapely form, some ^whilst proceeding sent out projections towards 3 or 4 summits as they passed between & drew them in again when they got ~~passed~~ clear of those attractions. But while these clouds were passing eastward fresh formd one kept adding & following so they grew larger & longer towards the wind which fed them & carried them along till their size wrapped over & hid the top line of the whole southern range of hills. Then rain began at the eastern end & obscured that portion ^of the hills & ^the rain gradually extended westward ^over the range while the ^line of Clouds were growing for miles over the sea whose distant horizon was still clear ^and [illegible] but the rain gradually extended till over the sea & then ^progressively obscured the whole horizon. here was a single line of clouds & rain of many miles in length I was yet in fine weather on the northern side ^& the rest of the sky clear. At first the mountains renderd ~~the air electrically minus~~ [3] & as the ^moist air followed it ^ kept lost electricity enough so coud not hold its vapour in ~~invisible~~ solution but deposited it ^& kept adding small clouds & as these floated over the mountains they were kept minus so more clouds kept forming behind them, & when they began to descend

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[1r]

A Theory of the Atmosphere shewing the formation of Clouds, their permanent existence, & their precipitation in rain or snow, & the consequent rise or fall of the Barometer, presented to the Public of Science for their examination;

by Cornelius Varley[20]

I will first relate the Observations which led to this Theory which every one can easyly repeat

1.st In a Thunder Storm I observ'd in the air Small specs of clouds appear which quickly grew larger & roundabout in every clear place others were forming which all kept uniting & form'd very large clouds which prov'd to be well charg'd with Electricity by discharging it in sparks on the Earth & then the cloud clos'd into drop of rain & fell in a heavy shower to the ground but as it well known that bodys charg'd with Electricity never discharge the whole of it at one shock, so this cloud had not discharg'd all for as much Electricity as it had lost so much of the Cloud fell

[1v]

fell down directly in rain & the small residium that remain'd held its portion of Cloud pendent in the air without raining which joind with larger ones that had just form'd & was then ready for another discharge

2.d In fine weather when the wind was Easterly I observ'd the very reverse effect for I saw large Clouds one or two miles distance coming ^from over Cader Idris before the wind which were constantly breaking in pieces & disolving in the air & were quite disolv'd before the wind coud bring them over my head I have also been under clouds that were disolving & there was nothing like rain but when the Clouds touch the mountains I have seen them break & disolve quickest

3.d when this same Fine weather had continued some days when there was no cloud the sky was very pale owing to the mist in the air which so obscur'd the distant mountain that you cou'd see little more than the^ir outline (~~which~~ ^this proves that the air does not hold

[2r]

it ^quite in solution for if it did it wou'd be perfectly transparent) but directly some clouds came the sky round them & afterwards all over became quite bright & the distance more distinct

4.th this weather with the same wind lasted about a fortnight on the first evening I saw no dew fallen on the second I perceiv'd a little on the third more which increas'd every evening till it became so thick that directly the sun was set it obscur'd the ground & the morning were very foggy & every day the sky became more misty as in third observation this prov'd that every day the Sun rais'd a quantity of vapour which found not enough Electricity to support it in the night & raise it up to the clouds, the Electricity being gradualy taken up from the Earth to form clouds during the fine weather towards the end there was so little left that almost all the vapour rais'd in the day fell down in the night & ~~produc'd those foggy morning~~

[2v]

I give the following as laws

1.st that no Cloud can be form'd or exist without Electricity

2.d that no Cloud can rain till it parts with some of its Electricity

3.d that it never can rain hail or snow unless the Electric state of the Earth is ^comparitively negative, as the clouds must always be ^more or less positive ~~according to the Theory of one Electric fluid~~

4.th that Electricity is the suspending power in Clouds b^y clothing each particle with an Electrical atmosphere ###

5.h that in fine weather the clouds are separating & in stormy weather uniting

6.th that water can exist permanently in 4 states & be in one temporary 2 by means of Electricity & 3 without it the first Electrical state is that of Cloud ^in which ^each particle is so much charg'd ## as to become lighter than air at the surface of the Earth the second is a complete saturation or solution of water in the Electric fluid which produces a transparent & elastic fluid light enough to float above the highest Cloud the first plain state is Ice the second is liquid the # third which is quite temporary is ^steam vapour for directly the supply of heat which was raising it is stopt it begins to lose that heat & falls back into its first state of Water.

Editorial Notes

[1] An escapement is part of the internal mechanism of a watch.

[2] In the 1770s, the French chemist Antoine-Laurent Lavoisier succeeded in burning a specimen of diamond (a phenomenon predicted by Isaac Newton) by placing it in an oxygen-filled jar and focusing sunlight on the specimen with a lens. This experiment enabled the English chemist Smithson Tennant to carry out follow-up experiments, the results of which he published in 1797, proving that diamond is nearly pure carbon. See Robert M. Hazen, The Diamond Makers (Cambridge: Cambridge University Press, 1999), pp. 9-10.

[3] Varley gives tripoli (primarily consisting of limestone) and iron oxide as examples of polishing powder in an exacting account of making and polishing lenses in Transactions of the Society … for the Encouragement of Arts, Manufactures, and Commerce, vol. 48 (London: n.p., 1831), pp. 332-400, p. 372.

[4] Shell lac is an insect-derived resin, used in sealing wax, varnish and lacquer.

[5] In 1794, Samuel Varley gave twelve lectures on chemistry at Hatton House, Hatton Garden. See Ian Inkster, '"Under the eye of the public": Arthur Aikin (1773-1854), the Dissenting mind and the character of English industrialization', in Felicity James and Ian Inkster (eds), Religious Dissent and the Aikin-Barbauld Circle, 1740-1860 (Cambridge: Cambridge University Press, 2012), pp. 126-55, p. 132. Like Cornelius after him, Samuel also made his own microscopes, among other forms of scientific apparatus, such as a customised blow pipe and lathe mandrel (device for rotating other pieces of equipment).

[6] An obituary for Cornelius Varley, published in volume 11 of The Monthly Microscopical Journal (1874), describes this as a meeting of the 'Friendly Microscopical Society', founded by Samuel Varley in 1795.

[7] For an account of Samuel Varley's use of oxygenated air for medicinal purposes, see The Philosophical Magazine, Vol. 3 (London: Alexander Tilloch, 1799), pp. 300-2

[8] Elizabeth and Catherine Bull.

[9] This was with the Rous family at Henham Hall in Suffolk, where Varley also taught drawing.

[10] A 17-page sketchbook (not digitised) survives from this tour, featuring views of Dolgellau and Cader Idris, and is now held at The Morgan Library & Museum; see http://corsair.themorgan.org/cgi-bin/Pwebrecon.cgi?BBID=123465. For pencil sketches by Varley of Llantony Abbey and a scene on the Wye, almost certainly dating from this tour, see https://www.royalacademy.org.uk/art-artists/work-of-art/llantony-abbey-wales and https://www.royalacademy.org.uk/art-artists/work-of-art/llantony-abbey-wales

[11] For an 1804 sketch by Varley, titled 'Near St Albans', see http://www.tate.org.uk/art/artworks/varley-view-near-st-albans-t01023

[12] The Society of Painters in Water Colours was founded in London in 1804 by a group of artists keen to raise the status of watercolour, which was, they felt, poorly served by the Royal Academy. John and Cornelius Varley were founder members of the Society, as was Joshua Cristall; together with a number of older, more experienced practitioners, this talented group of young painters staged annual shows of their work that created a new taste for watercolour.

[13] For sketches of St Albans that may date from this period, see https://www.themorgan.org/drawings/item/123463 and http://collections.britishart.yale.edu/vufind/Record/1666055

[14] Varley is quoting from Canto II of Byron's Childe Harolde's Pilgrimage (see ll. 224-5). The publication of Cantos I and II of Childe Harolde in 1812 give this as the earliest possible date for Varley's undated account of his Welsh travels.

[15] For a depiction of Cader Idris by Joshua Cristall, probably made on the spot on this tour, see https://www.themorgan.org/collection/drawings/122907

[16] This scene may be the one portrayed by Joshua Cristall in a sketch dating from c.1803, ‘Mountainous Landscape with Clouds’; see http://collections.britishart.yale.edu/vufind/Record/3488551

[17] In this passage Varley describes the appearance of a Brocken Spectre, an optical effect produced when the observer stands above the upper surface of a cloud or fog, with the sun behind them so that their shadow is projected onto the cloud. He goes on also to describe the appearance of a glory (‘a bright halo or ring of light’), a circular rainbow-like phenomenon, which surrounds the Brocken Spectre or shadow. For a discussion of the Brocken Spectre in Romantic-period literature, see Sebastian Mitchell, ‘Dark Interpreter: Literary Uses of the Brocken Spectre from Coleridge to Pynchon’, Dalhousie Review, 87: 2 (2007) 167-88; https://dalspace.library.dal.ca/handle/10222/61674

[18] ‘A circle of light round the moon (or a star) … The original sense seems to have been merely “circle, halo”; but in modern use there is usually the notion of a nebulous or nimbous disc of light enfolding the luminary’. OED.

[19] For Varley’s watercolour sketch of cottages at Llanllyfni, a village west of Snowdon, dating from this tour, see http://collections.britishart.yale.edu/vufind/Record/1666048

[20] This fair copy manuscript is closely related to an expanded account published by Varley in The Philosophical Magazine in 1807. The published version, however, makes no mention of the explicitly Welsh context of these observations, outlined in Varley’s memoir-tour and in the unpublished draft of the paper. It also expands the list of general laws at the end of account from six to seven, and adds a further section discussing electricity, weather and atmospheric conditions. See ‘On Atmospheric Phænomena: particularly the Formation of Clouds; their Permanence; their Precipitation in Rain, Snow, and Hail; and the consequent Rise of the Barometer’, The Philosophical Magazine, Vol. 27 (London: R. Taylor, 1807), pp. 115-21

Authorial Notes

[1] ‘* Our friends at the other Inn had twice sent over to know whether we had arrived & I suppose that in the perfect stillness our foot steps were heard approaching’

[2] ‘whilst rejoicing at so clear a day thre little clouds ^*** appeard over the hills before one these were slowly sailing towards Snowdon as they left others formed in their first place & followed then three more forming a _____

[3] ‘The moist air over them minus, its moisture thus became visible as small clouds’