

Protean Forms in Humphry Davy's Notebooks

Humphry Davy perceived the world to be in a state of perpetual change, where atoms dynamically forged and reformed into new configurations through the influence of fire, ice, or various chemical elements. His notebooks not only reveal this perspective, they also illustrate the analogous fluidity of Davy's creative thoughts. Unlike printed works, the notebooks reveal bold, speculative, and sometimes controversial ideas, often entwined with poetry. There is evidence that Davy composed poetry in the Royal Institution's laboratory, with pages bearing the marks of scientific experimentation.¹ While later notebooks contained less primary scientific research and more observations from his travels, Davy continued to intertwine science with poetry. Much fruitful research has examined the blend of scientific and literary material in nineteenth-century periodicals, but this essay focuses on how science and poetry coexist within one notebook, examining their effects in proximity.² Like the atoms of which we and everything are made, the words and ideas that comprise Davy's theory move from his scientific writing to poetry and back again to coalesce and reform, and to offer new insights and new understanding. Here, I argue that the Greek mythological figure of Proteus, figured in the *Proteus anguinus*, offered Davy a trope to explain the world as he saw it.

Davy's poetic entries in his notebooks exhibit recurring phrases, lines, and favourite words, which form new combinations and contexts. These repetitions mirror his scientific worldview of atoms perpetually changing and creating. Poetry, akin to atoms interacting to produce new entities, evolves with time, interpretation, and the poet's modifications. The poet can be thought of as a chemist who alters, modifies and intensifies language.³ Similarly

¹ For instance, Davy composes a Wordsworthian lyrical ballad in the middle of recording trials of nitrous oxide in RI MS HD/20/C, pp. 44, 46, 52.

² See, for example, *Science in the Nineteenth-Century Periodical* [website], <https://www.sciper.org/> (accessed 28 June 2023).

³ David Duff explores Samuel Taylor Coleridge's 'chemical poetics' in *Romanticism and the Uses of Genre* (Oxford University Press, Oxford, 2009), pp. 176–9.

in the medium of the notebook we witness the drafting process and elements that eventually re-emerge in the published text. Proximity is key: poetry and science existing on the same notebook page or within a few pages of each other create the proximity needed for transformation.

Davy was sceptical of John Dalton's (1766–1844) atomic theory when he first heard it, but he believed that his analyses of the oxides of nitrogen helped Dalton develop the theory.⁴ Davy mentions this in notebook 14I, kept between 1813 and 1826:

John Dalton was a very singular Man, a quaker by profession & practice he had none of the manners or ways of the world. [...] It is difficult to say how he gained his first notions of atoms; but I strongly suspect <that from Researches Chem & Philosophic published in 1801> ~~a work which I published~~ in which [x] it is stated that Nitrate of Ammonia become water & Nitrous oxide <& perhaps Cruickshanks discovery of Gas Ox. C.> gave him his first ideas.⁵

Davy was not convinced by Dalton's ideas for some time and does not appear to have liked him personally. As this passage shows, he doubted Dalton's originality. In the notebooks and elsewhere, when Davy uses the word 'atom' he simply means the smallest, indivisible element of matter, invisible to the naked eye.⁶

The idea that the world and all within in it, including humans, are made of the same atoms is one that we can see in some of Davy's earliest notebooks through to the final ones he kept. It was clearly a concept that he found highly suggestive and he returns to it repeatedly. One of the earliest references to this worldview comes in 1801 when Davy writes a poem about death and grief: 'In darkness & silence the organs of life / To their primitive

⁴ David Knight, *Humphry Davy: Science and Power* (Cambridge University Press, Cambridge, 1998), p. 39.

⁵ RI MS HD/14/I, p. 45

⁶ See Amanda Jo Goldstein for an excellent discussion of the neo-Lucretian tradition in Romantic-period literature, *Sweet Science: Romantic Materialism and the New Logics of Life* (University of Chicago Press, 2017).

atoms return'.⁷ The same notebook sees Davy making notes from the *Encyclopaedia Britannica* on his new topic of interest, electricity. There he notes that electricity is the reason for the attraction and cohesion of atoms in life.⁸ Since the ancient world, philosophers had posited various theories about these building blocks of matter. It is clear that Davy continued to believe, as he puts it, that 'life depends upon a certain chemical change'.⁹ Notable expressions of this opinion can be seen in his lecture notes, where he writes: 'In the operations of Nature, there is a continued succession; a destruction, & renovation of forms'.¹⁰ He specifies elsewhere that temperature is the agent of transformation: 'In every species of chemical change temperature is concerned'.¹¹ As he approached the end of his life, this idea consoled Davy, encouraging him to believe that humans would continue to exist in some form after death. In this essay I first consider how science and poetry interact on the same notebook page in notebook 20B, then I look at how science and poetry co-exist in a single notebook in 13D, and, finally, I examine Davy's interest in the Proteus anguinus in his notebooks and in his posthumous publication *Consolations in Travel*.

Known for his shapeshifting ability, Proteus appears in book four of the *Odyssey* where he is captured by Menelaus and will not give up the prophetic knowledge he possesses until he has become exhausted. First he turns into a series of frightening animals, water, and finally a tree before he eventually resumes his essential shape and answers Menelaus's questions. Theresa Kelley's excellent essay 'Proteus and Romantic Allegory' reminds us that Proteus's 'liminality is as much his destiny as it is his essence. Proteus is a sea-god, in appearance half-divinity, half-fish, for, as essential matter, he must participate in all forms of created life'.¹² Davy mentions Proteus in notebook 22C, kept in 1805, noting that the ancient

⁷ RI MS HD/13/C, p. 139

⁸ RI MS HD/13/C, p. 54.

⁹ RI MS HD/20/A, p. 23.

¹⁰ RI MS HD/04/A/3, p. 60.

¹¹ RI MS HD/14/A, p. 172.

¹² Theresa Kelley, 'Proteus and Romantic Allegory', *ELH*, 49: 3, 623-52 (1982), at p. 632.

fable is ‘*much* derived from *chemical changes*’.¹³ He compares the role of air, in the growth of the flower and in its circulation, to the ‘Protean form’, which passes ‘into as many shapes as the Genii of eastern romance’.¹⁴ In lecture notes from 1810, Davy connects the figure of Proteus with his theory of matter: ‘there is a continued circulation of the materials necessary for organized life [...] the proteus of mythology the substance is the same & the end is always the promotion of life’.¹⁵ Davy is fascinated by the Proteus anguinus because it seems to have similar abilities to transform at will. The content of Davy’s oeuvre, including published and manuscript texts, is similarly protean: the same questions, ideas and philosophies form the atoms that are shaped into poems and scientific writing. His very method of understanding the world, moving between scientific and poetic approaches is itself protean.

‘Ode to St Michael’s Mount’ in Notebook 20B

In notebook 20B a few pages are primarily dedicated to writing a poem while Davy squeezes in notes on scientific matters in the remaining space at the bottom of each page. This notebook, kept while he was in Bristol 1799–1800, mainly details the experiments with nitrous oxide and other gases that Davy took himself and with others. Towards the end it also features the first six stanzas of a poem he published in the first volume of Robert Southey’s (1774–1843) *Annual Anthology* (1799), ‘Ode to St Michael’s Mount’.¹⁶ In this notebook, we can see further evidence of Davy’s interactions with his new poetic network, which included Southey and S. T. Coleridge (1772–1834). Using the end of his notebook from back to front,

¹³ RI MS HD/22/C, p. 39.

¹⁴ Ibid, pp. 37-38.

¹⁵ RI MS/HD/03/B/2, p. 42. There are other references to the Greek god Proteus in the notebooks; for example in RI MS/HD/03/A/9, p. 14, RI MS/HD/04/B/1, p. 3, RI MS/HD/22/C, p. 37, RI MS/HD/02/B/1, p. 40, RI MS/HD/03/B/2, p. 121.

¹⁶ Titled ‘Ode to St Michael’s Mount, in Cornwall’, the poem is signed ‘D.’ and is dated 1796 with twelve stanzas in total, [Robert Southey, ed.], *The Annual Anthology* (1799), vol. 1, pp. 172–6. See Wahida Amin’s discussion of this poem and the sublime in ‘The Poetry and Science of Humphry Davy’, PhD Thesis, University of Salford (2013), pp. 79-90.

the title of the poem is given on page 236 with the first stanza numbered ‘1’. The substantive changes between this and the published text, plus an asterisked note in the manuscript explaining where the Mount was located, which does not make it into the final version, demonstrate the care that Davy put into this poem. A process of transformation is undergone from the poem’s incarnation in this manuscript to its published instance. Examining the poetry and science in proximity – on the same manuscript page – also reveals that the poem influences the science, which in turn influences the revised published version of the poem.

On the next page, stanzas ‘2’ and ‘3’ appear, and these reappear with only small but substantive changes in the *Annual Anthology*. Both stanzas have the phrase ‘very pretty’ again written beneath them in another pen [Figure 1, 20B, p. 235]. Given that there are mentions in this notebook of Southey breathing nitrous oxide, it is possible that these are stanzas Davy showed Southey for the *Annual Anthology* and that ‘very pretty’ conveys Southey’s judgement, even though the hand does not seem to be his.¹⁷ Stanza three contains the most differences between notebook and the *Annual Anthology* versions. One line is crossed out entirely but even without this it is clear that the poem chiefly concerns the sight of the island as evening draws in: ‘Where every object brings to view’.¹⁸ Regardless of the alterations, the published version has the same sentiment as the manuscript one: seeing the Mount brings back memories for the author of a time ‘When life was gay and young’, a line retained as written in both versions.¹⁹ The place has particular associations for Davy, and he imbues it with a special significance. The scientific notes that share the same manuscript page share ideas and metaphors with the poem.

¹⁷ Southey is mentioned taking nitrous oxide three times in RI MS HD/20/B, pp. 111, 152, and 208. Tim Fulford, the editor of Southey’s *Letters* does not think the hand is Southey’s. It is very like Davy’s own hand in fact; perhaps he was recording another’s assessment of his work.

¹⁸ RI MS HD/20/B, p. 235; [Robert Southey], *op. cit.* (note 16) vol. 1, p. 173.

¹⁹ *Ibid.*

Davy used the end of notebook 20B, writing from back to front, to discuss the luminous appearance of canes after ‘A Friend of mine a few days ago’ had asked Davy to examine this subject.²⁰ The stanzas ‘Ode to St Michael’s Mount’ take clear precedence on the page; they are written in a fainter ink with a neater pen, suggesting that they were there first. The ‘very pretty’ judgement has been written on the page after both the science and the poetry were already present. Gillian Beer imagines the relationship between science and poetry is one of ‘interchange rather than origins and transformation rather than translation’ and this instance might suggest that the poem, if written in 1796, influenced Davy’s scientific ideas of 1799 and vice versa.²¹ His scientific writing, coming after the initial version of the poem, could have shaped revisions to the poem for the published version. The poem itself discusses connections between science and poetry that Davy has experienced.

‘Ode to St Michael’s Mount’ describes how early in his life ‘Enthusiasm’ was his first tutor but that the burning, rapture, thrilling and even ‘ecstasy’ he feels when filled with ‘great emotions’ are eventually conquered by a calmer and more tranquil reason.²² Davy’s experiments with nitrous oxide as reported in this same notebook use very similar language to the emotions that describe the poet’s youth. For example, when breathing nitrous oxide he records experiencing ‘a thrilling in the chest & extremities’ while ‘highly pleasurable impressions were perceived at the same time with vivid ideas.’²³ In this state ‘ideas were more rapidly associated together’.²⁴ While this may be exciting and novel for the subject of experiment, it is not necessarily conducive to the analysis needed to draw scientific conclusions from the experience. At the same time, these are exactly the qualities that Wordsworth (1770–1850) and Coleridge thought were crucial for a poet. In the 1800

²⁰ RI MS HD/20/B, 242.

²¹ Gillian Beer, ‘Translation or Transformation? The Relations of Science and Literature’, *Phil. Trans. R. Soc. Lond.* **44**, 81–99 (1990), at p. 81.

²² ‘Ode to St Michael’s Mount’, [Robert Southey] *op. cit.* (note 16), vol. 1, p. 173, ll. 23, 29, 50, 51.

²³ RI MS HD/20/B, pp. 113–4.

²⁴ *Ibid.*, p. 114.

‘Preface’ to the *Lyrical Ballad*, which Davy proofread, a poet is a ‘man [...] endued with more lively sensibility, more enthusiasm and tenderness, [...] than are supposed to be common among mankind; a man pleased with his own passions and volitions’.²⁵ Davy experiences a poetic response from a scientific experiment.

In the published poem, Davy recalls that St Michael’s Mount first woke in him a passion that set him on the path he now follows:

Enthusiasm, Nature’s child,
Here sung to me her wood-songs wild,
All warm with native fire;
I felt her soul-awakening flame,
It bade my bosom burn for fame,
It bade me strike the lyre.²⁶

As Jon Mee has written, enthusiasm has both positive and negative connotations.²⁷ The word can imply madness and a religious fervour which needs to be kept in check. Enthusiasm here is the child of Nature, and, gendered female, she sings ‘wood-songs wild’, which – continuing with the warm alliteration of the ‘w’ sound – ‘warm’ the young Davy with a ‘native fire’. In the notebook version, ‘living fire’ downplays the importance of place and belonging of the published word ‘native’ but augments the idea that the songs continue to have a real effect on their audience. The fire metaphor continues in the poem and is transmitted to the young Davy who feels the effect to be one that wakens his soul and commands him to perform several interesting, and perhaps linked, actions. For example, the stanza recalls that it was in this place that he heard something that made him desire fame

²⁵ William Wordsworth and Samuel Taylor Coleridge, *Lyrical Ballads 1798 and 1800* (ed. Michael Gamer and Dahlia Porter) (Broadview, Ontario, 2002), p. 420.

²⁶ [Robert Southey] *op. cit.* (note 16) vol. 1, pp. 173, ll. 19-24.

²⁷ Jon Mee, *Romanticism, Enthusiasm and Regulation: Poetics and the Policing of Culture in the Romantic Period* (Oxford University Press, Oxford, 2003).

(with the alliterative ‘bade my bosom burn for fame’). Seemingly connected is the instruction that he ‘strike the lyre’, or, in other words, produce his own music, or poetry, in response.

In an earlier part of notebook 20B, in prose dated 26 December, presumably 1799, Davy complained that the youthful passion he once possessed had dimmed:

Time has annilated [sic] the enthusiasm
necessarily connected with the discovery
of new & important facts. They
now present themselves unconnected
with passion to be reasoned upon
& applied to useful purposes. –
It is impossible to describe with
accuracy effects ~~connected with~~
accompanied by vivid feelings
at the time of their occurrence
The imagination is influenced
&, ideal beings & realities
mingled together. —²⁸

In this passage, the soon to be twenty-year old Davy notes that when he was younger he used to respond more enthusiastically when he made scientific discoveries. In the same way, the ‘Enthusiasm’ described in his poem, encountered ‘When life was gay and young’, has been replaced now by reason and application.²⁹ What may have inspired him to write poetry (or ‘strike the lyre’) is not useful for his scientific work, which requires a more calm and sensible approach. What Davy suggests here echoes Wordsworth’s idea that poetry originates in

²⁸ RI MS HD/20/B, p. 107.

²⁹ [Robert Southey] *op. cit.* (note 16), vol. 1, p. 173, ll. 19, 18.

‘emotion recollected in tranquility’.³⁰ Davy confirms that it is not possible to describe emotions accurately at the time when they occur because the imagination does not discern between the real and the ideal. The ‘new & important facts’ are now divorced from the passion that originally accompanied them. This is useful for him because the ‘vivid feelings’ that they were ‘accompanied by’ serve only to muddy the waters of scientific accuracy. Elsewhere in notebook 20B, he repeats this sentiment: ‘vivid feeling always produces vivid ideas’.³¹

In the prose that appears on the pages beneath the draft stanzas of ‘Ode to St Michael’s Mount’ in notebook 20B, Davy notes that organic beings, due to their compound natures, are ‘capable of producing changes’, which despite his best efforts ‘the art of the chemist is unable to imitate’.³² He looks forward to a time when ‘a new branch of Science’ will open ‘a boundless field for investigation’.³³ Davy urges chemists to explore the ‘changes effected in dead matter by living beings’ and in so doing they will discover ‘the laws of their organisation’.³⁴ He encourages chemists to start with the ‘simplest’ life forms and proceed on to the ‘more perfect ones’ and thus establish by means of the differences between them the secret of why they are alive. For Davy, as for other chemists of his day and now, transformation is a key principle of life. The poetry written above this philosophical discussion mirrors the idea of a new scientific perception (a new, ‘boundless field’) with the image of St Michael’s Mount rising into view in his poem. The ‘new branch of Science’ is described using a visual metaphor, a commonplace one to describe the acquisition of new

³⁰ ‘Preface’ to the *Lyrical Ballads*, *op. cit.* (note 25), p. 183.

³¹ RI MS HD/20/B, p. 158

³² *Ibid.*, p. 236.

³³ *Ibid.*, p. 235.

³⁴ *Ibid.*, p. 234.

knowledge; in one a 'boundless' field is opened to us, and in the other, the mount of St Michael appears on the horizon.³⁵

Just as science can enable a more complex description of the natural world, the initially simple image of 'Old Michael' in Davy's poem gives way to a more complex perception of the many combined aspects of the water, wind, cliffs, ivy, and caves that can be seen on closer view. Elements combine in the third stanza to become 'ivied rocks' and then the combined adjectives of the next line, 'ivied, wave-beat rocks' bring together the individual elements noticed previously as separate (ll. 15, 16). Perhaps since, in his present day, the chemist is 'unable to imitate' the changes noted in organic beings, the poet can come closer to doing so. 'Ode to St Michael's Mount' describes the change that takes place in Davy as a kind of chemical reaction. Enthusiasm sings songs that are 'warm with native fire'; he feels the flame of this fire, which awakens his soul and produces a reciprocal burning 'for fame'.³⁶ The poet is changed by the experience for ever. The remainder of the poem – not copied into notebook 20B but published in the *Annual Anthology* – describes how other personifications, Fancy, Beauty, Truth, and Philosophy, also work on Davy to move him in different directions. The song that the poet produces on his lyre responds to the calling of these voices. But finally it is 'Truth' that produces Davy's 'best' and 'loftiest song'.³⁷

In the poem then, Davy's 'lyre' seems to generate both science and poetry, with science being established finally as the superior song. By the end of the poem, Davy has assumed the sublime role and position of St Michael's Mount himself, rising through the clouds and bursting through the night sky to view the 'radiance' of 'purest light'.³⁸ Similarly, earlier in this notebook, Davy had written of 'sublime Chemistry' and how repeatedly

³⁵ See Alice Jenkins, *Space and the 'March of Mind': Literature and the Physical Sciences in Britain, 1815-1850* (Oxford University Press, Oxford, 2007) for a discussion of the trope of the 'field' in scientific writing of the period.

³⁶ [Robert Southey] *op. cit.* (note 16), vol. 1, pp. 19-23.

³⁷ *Ibid.*, pp. 63, 60

³⁸ *Ibid.*, vol. 1, p. 176, l. 72, 70.

increasing amounts of nitrous oxide made him feel like a ‘sublime being’.³⁹ In ‘Ode to St Michael’s Mount’, this process is enacted as Davy takes on the characteristics and features of this tidal island that rises out of Mount’s Bay in all its wonder and glory. Writing poetry offers Davy a freedom that his scientific writing does not but the proximity of words on the page alerts us to the connection between the ideas and language in which these ideas are couched. Chemistry inspires poetry as well as poetry inspiring chemistry.

From Poetry to Science in Notebook 13D

Notebook 13D begins with an attempt to write a poem but ends – with the notebook turned upside down and writing from back to front – with scientific writing associated with Davy’s *Researches, Chemical and Philosophical; Chiefly Concerning Nitrous Oxide* (1801).⁴⁰ This notebook was also kept at Bristol in 1800, when, for the first half of the year, Davy was in daily conversations with Southey, Coleridge and Thomas Beddoes (1760–1808). It is only twenty-eight pages long but is a good example of the many and varied activities he undertook at this time. Many pages seem to be devoted to a single poem, presumably never published, variously titled ‘The Child of Genius’, ‘Child of Nature’, and ‘Lover of Nature, or the feelings of Eldon’. This poem seems to be autobiographical at times and very much in Davy’s contemporary poetic style, as with his other early poems ‘Sons of Genius’ and the contemporaneous ‘Life of a Spinosist’.⁴¹ Indeed, Davy attempts numerous times in a number of notebooks to poetically describe the ideal character of the man he wanted to become.

The final pages of notebook 13D are turned upside down, presumably to allow him to begin again in a different mode of writing, concern Davy’s nitrous oxide experiments. The

³⁹ RI MS HD/20/B, pp. 41, 133.

⁴⁰ *Researches, Chemical and Philosophical; Chiefly Concerning Nitrous Oxide, or Dephlogisticated Nitrous Air, and its Respiration*, CWHB, vol. 3.

⁴¹ See my chapter ‘Humphry Davy’s Poetry’, in *Literature and Chemistry: Elective Affinities* (Aarhus: Aarhus Universitetsforlag, 2013), pp. 77–98.

notebook moves from poetry to science, taking in philosophy, a fictional prose text, autobiographical notes, and ideas for future texts along the way. This notebook differs from 20B discussed above. Science and poetry are not explicitly written onto the same page but instead they exist in the same short notebook, as is often the case in the collection of extant Davy notebooks. However I argue here that there are still many links between the poetry and science in evidence. This brief notebook can be read in its entirety as a coherent whole concerned with topics that appear and return, emerge and re-emerge, in various different forms and genres.

The ‘Child of Genius’ is in draft form in notebook 13D (rather than having been copied out) and, while it is difficult to be certain, seems to occupy the first six pages. John Davy (1790–1868), Humphry’s brother, biographer and editor, published some of the verse from this notebook. In this instance, John decided that Davy was trying to write a poem which began with the words ‘Many days have pass’d’ though looking at the page itself, this is far from clear [Figure 2, RI MS HD/13/D, p. 2]. As a result of John’s efforts, Davy’s poem as published in the *Memoirs* appears more coherent and complete than what we have in the notebook.⁴² In 13D, we can see that Davy tried out a few versions of these lines, which were first crossed out and revised with some intriguing changes.⁴³ The whole as published by John is a Wordsworthian ‘Tintern Abbey’ style poem, which John connects with Davy’s recent visit back to his family home in Cornwall, and which confirms the influence of Wordsworth (perhaps via Coleridge) on Davy at this time.⁴⁴ Reading Davy’s poetry in notebook drafts and redrafts emphasises the protean nature of the work, compared to the stability and fixedness that John Davy later imposes when he edits and publishes the poetry in the *Memoirs*.

⁴² John Davy, *Memoirs of the Life of Sir Humphry Davy*, 2 vols. (Longman, Rees, Orme, et al, London, 1836), vol. 2, 95–6.

⁴³ RI MS HD/13/D, pp. 2 and 3.

⁴⁴ For Wordsworth’s influence on Davy, see Alice Jenkins, ‘Humphry Davy: Poetry, Science, and the Love of Light’ in *1798: The Year of the Lyrical Ballads* (ed. Richard Cronin) pp. 133–50 (Palgrave Macmillan, Basingstoke, 1998), pp. 133–50.

A 'Resolution' written on page 24 of notebook 13D sees Davy plan his working day. He is ambitious in his plans, aiming to work from two hours 'before breakfast', from six till eight in the morning, on his poem, but then to spend the time from nine till two in the afternoon in experiments. After a two hour break, he intends to read from four till six and then contemplate a 'Metaphysical system (ie system of the universe' from seven till ten in the evening. It is an impressive schedule, which reveals a number of interesting things: primarily perhaps that his poem was important to him but also that it is less important than the work of the main part of his day, which is admittedly, that for which he is being paid: scientific experiments. An alternative reading is that Davy does his best work first thing in the morning and that his poetry is the most important work for him. However the resolution is read, it is a promise that for specified hours Davy will work 'with pen' on his poem, and for other hours he will work on similar things using a different method, in other words, using science ('in exp.'). The notebook itself demonstrates a concerted effort to use different means for the same ultimate purpose, and this could be described as a 'Metaphysical system': to reflect upon the idea that the world is made of atoms that continually shift and move to create and recreate new forms.

It is possible to consider this notebook as a whole, as an attempt to write something coherent, even though it begins life as a poem and turns into prose and is interrupted by notes and ends with a focus on chemistry. In 13D, in the poem 'Child of Genius', describing the youth of the 'Child', Davy again connects science and poetry within himself while referring to atoms:

Here thro' the trembling moonshine of the grove

My earliest lays were wafted by the breeze

And here my kindling spirit learnt to trace

The mystic laws. from whose high energy

The moving atoms in eternal change

Still rise to animation. – ⁴⁵

Davy thus links ‘the sage’s’ ‘earliest lays’, or his poems, to the moment he ‘learnt to trace / The mystic laws’ of science. These activities happen at the same time, in the same place: ‘Here [...] / And here’. There is a distinctly Wordsworthian notion that his ‘earliest lays’ were aided by nature, ‘wafted by the breeze’. His ‘spirit’ is ‘kindling’ so still awakening the fire it will eventually become. At this time, Davy was trying to discover the ‘laws of life’, and here is further confirmation that he was learning to ‘trace’ those laws, to identify and understand them. These laws possess an energy which enables the continually moving atoms, which are constantly changing into new forms, to create new living beings. In his 1804 *Outlines of a Course of Lectures on Chemical Philosophy*, Davy spoke of matter possessing ‘active powers’, another term for ‘high energy’, which enables the continual transmutation of the living world.⁴⁶ The chemist himself also possesses these ‘active powers’ enabling him to change matter from one state to another, whether by combining elements to make new compounds, such as nitrous oxide, or the separation of mixtures into their constituent parts, or changing the forms of things, by means of, say, the application of heat, cold, or electricity to resolve ice to water or vice versa. As such views make clear, Davy is no atheist, though he flirts with Pantheism and Spinozism when young; in these lines there is a certainty that God created the world in which such transformations take place.⁴⁷ He is reassured too that the ‘living mind’ will survive physical death. As I will show in next section of this essay the older, ailing Davy finds this idea comforting as he faces his own mortality but even in these early notebooks, he is reflecting on these subjects.

⁴⁵ RI MS HD/13/D, p. 4.

⁴⁶ Humphry Davy, *The Collected Works of Sir Humphry Davy*, 9 vols. (Smith, Elder and Co., London, 1839), vol. 2, p. 442. Hereafter *CWHD*.

⁴⁷ For more on Davy’s poetical philosophy, see my book *Creating Romanticism: Case Studies in the Literature, Science and Medicine of the 1790s* (Palgrave, Houndsmills, 2012), chapter 4.

In the prose piece written into notebook 13D, Aiga, the philosophical friend of the narrator, is dying when the narrator travels to see him. This situation allows Davy to reflect upon death the possibility of an afterlife. Aiga speaks the following words:

The frost of the grave can
never chill those <burning> energies connected
with the thoughts of future
existence. – I feel & I believe
that the genial warmth of
the sun of immortality, which
has shone through this shattered
frame with feeble light
shall be more permanent
in the regions of bliss. I feel
within me new energies. –
these hopes do not announce
pain or annihilation. O
happy man. – O benevolent
deity thou art every where
existing & where thy
pure essence is interfused
pain cannot [be] permanent
there is no pure *pain*⁴⁸

Aiga has made his peace with death and believes that there is a form of existence beyond physical suffering. There is a sustained metaphor of heat to describe this future existence.

⁴⁸ RI MS HD/13/D, pp. 15-16.

Opposed to the cold ‘frost of the grave’ are the ‘<burning> energies’ that shall continue into some form of afterlife. These are of course chemical metaphors in a sense and the energy could be thought of as electricity. The grave cannot chill the heat Aiga feels and though it is yet a feeble light while he is alive, its power will grow after his death. Indeed, the source of the light is the ‘sun of immortality’, whose ‘genial warmth’ shines through, and which, even at this moment near death, Aiga can feel within him. The experience proves to Aiga that there is a God, a benevolent being whose presence is to be felt everywhere. In a further chemical metaphor, where the ‘pure essence’ of this being is ‘interfused’ pain will not be felt. In this metaphor, God is the dynamic physical force that brings atoms together. The use of heat and light, elements that Davy had written about in his early essay, alongside other chemical processes, again demonstrates the symbiosis of science with poetry.

In the extended prose fiction of notebook 13D, there is a further moment when science and poetry are connected. Perhaps remembering the ‘congenial souls’ as they are described in the poem earlier on page 4, here ‘The Solitary’ recalls the

people who had crowned
my brows with the laurels
of science & who had listened
to the wild & simple harp
of a son of the mountains⁴⁹

Here again, science and the harp (to represent the minstrel’s lay, or poetry) are connected. The ‘Solitary’ has been celebrated for his scientific achievements (crowned with the laurel) and the people also listen to his ‘wild & simple’ unsophisticated music. Elsewhere in the poem, he talks about himself as an aeolian lyre, a Romantic trope used by Coleridge among

⁴⁹ Ibid, p. 11.

others, and which also featured in 'Ode to St Michael's Mount'. Here, the poet's 'new tuned frame' responds to the newly found beauty of nature.⁵⁰

Davy's new interest in electrochemistry seemed to confirm 'The mystic laws' he discovered. Through this work, he saw a world of polar forces attracting and repulsing matter. Such forces offer a metaphor for the 'living energy' of 'Child of Genius' or the 'living and sublime energy' of 'The Solitary' in notebook 13D.⁵¹ The narrator's friend Aiga is a believer who, while he recognises that his body will 'resolve into their primitive atoms' still has faith that his mind will achieve immortality.⁵² In the pages of 13D devoted to notes on texts that Davy wants to write in the future, Davy returns to the subject of what will last of us after physical death. When he is gone, he writes, the sun will still warm and illumine others. In a final statement, he declares:

all
is change nothing is permanent
nothing lasting –

In the notebook 15F, this is called 'the natural law of change'.⁵³ The prospect of continual change in the world is exhilarating to Davy when alive, but later in life he worries about the possibility that there may be nothing of his mind or identity that survives bodily death.

Notebook 13D can be seen as a unified whole, using proximity as a limiting factor, the ideas are atoms that move from poetry to prose to other kinds of writing but which circulate through the pages settling into new momentarily fixed states. The next section explores Davy's fascination with the *Proteus anguinus*, a creature that seemed not to settle into one fixed form.

⁵⁰ Ibid, p. 5.

⁵¹ Ibid, pp. 2, 7.

⁵² Ibid, p. 14.

⁵³ Ibid, pp. 8, 28.

Notebook 14L: The Proteus and Immortality

Davy mentions the *Proteus anguinus* in a few notebooks and it reappears in the strange, philosophical text, posthumously published as *Consolations in Travel*. In notebook 14K, he writes that it is only to be found in subterranean caves in Carniola, which we now know as Slovenia.⁵⁴ Davy first travelled in this region in 1818 and the mountain chains he saw clearly inspired much philosophical thought, as well as aesthetic appreciation, as recorded in notebook 14L. Even these seemingly most durable and permanent features of the landscape confirm Davy's understanding that the world is always shifting and transmuting into new forms, though, in the case of mountains, at an extremely slow pace.

In his letter to William Thomas Brande (1788–1866), Davy mentions: 'I am now in the *Proteus Country* and I hope to send Sir Everard [Home] some alive. I go to the caverns where they are found the day after to-morrow.'⁵⁵ The cave was Črna jama, near Postojna in Slovenia and Davy returned to this same system of caves ten years later, again to see the *Proteus*.⁵⁶ Also known as the Olm or sometimes the 'human fish', the *Proteus anguinus* is a cave-dwelling aquatic salamander. Home (1756–1832) used the specimens Davy sent to help describe the first ichthyosaur, which Mary (1799–1847) and Joseph (1796–1849) Anning had found fossil remains of near Lyme Regis in 1812. In his paper, 'Reasons for Giving the Name Proteo-Saurus to the Fossil Skeleton Which has Been Described', read to the Royal Society on 1 April 1819 and published in the *Philosophical Transactions of the Royal Society*, Home observed: 'I was led to examine the vertebræ of the *Proteus*, three specimens of which Sir Humphry Davy had just sent me from Germany'.⁵⁷ Investigating these specimens, Home

⁵⁴ For example, he mentions Sittich, the German name for Stična, a village in the region known in Davy's time as Lower Carnolia as a location for the *Proteus anguinus* in RI MS HD/14/K, p. 55.

⁵⁵ Davy to William Thomas Brande, 23 August 1818, *The Collected Letters of Sir Humphry Davy* (ed. Tim Fulford and Sharon Ruston), 4 vols. (Oxford University Press, Oxford, 2020), vol. 3, p. 127.

⁵⁶ John James Tobin, *Journal of a Tour Made in the Years 1828-1829 Through Styria, Carniola, and Italy, Whilst Accompanying the Late Sir Humphry Davy* (W. S. Orr, London, 1832), p. 152.

⁵⁷ Everard Home, 'Reasons for Giving the Name Proteo-Saurus to the Fossil Skeleton Which has Been Described', *Phil. Trans. R. Soc. Lond.* **109**, 212-6 (1819), at p. 213.

decided that they formed ‘a distinct class, which [...] I shall call Proteus, till a more appropriate name is given.’ His choice of the name was made in part because the creature seemed to have both lungs and gills and therefore be capable of breathing in air and water, while also possessing feet as well as ‘cupped verterbræ. It was therefore able to both walk on land like an animal and move in water as a fish’.⁵⁸ In fact, the *Proteus anguinus* is entirely aquatic, but the creatures’ strange appearance, being blind and with a skin colour akin to that of white human flesh, meant they were often deemed to have links with an ancient past.

Davy also writes about these creatures in *Consolations in Travel*, when the character called the ‘Unknown’ recalls first seeing these animals in the caves of Adelsberg (now called Postojna) in Slovenia, ‘ten years’ ago: ‘At first view, you might suppose this animal to be a lizard, but it has the motions of a fish. Its head, and the lower part of its body and its tail, bear a strong resemblance to those of the eel; but it has no fins; and its curious branchial organs are not like the gills of fishes’.⁵⁹ This creature appears in Dialogue Four of *Consolations*, which is titled ‘The Proteus or Immortality’: its peculiar appearance and mysterious origin leads to a discussion of man’s immortality and of life itself. Referring to the dialogues in *Consolations*, Davy had written to his brother: ‘I question whether they are poetical or philosophical’.⁶⁰ The *Proteus anguinus*, so named for its ability to transform its identity and even species, is of scientific interest to Davy but in *Consolations* it leads him on to poetical and philosophical discussion. Comparing notebooks kept in 1818, when he first sees the *Proteus anguinus*, with later notebooks kept in 1827, we can see Davy return to questions of how the world is in a constant state of flux and the *Proteus anguinus* offers a good example of how Davy thinks this flux can be witnessed at an individual species level.

⁵⁸ Ibid, p. 214.

⁵⁹ Humphry Davy, *Consolations in Travel* (John Murray, London, 1830), pp. 190, 186.

⁶⁰ Humphry Davy to John Davy, 30 January 1829, *CLHD*, vol. 4, p. 160.

In 14L, Davy wonders how it is that ‘every part of the globe has become peopled with beings fitted to exist in them’, using the ‘subterraneous caves filled with water with the proteus’ as an example of an organic being peculiarly suited to its environment.⁶¹ Davy muses that the existence of the proteus suggests that a flood is far more likely than fire to be the cause of transformation since the pre-historical world. In Davy’s words, the proteus and other creatures suggest ‘that great change produced in the matter of the globe by *water*; & which seems to have preceded the present order of things.’⁶² He goes on to consider whether his own ‘present order’ might also eventually be destroyed by fire. This leads him to think that life on earth must be part of a system such as that described in the Book of Revelation.⁶³ Deleted lines compare the human mind to ‘~~an atom of dust~~’.⁶⁴ He acknowledges that man remains ‘profoundly ignorant’ of these matters but writes that some analogies seem to be found, for example, in the fact that there are ‘races of animals’ found in ‘New Holland’, or Australia, which are found nowhere else on the globe.⁶⁵ We can see here how his investigation of the *Proteus anguinus* sparks philosophical enquiries, and Davy contributes privately in a notebook to the live and controversial topic of the origin of species.

Notebook 14L then continues with geological accounts of the rock Davy encounters in the mountainous regions he travels through accompanied by sketches of the mountain ranges themselves. He notices ‘a beautiful circumstance in the oeconomy of the Globe’, which explains the presence of ‘mist over rivers and lakes in calm and clear weather after sun set’.⁶⁶ Subsequently, Davy wrote up the findings from this notebook and they were published in the same issue of the *Philosophical Transactions of the Royal Society* as Home’s essay on

⁶¹ RI MS HD/14/L, p. 32. See Eleanor Bird’s article in this special issue on Davy’s attitude to climate and population.

⁶² RI MS HD/14/L, p. 33.

⁶³ *Ibid*, p. 38.

⁶⁴ *Ibid*, p. 39.

⁶⁵ *Ibid*, p. 39.

⁶⁶ *Ibid*, p. 44.

the proteus.⁶⁷ Davy's notebook records temperatures in the Drave and other rivers, which reappear in the final essay. In the midst of these scientific notes, though, he writes about politics. He muses on how 'A People amongst whom abuses have been gradually accumulating' might be compared to a lake where mud has gathered and covered 'all that it may contain of beautiful or precious gems or ores'.⁶⁸ The cave in which he found the proteus may well be on his mind here. He goes on to write that 'A revolution is like an earthquake', which 'mixes all the materials together & shows what is valuable & useful'.⁶⁹ While these thoughts are not finished and his ideas trail off, it is fascinating that a man so politically conservative as he seemed to be at this point in his life would think that a revolution might still have this purpose.⁷⁰ What is equally clear is that the observation of natural phenomena leads him to think about political and religious theory.

Further on in notebook 14L Davy notes his encounter with an individual specimen of the Proteus in 'Madelena Grotto'

The proteus that I saw was reposing on the mud & did not move when the light was held over it; but when the water was moved by the man who dipped the net into the water it rapidly hid itself under a stone.⁷¹

Then follows some geological accounts of stone Davy has found and musings on whether an ancient volcanic eruption was responsible for those and other rocks in a mountain pass near Laibach (now called Ljubljana) in Slovenia.⁷² After these notes, there are draft lines of the poem that opens with the line 'The massy pillars of the earth' and the poem has distinctly similar concerns to the discussions seen in the pages previously. Since Davy's time, the

⁶⁷ Humphry Davy, 'Some Observations on the Formation of Mists in Particular Situations', *Phil. Trans. R. Soc. Lond.*, **109**, 123-31(1819), 123-31.

⁶⁸ RI MS HD/14/L, p. 48.

⁶⁹ *Ibid*, p. 48.

⁷⁰ See Alexis Wolf's essay "'The Son of Liberty": Literary and Scientific Experimentation in the Davy Notebooks' in this special issue for an account of Davy's politics.

⁷¹ RI MS HD/14/L, p. 59. The 'Maddalena Cave' is part of the larger Postojna Cave in Slovenia.

⁷² *Ibid*, pp. 60-61.

Proteus anguinus has become the symbol of Slovenian natural heritage, protected by law, and recognised as unique in its ability to live for up to 120 years due to its ability to regenerate limbs lost.⁷³ It can be seen as a symbol of the earth itself and its ability to transform through geological time. The proximity of these musings – scientific, geological, and political – in Davy’s notebooks leads to lines of poetry that discuss exactly these issues.

It is likely that notebook 14L contains the first iteration of ‘The Massy Pillars of the Earth’, since the lines are very rough with much deletion. While the poem seems to be written first in pen, there are substantial additions, crossings out and numbers given to stanzas in pencil. A likely hypothesis is that the first rough pen version of the poem was worked on again in pencil and finally copied out in a much neater hand, which is not Davy’s own, in notebook 14E, which was kept later in 1827, and which contains a number of poems written over the course of Davy’s life copied out in fair hand.⁷⁴ Other notebooks kept around this time also contain the dialogues that would be published posthumously in *Consolations in Travel*. The poems copied out in Notebook 14E may well have been Davy’s attempt to gather together the poems he had written over the course of his life to assess whether he wanted to publish them in *Salmonia*.⁷⁵ The ‘Proteus’ plays an important part in Davy’s thinking. ‘Massy Pillars’ brings together Davy’s thoughts from both periods, 1818 and 1827, but in the latter year, after his stroke, the notion of regeneration through change had a more personal inflection.

⁷³ *Symbols of Slovenia* [website], <http://www.slovenia25.si/symbols-of-slovenia/the-olm/index.html> (accessed 14 August 2023).

⁷⁴ John Davy writes that Davy’s poem ‘The Massy Pillars of the Earth’ was written around 1816 but gives no evidence for this dating. He remarks that the poem displays sentiments relating ‘to the spiritual nature of man and his destinies’, *op. cit.* (note 42), vol. 2, p. 95. I quote a few lines of this poem in *Creating Romanticism*, pp. 171-2. David Knight dates the poem from ‘about 1815’, *op. cit.* (note 4), p. 137. Wahida Amin likens this poem to ‘The Spinosist’ and finds in it ‘a variation of Davy’s materialism’, *op. cit.* (note 16), p. 280. Richard Holmes also recognises that the poem suggests a philosophy akin to the ‘First Law of Thermodynamics’ and considers it a performance of ‘Evangelical self-confidence’, *Age of Wonder* (HarperPress, London, 2008), pp. 360-1.

⁷⁵ In a letter to his wife, Davy wrote that he had decided against including any of his poems in the second edition of *Salmonia*. See Humphry Davy, Letter to Jane Davy, 20 April 1828, in *CLHD*, vol. 3, p. 279.

The poem is quoted here from notebook 14E, kept in 1827, because that version is more fluent and polished; this seems to be the text that John Davy used for his *Memoirs*, though there are some interesting variations.⁷⁶ The later version of the poem was written into notebook 14E when Davy was ill and thinking about his own mortality. Important differences can be seen when compared to the earlier 14L version:

The massy pillars of the earth,
The inert rocks, the solid stones,
Which give no power no motion birth,
Which are to Nature lifeless bones;

Change slowly; but this dust remains
And every atom measured, weighed,
Is whirled by blasts along the plains
Or in the fertile furrow laid.

The drops that from the transient shower
Fall in the noon-day, bright and clear
Or kindle beauty in the flower,
Or waken freshness in the air;⁷⁷

Nothing is lost. The ethereal fire

⁷⁶ There is more enjambement in John's version in keeping with Victorian poetic practice. For more substantive differences, where John publishes 'evanescent tints of heaven' in the final line of the poem, I have followed both the 14L and 14E versions, which clearly have 'transient rainbow tints of heaven' (John Davy, *op. cit.* (note 42), p. 296; RI MS HD/14/L, p. 65 and HD/14/E, p. 72). John Davy also published 'worlds attracted bends' instead of 'worlds attractive bends' for line 16 (p. 95).

⁷⁷ Davy tried and rejected a number of lines and phrases before settling on an image he was happy with. The earlier version has various images that concern heat and light, connecting with his scientific interest in these subjects at the time: 'glistening <snows>', 'heat drops' and mountain 'mists' (HD/14/L, p. 67).

Which from the furthest star descends
Through the immensity of space,
Its course, by worlds attractive bends.⁷⁸

To reach the earth. The eternal laws
Preserve one glorious wise design;
Order amidst confusion flows
And all the system is divine

If *matter* cannot be destroyed,
The *living mind* can *never die*:
If e'en creative when alloyed,
How sure its immortality.

Then think that intellectual light
Thou lovest't on earth is burning still:
Its lustre purer and more bright,
Obscured no more by mortal will.

The things most glorious on the earth
Though transient & short lived they seem;
Have yet a source of heavenly birth
Immortal: not a fleeting dream.

⁷⁸ In RI MS HD/14/L, p. 66 there is a deleted line after line 12, which reads 'Travelling through your'.

The lovely changeful light of even
The fading gleams of morning skies;
The transient rainbow tints of heaven,
From the *eternal sun* arise.⁷⁹

In the earlier version of the poem, in notebook 14L, Davy first writes ‘massive’, but this word is deleted and replaced with ‘massy’ to describe the ‘inert rocks’ and ‘solid stones’ he sees in the mountains on the earth. [Figure 3, 14L, p. 67] The numbers written to the left of the page give the order of the stanzas as they appear in 14E so we can conclude that when Davy is working in pencil it is after the first draft in pen but before – and perhaps in preparation for – the fair copy that can be read in 14E. There is also a pencil line drawn under line four to show that this is where the stanza break should come. In a poem, the idea of ‘every atom, measured, weighed’ calls attention to the rhythm or beat of the lines. The line neatly rises and falls with the poem’s iambic tetrameter pattern and references to counting (or ‘being measured and weighed’) signify poetic technique and the number of metrical feet per line.

While rocks and stones might be called ‘Nature’s lifeless bones’, Davy acknowledges that even these do change, albeit slowly. The enjambement at the end of the stanza, coming after this phrase, mirrors the connecting but also separating purpose of bones, while the next line expresses their slow disintegration.⁸⁰ The rocks do not entirely disappear but ‘dust’ remains, which provides ‘atoms’ that are lifted and transported to create new life forms in different locations. The poem can be likened to Percy Bysshe Shelley’s ‘Ode to the West Wind’ which similarly imagines dead leaves transported by the wind to become the seeds of new life.⁸¹ Davy reverses the stress pattern with the word ‘Change’ giving the first word of

⁷⁹ RI MS HD/14/E, pp. 72-74.

⁸⁰ In the earlier 14L version, there is a full stop at the end of the first stanza while in 14E it is a semi colon. But both versions clearly have a semi colon after ‘Change slowly’ (RI MS HD/14/L, p. 67; RI HD/14/E, p. 72).

⁸¹ Percy Bysshe Shelley, ‘Ode to the West Wind’, in *The Poems of Shelley: Volume 3 (1819-1820)* (ed. Jack Donovan, Cian Duffy, Kelvin Everest, and Michael Rossington), 6 vols. (Harlow: Longman, 2011), vol. 3, pp. 200-12.

the second stanza charge and force. Coming after the enjambment at the end of the stanza previously, it also suggests a disjunction, with elements coming apart from each other. The whole process seems to have purpose, with the atoms being ‘measured, weighed’ and their purpose emphasised by the fall of the stressed syllables. Alliteration is employed in ‘fertile furrows’ to highlight the vitality of the earth, and Davy picks this idea up again in the next stanza, which describes the complete natural cycle of moisture from the air to the ground.

Stanza three in 14E begins with a declamatory statement: ‘Nothing is lost’. The point made in the previous stanzas – that every element of the planet is engaged in the process of transformation – extends beyond the earth to the matter of the stars. His vision is now universe-wide: the earth ‘attracts’ the stellar material and thus its course is ‘bent’ towards earth and all matter combines. Davy ascribes this process to an eternal law which is divinely ordained and his language invokes magnetism or forces of electrical attraction. Stanza five, with its religious message, is in pencil and perhaps added later.⁸² In 14L, there is an additional line, almost alone on the page, which makes reference to God: ‘meted by the eternal hand’ that does not appear in 14E.⁸³ In the poem, God is imagined in Davy’s chemical-protean poetics as the dynamic force that attracts or repels atoms of being.⁸⁴ If all of this is true, he argues, and matter cannot die, the mind is also immortal.

Bringing his scientific knowledge to bear on this philosophical discussion, Davy refers to the process of combining two metals together to create something stronger with the lines: ‘If een creative when alloyed, / How sure its immortality’. The immortality of the mind is assured by the metaphor used: the process of combining to create an alloy is like the bringing together of disparate forms to create new life. The early draft of this poem in 14L is

⁸² RI MS HD/14/L, p. 65.

⁸³ Ibid, p. 62.

⁸⁴ I am grateful to Ian Duncan for pointing out that Davy refers here to a standard Augustan theme of *concordia discors*, the idea that there is harmony in the seeming chaos of the elements of the world, which can be traced back to Pythagoras, among others. In RI MS HD/14/E, p. 66, Davy tries out different words before deciding upon ‘glorious wise’ including a rejected ‘one ~~system~~’. He also underlines ‘amidst confusion’.

much longer and comes to the conclusion that the ‘living mind cannot die’ at its end. Davy rejects two stanzas written in pencil on a separate page with crosses through each whole stanza.⁸⁵ He tried a few different versions of this powerful statement, and the rejected lines make it clear that when he speaks of matter, he means ‘gross’ and ‘inert’, or inorganic bodies.⁸⁶ Thus, when he acknowledges that even this cannot be ‘destroyed’, it is clear that everything the universe is already in existence, nothing new can be created or destroyed, except by the new combination, recombination or disintegration of matter. It is likely that in 1827 and with failing health, Davy found reassurance in this idea, which the Proteus anguinus also promised.

In *Consolations in Travel*, published by John Davy after his brother’s death, the proteus reappears and Davy’s train of thought leads again to a discussion of the afterlife of the physical world and the possible immortality of the mind. In the dialogue titled ‘The Proteus, or Immortality’, the Unknown follows Davy’s train of thought as witnessed in notebook 14L. Speaking of the way that all life forms seem to be perfectly fitted to the location in which they are found, he brings up the example of ‘the Proteus’, which does not need light and can live equally well on land or in water.⁸⁷ The narrator, ‘Philalethes’, who is dying, then recalls how it has been ‘ten years’ since he saw his first proteus. He describes how when he searched for the proteus in the cave that night, he could not find it, but it was there – seemingly miraculously – the next day. The experience made him both poetical and philosophical: ‘My reveries became discursive, I was carried in imagination back to the

⁸⁵ It is difficult to make out much of these deleted stanzas but the first seems to argue that even short-lived insects continue by means of their progeny and the second addresses the reader directly: ‘~~And can you think that mind can die~~’ (RI MS HD/14/E, p. 64).

⁸⁶ Rejected lines include ‘~~If lifeless & inert~~’ and ‘~~If matter is in~~’. The numbers alongside the stanza, which is afforded a page to itself in 14E show that Davy thought about putting this stanza fourth in the poem before settling on placing it sixth. Difficult to read and crossed out, Davy seems to have considered ‘~~light & lovely~~’ before deciding upon ‘een creative’ (RI MS HD/14/E, p. 63).

⁸⁷ Humphry Davy, *op. cit.* (note 59), p. 187. James A. Secord includes an illustration of the Proteus anguinus, published in a later 1851 edition of *Consolations in Travel*, in his discussion of the text; see *Visions of Science: Books and Readers at the Dawn of the Victorian Age* (Oxford University Press, Oxford, 2014), p. 34, figure 7.

primitive state of the globe' and the creatures that roamed the earth in ancient times now evident in fossilised remains.⁸⁸ The discussion moves easily from there to ideas of how respiration and animal heat operate in living beings and 'The Unknown' states that

The powers of the organic system depend upon a continued state of change; the waste of the body produced in muscular action, perspiration, and various secretions, is made up for by the constant supply of nutritive matter to the blood by the absorbents[.]⁸⁹

He gives further examples of this constant transformation from the action of the heart and lungs and speculates on how, exactly, the latter works. He refutes the idea offered by 'Newtonian philosophy' that 'man' is to be 'supposed a species of hydraulic machine'.⁹⁰ A few pages later, the Unknown asserts his refusal to 'believe [...] that *intelligence* can result from combinations or insensate and brute atoms.'⁹¹ A distinctly vitalist argument is put forward, whereby a subtle, invisible power is considered requisite for a body to live and the difference between living and dead bodies is absolute. A third character, the medical doctor Euthabes, states that he is no 'professed materialist' but does believe there is a link between intellectual powers and the body's organisation; for example, that mental capacity accompanies physical capacity, both lessening in old age. After death, he says, the 'elements are again restored to that dead nature from which they were originally derived.'⁹² At that point, the living matter returns to its natural, inert state. He states that 'there was a period, when the greatest philosopher, statesman or hero that ever existed was a mere living atom'.⁹³ But, the 'Unknown', who in many respects speaks for Davy himself, roundly rejects the materialist argument, saying that the eye and brain are 'but the instruments of a power which

⁸⁸ Humphry Davy, *op. cit.* (note 59), p. 191.

⁸⁹ *Ibid.*, p. 195.

⁹⁰ *Ibid.*, p. 201.

⁹¹ *Ibid.*, pp. 206-7.

⁹² *Ibid.*, p. 208.

⁹³ *Ibid.*, pp. 208-9.

has nothing in common with them.’⁹⁴ Instead, the Unknown posits the idea of a ‘*monad*, or *self*’, which is ‘constantly present’ but which undergoes change, moving through bodies ‘in circles of existence’.⁹⁵ Thus, ‘human life may be regarded as a type of infinite and immortal life’ and, indeed, ‘The whole history of intellect is a history of change according to a certain law’.⁹⁶ Such observations confirm his belief in the vital principle, which is too subtle to be discovered by experiment or observation. Humans cannot solely be made of matter, he argues, because ‘the material of which human beings are composed change rapidly, and in a few years probably not an atom of the primitive structure remains’.⁹⁷ In other words, purely physical beings transform much faster than those capable of intellect. Even humans shed skin and other parts of our bodies constantly, so much so that within a few years nothing of our original physical selves remains. Instead, religion and the fact that we can imagine – even imperfectly – a divine Supreme Being confirms the Unknown in his belief that there is a connection between our ‘finite knowledge’ as individuals and ‘eternal wisdom’.⁹⁸ This final point is echoed in the ‘Massy Pillars’ poem.

The publication of Davy’s notebooks allows us to witness the protean nature of his ideas, the appearance and reappearance and circulation of words and phrases that demonstrate his belief that all matter exists in the world. Ideas emerge and reemerge in his poetry and scientific writing and form new combinations in their new location. Examining poetic and scientific language written in close proximity whether on the notebook page or within a single coherent notebook makes clear the interplay between the two and the symbiotic nature of their relationship in Davy’s thought and writing. Notebooks are a medium that encourage a sense of impermanence, of shifting transitory moments that are reluctant to be fixed into one

⁹⁴ Ibid, p. 210. See James A. Secord, *op. cit.* (note 87), p. 37 on the ambiguities involved in this attribution.

⁹⁵ Humphry Davy, *op. cit.* (note 59), pp. 211-2.

⁹⁶ Ibid, p. 212.

⁹⁷ Ibid, p. 217-8.

⁹⁸ Ibid, p. 219.

place or mode of being. The poems themselves illustrate how science and poetry are contiguous ways of thinking about knowledge and of expanding and developing understanding for Davy. With the publication of the notebooks we can finally see the complexity and multiplicity of his thinking and how his chemical — or protean — poetics imagine God as a dynamic force bringing order to chaos.