

## Humphry Davy in 1816: Letters and the Lamp

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By 1816, not yet 40 years old, Humphry Davy had retired from his paid roles at the Royal Institution of Great Britain, Board of Agriculture, and the Royal Society, after marrying the wealthy widow Jane Apreece and being awarded a knighthood.

However the invention for which he is now best known was yet to come. When Robert Gray, rector of Bishopwearmouth, wrote to him on behalf of coal mine owners in the North East, asking him to turn his mind to the question of how to light mines safely, Davy responded with characteristic optimism and confidence. His response reveals his motive and agenda from the outset. He intended his contribution to be considered as theoretical, scientific knowledge for a higher purpose: “It will give me very great satisfaction if my chemical knowledge can be of any use in an enquiry so interesting to humanity” (letter from Davy to Robert Gray, August 3, 1815).<sup>1</sup> In this essay I will discuss letters that demonstrate the lengths to which Davy went to maintain this view of his development of the miners’ safety lamp that became known as the “Davy lamp”.

The forthcoming *Collected Letters of Sir Humphry Davy* edition will publish approximately one thousand letters not currently in the public domain. These letters will be of particular interest to Romantic-period literary scholars: they include letters to Wordsworth, Coleridge, Southey, Maria Edgeworth, and Walter Scott; there are letters that discuss Byron and the scandalous circle at Geneva in 1816, and letters that demonstrate Davy’s poetic sensibility. The previously unpublished letters and poems written by Davy that I consider in this essay reveal new information about who

invented the miners' safety lamp first. In particular, fifty-three as yet unpublished letters written from Davy to John Hodgson (1779–1845) tell us about Davy's personal response to attacks made upon him by rival lamp inventors, William Reid Clanny (1776–1850) and George Stephenson (1781–1848). These letters and poems show us a new side of Davy; he is bitter, malevolent, and vindictive. They show just how much the claims of others affected him and his efforts to discredit these claims. These letters demonstrate the way that scientific authority and credibility was asserted and challenged in the public press. Davy, like Wordsworth and Coleridge, finds himself at the mercy of ferocious attacks in the press; the public nature of the debate confirms that the divisions that had become apparent during the earlier so-called journal wars still existed.<sup>2</sup> This essay explores the role of manuscript draft letters and fragmentary poems in the safety lamp controversy. I argue that Davy's letters to Hodgson constitute an active part in this controversy: not simply documenting the events but intervening in the way the invention would be remembered.

Coal mines were key to the industrialization of Britain and the world in the early nineteenth century. They were a crucial factor in the growth of the economy and of the rise of the empire but working conditions for miners were horrendous and deaths became increasingly common. Miners needed to take candles down the mines but this was extremely dangerous because fire damp, which was largely made up of highly flammable methane gas (as it was later called), could ignite in the candle's flame and the resulting explosion was often devastating. One explosion at Felling colliery, on May 25, 1812, killed ninety-two men and boys and the remaining gas was so lethal that many months passed before bodies could be recovered.<sup>3</sup> John Hodgson, the rector of Jarrow-with-Heworth, which included Felling, wrote an emotional account of this

disaster and this eventually prompted coal owners to set up the Society for the Prevention of Accidents in Coal Mines (also known as the Sunderland Society). It was on its behalf that Robert Gray wrote to Davy on August 3, 1815.

John Hodgson is an intriguing and important figure in the story of the lamp's development. He is primarily remembered now as an antiquarian and a historian of the North East but he also wrote poetry, such as *Poems Written at Lanchester* (1807).<sup>4</sup> His biographer, James Raine, claims that it was at the age of fifteen or sixteen that Hodgson "became a chemist" and studied geology (1:8).<sup>5</sup> He wrote a guidebook in 1807, *The Picture of Newcastle-Upon-Tyne*, which contained a section on the "Coal Trade" (Hodgson 1807 134-86). This was expanded in a second edition to "A *Detailed History of the Coal Trade*" and brought up to date (Hodgson 1812 216-81). In this history Hodgson conjectures that in the Newcastle coal trade alone 6,530 pitmen were employed and he demonstrates a thorough knowledge of the coal industry and of mines (1812 232). He also mentioned past mine explosions, such as at Lambton colliery on August 22, 1766 where six lives were lost. The noise of the blast was heard three miles away and there was a flash like lightning; the people who came to help "found only heads, arms, and legs, thrown out to a great distance from the mouths of the pits" (Hodgson 1812 278). In 1805 alone thirty-five people were killed in Hebburn and thirty-eight in Oxclose, both in County Durham, and there were many more deaths in mines in this region and others during this period.

The explosion at Felling Colliery, though, was much larger than any of these: there were 121 men working in the mines when the explosion occurred and ninety-two of them died, leaving, as Hodgson noted, forty-one widows (ten of whom were pregnant) and 133 children "to the protection of the public" (1812 278). Raine described the Felling explosion as being "of so dreadful a nature as to surpass in its

awful consequences [...] any calamity of the kind which had previous occurred either in his own parish or in the whole mining districts of the North of England” (1:90). Hodgson felt the loss deeply; he knew the pits and the people who worked in them and his *Account* is testament to both his personal involvement and detailed technical knowledge. Hodgson wrote that he was determined “*contrary to the feelings of the coal-owners at the time*” to make the disaster as public as he could “*with the hope of rousing the sympathies of scientific men to investigate the causes of explosions in mines, and finding some mode of preventing them*” (quoted in Raine 1:93). The Brandling family of Gosforth had owned Felling Colliery since 1590 (Hodgson 1813 5). In the ensuing debate over the lamp they were firmly on the side of Davy’s rival Stephenson, while Hodgson became one of Davy’s key supporters.

Hodgson’s *Account of the Explosion at Felling* is a graphic and highly emotional description; it was published as a prefix to his *Funeral Sermon of the Felling Colliery Sufferers* (1813). He recalls the cries of widows and children, the poignant but ultimately false hope offered by tales repeatedly recounted of bodies brought up from other mines days and weeks after the explosion, and the bribes that were offered to people to attempt to recover the bodies (Hodgson 1813 19, 22). Only five boys were buried on May 27, 1812 (their ages ranged from eleven to fourteen) and the other men and boys were buried at intervals until September 19 (Raine 1:91). In Hodgson’s “A List of Persons Killed in the Explosion”, he notes that one body was never found while the first name or surname of others remains unknown (1813 13-15). Describing the first blast, he writes

the neighbouring villages were alarmed by a tremendous explosion in this colliery. The subterraneous fire broke forth with two heavy discharges from the John Pit, which were, almost instantaneously, followed by one from the William

Pit. A slight trembling, as from an earthquake, was felt for about half a mile around the workings; and the noise of the explosion, though dull, was heard to three or four miles distance, and much resembled an unsteady fire of infantry. (Hodgson 1813 15)

As this description suggests, Hodgson's *Sermon* is a highly literary text; it has for an epigraph a quotation from Milton's *Paradise Lost* (1. 233-7) and includes Hodgson's own translation of Virgil's description — taken from Pindar — of Mount Etna's explosion (1813 17). The eighty-seven bodies that remained underground could not be recovered because the mine was thought to still be on fire and “choak-damp” (later known as carbon dioxide) was still believed to be present (Hodgson 1813 19). When they were brought up, many bodies “were too much mangled and scorched to retain any of their features. Their clothes, tobacco-boxes, shoes, and the like, were, therefore, the only indexes by which they could be recognised” (Hodgson 1813 32). While humanitarian distress was clearly what motivated Hodgson in writing this book, the economic case was probably more persuasive for the coal mine owners. In mid July 1815 the Society wrote to Humphry Davy, asking perhaps the best-known chemist in Britain at the time to turn his mind to the task. Even in his reply to this first letter, Davy realized that he would be able to help and began to think about how a lamp could be developed that would produce sufficient light for the miners to do their work but which would not inflame the gas.

Davy went to Newcastle and met Hodgson for the first time in the Turk's Head on August 24, 1815; they then went together to the house of the mine viewer, or engineer, John Buddle (1773–1843), who would become another important Davy supporter in the following dispute. On this trip, Davy went down into Hebburn mine and was lent overnight a bellows lamp that had been invented by Dr William Reid

Clanny. This was generally thought not to be of much practical use in a mine because it required two people to operate it (see James 180).<sup>6</sup> While Davy and others would improve upon this lamp, Clanny was the first to consider the idea of a safety lamp and the Society of Arts recognized his achievement with awards in 1816 and 1817. After the trip to the North East Davy returned to London and continued his experiments in the laboratory of the Royal Institution. In December 1815, after creating a succession of lamps, he hit upon the aspect for which he is famous, and which is his own unique contribution to the safety lamp: the use of wire gauze in the lamp, which allows light to shine but does not allow flame to pass through, averting the risk of explosion. However, as early as December 5 1815, Davy had been accused of stealing Clanny's bellows lamp without acknowledgement in a letter from one Clanny's supporters, Joseph Henry Herndon Holmes, to the *Tyne Mercury*.<sup>7</sup> Thus began a protracted and often nasty campaign throughout 1816 through the medium of letters written to the editors of a number of regional and some national newspapers.

During this same period, George Stephenson had also developed a lamp to be used in mines; both Clanny and Stephenson had attended the first meeting of the Sunderland Society on October 1, 1813. Unlike Davy, Stephenson had developed his lamp through working in a mine itself. He had worked his way up from being a "picker", clearing the stones from coal, as a young boy to becoming the enginewright at Killingworth Colliery, near Newcastle. At the age of eighteen he learned how to read, write and was taught arithmetic. Stephenson tested his first lamp in Killingworth on October 21, 1815 and it then went through several stages of development. This safety lamp became known as the "Geordie" and was widely used in the north-east, particularly in Sunderland. Likewise, Clanny also produced a lamp that was used in mines.<sup>8</sup> In 1816, the question of who first invented the lamp was intensely

acrimonious and there is much evidence to suggest that the wounds inflicted took many years to heal, if they ever did.

As Frank James's excellent article "How Big is a Hole?" makes clear, the most important feature in deciding who first invented the lamp was the size of the apertures in Davy's and Stephenson's respective lamps. Davy was the first to use wire gauze but Stephenson thought gauze mere ornament, that there were holes at all was the point.<sup>9</sup> The second and third lamps that Stephenson developed all had a tin case surrounding them, which had small apertures at the top and bottom. In fact, the issue of how big the holes should be continued to vex Davy. One of the things that publishing Davy's letters will reveal is how much his lamp continued to change and evolve even after his discovery of the wire gauze. In the 1816 letters, Davy continually revised his ideas about the gauze: changing his instructions on how big the apertures should be and how thick the wire should be.<sup>10</sup> The apertures in the gauze allow the candle to emit light, while the thickness of the wire used in the gauze absorbed the heat of the flame so that there be no explosion. Throughout, Davy represents his as a "scientific" discovery, made in the laboratory and dependent upon his superior knowledge of chemistry.

Davy's self-representation as a conqueror of nature is confirmed in the way that he explains how the wire gauze will allow methane to pass through (but not ignite) which then burns harmlessly within the gauze.<sup>11</sup> By means of the wire gauze Davy writes to Hodgson: "I confine this destructive element flame like a bird in a cage" (letter from Davy to Hodgson, December 29, 1815). His language is of nature tamed and controlled by man's ingenuity. In a letter dated 1816 Hodgson replied using the same language: "your late discoveries of the properties of flame by this successful application to controul the dreadful energies of inflammable mine-damp"

(letter from Hodgson to Davy, May 27, 1816). The idea of something burning or glowing “without flame” occurs repeatedly in Davy’s poetry too, such as in the poem he wrote in Salzburg on June 29, 1827, or his poem “To the Glow Worm” whose lamp has “No flames to kindle & destroy” and “Constant innocuous still it beams”. The use of gauze was indisputably Davy’s unique contribution to the development of the miners’ safety lamp but there remains a question about how essential the gauze is to the lamp’s safety.

The controversy really became, in the end, a war of words. Just as Wordsworth and Coleridge were forced to engage with the public sphere of the periodical press in order to gain acceptance and assert their authority, Davy was similarly forced on the offensive. Davy asserted and maintained throughout the ensuing months that Stephenson must have stolen his idea because he could never have understood the science behind it. Davy portrayed his contribution as scientific research, culminating in *Philosophical Transactions* papers that improved our knowledge of flame. Davy was awarded a gift of plate by coal mine owners in 1817 inscribed with the message “Presented / To Sir Humphry Davy by the Subscribers / As a Token of Gratitude for his Invaluable Invention / Of the Safety Lamp” (Davy J. 1836 2:44). Crucially, the safety lamp is here declared to be Davy’s invention (“his” Invaluable Invention’ of “the safety lamp”). If this was a war, in many respects it was won by Davy, who brought the full force of metropolitan science to crush Clanny’s and Stephenson’s claims.<sup>12</sup> Davy never applied for a patent but after a closer look at his letters of this period perhaps his claim would not have been accepted. In any case, Davy by this time in his life eschewed any links with monetary gain from his scientific research, as befitted his elevated social position. He was made a Baronet in 1818 for the invention of the lamp, which was promoted as the highest example of



science's beneficent gift to humanity. Raine, writing in 1857, regarded the matter of who first invented the lamp as resolved: "Public opinion, which is seldom wrong, came to a speedy decision on the subject; and time has confirmed its conclusion. To the miner his "Davy" — he knows it by no other name — is now as necessary as his daily bread" (1:176). To the end of his life, Hodgson believed in and supported Davy's claim to priority. In his mind, the Davy Lamp

presented the miner with one of the most brilliant and most beneficial inventions that stand in the annals of science; discoveries which, in the early ages of the history of man, would have ranked its author in the number of the heavenly gods; and which, through the earth-born spirit of envy and ingratitude may for a season continue to assault his name, will place upon the altar of his memory a light that shall only cease to burn, when our planet in its present condition ceases to exist. (quoted in Raine 1:175)

The act of collating and binding Davy's letters, newspaper cuttings, pamphlets, letters from others, and other ephemera, confirms Hodgson's certainty in Davy's claim for priority.

Hodgson was instrumental in the foundation of a society of antiquaries in Newcastle in 1813 and his interest in manuscripts, records, and artefacts can be seen throughout his life. Davy's letters were not the only letters collected by Hodgson in this manner. Raine notes that Hodgson collected the replies that he received to his letters asking for financial aid for the victims' families in Felling: "He has preserved the letters which came to hand in reply to his application, and has carefully bound them up in a thick volume, as a melancholy record of that catastrophe" (1:117-18). It is perhaps a similar project to gather together the materials relating to the invention of the miners' safety lamp but the highly contentious nature of this event — compared to

the primarily “melancholy” character of the earlier volume mentioned — gives the volume containing Davy’s letters a different kind of interest and potential agency. Indeed, Hodgson’s letter book is an artefact that does not simply document the safety lamp controversy but plays an active role within it.

Raine also found in the letter book evidence of Hodgson’s personal involvement in the development of the lamp. He describes it with the following:

A thick volume now before me, containing original papers, letters, reports, proceedings of meetings, &c. &c., [...] would enable me to lay before the public many extraordinary proofs of the active and intense interest which Mr. Hodgson took in every plan suggested for the attainment of the object for which the Society had been formed. (Raine 1:175)

Reading this volume, it becomes clear to Raine that Hodgson was Davy’s main contact: “it is quite manifest that it was chiefly to him and his experience that Davy had recourse for most of his local information” (1:176). The letter book also preserves and presents other kinds of evidence, such as potentially revealing the identities of those who wrote anonymous and pseudonymous letters to the regional newspapers attacking Davy. Since the newspapers never published some of these attacks, the evidence contained within this letter book is all that proves their existence. The letter book also proves that Davy knew about the attacks upon him; it provides evidence that Hodgson sent details of criticism in the press to him and discussed them with him. Davy’s replies to Hodgson in these letters are among the least guarded and most angry of his entire correspondence.

Raine also noted the incendiary potential of this material were it to be published:

If the time shall ever arrive, and arrive it may, when the volume of papers, to which I have above alluded, shall issue from the press, as a record of proceedings touching one of the greatest discoveries in modern times; it will be seen that Davy was not merely an abstruse philosopher, devoting his energies to the good of others, but that, in defence of himself and his discovery, he could write also. [...] His pen might at that time have not been without the power of that withering blast over which he had achieved a victory. (1:177)<sup>13</sup>

Reading these letters, Raine is struck by Davy's writing talent but writing of a particular kind not usually associated with him. The "withering blast" is much in evidence in these letters with Clanny and Stephenson as its object. This is not the Davy that we know from his published writings: here he is bitter, satirical, and petty.

When Hodgson bound Davy's letters, he numbered the pages and inserted other material that was relevant to the events unfolding, some of which constitutes the only known examples of privately printed pamphlets, proof copies of published texts with handwritten corrections, newspaper articles, and letters from others that help to explain and contextualize Davy's letters. Hodgson also helpfully dates some of Davy's undated letters and adds notes recalling the events described, such as: "March 15 1816 I breakfasted with Sir H. Davy, Mr Pepys and Mr H. Solly on their way to Mailros"<sup>14</sup> (letter from Davy to Hodgson, [March 14, 1816]). He also indexed the whole although it is unclear when he did this. Raine speaks of the possible publication of this letter book but it is impossible to know whether Hodgson intended it to be published. His antiquarian interest suggests that he is keen to preserve and record but his political interest alerts us to another possible agenda: the desire to support Davy's claim to priority.

Davy was famous by the time of Hodgson's death in 1845; he had become President of the Royal Society and Hodgson visited him in London in 1821 after he had gained this position (Raine 1:345). Certainly Hodgson's letter book seems to have been created for posterity or for some future reader rather than simply for his own purposes. In one instance, in an asterisked annotation to Davy's letter, Hodgson first writes some shorthand symbols and then a note: "see Pamphl. above intitelled "A few practical Observations &c" p. 8" (letter from Davy to Hodgson, June 7, 1816). The shorthand and the note are, respectively, potentially private and public modes of address that both imply a reader (though, in both cases, this reader could also be the author). Shorthand might be used to hide information where the note proffers further information to elucidate the letter.<sup>15</sup> Equally, shorthand and the annotation could act as notes to a future self, a kind of aide memoir.

Hodgson writes dates and other information on Davy's letters sometime after the fact but it is impossible to tell when this occurred and some information is incorrect, which may suggest that such notes were written a long time after the events themselves. What is clear is that these letters have been organized and arranged to present a narrative, one that is intended to exonerate Davy from any accusations of plagiarism and which supports the claim that Davy invented the safety lamp first. At the time, the chronology of events became a matter of burning importance. Evidence of this can be seen in a letter written on September 5, 1816 by John Buddle, a lifelong Davy supporter, to John Hodgson, telling him that Davy would arrive in Newcastle that evening. He asked whether Hodgson could find Davy's letter "in which he *first* informed you of his discovery of the principle of ~~his~~ safety Lamps" and bring the letter to the meeting (letter from Buddle to Hodgson, September 5, 1816, f. 409). Buddle suggested to Hodgson: "it will be dated sometime about the 15 or 16<sup>th</sup> Oct<sup>r</sup>

1815” (f. 410); if so, it would have been written before Stephenson’s first successful test of the lamp on October 21, 1815. This would seem to be an early attempt to use the letters to marshal evidence in favor of Davy’s case.

As with all manuscript sources the crossings out and insertions above the line, the angry cross-written text and the postscripts reveal more than their author might have intended. Buddle’s self-correction here makes it clear that it is not just Davy’s discovery of the principle behind his safety lamps that is at stake because that would imply that Davy’s safety lamp was not the safety lamp. Instead his crossing out of “his” makes it the principle behind safety lamps generally. The idea that there was a theoretical “principle” behind this work that Davy understood but Stephenson did not is one that appears repeatedly in Davy’s letters and published writings on his lamp. It is a word used by Clanny’s and Stephenson’s supporters too and knowledge of the “principle” is regarded as key to determining who invented the lamp first.

The information Buddle requested was soon utilized in response to the chronology Robert William Brandling (1775–1848) had produced, which detailed how Stephenson’s lamp was developed before Davy’s, and which he sent to the Secretary of the General Meeting of the Coal Trade on August 22, 1816. At the General Meeting of the Coal Owners on October 11, 1816 Brandling “moved, [...] That this Meeting do adjourn until, by a comparison of dates and an inquiry into facts, it shall be ascertained whether the merit of the invention of the Safety Lamp is due to Sir Humphrey Davy or George Stephenson”. This motion was printed, though it was not passed, and Hodgson bound a copy in his letter book.<sup>16</sup> In turn, Hodgson produced and published a chronology of Davy’s lamp.<sup>17</sup> The meeting of the Coal Owners continued with their plan to award Davy with a service of plate worth a thousand guineas thus ensuring that he was to be given full credit.<sup>18</sup>

The personal pronoun formed a sticking point in the subsequent debate. After Brandling's continued efforts Stephenson was also to be remunerated for his safety lamp though not for the safety lamp according to the *Newcastle Weekly Chronicle* (November 8, 1816, p. 3). Anonymous and pseudonymous letters were written to the local newspapers using such pseudonyms as "Fair Play" and "Aladdin"; the latter clearly drawing on the famous character from the eighteenth-century literary text *The Arabian Nights*.<sup>19</sup> In one pseudonymous letter to the *Newcastle Courant*, "Aladdin" noted that "the committee appointed to prepare the offering to Sir H. Davy [...] will not allow themselves to be fettered by the resolutions of the first meeting, which declared the plate to be given to Sir H. Davy, for *the* invention of *his* Safety Lamp, and which was ingeniously altered by the second meeting, into *his* invention of *the* Safety Lamp" (*Newcastle Courant*, November 9, 1816, p. 4). The question is raised here whether there was one lamp or many, what is the single principle behind the safety lamp, and who identified it.

Davy persists in misspelling Stephenson's name in his letters until late in 1816, which may well be deliberate. Clanny is written later as "Clansy", perhaps also deliberately, in a letter to Hodgson (letter from Davy to Hodgson, [May ?28, 1817]). It certainly is deliberate and telling that Davy never identifies Stephenson with the title "Mr" thus alluding to his lower status. Instead, as the dispute continues, Davy describes Stephenson and his supporters using a number of unflattering terms, such as here to Hodgson on October 27, 1816: "I can only pity those persons whose malevolence induces them [to] find in the incoherent dreams of an ignorant mechanic not told at all or told only to persons as ignorant as himself the germs of an important discovery" (letter from Davy to Hodgson, October 27, 1816). There is an echo here of *Macbeth*: "It is a tale / Told by an idiot, full of sound and fury, / Signifying nothing"

(5. 5. 26-8). Stephenson is an “ignorant mechanic”, which phrase evokes Bottom in *Midsummer Night’s Dream* here, whose “incoherent dreams” are not to be taken as containing the “germs of an important discovery”. This repeats the claim that Stephenson’s invention was not informed by scientific knowledge and that there was a single “important discovery”. Davy’s letters to Hodgson, taken in their entirety in the bound letter book, present the tale of the lamp — or a tale of his lamp. They offer evidence for what happened when and place these events in the context of the larger dispute. Davy’s letters from here on become increasingly angry. Uncharacteristically, there are words missing as seen in the quotation above. They are often cross-written or written down the side. Davy seems annoyed at himself for engaging in the debate at all and we witness sarcasm, pettiness, and class superiority.

Hodgson’s letter book contains private letters that give more information about the pseudonymous letters published in the local newspapers. For example, a letter from John Buddle to Hodgson on November 10, 1816 informs him that “Aladdin” was the pseudonym of Robert William Brandling, one of Stephenson’s main supporters and part of the family that owned Felling mine: “The letter, Aladdin, is Brandling’s own [...] — it is evidently his sneering style” (f. 480). This identification has not yet been confirmed — and may never be — but there is a pleasing partial rhyme in the names “Aladdin” and “Brandling”.

In Hodgson’s letter book there is, unusually, a draft of a letter that Hodgson sent to Davy on May 20, 1816, the existence of which perhaps reveals that Hodgson put more effort than was usual into writing on this delicate topic. In general, Davy did not keep the letters he received, and so this draft offers a rare glance into the other side of his correspondence. In this draft letter, Hodgson claimed that “a very venomous paper” on the subject of “Wire Gauze cylinders” had been published in the

*Tyne Mercury* (April 16, 1816, p. 4). Wire Gauze was known to be Davy's particular contribution to the lamp. The paper was signed "A Friend" but Hodgson claimed that it had been written by William Reid Clanny. Hodgson then wrote that Clanny had next sent "a poetical performance in the Hudibrastic Style", or "doggerel three double", pseudonymously to the *Newcastle Chronicle*. This was signed "Tam Glen". The editors considered it "mischievous & malignant" and refused to publish it (f. 349).<sup>20</sup> "Tam Glen" is an eponymous poem by Robert Burns though it seems the name is not uncommon in Scotland at this time and had been used before Burns.<sup>21</sup> The third stanza of Burns's poem features an upstart pretender, "Lowrie the laird o' Dumeller," who "brags and he blaws o' his siller" (ll. 9-11). Despite his higher social station and his boasting about money ("siller" is dialect for "silver"), he will never compare to Tam Glen. Perhaps in this allusion Davy is "Lowrie" and Clanny is "Tam Glen".

The mock-heroic poem *Hudibras* by Samuel Butler, published between 1663 and 1678, is a particularly appropriate choice for an attack on Davy. It uses iambic tetrameter with closed couplets and features a number of feminine rhymes. It offers excessive praise for a knight and Davy had been knighted in 1812 a few days before his marriage to the wealthy widow Jane Apreece. The choice of genre conveys the message that, like *Hudibras*, Davy does not deserve the praise he receives.

Hodgson's draft letter does not transcribe the whole poem but just gives the opening and closing lines:

The object of the species of wit was to charge you directly with having stolen  
~~all xxx ideas from~~ his invention & run away with the honor I think it began  
thus

Sir Humphry Davy took a trip



and after

~~and ended with an~~ enumerating of the obligations you were under to different

~~xx xxxxx~~ sources for information on yr subject

ended with the line

But most of all to Dr Clanny

Hodgson's depreciating phrase "doggerel three double" most probably refers to ballad-style verse heavily driven by stress. Even in the few lines given in Hodgson's draft letter the iambic tetrameter is apparent.

In fact, this poem was published elsewhere as "Hocus Pocus, or the Juggle of the Lamp" and dated April 1, 1816.<sup>22</sup> It appeared in a short-lived journal called the *Monthly Visitor or Universal Entertainer*, which was published in Newcastle in 1816 and 1817. The poem is in iambic tetrameter and claims that Davy had stolen Clanny's idea. Interestingly, a footnote states that this poem was written "by a London artist, and not by the gentleman to whom it has generally been attributed" (*Monthly Visitor*, vol. 1, 560). The "hocus pocus" of the title perhaps refers to the kind of meaningless talk designed to conceal truth or to a juggler's conjuring trick, which is intended to deceive. The first and final lines are slightly different to those given by Hodgson: "Sir H\*\*\*\*\* D\*\*\* went to see" and "And more than all of Doctor Clanny". This suggests that the poem has been through some revision between the two iterations as known between it being sent to and rejected by the *Newcastle Chronicle* and sent to and accepted by the *Monthly Visitor*, or vice versa, or that Hodgson misremembered the opening and closing lines. Davy is accused of making a lamp based on Clanny's: "But, different somewhat, lest folk might / Think he had pilfer'd it outright". The author claims that Davy kept Clanny's "out of sight", in order "That all may deem his lamp the first, / Instead of second on the list". The issue of priority is confronted

directly and the author comes down on Clanny's side.

After further attacks in the press, Davy composed and sent to John Buddle what he calls "two specimens of proper advertisements for Brandling & Stevenson" (letter from Davy to Buddle, February 8, 1817). Here we see Davy retaliate in like manner and style, demonstrating the "withering blast" that Raine identified when he read the letters in Hodgson's possession. The "specimen of an advertisement suited to Mr. W. Brandling" is as follows:

Aladdin should sign his name Assassin for he endeavours to stab in the dark.

An assassin is a proper associate for a private purloiner. One may attempt to murder while the other carries off the plunder. Mr. W. J. Brandling must be ashamed of such friends as Aladdin and Fair Play, at least he cannot wish to be seen in public with them even though he should love them as dearly as himself.

Davy signed this "advertisement", a term meaning "an admonition, warning or instruction", with the name of "TRUTH".<sup>23</sup> The mere act of signing the piece pseudonymously, in the same vein as "Fair Play", suggests a degree of polish that might imply that he intended to publish the piece but there is no evidence that he did. Perhaps he was simply flexing his skills as a satirist, demonstrating that he can write in this manner, or blowing off some steam.

In the advertisement, Aladdin, associated with the lamp and with light becomes "Assassin" who works in the dark. To stab in the dark is to make a guess but also not to fight fairly or to attack under cover of dark, thus drawing attention to the fact that "Aladdin" does not give his real name. If Brandling is "Aladdin", his "proper associate" is Stephenson "the private purloiner", one who steals another's ideas. The next sentence begins "One may", which may echo *Hamlet*: "One may smile, and

smile, and be a villain” (1. 5. 8) but Hamlet refers only to one person where Davy refers to two (“One may attempt to murder while the other carries off the plunder”). Davy’s deliberate misdirection, where he names Brandling as the “friend” of “Aladdin” and “Fair Play” is fretted with Davy’s own “sneering style”. The final line implies that Brandling does not appear in public with them because he is actually one of them, if not both, and the final taunt is that he cannot appear in public because he hides behind one or other — or both — of these pseudonyms.

These examples of the public style in a private letter demonstrate Davy’s anger at what he sees as the underhand tactics employed by Stephenson’s supporters. He deigns to stoop to their level here and shows himself adept at employing the genre for his own purposes. The nastiness of such public attacks was clearly seen as underhand by such as Hodgson. Raine notes that he defended Davy publicly and without subterfuge:

It was Mr. Hodgson’s firm conviction that the merit was due to Sir Humphry Davy, and to him alone. This opinion he manfully, but temperately, defended in the local newspapers, under his own proper signature; and no attacks or anonymous but well known partizans on the other side could convince him of the contrary. (1:176)

Raine’s comment also claims that the authors who wrote anonymous contributions were in fact “well known”. Davy may have sent these to John Buddle in order for them to be circulated in manuscript of course. There is at least one other example of Davy writing something for the papers at this time anonymously.<sup>24</sup>

Davy’s as yet unpublished letters to Hodgson and other material collected in Hodgson’s letter book reveal information that would otherwise be lost. This information supplements and explicates what is publicly printed about the debate. In

the same vein, there is an unfinished poem that Davy wrote in one of his later notebooks about the safety lamp that may well show the final, true state of his feelings. The poem is titled “Thoughts after the *ingratitude* of the Northumbrians with respect to the *Safety Lamp*” and appears in a notebook used between 1819 and 1827, some years after the events to which it alludes:

And though in all my intercourse with man  
The feelings recollected scarcely leave  
Aught to admire or glory in. Though good  
Has been replaced with evil. And a light  
Of Science & humanity received  
With stern ingratitude — Yet have I not  
Recanted, or relaxed in labours high  
For these my enemies. And if a ~~glow~~ <chill>  
Of indignation has oppressed my mind  
It was but transitory like the chill  
Of a snow cloud in summer. Which though dark  
And threatening soon in genial dews  
Dissolves to vivify the parched earth.  
~~And whether~~  
And I have not ~~unkind~~ both coldness & unkindness  
As the <fair plant of Ceylon> cingalian tree which ~~wounded~~ when cut  
<Does> Not alone *perfume* the axe: but gives a balmy oil  
Which preserves its harsh & sullen texture from decay. —<sup>25</sup>

The poem begins in a despondent tone. When Davy remembers his dealings with men over the past years they have rarely offered anything worth admiration or glory. The

“light” of “Science and humanity” refers to his safety lamp as well as to the scientific knowledge behind it. Even despite all of this, even though good has been replaced by evil, he refuses to recant his priority. There is a potential reference to Galileo, which was current in this period.<sup>26</sup> The manuscript is difficult to read at this point and perhaps the word written is “Resorted”. Davy may have believed that he refused to resort to the levels to which his enemies had. In any case he has not stopped working on his important labors since then. He claims that the “indignation” felt has only been a transitory emotion. He likens it to a “snow cloud” in summer that actually does more good than harm in watering much needed “parched earth”. Similarly, the oil from the unidentified tree from Sri Lanka (then called Ceylon), not only perfumes the blade of the axe that wounds it, it also preserves the tree itself from decay. The word “cingalian” is an awkward derivation from “cingalese” that was also in use at this time. Davy’s brother, John, was stationed as an army physician in Sri Lanka from August 1816 until February 1820. On his return he published *An Account of the Interior of Ceylon and of its Inhabitants, with Travels in that Island* and this text mentions the cinnamon tree a number of times, which emits a sweet fragrance when bruised (see, for example, 39). In Davy’s use of this simile, he compares his feelings to the tree. By being “cut”, rather than the earlier, more emotive word “wounded”, the plant can continue because the “balmy oil” is needed to preserve it. This poem gives perhaps Davy’s final word on the matter, his view of the safety lamp episode on reflection; he is no doubt bitter but also resilient.

The Davy letters offer greater understanding of the process that Davy went through in the development of his lamp. The question of who invented the lamp first turns on issues of chronology, scientific knowledge and language, all of which are established within Davy’s letters. Hodgson’s letter book shows that the effort to

establish exactly the order of events continued beyond the immediate event of the lamp's development. Davy's letters to Hodgson were retrospectively arranged in order and sequence, bound, paginated, annotated and indexed, to support a particular version of the story of the safety lamp. The volume was intended to have agency in the ensuing priority debate. Finally, Davy's private responses to published letters see him imitate, perhaps parody, the "specimen" of writing identified as an "advertisement" in the newspapers and his poem reveals his bitterness at what he perceived as ingratitude on the part of those he served.

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## Notes

<sup>1</sup> Working transcriptions of all letters quoted in this article are available through the Davy Letters Project website: <http://www.davy-letters.org.uk>. This will be superseded by *The Collected Letters of Sir Humphry Davy*, edited by Tim Fulford and Sharon Ruston, Oxford: Oxford UP, 2018. 4 vols.

<sup>2</sup> For more on "the practice of making public attacks on private character", see Cronin 15. See also Fulford on Wordsworth's, Coleridge's, and Southey's efforts to defend themselves and each other against attacks in the periodical press.

<sup>3</sup> Felling is now in Gateshead but it was then in the County of Durham.

<sup>4</sup> There is much poetry by Hodgson in the first volume of Raine.

<sup>5</sup> Hodgson contributed papers to the *Gentleman's Magazine* from 1821 onwards under the pseudonym Archaeus, which is an alchemical term.

<sup>6</sup> I am hugely indebted to this article.

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<sup>7</sup> Hodgson described him as “M<sup>r</sup> Holmes the D<sup>rs</sup> Dirty-job-man” (f. 349) in a draft letter to Davy of May 20, 1816.

<sup>8</sup> For the future of these lamps and hybrid lamps, see Rimmer et al.

<sup>9</sup> Stephenson maintained repeatedly that wire gauze was not necessary. See *A Description of the Safety Lamp* 6: “use of the wire gauze is certainly a happy application of a beautiful manufacture to a very useful purpose, but I confess I cannot consider it in any other light than as a variation in construction”.

<sup>10</sup> For example, Davy discovered a new kind of stronger, twilled gauze manufactured by a company called Bayliff and Bigg in Kendal, which reveals the unsung but crucial contribution of working men to his lamp: “I find by conversing with the wire workers that they can weave wire much thicker than that commonly used in the lamps” (letter from Davy to John Buddle, October 9, 1816).

<sup>11</sup> This characterization of Davy has been discussed previously; see, for example, Crouch for the links between Davy and Professor Waldman in Mary Shelley’s *Frankenstein*.

<sup>12</sup> For example, a formal document asserting Davy’s position was issued from Sir Joseph Banks’s house on November 20, 1817 signed by Banks, Thomas Young (Foreign Secretary of the Royal Society), William Thomas Brande (Secretary of the Royal Society and Professor at the Royal Institution), and by Davy’s personal friends the chemists William Hyde Wollaston and Charles Hatchett. This was published in the *Morning Chronicle*, November 22, 1817, the *Tyne Mercury*, November 25, 1817, and the *Newcastle Courant*, November 29, 1817.

<sup>13</sup> Raine may be referring to Robert Burns’s song ‘O Raging Fortune’s Withering Blast’ here.

<sup>14</sup> “Mailros” meaning Melrose.

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<sup>15</sup> Some of Hodgson's shorthand symbols appear in known eighteenth-century shorthand systems, such as John Byrom's, which was first published in 1740 and was taught at the universities.

<sup>16</sup> Northumberland Archives (Woodhorn), SANT/BEQ/18/11/13/457-60. Stephenson sent Brandling's letter to a number of local newspapers and it was published in the *Tyne Mercury*, October 15, 1816, p. 3; the *Durham County Advertiser*, October 19, 1816, p. 3; and the *Newcastle Chronicle*, October 19, 1816, p. 3.

<sup>17</sup> Hodgson's chronology, dated October 21, 1816, was published in the *Newcastle Courant* on October 26, 1816, p. 2; and republished in the *Tyne Mercury*, November 5, 1816, p. 4 and the *Philosophical Magazine*, vol. 48, 1816, pp. 350-3.

<sup>18</sup> Davy was presented with this on October 11, 1817 (see Davy J. 1836 2:44). See James 211 for Stephenson's further attempts to gain recognition and award for his lamp, which did pay off to a degree: on January 12, 1818 Charles J. Brandling held a dinner for Stephenson where he was presented with a silver tankard purchased from £1000 raised for him. There is a postscript to this aspect of the story. In a letter to Lord Londonderry dated January 4, 1821, John Buddle writes that this "schism caused a defalcation in the Subscription, and in the end left £1210 short of paying the Silversmith for the Plate". He proceeds to ask Londonderry to provide "any assistance your Lordship may think proper to afford them in this difficulty" (*Letters of John Buddle* 17). In 1821, therefore, the money to pay for Davy's plate had yet to be raised.

<sup>19</sup> See Lacey on the language used and cultural capital displayed in these published letters. "Aladdin" was not part of the original Arabic text but was added by the French translator, Antoine Galland, to *Les mille et une nuits*, 21 vols (1704-17).



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<sup>20</sup> On April 20, 1816, the editor of the *Newcastle Chronicle* noted: “The lines signed “Tam Glen” and the letter from Alston, have been received, but we must beg to decline the insertion of either” (p. 2).

<sup>21</sup> Thanks to Alex Broadhead for these ideas about why Burns’s poem may have been alluded to.

<sup>22</sup> I am indebted to Ian Winship, a volunteer at the North-East Institute of Mining, for this discovery.

<sup>23</sup> “The action or an act of calling the attention of someone; (an) admonition, warning, instruction. *Obs.*” *OED*, 1b.

<sup>24</sup> Davy wrote “an exposure of the falsehood & absurdity of the opinion expressed in [Brandling’s and Stephenson’s] resolutions”, which he sent to the *Tyne Mercury* and it was published anonymously on November 25, 1817, p. 3.

<sup>25</sup> This was a poem found by Wahida Amin; see Amin 249. I have newly transcribed it.

<sup>26</sup> Davy mentions Galileo in letter to John George Children (on copper sheathing) of October 29, [1824]. The *Monthly Magazine* published the surgeon William Lawrence’s signed recantation, dated April 16, 1822, in parallel columns alongside “the never-to-be-forgotten abjurations of Galileo”.

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