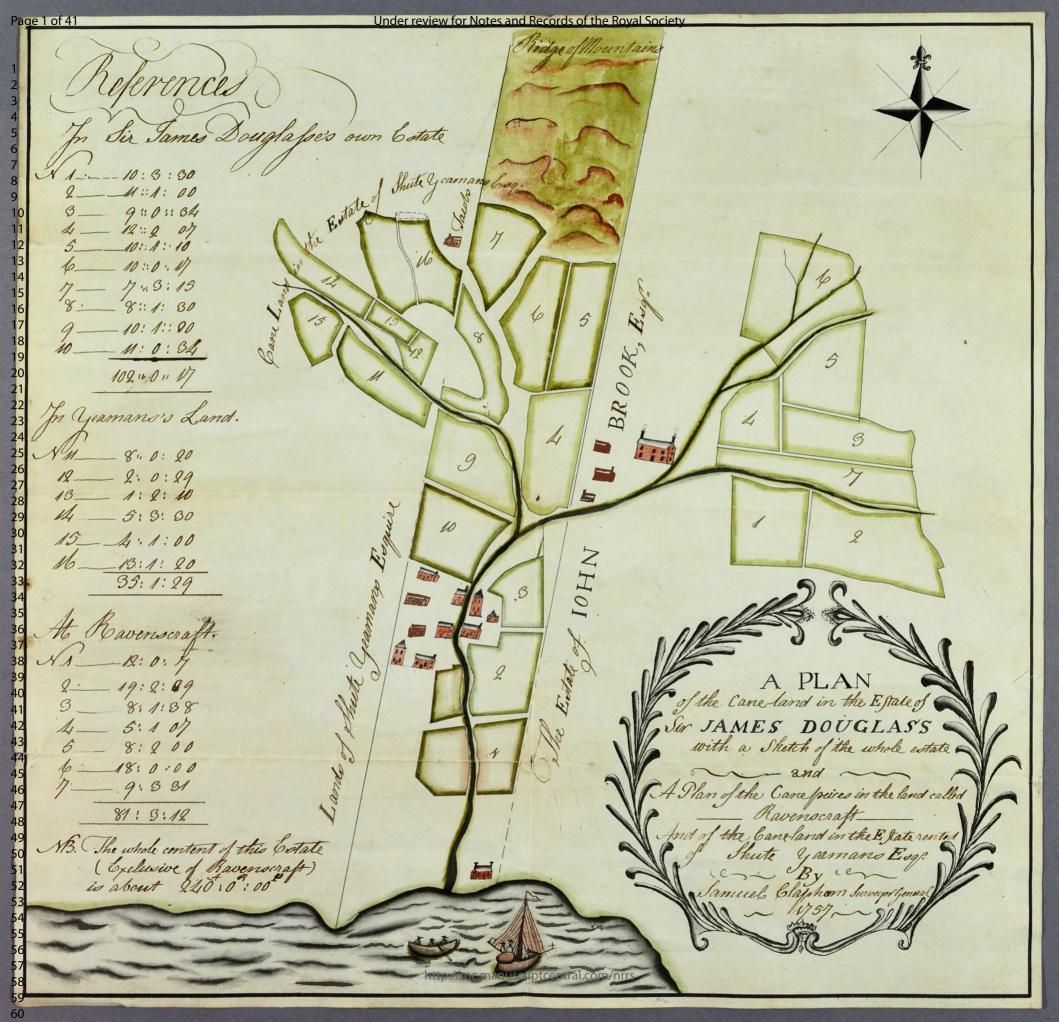
# NOTES AND RECORDS

THE ROYAL SOCIETY JOURNAL OF THE HISTORY OF SCIENCE

## Humphry Davy, Transatlantic Slavery and His Constructions of Racial Difference in an Early Notebook

Journal:	Notes and Records: the Royal Society journal of the history of science
Manuscript ID	RSNR-2023-0089.R2
Article Type:	Research
Subject:	19th Century science < HISTORY OF SCIENCE
Keywords:	Humphry Davy, transatlantic slavery, slave-trade debates, race, Romanticism, debates about the causes of skin colour

SCHOLARONE™ Manuscripts





No. 349 \ Sir Humphry Davy, Knight). of the Parish
Albemarle Street in the County of Middlesex a Bachelor and
Same Apreece of Berkeley Square in the same County a Wiolowere
Married in this by a Special Licence at Robert Farguhan Portland place.
this Eleventh Day of April in the Year One Thousand
Eight Hundred and Juelve By me Cam! Cartiele -
This Marriage was solemnized between Us Jane Hung Day
In the Presence of Role Farguspas Cottonillade
Elizahar inguhar.

Figure 3. The marriage certificate of Humphry Davy and Jane Apreece, London Metropolitan Archives, City of London P89/MRY/183, reproduced with the permission of the St Marylebone parish.

381x196mm (300 x 300 DPI)



Figure 4. RI MS HD/15/I, p. 19. 374x299mm (279 x 279 DPI)

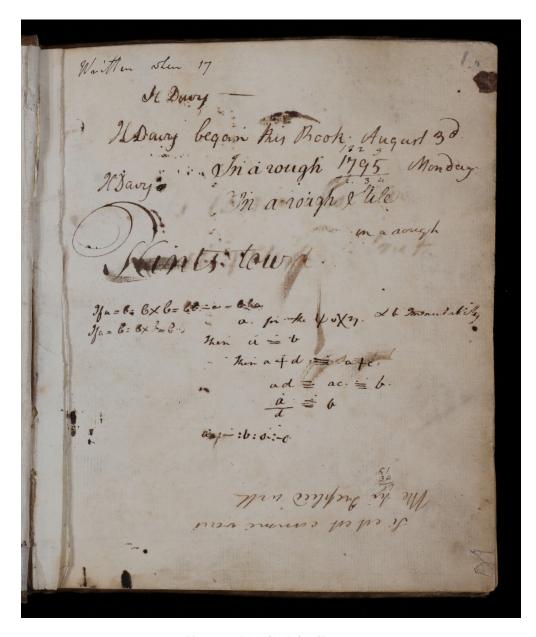


Figure 5. RI MS HD/13/F, p. 1

192x230mm (300 x 300 DPI)

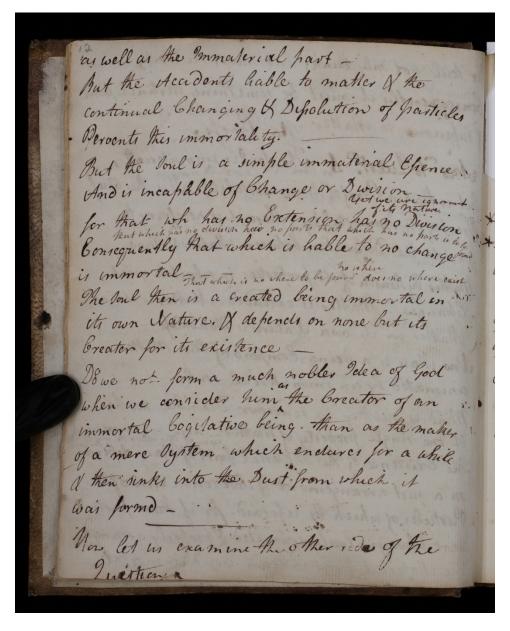


Figure 6. RI MS HD/13/F, p. 12 189x236mm (300 x 300 DPI)

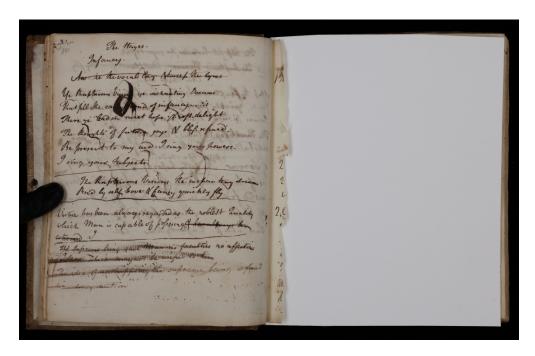


Figure 7. RI MS HD/13/F, p. 30.

370x237mm (300 x 300 DPI)

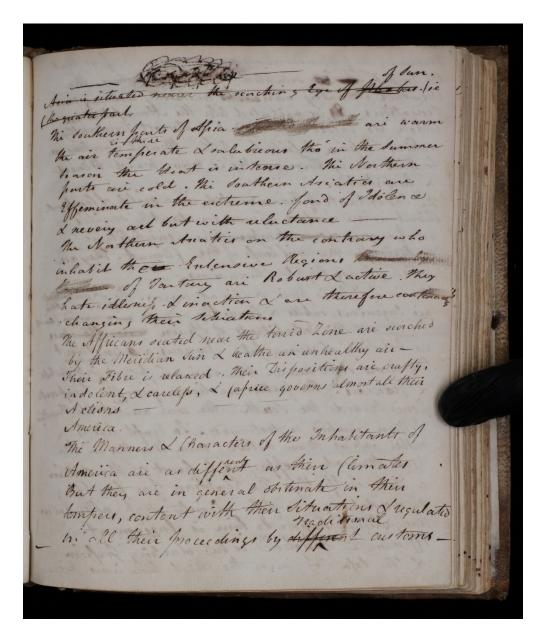


Figure 8. RI MS HD/13/F, p. 116 194x231mm (300 x 300 DPI)

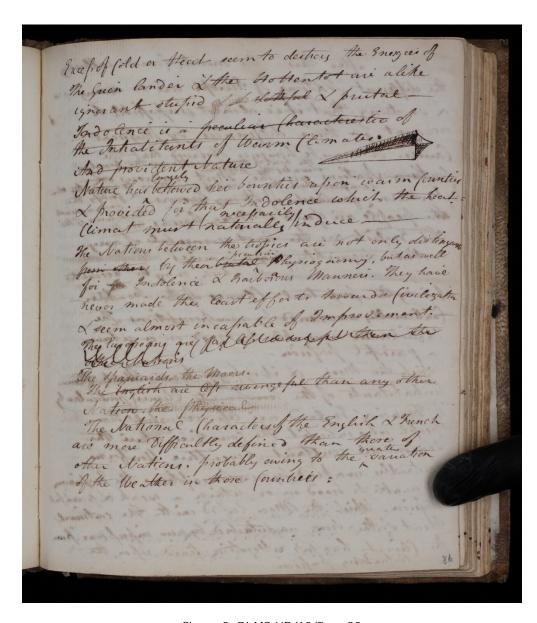


Figure 9. RI MS HD/13/F, p. 98 197x228mm (300 x 300 DPI)

1	Humphry Davy,	Transatlantic Slavery	and His Constructions	of Racial Difference	in an Early
		_			

<u>1</u>	<u>Note</u>	<u>bool</u>	K
----------	-------------	-------------	---

Eleanor Lucy Bird, Lancaster University
---

Humphry Davy was the most celebrated chemist of his day in Britain, but he has been absent from discussions of Romantic-era constructions of race. It is well known that Davy was an experimental chemist, popular lecturer, and as has been recently explored by the Davy Notebooks Project, a poet; this essay expands this narrative to include his connection to transatlantic slavery and writing about race, which are neglected aspects of his life and writing. In this essay, I examine Davy's response to the slave-trade debates and for the first time his close family links to transatlantic slavery, focusing on his wife Jane's stepfather, the major enslaver, Robert Farquhar. I discuss Davy's writing on the chemical causes of Black skin colour and a draft essay on the climate in notebook 13F in which he constructed the racial difference of Black Africans. I argue his essay can be understood by recognising 13F as a school notebook used during his period of self-education and reflects the messy and unstable nature of writing race in the Romantic period. Davy's racial thinking was influential and he was recognised as an authority on skin colour by his contemporaries, Thomas Beddoes, Johann Friedrich Blumenbach and Sir Everard Home.

- Keywords: Humphry Davy, transatlantic slavery, slave-trade debates, race, racism,
- 20 Romanticism, chemistry, debates about the causes of skin colour

- In the final year of his life, Humphry Davy articulated racist sentiments about the inferiority
- of Black people and their lack of intellectual capacity, and he argued that racial
- characteristics, 'powers or habits', were inherited. In doing so, Davy returned to a view he

held throughout his life that the climate was a leading cause of human variety: 'In man moral causes and physical ones modify each other'.<sup>2</sup> In one of his earliest essays 'An Essay on the Influence of Climate on National Manners & Character', in notebook 13F, the teenage Davy engaged with the arguments of David Hume and Charles Louis Montesquieu who debated whether moral causes like governments or physical causes such as the air and climate played a bigger role in shaping human difference.<sup>3</sup> In this as in his later writings on the subject, Davy specifically constructed ideas about racial difference. In a draft of the first dialogue in Davy's literary work, *Consolations in Travel*, edited by his brother and published posthumously the following year, Davy marked a shift away from his earlier view of the changeability of humans in different environments towards a fixed and essentialist racism, rooted in a view of the biological causes of racial difference.

Davy's life and career spanned a period of British history and Romanticism now well known as a time when 'a diffuse rhetoric of race' hardened into racism, and a belief in a fixed biological difference.<sup>4</sup> It was a period of the Haitian Revolution (1791-1804) and ultimately successful campaigns in Britain for the passage of acts for the abolition of the slave trade (1807), slavery (1833) and apprenticeship system (1838), and Britain's deep economic, cultural and social involvement in the transatlantic slave trade and slavery, the legacies of which still shape Britain today.<sup>5</sup> Davy was the most celebrated chemist of his day in Britain, and for too long he has been absent in discussions of race and our understanding of how racism developed in the Romantic era. Biographies of Davy, from formal academic titles to his representation on Wikipedia and the *ODNB*, have not addressed Davy as participant in these crucial contexts for the histories of British Romanticism.<sup>6</sup> The familiar narrative of Davy is that he was an experimental chemist who isolated seven chemical elements, more than any individual before or since, a popular and inspiring lecturer at the Royal Institution, and, as has been more recently revealed and examined by the Davy Notebooks Project, a

poet, who included Coleridge, Wordsworth and Southey in his network. But this narrative must expand to include his connection to transatlantic slavery and his writing about race.

There are three important exceptions that have examined Davy in the contexts of slavery and race. Professor Frank James examines Davy's 1798 manuscript essay 'An Essay on Heat and the Combinations of Light' that he gave to Thomas Beddoes as a kind of 'job application'. James notes that in this essay, Davy, keen to impress Beddoes and echo some of his work, articulated a theory of the chemical basis of differences between humans including diverse skin colours that 'doubtless continued to the formation of Davy's opinion of the racial superiority of white Europeans'. James has shown that Jane Davy received her wealth from her father Charles Kerr, and that he made this money in part from holding people in slavery in Antigua and leasing them out to what is now Nelson's Dockyard. The biographies published in the *Collected Letters of Sir Humphry Davy (CLHD)* have also shown that many in Davy's network were enslavers, or had family links to slavery (for example, Davy was friends with James Webbe Tobin 1767-1814, the son of a plantation owner) or those invested in campaigning for abolition or defending slavery, and included several members of Jane's immediate family network.

A reassessment of Davy in the contexts of slavery, race and Romanticism is newly possible with two collections of his writing recently becoming available: the collected edition of his letters and his entire notebook collection. This essay does not intend to finish this conversation but to continue the process of decolonising Davy started by James's articles and the Davy Letters Project. In studying the writing of Davy – a white European male – this essay does not expand or include the voices of the enslaved people held on the plantations of his wife's stepfather or focus on Black resistance and agency, but it seeks to bring attention to considerations of race and slavery at the heart of the Romantic canon. Scholars of British Romanticism have drawn attention to the centrality of textual representations of slavery and

race to Romantic writing; they have started to revise and expand which writers and generic forms are included within our understanding of the Romantic to pay attention to global writers and forms that have previously been overlooked. Manu Chander and Patricia A. Matthew describe the 'generic experimentation' of textual representations of race and slavery within Romantic abolitionist writing especially, and they note that discussions of race were diffuse and multifaceted in the late eighteenth and early nineteenth century. Certainly, these discussions were pervasive in Davy's writings and networks.

Davy's discussion of the role of the climate in shaping human difference and his interest in the anatomical causes of black African skin colour reflect his involvement in the 'science' of race that had preoccupied men in European scientific academies since the middle of the seventeenth century. Cristina Malcolmson shows how between 1660 and 1700 within published papers and its journal book minutes, members of the Royal Society moved from an interest in a range of skin colours to a fixation on black African skin. Many of the members had vested interests in the subject with their financial ties to the economy of the slave trade and slavery, and their increasing fixation on the origins of blackness, reflects how government institutions and science, and the contexts of the slave trade and colonialism were 'collaborating to usher it into public view'. 12 There was an increased racialisation within these discussions in the Royal Society, which moved the Society closer to fixed views of race and the modern scientific racism that became mainstream by the nineteenth century. 13 In France, Bordeaux's Royal Academy of Science held an essay contest in 1741 into the physical cause of black African skin and hair. As Andrew S. Curran and Henry Louis Gates Jr., argue, the essays reflect the lack of consensus on this question and a variety of explanations were given including the climate, the curse of Canaan, the mother's imagination and anatomical differences; however, they fed into explanations of human difference that by the late eighteenth century were more fixated on anatomical differences. <sup>14</sup> Focusing on

eighteenth-century travel accounts and histories, Andrew S. Curran explores the construction of the 'textualized African' in the Francophone Atlantic context that focused increasingly on anatomical difference and a hardening attitude towards human differences in which 'blackness became [seen as] a thing'. <sup>15</sup> Within medical discourses of disease, as Suman Seth has shown, there was a shift away from explanations of human variety that focused on the climate (as well as diet and behaviour) towards a minority view by the turn of the eighteenth century towards the importance of physiological differences, as race started to harden as a concept. <sup>16</sup> Two emerging ideas accompanied this medical discourse: that black skin was better able to cope in tropical climates and black bodies were less able to feel pain. <sup>17</sup>

Davy participated in the creeping racialisation of 'scientific' research, a fixation on the difference of black skin, and the move towards more fixed racial categories. His early writing expressed a view of human differences that seemed fluid in his belief that the climate shaped human variety and that people could change when they changed environments. His explanation for human variety came from a monogenesis degeneration theory understanding of humankind; this was a racialised view that privileged the white European as a prototype from which black Africans were 'corrupted'. 18 Later, Davy explored anatomical explanations of human variety and in his final year expressed the view that adaptations to the climate were hereditary, a belief also held by Immanuel Kant. 19

In this essay I first consider Davy's response to anti-slave trade discourse in his notebooks, before turning to look at Davy's connection to transatlantic slavery through his wife Jane's stepfather, Robert Farquhar, a major absentee enslaver. This essay is the first to look at Jane's stepfather Farquhar to build a fuller picture of Davy's immediate family network and their links to slavery. Next, I examine how Davy contributed to 'scientific' discussions about the causes of black skin colour and examine Davy's construction of racial difference in 'An Essay on the Influence of Climate on National Manners & Character' in

notebook 13F. Finally, I discuss the impacts that his racial thinking had on his contemporaries.

This essay is the first to look at Davy's 'An Essay on the Influence of Climate on National Manners & Character' as a text that constructs racial difference. Jan Golinski has discussed it as evidence of Davy's life-long belief in humoral theory and the effect environment can have on the body.<sup>20</sup> Drawing on recent work by Matthew Daniel Eddy on the notebooks of Enlightenment schoolchildren in Scotland, I argue that 13F can be read as a school notebook and a training ground for Davy as an Enlightenment scholar. Eddy's study of the notebooks of Enlightenment schoolchildren in Scotland shows that these were seen as media machines with the ability to shape and reflect the mental world of the notetaker; rather than buying blank bound notebooks, it was common for school notebooks to begin as sheets of paper (quartos or folios) that students folded to create a bifolium, which were then stacked and collocated into quire: 'interchangeable' thinking technologies that could be reshuffled and bound later.<sup>21</sup> Eddy notes that schoolchildren created rough notes or draft copies of notes called a 'scroll book' that were often recopied into neater notes.<sup>22</sup> 13F seems like such a book, suggesting that the Essay was an early production that established patterns of understanding that would pervade Davy's career and by extension, influence Romantic-era conceptions of racial difference.

Scholars of Romanticism recognise the importance of returning to the period before multiple discourses of race hardened into the fixed essentialist biological racism of the midnineteenth century.<sup>23</sup> Paul Youngquist argues in another context for the importance of counter-histories of slavery that provide multiplicity as this 'introduces an element of instability into accounts of human mastery'.<sup>24</sup> Reading Davy's draft essay about human variety, and his redrafting of it in his notebook, draws attention to its messy fragility and highlights that his descriptions of racial difference were constructions. Returning to Davy's

draft essay in a period when ideas about race were multifaceted, unsettles the idea of the fixed and immutable advent of racism. Davy's draft essay reveals to us the instability of Romantic understandings of race. Davy participated in Romantic-era discussions of race and human difference and he had immediate family links to transatlantic slavery. Far from being an isolated example in one of his earliest notebooks, throughout his life Davy returned to ideas about skin colour and race across his manuscript and printed writing.

#### Davy and Anti-Slave-Trade Discourse

Davy's attitudes to the transatlantic slave trade and slavery are hard to identify given his silence on this topic in his letters and his notebooks. Davy frequently uses the language of slavery and freedom within some of his poetry, and, as [Author name] examines in her essay on Davy's poetry in this issue, his early notebooks contain radical, materialist, and republican pro-French revolutionary views. However, explicit references to the transatlantic slave trade, African slavery and campaigns for its political abolition in Britain have so far not come to light.<sup>25</sup>

Nevertheless, what we can find in his notebooks is evidence that Davy was, at the very least obliquely, thinking about these issues. In notebooks 15J and GS61, Davy puts forward a monogenetic view that suggests the shared origins of all humankind rather than a polygenetic view that human races have different origins. In 15J, probably written *c*. 1798-1800 while Davy was in Penzance and before he departed for Bristol, he writes that before the deluge and in the 'infancy of mankind' 'the human species existed <only> in the tropical countries'. <sup>26</sup> In what appear to be lecture notes for a course on the 'History of Natural Science' that John Davy believed were 'very early' but not delivered, in the undated notebook GS61, Davy describes: 'Those parts of the Globe which were most immediately peopled after the deluge certainly appear to have been the temperate regions of Asia &

Affrica' <sup>27</sup> Davy states that he draws on the Scriptures and writings of the ancient Greeks for evidence. He goes on to argue that early human societies in the tropics were among 'the/ most polished Nations of Antiquity', as the 'almost spontaneous fertility of the earth' allowed humans to have security that his basic needs were met, leaving them with the capacity to develop knowledge, riches and inventions.

To understand Davy's views, it is helpful to place them in the context of those of his contemporaries. Similar to other Romantic poets, Davy's poems in notebook 13H use slavery and liberty as metaphors to describe for example unrequited love rather than engage with political slavery. His contemporaries were engaging with the debate more explicitly. Coleridge adopted an anti-slave-trade stance in 1790s; he delivered a lecture in 1795 in Bristol against the slave trade and a revised version of this was published in 1796 in which he criticised commodities including West-Indian sugar, rum and coffee that were products of the West India trade as 'imaginary wants', defining these as unnecessary luxuries. However, by the later 1790s, as Helen Thomas has shown, Coleridge had distanced himself from the abolitionist cause; his poetry at this time used the tropes of radical dissenting spiritual autobiography, but these were emptied of any overt references to abolitionism. Until 1830s, Wordsworth and Southey did not support the immediate emancipation of slavery in the British Empire. They declined to supply poems for Sheffield abolitionist Mary Anne Rawson's antislavery gift book *The Bow in the Cloud* published in 1834, sending her letters of refusal.

Davy's early writing on luxury and cruelty in his notebooks came closest to containing a kind of anti-slave-trade sentiment. In notebook 20A, kept 1799-1800, Davy wrote a short essay on luxury:

Observations on Luxury.

It is connected with the misery of

200	the whole & consequently ought to be destroyed:-
201	Of its immediate influence on the luxurious
202	Tends to destroy their sympathies with
203	Man & with nature, renders them
204	literally immoral []
205	- Effects
206	On the middle classes of society on
207	the lower classes most terrible. by
208	producing unnecessary labor – How
209	Can it be destroyed how can a
210	great mass of individuals exist without
211	it equalisation of labour <sup>32</sup>
212	Davy's uses the term 'unnecessary labour' and this recalls the 'imaginary wants' that
213	Coleridge described in his 1795 and 1796 lectures against the slave trade. He gives what
214	would have been familiar arguments about the negative impact luxurious goods have on the
215	wealthy and argues, more radically, for the 'equalisation of labour'. Davy appears to focus
216	his attack on the damage it is causing to people within the class structure of English society,
217	rather than enslaved peoples in the British Empire. In contrast to Coleridge, he does not
218	explicitly identify items produced by enslaved people in the British Empire as the luxuries
219	that ought to be resisted.
220	Writing on the subject of unnecessary luxury again in another notebook, kept in 1800,
221	Davy brings in another contemporary debate about the ethics of using animals that can feel
222	pain in chemical galvanic experiments:
223	It is perhaps difficult to repel the charge
224	of cruelty which has been more than once urged against galvanic expts.

225 [...]

If however we can without remorse daily sacrifice thousands of unnecessary victims upon the altars of luxury. Why should we hesitate to deprive animals of life when they are capable of teaching us useful truths<sup>33</sup>

Davy argues for using animals within experiments because they can teach useful truths, which must be allowed if people are comfortable morally with the greater evil of sacrificing human victims in pursuit of luxury commodities. Davy engages with the broader discussion in this period around whether animals had souls and questions about life itself and the inclusion of plants and animals into the category of sensitive beings.<sup>34</sup> Elsewhere, Davy wrote that animals did not have language, but they had thoughts.<sup>35</sup> There is ambiguity about who the 'unnecessary victims' in the quest of luxury are, especially given Davy's earlier comments about this damaging the whole structure of society including the purchasers of luxury goods. The implication of the term 'sacrifice' implies complete physical and spiritual damage. The victims could be the 'lower classes' in Britain, or perhaps enslaved Africans, as well as animals that were part of the cosmetics trade. The luxury goods could refer to imported items like sugar or mahogany but also those made in Britain such as wrought iron and brass, which were also the targets of luxury debates in the eighteenth century.<sup>36</sup> We often think that discourses on animal cruelty accompanied abolitionist ones, creating what Brycchan Carey describes as an 'anti-cruelty ethos' that included 'all creatures capable of experiencing pain', but, as Davy demonstrates, this was not always the case.<sup>37</sup>

Like his contemporaries, Davy saw the machine technologies like the steam engine as liberating forces. However, there is no evidence that he used scientific arguments as some of his contemporaries did to support protests for the abolition of the slave trade. In *The Science of Abolition*, Eric Herschthal explores how abolitionists used science in their cause and represented slaveholders as the enemies of progress. Herschthal explores the gradualism of

Joseph Priestley, showing that he was anti-slave-trade but not supportive of immediate emancipation.<sup>38</sup> He argues Priestley, Josiah Wedgwood and Erasmus Darwin, members of the Lunar Society, depicted machine technologies such as steam engines and electrical batteries as 'engines of emancipation', which could be part of the abolition of the slave trade.<sup>39</sup> In draft lecture notes from 1809 from an introductory lecture to a course on electrochemical science, Davy describes chemistry and the steam engine as freeing 'thousands of our robust peasantry' from 'painful and humiliating labour'. 40 Admittedly, Davy wrote this after the abolition of the slave trade in Britain had passed in 1807 and came into force the following year, but he disassociated this rhetoric from an attack on the slave trade, focusing on the English peasantry rather than enslaved people as those who would be emancipated by this liberating technology and the science that made it possible. Like Coleridge and Wordsworth's continued use of the tropes of Black spiritual autobiography divested on the political urgency of abolitionist arguments as Helen Thomas has shown, after the abolition of the slave trade, Davy used a discourse that had been seeped in anti-slave-trade arguments but divested it of its political message. Davy's notebooks do not contain his explicit anti-slave-trade discourse and show that early in his career he believed in monogenic theories about the shared origins of humankind. However, he went on to marry into a family with deep links to transatlantic slavery.

### Davy's Immediate Family Network and Transatlantic Slavery

Between 1811 and 1812, with Davy's courtship and marriage to the wealthy widow Jane Apreece, *née* Kerr, he became directly financially linked to transatlantic slavery. To date little has been made of Davy's links to Robert Farquhar, a major enslaver with four sugar plantations in Antigua and Grenada who was awarded the huge sum of over £17,000 in compensation by the British government, as part of the system of wider financial

compensation given to British enslavers that had been agreed as part of the Slavery Abolition Act passed in 1833. This would have been equivalent to the cost of buying a landed estate such as the Quantock Hills Estate in Somerset (indeed, when Davy was looking to buy a landed estate in 1817, he wrote to Thomas Poole that he was looking to spend ten to twenty thousand pounds on this). I Jane's mother had married Robert Farquhar on 25 January 1798, following the death of her first husband and Jane's father, Charles Kerr, in 1795. There is evidence that the Kerrs had known Farquhar in Antigua. Farquhar's plantation in Antigua was called Cades Bay, formerly known as Mr Yeomans Old Road Estate and later Harvey's, and he had three plantations in Grenada: (Ro)Chambord, Mornefendue and Plain. Many of these acquisitions occurred after Davy became linked with the family: Farquhar was accumulating plantations and purchasing enslaved people during the years of the Davys' marriage. Between 1817-1821 Farquhar leased and then purchased 219 people from Sir George Douglass who owned the adjoining Douglass plantation. Farquhar became a joint owner of the Plain plantation in Grenada in around 1821.

[Figures 1 and 2 showing the plans of the estate of James Douglass and the adjoining plantation that became known as Cades Bay]

Documents detailing key lifecycle milestones in this family network, of births, marriages, and deaths, as well as surviving letters recently published as part of the *CLHD* show that this was an intimately connected family group thoroughly embroiled in the profits of slavery. The report about Jane's first marriage to 'Mr Apreece' dated 3 October 1798 describes Jane as 'daughter of Mrs Farquhar, of Portland Place' indicating that even upon her first marriage her social identity was presented as associating her with Portland Place and the Farquhars. Jane did not seem to inherit money directly from Farquhar, but the Davys received other types of payments from him, such as their time and use of their home in Portland Place for their wedding.<sup>45</sup>

#### [Figure 3, the marriage certificate of Humphry Davy and Jane Apreece]

The Davys kept up close links with Eliza Mary Shaw-Stewart, née Farquhar, the halfsister of Jane and her husband Michael Shaw-Stewart Nicholson (1788-1836). The couples facilitated each other's relationships. Nicholson became the 6th Baronet of Greenock and Blackall in 1825 and the owner of Ardgowan House in Greenock, neighbouring Glasgow, on the west coast of Scotland, a prominent port with long links to the Caribbean and slavery.<sup>46</sup> Ardgowan House was built on the profits of plantations in Trinidad and Tobago. Eliza Mary would later inherit the compensation money her father Robert Farquhar had received in 1835.<sup>47</sup> Davy's letter to Marie Anne Lavoisier was passed to her by Eliza and her husband while in Paris, and Davy reminds Lavoisier that she met the couple at the Davys' house and speaks highly of them both: 'You have seen at our house this excellent, nice and learned woman. Her husband has plenty of spirit; deriving from the oldest and noblest Scots families he is a credit to his forefathers.<sup>48</sup> Writing to Nicholson on 1 October 1822, Davy ends his letter with the sign off 'I beg my kindest love to Eliza', indicating a level of intimacy and affection for his wife's half-sister.<sup>49</sup> A further letter suggests that Davy visited Ardgowan House in 1826.<sup>50</sup> Letters to the Danish sculptor Bertel Thorvaldsen (1770-1844), who spent much of his life in Italy, suggest a shared connection between the Davys, the artist and Shaw-Stewarts, with Jane mentioning Lady Shaw Stewart to Thorvaldsen in one letter, who purchased a marble statue Cupid with his Bow in 1828, which was displayed at Ardgowan House.<sup>51</sup>

The houses of Portland Place and Ardgowan House, run by their absentee enslaver owners, surely would have contained examples of the empire at home: goods such as sugar, and perhaps furniture and ornaments made from materials imported directly from the Caribbean or purchased from the wealth made from their plantations.<sup>52</sup> These houses almost certainly would have contained papers such as maps, estate inventories and letters –

fragments of which remain today – which linked these places to the plantations and people from which they extracted their wealth. Research into the connections between the Davy and Farquhar families is necessarily continuing, but the cultural and financial links suggested by records of ceremonies relating to births, marriages, and deaths, indicate the closeness of the family circle. They were not just known to each other, but were closely interconnected on personal and social levels; family events would have been ideal locations for intimate discussions about each other's affairs.

Although Jane and her family network, with their financial links to slavery, only came into Davy's life in 1811 – after many of his chemical achievements – but this linear chronology overlooks Jane's role as a curator of and collaborator in Davy's notebooks. Her hand appears throughout 15I, a notebook originally used by Davy in 1806 during a geological tour of Ireland [Figure 4, RI MS HD/15/I, p. 19]. Davy's posthumous biographical image was shaped by Jane.<sup>53</sup> Until now, Davy's immediate links to transatlantic slavery have remained unknown; another forgotten aspect is his contribution to discussions about the causes of Black African skin colour and his view of its chemical basis.

#### Davy on the Chemical Causes of Skin Colour

Davy's 1798 manuscript essay was written in Penzance and contained his early views on the chemical basis of different skin colours. In the essay, he argued that skin colour (as well as the colour of animals and plants) depended on the amount of light people were exposed to in different parts of the globe.<sup>54</sup> He argued that exposure to light caused the depletion of oxygen and that oxygen was not an element but contained light and oxygen, which Davy called phosoxyd in this essay and later called phosoxygen.<sup>55</sup> Like many of his contemporaries, Davy saw the rete mucosum, a layer of tissue in the skin that had been discovered by Marcello Malpighi in 1665, as the seat of colour. Davy argued that exposure to light caused the

subtraction of oxygen and the 'superabundance of Carbon', and that this caused black skin: 'From hence that blackness so peculiar to the inhabitants of those countries, who are much exposed to the stimulus of light'.<sup>56</sup>

Davy's racial politics had a direct impact on his chemical experiments. In the essay, he positions his work on light and oxygen and the colour of human skin within a conversation between Erasmus Darwin and Beddoes about how to restore human health and the medical treatment of respiratory diseases using gases. <sup>57</sup> He describes the 'dark brown ast[h]matic or scorbutic hue', as in a complexion affected by the scurvy, linking skin colour to ill health and an imbalance in oxygen and light in the system. Davy argues that his own 'doctrine of color' agrees with the work of Beddoes, who proposed that the causes of conditions such as scurvy, asthma, and consumption were due to a deficiency of oxygen and could be treated by breathing in oxygenated air. <sup>58</sup> In a footnote, he praises Beddoes's letter to Darwin, published in 1793, in which Beddoes describes inhaling the gases oxygen and nitrogen to oxygenate himself and lighten his skin from its usual 'brown'. <sup>59</sup>

Davy believed that a change of climate could change a person's colour over time, but that skin could become 'hereditary' and take a 'considerable time to change', giving the example that 'Europeans are not made perfect negroes tho' much exposed to the stimulus of Light in the affrican countries for many generations and Negroes are not blanched except in a great length of time by the abstraction of Light'.60 Davy describes the role that the mind plays in influencing chemical changes, reflecting his early materialist association between the mind shaping the body: 'Thus the generating Mind which influences all chemical changes which take place in the animal oeconomy exerts its energies'.61 Davy connected mental and moral character with physical ones, suggesting that both are shaped by the climate; he describes this as a 'physiological fact', connecting physiology with character and mental characteristics,

and seeing the physical cause of the climate as key in shaping this difference between nations.<sup>62</sup>

In his notebooks kept around this time, Davy describes his theory of phosoxygen and the many experiments he made to illustrate this as well as experiments on plants and their change of colour when kept in the dark, but he makes no explicit mention to his theory of the chemical basis of different skin colours. After he moved to the major slave-trading port of Bristol, Davy wrote on the chemical basis of skin colour again in one of his two earliest published papers entitled 'Experimental essay on the generation of phosoxygen (oxygen gas), and on the causes of the colors of organic beings', which as Frank James notes was derivative of his 1798 essay. Davy repeats his argument that the skin of Black Africans is caused by exposure to light, which causes the subtraction of oxygen and 'the carbon becomes the predominant principle'. He develops his earlier idea that skin colour could become 'hereditary' by the imagination and the mind: 'when these colors are once produced, their changes are in some measure dependant on the mind'. He

The Black Atlantic author and abolitionist Olaudah Equiano argued that climate caused different skin colours and a person's skin colour could change in different climates in *The Interesting Narrative*. He cited Dr John Mitchell's paper 'An Essay upon the Causes of the Different Colours of People in Different Climates' and Thomas Clarkson's 1786 *Essay on the Slavery and Commerce of the Human Species*.<sup>67</sup> Clarkson argued that climate and especially the sun is the reason for differences in skin colour: 'we cannot divest ourselves of the idea, that climate has a considerable share in producing a difference of colour.'<sup>68</sup> Equiano gives two examples of Portuguese and Spanish settlers changing their skin colour to become black, taken from Clarkson and Mitchell. He argues, 'Surely the minds of the Spaniards did not change with their complexions!' He argued that rather than see black skin as a mark of inferiority the apparent inferiority of African people was caused by their situation and by

nurture rather than nature, showing that the same 'scientific idea' can produce different ideological positions.<sup>69</sup> Writing about climate as a primary cause of skin colour was used in Equiano and Clarkson's pieces to argue for the common descent of man from a single origin and to reinforce their monogenesis arguments. It is Davy's hesitancy about the slow speed of change and his sense that skin colour could become fixed for a period of time, alongside his connection between light altering mental and physiological elements, that marks a departure from Equiano and Clarkson.

In his 1799 essay on the generation of phosoxygen, Davy describes using potash to blacken his own skin and provides a detached summary of an experiment Beddoes made on the skin of an unnamed African man, focusing on the chemical findings:

By combining with oxygen the rete mucosum is uniformly whitened. Dr Beddoes whitened the fingers of a Negro by muriatic phosacid, which appears capable of giving out a small portion of oxygen and still retaining all the light entering into its composition.<sup>70</sup>

Davy probably took the account from Beddoes's *Alexander's Expedition* published in 1792.<sup>71</sup> Beddoes's account of this experiment makes for traumatic reading. He used what is now known as chlorine to temporarily whiten the fingers of the man to try to prove the link between oxygen and a whitening of the skin. He describes the sharp pain that the unnamed Black man felt in his arm and that 'The man did not choose to [sic] risque any more pain' and refused to do the experiment again.<sup>72</sup> In what appears to be a second account of the experiment, Beddoes relates that this took place in Oxford in 1790 and describes proposing the scheme to the man, who is described as 'distressed' but who was 'to exhibit the appearance, if it should be curious, for the relief of this family'.<sup>73</sup> There is no suggestion that Beddoes paid the man, but he seems to have approached a man in financial need and he may have suggested to him that he could make some money from the experiment, if the temporary

change in colour was 'curious' enough to be exhibited. The man is described as 'very cautious' and complaining after the whitening of severe pain and ulcers that swelled and became inflamed. Even in these two texts that are written by Beddoes, and with his priority given to the 'scientific' evidence that this experiment proved, this man's story: his motivation to help his family and his sense of his own limited options for achieving this and his unwillingness to proceed, reflects his agency and voice, which jostles beneath the surface. It also shows the proximity of the world of chemical experiments and colonialist displays of curiosities within the 'scientific' discussion of the causes of different skin colours. Davy was plugged into a network of knowledge production that exploited and coerced Black bodies in the name of 'scientific' experiments. As this example shows, white men of science through making their experiments could uphold white supremacy.

Beddoes's discussion of his experiment on a Black person in *Alexander's Expedition* paraphrased and cited Blumenbach's second edition of *De Generis Humani*, 1781.<sup>74</sup> Beddoes asked whether a Black infant could be prevented from turning black by an application being made to his skin immediately after birth. His suggestion that this was a desirable possibility indicates that Beddoes saw lightened skin as superior. This reflects Beddoes' reading of Blumenbach's *De Gen. Humani Varietate*, in which he claimed that the skin colour of Ethiopians came after the foetus was born and they came into contact with the external air when by the action of blood vessels it is secreted and fixed by the carbonaceous element.<sup>75</sup> Beddoes goes on to endorse the scientific racism of Petrus Camper and Samuel Thomas von Soemmerring and describes the differences in the skeletons of white and Black foetuses.<sup>76</sup> In the same text, writing in 1792, Beddoes expresses an anti-slave-trade sentiment describing it as a 'criminal commerce' that is 'disgraceful' to Britain and the fear that his work on the chemical basis of skin colour might be used for a pro-slave-trade agenda, which he did not see as inconsistent with his early scientific racism.<sup>77</sup> Elsewhere, in *Observations on the* 

*Nature and Cure of Calculus*, Beddoes stated his anti-slave-trade stance deploring the suffocating conditions on board slave ships.<sup>78</sup>

Reading Davy's 'An Essay on the Influence of Climate on National Manners & Character' in

the Context of Notebook 13F as a Self-Educational Notebook

In his 'Essay on the Influence of Climate' in notebook 13F, Davy constructed ideas of racial difference. This draft essay with its false starts, five similar titles, plans and repetitions, shows the instability of race in the Romantic era. <sup>79</sup> The shift in Davy's language over his career reflected a hardening of his view of racial differences and shows how his ideas about African people were created within specific contexts and that these changed over time. The high-quality images of notebook pages used on Zooniverse have enabled the Davy Notebooks Project to crowdsource transcriptions from an international community of over three thousand volunteer transcribers, but the flat 2D images obscure some of the material features of the notebooks. Looking at notebook 13F in the archive at the Royal Institution shows stubs, cropped pages and the paper quality and binding that were not visible on the images. In this section, I draw on research with 13F in the archive that supports my reading of it as in the style of a school notebook that Davy used during a period of his self-education after just leaving school. Davy fashions himself as Enlightenment scholar in notebook 13F and it is in this context that we can read his draft essay on the influence of the climate on national manners and character and his construction of racial difference. 13F has been seen as a notebook kept by Davy during a brief radical phase in his youth; however, while acknowledging the radical ideas within this notebook, I argue it can be seen as belonging to the school notebook genre and it reflects Davy's desire to train himself within the establishment and learn the conventional and expected rules of notebook-keeping and introduce himself to an adult world of writing on paper.<sup>80</sup>

Davy used notebook 13F after he left Rev. Dr. Cardew and Truro Grammar School and once he had started his apprenticeship with John Bingham Borlase, a surgeon and apothecary of Penzance on 10 February 1795. It forms a pair with the mathematics notebook Davy also kept around this time, notebook 21A. In notebook 14J, John describes his brother's earliest notebooks as covering 'from the time he began his private studies, his self-education, soon after quitting ... [Truro] Grammar school'. <sup>81</sup> The first page of notebook 13F contains a mixture of Davy's and John Davy's hand, probably added in 1830 when he started collecting together materials that could be used for his brother's biography, which he ultimately published in *Memoirs of the Life of Sir Humphry Davy* in 1836 [Figure 5, RI MS HD/13/F, p. 1]. John writes '1829', the year of his brother's death, and 'Written when 17' and '34' and appears to be working out his brother's age when keeping the notebook. <sup>82</sup>

Notebook 13F was used by Davy as an educational notebook and is similar to the rough books of notes kept by Enlightenment schoolchildren that Eddy describes. 83 Its paper is cruder and it is not as well bound or expensive as many of Davy's notebooks. There are two examples in this notebook of cropped handwriting appearing very close to the edge of the page, such as on page 12 where 'Question' appears cropped at the bottom of the page [Figure 6, RI MS HD/13/F, p. 12] that might suggest that these could have been written upon and cut down from a folio page, which might intimate that the pages of the notebook were used and then collocated and bound into one volume. 84 The rough notes form was a common feature of school notebook writing and signals this as a notebook where he may have rehearsed the training that he had received in school for keeping notes and writing essays. 85 The repetition of 'H Davy' three times and the phrase 'In a rough stile' on this page evokes the genre of the school notebook. There is a half-finished title 'Hints Towa' and on page 3, then on page 4 a third repetition of the same title:

Hints towards the

Investigation of Truth

in Religious &

Political opinions

composed as they occurrd

to be placed in a more

Regular manner hereafter<sup>86</sup>

Davy notes here that he is writing as he is thinking: he describes his plan to place his rough notes 'in a more Regular manner hereafter', again reflecting the practice of schoolchildren recopying and making neater copies from rough notes.

In this notebook, Davy fashions the contents of this notebook through adding comments and taking away and removing parts – he is an editor, and a writer. Seeing the notebook in the archive reinforces that it was multivocal and an artefact added to over time; rather than a fixed repository of knowledge, which reflects Davy's evolving thinking.<sup>87</sup> In several places, Davy intervenes into his earlier radical writing on materialism from the point of view of a changed mind including on page 6, where he angrily corrects and comments on his earlier opinions now aged 19 ½. There are 14 stubs showing that number of double-sided pages have been removed [Figure 7, RI MS HD/13/F, p. 30]. This suggests a notebook that was rough and that its contents were also shaped by the removal of pages. The notebook is multivocal in the Bakhtinian sense that in it Davy takes on different voices and perspectives.

In his essay on the climate, Davy writes about varieties of human difference and its causes, which at the time of his writing were 'a preoccupation of intellectual inquiry' and several models were used to account for these constructed differences. Bay Davy was influenced by Charles Louis Montesquieu the leading writer on climate and civilisation who argued in the *Spirit of the Laws* published in 1748 and translated into English in 1750 that climate shapes differences between men including national difference. Davy's essay shares

similarities with Montesquieu's climatic ideas such as that heat and cold relax and contract

fibres. 90 Both draw on the Hippocratic tradition and link atmospheric air and disease. Davy describes 'unhealthy [warm] air' as creating a relaxed 'lax' fibre'. 91 Davy draws on humoral theory mentioning one of the four humours, phlegm (the other three being blood, yellow bile and black bile). There are points of difference between Montesquieu and Davy too suggesting that Davy was not paraphrasing or copying Montesquieu's arguments in a wholesale manner. Davy does not reproduce Montesquieu's negative view of the English and English climate and instead sees the inconstancy of the weather as stimulating mental activity there. 92 Jan Golinski has shown that in this period British people linked their weather, which was seen as moderate but changeable and therefore stimulating, to national progress and civilisation; Davy's views of England's weather conformed to this dominant discourse. 93 Montesquieu's arguments were countered by Hume in 1748 who argued that climate alone cannot explain difference and who advocated that moral causes such as government also plan a part. Davy engages with David Hume's essay 'Of National Characters' that argued that national difference was due to moral causes rather than physical causes such as the qualities of the air and climate. Davy argues philosophers neglected the role that the climate, rather than customs and laws have played in influencing this difference; he argues that the 'Difference of Climat.' is the key reason for the manners of man.<sup>94</sup> Davy references Hume but comes down on Montesquieu's side of the argument, stating that we cannot disregard the influence of climate.

Davy talks about the superiority of white Europeans and the racial inferiority of Black African people [Figure 8, RI MS HD/13/F, p. 116]:

The Affricans seated near the torrid Zone are scorched

by the Meridian Sun & breathe an unhealthy air –

Their Fibre is relaxed. Their Dispositions are crafty,

indolent, & careless, & Caprice governs almost all their

Actions ---95

He argues for white European superiority, and particularly the English and French nations as pinnacles of excellence. According to Davy, English people benefit from changeable weather and atmosphere, meaning that they are 'constantly receiving new / Sensations', and the English person's 'active' and 'agitated' mind, reflecting the weather, protects him from 'Torpor', and he is 'proud Honest / & hospitable'. 96 He argues that Africans near the torrid zone had to breathe 'unhealthy air' and endure the scorching 'Meridian sun', with the result that their 'Fibre is relaxed'. He argues later in his essay that constancy of heat or cold lead to 'always the same dull round of Perceptions', that were unstimulated by 'curiosity'. 97 He associates the progress of 'Civilisation' and 'Science' with European countries, where new ideas are continually excited in the minds of those living there. Discussing man's capacity for perception, he argues that the mind is capable of removing or continuing these sensations (coming from the action of external objects on an individual's organs of sense) depending on whether they are accompanied with pleasure or pain. He argues that the climate shapes how the mind filters these sensations and that those in excessively hot or cold climates are more likely to experience painful sensations, which the mind acts to remove.

Davy argues in the essay that a change in environment could cause people to change their characters and temperament and this works to an extent to undermine the hard and fixed boundaries of national difference; however, he undermines that sense of complexity and changeability in his descriptions of nations between the northern and southern hemisphere 'between the tropics':

The Nations between the tropics are not only distinguished from others by their brutal <peculiar> Physiognomy, but as well for [?xxx] Indolence & Barbar<a>ous Manners. They have

never made the least efforts towards Civilization

& seem almost incapable of Improvement.98

He expresses hesitancy on this page [Figure 9, RI MS HD/13/F, p. 98] that African people can change and become more civilised, stating they 'seem almost incapable of improvement'; by 1829, Davy's attitude had hardened and he commented that the African 'race ... has never been cultivated'. 99 Davy's ideas about the superiority of white Europeans jar with our modern sensibilities, and it is tempting to read them as incongruous to the poetry, experiments, narratives, and diary-like entries that fill the pages of 13F and his other notebooks, and to see these racial constructions as the antithesis of his later meticulously and carefully recorded chemical experiments. However, including this writing in Davy's oeuvre changes our perception of him by showing that he was a man of his time, participating in the legacies of slavery and Empire and contributing to emerging ideas about racial difference, and narratives of white European superiority.

Davy's climate essay is a messy draft; however, there is no sign of Davy intervening into his earlier ideas and contradicting them as he did with his materialist arguments. One reason for this might be that Davy did not change his mind on the subject of climate shaping human difference. In *Literary Reminiscences*, Thomas De Quincey mentions meeting Davy in 1808 or 1809 and remembers his view on the link between climate and national differences, 'that climate was the great operating cause in determining national differences of all kinds – in the arts as well as in civil institutions'. <sup>100</sup> This suggests one reason for the absence of Davy's later critical voice intervening into this essay: his ideas about the human variety and the role of climate as a leading cause of this remained consistent throughout his life.

#### The Impacts of Davy's Racial Thinking

Having looked at some of Davy's ideas about racial difference and the causes of African skin colour, this section will look at the reception of these ideas and show that Davy was seen as a respected authority on the causes of skin colour by his contemporaries. Davy's views on the causes of black skin colour influenced Blumenbach. In the third edition of *De Gen. Humani Varietate Nativa*, published in 1795, Blumenbach claimed that darker skin colours were caused by an abundance of carbon in the body, which with hydrogen were secreted through the skin, and combining with oxygen in the atmosphere became embedded in the Malpighian mucus. <sup>101</sup> As Joris van Gorkom has identified, Blumenbach was aware of the experiments Beddoes made in bleaching the skin of a Black person using oxygenated marine acid. <sup>102</sup> In 1803, in a short essay, Blumenbach uses a summary of Beddoes' experiment in his discussion of five known causes of Black people being able to change the colour of their skin, which also included the climate, disease and old age. For Blumenbach, Beddoes's experiment represents the temporary and artificial chemical change that can be made to the skin by applying a bleaching agent. <sup>103</sup>

In the third edition of *The Institutions of Physiology*, in Latin published in 1810, and the English translation of this in 1817, Blumenbach continues to argue that carbon causes different skin colours and draws on Davy to support his arguments:

The essential cause of the colour of the Malpighian mucus, is, if we mistake not, the proportion of carbon which is excreted together with hydrogen from the corium; and in dark nations being very copious, is precipitated upon the mucus and combined with it.\*

\* I have given this opinion at some length in my work, *De Gen. Human. Varietate*Nativa, p. 122, sq. ed. 3.<sup>104</sup> Some eminent chemists accord with me, among whom

suffice it is to mention the celebrated Davy, in the *Journals of the Royal Institution*, vol. ii. p. 30. "In the rete mucosum of the African, the carbon becomes the predominant principle; hence the blackness of the negro." W. B Johnson, l. c. vol. ii. p. 229.<sup>105</sup>

Blumenbach cites a page from Davy's essay 'Observations on the Processes of Tanning', which is the process of preparing animal skins and using tannins for example from tree bark to chemically alter them and turn them in to usable leather (implying an equivalence between Black and animal skin). On this page, Davy does not discuss the causes of the colour of the skin but talks about preparing animal skin for tanning. Blumenbach quotes from William Brooks Johnson who paraphrases Davy's arguments in his 'essay on the generation of phosoxygen'. While Johnson situates Davy's arguments that carbon causes different skin colours in the fuller context of Davy's arguments that light subtracts oxygen and that this causes a predominance of carbon, Blumenbach makes no mention of the role of oxygen or light in causing skin colour. Neither does Blumenbach mention Johnson's comment:

Davy is of the opinion, that though differences of the colour of the skin of different nations must have originally depended entirely on the chemical influence of light, yet when once these colours are produced, their changes are in some measure dependant on the mind ... the generating imagination makes them hereditary, and the chemical changes of the influence of light are more slowly produced.<sup>108</sup>

Blumenbach's description of Davy as 'the celebrated Davy' acknowledges his esteemed status and Blumenbach's use of his arguments alone as evidence of the scholarly chemical community agreeing with his ideas are suggestive of the perceived weight Davy had in chemistry at this time. By reusing a quotation of Davy's 'An Essay on the Generation of Phosoxygen' given in Johnson's work rather than directly taking this from Davy's essay, and

not repeating Davy's views on the hereditary nature of skin colour and the role of the mind and imagination in fixing these colours that Johnson also quoted, Blumenbach removes Davy's idea that black skin colour is caused by carbon from his wider arguments about light that he put forward in his essay on phosoxygen. Nevertheless, Blumenbach also takes a part of it this early essay and validates it, showing that not all of Davy's early essay had been discredited. Davy's arguments about skin colour were still mentioned in later editions of Blumenbach made by Elliotson in 1835. 109 This demonstrates that while Davy came to regret his early published papers on heat and light in Beddoes's *Contributions to Physical and Medical Knowledge*, his writing on the causes of skin colour was lifted out of this work and retained prestige.

The perception of Davy's expertise in the area of skin colour extended later into his career. In 1821 Everard Home published a paper 'On the black rete mucosum of the Negro', read to the Royal Society on 9 November 1820, in which he claimed that black skin acted as a defence against the heat of sunlight. Home was inspired by reading a work by Davy about silver fish that had burnt their backs after trees shading them from the sun had been cut down. He presented his experiments on his own skin and the hand of an unnamed Black person, which was exposed to 100-degree heat to see if it would burn and blister like his own skin. Home claimed that the protection Black people 'living in the tropics' had from sunlight came from living in a hot climate. Home showed his observations to Davy and asked for his opinion, reporting that 'He said the radiant hear in the sun's rays was absorbed by the black surface, and converted into sensible heat'. Home approached Davy to give his expertise and provide an explanation for his findings and called on him as an authority. Davy's collaborative role in this later research on Black skin and the perception of his expertise in this area shows his contemporaries saw him as part of these discussions.

#### Conclusion

Writing years after Davy's death, and the British abolition of slavery and the apprenticeship system in 1834 and 1838 respectively, his brother, John, who as an Army Inspector of Hospitals 1845-1848 had visited and lived in many Caribbean islands, criticised the institution of slavery, arguing people of African descent were not inherently inferior but had been 'degraded' by slavery. 112 This shows the complexity of the Davy family's relationship to the legacies of British slavery, as was the case for many families (including Jane Austen's). 113 However, until recently, Davy's earlier connection to transatlantic slavery through his wife Jane Davy and her father and stepfather's financial involvement in holding people in slavery was not known. Biographies of Davy have tended to focus on him and his achievements, rather than his social network or to look deeply at Jane and her family circle. There is more work to be done in exploring for example the financial records of the Farquhar family held in the Drummonds bank ledgers. More work could be done on the links between Kerr and Farquhar in Antigua – surviving documents suggest Farquhar was involved in managing Cades Bay before he took ownership of it following his uncle's death, and that he came into contact with Charles Kerr in this capacity. 114 The ongoing process of decolonising Davy could raise his profile in national discussions about the legacies of slavery in Britain. As a starting point, Davy and Farquhar's monuments should be added to the British Public Monuments Related to Slavery database. 115 Awareness of Davy's 'scientific' racism and financial links to slavery could be raised in public sites that commemorate him and his family circle, especially within the permanent exhibition space on the ground floor of the Royal Institution in London, which also holds most of his notebooks in its archive. Family history research could explore the lives of the enslaved people who lived on Farquhar's plantations and works by contemporary makers could address the implications of the traumatic and unwanted medical inventions on Black bodies to create alternative narratives. This essay has

shown that Davy was a respected authority on the causes of black and white skin colour, and his views on this were taken out of his early paper on phosoxygen long after the rest of that essay had been discredited. This essay is the first to start decolonising Davy's notebooks but this is an ongoing process with much more to discover.

<sup>&</sup>lt;sup>1</sup> RI MS HD/14/H, pp. 131-33. For the published version, see Humphry Davy, *Consolations in Travel, or The Last Days of a Philosopher* (ed. John Davy) (John Murray, London, 1830), pp. 39-41.

<sup>&</sup>lt;sup>2</sup> RI MS HD/14/H, p. 133.

<sup>&</sup>lt;sup>3</sup> For 'An Essay on the Influence of Climate on National Manners & Character', see RI MS HD/13/F, pp. 93-128. This is one of the five similar titles Davy gives the essay, on p. 126; see also, p. 108, p. 118, p. 123, p. 132.

<sup>&</sup>lt;sup>4</sup> Roxann Wheeler, *The Complexion of Race: Categories of Difference in Eighteenth-Century British Culture* (University of Pennsylvania Press, Philadelphia, 2000).

<sup>&</sup>lt;sup>5</sup> Paul Youngquist, 'Introduction', in *Race, Romanticism, and the Atlantic* (ed. Paul Youngquist), pp. 1-22 (Ashgate, Surrey, 2013), at p. 8. *Legacies of British Slave-Ownership: Colonial Slavery and the Formation of Victorian Britain* (ed. Catherine Hall et all) (Cambridge University Press, Cambridge, 2014).

<sup>&</sup>lt;sup>6</sup> For three examples, see Jan Golinski, *The Experimental Self: Humphry Davy and the Making of a Man of Science* (University of Chicago Press, Chicago, 2016), David Knight, *Humphry Davy: Science and Power* (University of Cambridge, Cambridge, 1992) and June Fullmer, *Young Humphry Davy: The Making of an Experimental Chemist* (American Philosophical Society, Philadelphia, 2000).

<sup>&</sup>lt;sup>7</sup> Frank A. J. L. James, 'Humphry Davy's Early Chemical Knowledge, Theory and Experiments: An Edition of His 1798 Manuscript, 'An Essay on Heat and the Combinations of Light' From the Royal Institution of Cornwall, Courtney Library, MS DVY/2', *Ambix*. 66, 303-345 (2019), at p. 315.

<sup>&</sup>lt;sup>8</sup> *Ibid.*, at p. 311.

<sup>&</sup>lt;sup>9</sup> Frank A. J. L. James, 'Making Money from the Royal Navy in the Late Eighteenth Century: Charles Kerr on Antigua 'breathing the True Spirit of a West India agent', *The Mariner's Mirror*. 107: 4, 402-419 (2021), at p. 409. Frank James, 'Frank James on Lady Davy's Money', Davy Notebooks Blog [weblog], 1 November 2021, https://wp.lancs.ac.uk/davynotebooks/2021/11/01/frank-james-on-lady-davys-money/ (accessed 20 November 2023)

<sup>&</sup>lt;sup>10</sup> Manu Samriti Chander and Patricia A. Matthew, 'Abolitionist Interruptions: Romanticism, Slavery and Genre', *European Romantic Review*. 29:4, (2018), The Bigger Six Collective, 'Coda: from Coteries to Collectives', *Symbiosis: A Journal of Transatlantic Literary and Cultural Relations*. 23:1, (2019) at. 139. Manu Samriti Chander, *Brown Romantics: Poetry and Nationalism in the Global Nineteenth Century* (Bucknell University Press: Lewisburg, 2017).

<sup>&</sup>lt;sup>11</sup> Chander and Matthew, op. cit (note 9), at p. 431.

<sup>&</sup>lt;sup>12</sup> Cristina Malcolmson, *Studies of Skin Color in the Early Royal Society: Boyle, Cavendish, Swift* (Ashgate, Farnham, 2013), p. 5

<sup>&</sup>lt;sup>13</sup> *Ibid.*, p. 7.

<sup>&</sup>lt;sup>14</sup> Who's Black and Why? A Hidden Chapter from the Eighteenth-Century Invention of Race (ed. Henry Louis Gates, Jr. and Andrew S. Curran) (Harvard University Press, Cambridge, 2022), p. 42.

<sup>&</sup>lt;sup>15</sup> On the textualization of the black African, see Andrew S. Curran, *The Anatomy of Blackness: Science and Slavery in an Age of Enlightenment* (John Hopkins University Press, Baltimore, 2011), pp. ix and 15; p. 224.

<sup>&</sup>lt;sup>16</sup> Suman Seth, *Difference and Disease: Medicine, Race, and the Eighteenth-Century British Empire* (Cambridge University Press, Cambridge, 2018), pp. 249-50.

<sup>&</sup>lt;sup>17</sup> *Ibid.*, p. 283.

<sup>&</sup>lt;sup>18</sup> On the racialisation of the degeneration discourse and its positing of the African as debased from the European prototype, see Gates and Curran, *op. cit* (note 15), p. 29.

<sup>&</sup>lt;sup>19</sup> On Kant's views, see *Ibid.*, p. 42.

<sup>&</sup>lt;sup>20</sup> Jan Golinski, "The Fitness of Their Union": Travel and Health in the Letters of Humphry and Jane Davy', *Ambix*. 66, 181-194 (2019), at p. 183, n. 12.

<sup>&</sup>lt;sup>21</sup> Matthew Daniel Eddy, 'The Nature of Notebooks: How Enlightenment Schoolchildren Transformed the Tabula Rasa', *Journal of British Studies*. **57.2**, 275-307 (2018), at p. 281.

<sup>&</sup>lt;sup>22</sup> *Ibid.*, p. 280.

<sup>&</sup>lt;sup>23</sup> Youngquist *op. cit.* (note 4), at p. 8.

<sup>&</sup>lt;sup>24</sup> *Ibid.*, at p. 3.

<sup>25</sup> Sharon Ruston, *Shelley and Vitality* (Basingstoke: Palgrave Macmillan, 2005), at pp. 35-36.

<sup>26</sup> RI MS HD/15/J, p. 35.

<sup>27</sup> GS61, pp. 15-16. The History of Natural Science lecture notes can be found also in RI MS HD/19/A, RI MS HD/19/B, RI MS HD/19/C, RI MS HD/19/D and CRO acc 8338/32. Thank you to the Zooniverse volunteer @TEHark who made the link between the lecture notes in notebook GS61 and John Davy's description of them in John Davy (ed.) *The Collected Works of Sir Humphry Davy* (London: Smith and Co., 1840), vol. 8 at p. 321. See also, RI Managers Minutes, 14 January 1805, **4**: 9.

<sup>28</sup> RI MS HD/13/H, untitled poem, pp. 37-40, especially p. 37, 'Ode 8: To Freedom', pp. 52-58, especially pp. 53-55

<sup>29</sup> 'On the Slave Trade, in *The Collected Works of Samuel Taylor Coleridge The Watchman*, ed. By Lewis Patton (Princeton: Princeton University Press, 1970) at pp. 130-132.

<sup>30</sup> Helen Thomas, *Romanticism and Slave Narratives: Transatlantic Testimonies* (Cambridge: CUP, 2000), pp. 97-98, p. 109. See also, Chine Sonoi, 'Coleridge and the British Slave Trade', *The Coleridge Bulletin*, **27**, 27-37 (2006).

<sup>31</sup> Debbie Lee, *Slavery in the Romantic Imagination* (University of Pennsylvania Press, Philadelphia, 2002), at p. 219. Atesede Makonnen, "'Even in the Best Minds'': Romanticism and the Evolution of Anti-Blackness, *Studies in Romanticism*, **61.1**, 11-22 (2022), at pp. 11-12.

<sup>32</sup> RI MS HD/20/A, pp. 134-131.

<sup>33</sup> RI MS HD/20/C, p. 108.

<sup>34</sup> Sharon Ruston, 'Vegetarianism and Vitality in the Work of Thomas Forster, William Lawrence and P. B. Shelley', *Keats-Shelley Journal*, **54** 113-132 (2005), p.116, pp. 127-29. Sharon Ruston, *The Science of Life and Death in Frankenstein* (Bodleian Library Publishing, Oxford, 2021), p. 84.

<sup>35</sup> RI MS HD/20/A, p. 79.

<sup>36</sup> Maxine Berg and Elizabeth Eger, 'The Rise and Fall of the Luxury Debates' in *Luxury in the Eighteenth Century: Debates, Desires and Delectable Goods* (ed. Maxine Berg and Elizabeth Eger), pp. 7-27 (Palgrave Macmillan, London, 2002), at p. 13.

<sup>37</sup> Brycchan Carey, 'Abolishing Cruelty: The Concurrent Growth of Anti-Slavery and Animal Welfare Sentiment in British and Colonial Literature', *Journal for Eighteenth-Century Studies*. 43.2, 203-220 (2020), at p. 206.

<sup>38</sup> Eric Herschthal, *The Science of Abolition: How Slaveholders Became the Enemies of Progress* (Yale University Press, New Haven, 2021), p. 69, p. 95.

<sup>39</sup> *Ibid.*, p. 73, p. 74.

<sup>40</sup> RI MS HD/03/a1, p. 49; 'Elements of Agricultural Chemistry, Part II: Miscellaneous Lectures and Extracts from Lectures', *CWHD*, vol. 8 (Smith, Elder and Co., London, 1840), p. 355, p. 358.

<sup>41</sup> Humphry Davy, Letter to Thomas Poole, 3 December 1817, in *CLHD*, vol. 3, p. 84.

<sup>42</sup> An excellent starting point for this research is provided by UCL's Centre for the Study of the Legacies of British Slavery Database. UCL.

<sup>43</sup> 'Cades Bay, Antigua', Centre for the Study of the Legacies of British Slavery [website], <a href="https://www.ucl.ac.uk/lbs/estate/view/330">https://www.ucl.ac.uk/lbs/estate/view/330</a> (accessed 19 July 2023).

<sup>44</sup> 'Plain, Grenada', Centre for the Study of the Legacies of British Slavery [website] <a href="https://www.ucl.ac.uk/lbs/estate/view/1430">https://www.ucl.ac.uk/lbs/estate/view/1430</a> (accessed 19 July 2023).

<sup>45</sup> For this, see the marriage certificate of Humphry Davy and Jane Apreece, London Metropolitan Archives, City of London P89/MRY/183.

<sup>46</sup> Stephen Mullen, *The Glasgow Sugar Aristocracy: Scotland and Caribbean Slavery, 1775-1838* (University of London Press, London, 2022), p. 22.

<sup>47</sup> 'Sir Michael Shaw Stewart (1788-1836)', Centre for the Study of the Legacies of British Slavery [website] <a href="https://www.ucl.ac.uk/lbs/physical/view/1995968479">https://www.ucl.ac.uk/lbs/physical/view/1995968479</a> (accessed 4 December 2023).

<sup>48</sup> Humphry Davy, Letter to Marie Anne Lavoisier, 10 January 1822, in *CLHD*, vol. 3, p. 319. Original in French and the translation from footnote 4, in *CLHD*, vol. 3, p. 320.

<sup>49</sup> Humphry Davy, Letter to Michael Shaw Nicholson, 1 October 1822, in *CLHD*, vol. 3, p. 361.

<sup>50</sup> Humphry Davy, Letter to James Hudson, 20 July 1826, in *CLHD* vol. 3, p. 605.

<sup>51</sup> Jane Davy, Letter to Bertel Thorvaldsen, undated and Humphry Davy, Letter to Bertel Thorvaldsen, 8 July 1823, both in 'Documents' The Thorvaldsens Museum Archives [website], <a href="https://arkivet.thorvaldsensmuseum.dk/documents">https://arkivet.thorvaldsensmuseum.dk/documents</a> (accessed 1 December 2023).

<sup>52</sup> Catherine Hall and Sonya Rose, 'Introduction: being at home with the Empire', in *At Home with the Empire: Metropolitan Culture and the Imperial World* (eds Catherine Hall and Sonya O. Rose) (CUP, Cambridge, 2006). <sup>53</sup> Frank A. J. L. James, 'Constructing Humphry Davy's Biographical Image', *Ambix*, **66**, 214-238 (2019), at pp. 217-19.

<sup>&</sup>lt;sup>54</sup> The version of the June 1798 manuscript essay cited here is from the transcription of it in James, *op. cit.* (note 6), at pp. 315-344, at p. 343.

<sup>&</sup>lt;sup>55</sup> *Ibid.*, at p. 315 and at p. 330.

<sup>&</sup>lt;sup>56</sup> *Ibid.*, at p. 342.

<sup>&</sup>lt;sup>57</sup> *Ibid.*, at p. 343.

<sup>&</sup>lt;sup>58</sup> For Beddoes's key publications on this at this date, see Thomas Beddoes, *Observations on the Nature and Cure of Calculus, Sea Scurvy, Consumption, Catarrh, and Fever: Together with Conjectures upon Several Other Subjects of Physiology and Pathology* (J. Murray, London, 1793), Thomas Beddoes, *A Letter to Erasmus Darwin M. D. on a New Method of Treating Pulmonary Consumption, and Some Other Diseases Hitherto Found Incurable* (Bulgin and Rosser, Bristol, 1793).

<sup>&</sup>lt;sup>59</sup> James, *op. cit.* (note 6), at p. 343, n. 154. Beddoes, *op. cit.* (note 51), pp. 50-51. See RI MS HD/13/E, p. 25 a notebook page where Davy states Beddoes has almost relinquished his theory of hyperoxygenation (administering oxygen) as a treatment for Typhus, asthma, and pulmonary diseases.

<sup>&</sup>lt;sup>60</sup> *Ibid.*, at p. 342, n. 151.

*Ibid*. at p. 342.

*Ibid*. at p. 343, n. 156.

<sup>&</sup>lt;sup>63</sup> RI MS HD/13/E, p. 36, RI MS HD/20/A, p. 271, RI MS HD/13/E, p. 21.

<sup>&</sup>lt;sup>64</sup> Humphry Davy, 'Experimental essay on the generation of phosoxygen (oxygen gas), and on the causes of the colors of organic beings' in *Contributions to Physical and Medical Knowledge, Principally from the West of England* (ed. Thomas Beddoes), pp. 151-205 (Bristol: Biggs & Cottle, 1799), at pp.197-98

<sup>&</sup>lt;sup>65</sup> *Ibid.*, pp. 194-95.

*Ibid.*, p. 198.

<sup>&</sup>lt;sup>67</sup> John Mitchell, 'An Essay upon the Causes of the Different Colours of People in Different Climates', *Phil. Trans. R. Soc. Lond.* **43**, 102-150 (1744). See Olaudah Equiano, *The Interesting Narrative and Other Writings* (ed. Vincent Carretta) (Penguin Books, New York, 1995), p. 246 reference 76.

<sup>&</sup>lt;sup>68</sup> Thomas Clarkson, *An Essay on the Slavery and Commerce of the Human Species, Particularly the African* (P. Byrne, Dublin, 1786), p. 198.

<sup>&</sup>lt;sup>69</sup> Carretta, *op. cit.* (note 61), p. 45.

<sup>&</sup>lt;sup>70</sup> Davy, *op. cit.* (note 58), at p. 195.

<sup>&</sup>lt;sup>71</sup> Thomas Beddoes, *Alexander's Expedition Down the Hydaspses & the Indus to the Indian Ocean* (London: J. Murray and James Phillips, 1792), at pp. 79-80.

<sup>&</sup>lt;sup>72</sup> *Ibid.*, p. 80.

<sup>&</sup>lt;sup>73</sup> Thomas Beddoes and James Watt, *Considerations on the Medical Use of Factitious Airs: And on the Manner of Obtaining then in Large Quantities*, in Two Parts, Part 1, (Bristol: Bulgin and Rosser, 1794), p. 32. hered<sup>74</sup> Beddoes, *op. cit.* (note 64), p. 78, ftn e.

<sup>&</sup>lt;sup>75</sup> Blumenbach, De Generis Varietate Nativa, 3<sup>rd</sup> edition (Vandenhoek et Ruprecht, Gottingae, 1795), p. 125.

<sup>&</sup>lt;sup>76</sup> Beddoes, *op. cit.* (note 64), p. 80-81.

<sup>&</sup>lt;sup>77</sup> *Ibid.*, p. 82.

<sup>&</sup>lt;sup>78</sup> Beddoes, *op. cit.* (note 51), p. 99.

<sup>&</sup>lt;sup>79</sup> *op. cit.* (note 3).

<sup>&</sup>lt;sup>80</sup> Matthew Daniel Eddy, *Media and the Mind: Art, Science, and Notebooks as Paper Machines, 1700-1800* (University of Chicago Press, Chicago: 2022), p. 86. For RI MS HD/13/F as a radical notebook, see Ruston *op. cit.* (note 18), pp. 34-35.

<sup>&</sup>lt;sup>81</sup> RI MS HD/14/J, pp. 133-36, 160.

<sup>&</sup>lt;sup>82</sup> RI MS HD/13/F, p. 001

<sup>83</sup> Eddy, op. cit. (note 82), p. 94, p. 98.

<sup>&</sup>lt;sup>84</sup> RI MS HD/13/F, p. 12 and p. 14.

<sup>&</sup>lt;sup>85</sup> Eddy, *op. cit.* (note 84).

<sup>86</sup> RI MS HD/13/F, p. 4.

<sup>&</sup>lt;sup>87</sup> On notebooks as 'artefacts assembled from different components over time', see Eddy, op. cit. (note 87), p. 7.

<sup>88</sup> Wheeler, op. cit. (note 4), pp. 37-8.

<sup>&</sup>lt;sup>89</sup> Montesquieu, 'Book 14. Of Laws as Relative to the Nature of Climate', pp. 316-335 in *The Spirit of Laws* (trans. Mr. Nugent). vol. 1 second edition (J. Nourse and P. Vaillant, London, 1752). David Hume. 'Of National Characters', in *Essays: Moral, Political and Literary* (ed. Eugene F. Miller), pp. 197-215 (1748; LibertyClassics, Indianapolis, 1987).

<sup>&</sup>lt;sup>90</sup> Montesquieu, *op. cit.* (note 91), p. 316.

<sup>&</sup>lt;sup>91</sup> RI MS HD/13/F, p. 104, p. 116, p. 122.

<sup>&</sup>lt;sup>92</sup> Montesquieu, *op. cit.* (note 91), p. 331.

- <sup>93</sup> Jan Golinski, *British Weather and the Climate of Enlightenment* (University of Chicago Press: Chicago, 2007), p. 2, p. 3, p. 5.
- <sup>94</sup> RI MS HD/13/F, p. 118.
- 95 RI MS HD/13/F, p. 116.
- <sup>96</sup> RI MS HD/13/F, p. 115.
- <sup>97</sup> RI MS HD/13/F, p. 95.
- <sup>98</sup> RI MS HD/13/F, p. 98.
- <sup>99</sup> Davy, op. cit. (note 1), p. 39.
- <sup>100</sup> Thomas De Quincey, *Literary Reminiscences: from the Autobiography of an English Opium-Eater* (Ticknor, Reed, and Fields: Boston, 1853), p. 40.
- <sup>101</sup> Blumenbach, op. cit. (note 67), pp. 124-125
- <sup>102</sup> Joris van Gorkom, 'Skin Color and phlogiston Immanuel Kant's racism in Context' *History and Philosophy of the Life Sciences.* **42.2**, *1-22* (2020), at pp. 18-19.
- <sup>103</sup> J. F. Blumenbach, 'Contribution to the answer to the question Jerem. K. 13 V. 23. 'Can a Moor Change his skin?'', *Magazin für den neusten Zustand der Naturkunde*, **5**, 365-368 (1803), at p. 366.
- <sup>104</sup> Refers to Blumenbach, op. cit. (note 67).
- <sup>105</sup> J. Fred. Blumenbach, *The Institutions of Physiology*, 2nd edition, trans. From the Latin of the Third and Last Edition and supplied with numerous and extensive notes by John Elliotson (Philadelphia: Benjamin Warner, 1817), p. 109. Davy is also mentioned in the same section and along with the same quotation in Blumenbach, *Institutiones Physiologicae*, 3rd edition (Henr. Dieterich, Gottingae, 1810), p. 161, which is the edition used for the 1817 translated version.
- <sup>106</sup> Humphry Davy, 'Observations on the Processes of Tanning' *Journals of the Royal Institution of Great Britain*, vol. 2 (1803), pp. 30-38.
- <sup>107</sup> W. B. Johnson, *Progress and Present State of Animal Chemistry*, vol. 2. (London: Printed for J. Johnson, 1803) p. 229. Paraphrases p. 194 of Davy
- <sup>108</sup> Johnson, *op. cit.* (note 78), p. 230. See Davy, *op. cit.* (note 58), pp. 197-198.
- <sup>109</sup> John Elliotson, *Human Physiology with which is incorporated much of the elementary part of the Institutiones Physiologicae of J. F. Blumenbach* (London: Longman, Rees, Orme, Brown, Green and Longman, 1835) 5th ed., p. 273.
- <sup>110</sup> Edward Allen Driggers, 'The Chemistry of Blackness: Benjamin Rush, Thomas Jefferson, Everard Home, and the Project of Defining Blackness through Chemical Explanations', *Critical Philosophy of Race*, **7.2**, 372-391 (2019), at pp. 385-386.
- <sup>111</sup> Sir Everard Home, 'On the black rete mucosum of the Negro, being a defence against the scorching effect of the sun's rays', *PTRS*, exi (1821), 1-6.
- <sup>112</sup> John Davy, *The West Indies Before and Since Slave Emancipation* (London: W. & F. G. Cash, 1854), pp. ii-iii.
- <sup>113</sup> Devoney Looser, 'Breaking the Silence: The Austen Family's Complex Entanglements with Slavery', *TLS*, 21 May 2021, pp. 3-4.
- <sup>114</sup> Charles Kerr, Letter to Walter Nisbet, 24 march 1788, Beinecke Collection M318, p. 2.
- <sup>115</sup> There are numerous sites where Davy is commemorated, including his statues in Penzance and the Oxford University Museum of Natural History and the Davy lamp sculpture in Hednesford town centre, as well as the funereal monument of Robert and Jane Farquhar in St John's Church, Marylebone. For the database of monuments, see https://www.britishmonumentsrelatedtoslavery.net, and Gavin Grindon, Jennie Williams and Duncan Hay, 'Mapping British Public Monuments Related to Slavery, *Slavery & Abolition*. 1-24 (2023).