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"An Inventive Age": Romanticism and the Industrial Revolution', Special Issue, ed. Jeremy Davies, *Studies in Romanticism* 61, no. 2 (Summer 2022).

Closing Response by Nigel Leask: 'Penetrat[ing] the Gloom of Britain's Farthest Glens': A Response from the Highlands.

(23 Dec 2021)

This special issue of *Studies in Romanticism* opens up new perspectives on the relationship between British Romanticism and the Industrial Revolution in the core decades 1780-1830. This is long overdue, given the dominance of a retrospective view entrenched in a notion of deep antagonism between industrialisation (and its intellectual auxiliaries, utilitarianism and political economy) and a view of canonical Romanticism as a compensatory humanism. It's a view that played a profound role in the emergence of 20th century English literary studies, at least since as F.R. Leavis's mid-century edition of J.S. Mill's Essays on Bentham and Coleridge. Even Raymond William's hugely influential Culture and Society (1958), which re-orientated core Leavisite values in a more historicised and leftist direction, maintained that sense of antagonism, in turn influencing the perspective of later 20th century cultural studies and New Historicism. In Romanticism, Economics, and the Question of Culture (2001), Phil Connell complained that 'the Romantic component of 19th century social criticism, as well as Victorian middle-class values, is still described in terms of an anti-industrial 'culture and society' tradition, which has in turn often been reliant upon a reductive opposition between Romanticism, on the one hand, and the impoverished, 'bourgeois' ideologies of utilitarianism and political economy, on the other'.¹ The rise of ecocriticism in the late 20th century has if anything simply fortified Connell's 'reductive opposition'. In a classic instance of McGann's 'Romantic ideology', 'idealist' Romantic ecocritics like Jonathan Bate and James McKusick dismissed the industrial revolution as

¹ Phillip Connell, *Romanticism, Economics, and the Questions of 'Culture'* (Oxford University Press, 2001), pp. 283-4. One notable exception is Humphry Jennings' (posthumous) *Pandaemonium* (1985), the work of a former Cambridge student of Empson and Richards, subsequently a surrealist painter and documentary film maker. Jennings drew on his creative background to present a pastiche of 'images' or Benjaminian 'illuminations' (selected passages from contemporary writing) that constituted 'the imaginative history of the Industrial Revolution'. Several of these passages are referred to in the essays in this special issue. *Pandaemonium: The Coming of the Machine as seen by Contemporary Observers, 1660-1886*, ed. Mary-Lou Jennings and Charles Madge (London and Basingstoke: Macmillan, 1995), p. xxxv.

product of a 'mechanical age' anathema to an organicist 'song of the earth'.² In this one respect they made common cause with their cultural materialist antagonists, who saw the 'dismal science' as a 'fanatically bleak materialism...ill-suited to creating that cultural and value system which is the mark of a hegemonic ideology'.³ This special issue implies the pressing need to revisit this relationship in an era afflicted by the consequences of anthropogenic climate change, unforeseen consequence of the Pandora's box of carbon energy opened by the 'inventive age': for as Jeremy Davies's introduction puts it, 'economic phenomena cannot finally be separated from ecological ones' (p. 10). Beyond hailing Wordsworthian naturalism as a point of origin for modern ecocriticism (Bate and McKusick), Romanticists need to establish 'an unillusioned and useable genealogy of the present global environmental crisis'. Or (in an earlier formulation), a 'critical genealogy of regimes of exploitation', in place of 'a celebratory genealogy of Western conservationism'.⁴

That revisionary project is central to the argument of the four essays on Romanticism and the Industrial Revolution that follow, challenging the notion of the latter as a 'disruptive novelty', two focusing on England, two on Scotland. Jeremy invited me to draw on my own recent research in *Stepping Westwards: Writing the Highland Tour 1720-1830*, and the co-edited volume *Old Ways and New Roads: Travel in Scotland*, to reflect upon the essays published here. ⁶ Judged from the dominant association of the Industrial Revolution with 'dark Satanic mills' of popular imagination, this might seem anomalous: the cotton mills of Manchester and Glasgow, not the rural Highlands, were the *loci classici* of the 'short' industrial revolution coinciding with British Romanticism. The Scottish Highlands, like southern and western England and much of Wales and Ireland, were a region of Britain that did *not* experience an 'industrial revolution'. Given the shift from a solar to a carbon economy linking industrialism with the dawn of the anthropocene, it might seem perverse to focus on a region in which all attempts to discover coal seams proved fruitless. The

² Jeremy Davies suggests that William's *The Country and the City* (1973) and John Barrell's *The Idea of Landscape and the Sense of Place* (1972) might have inspired a different kind of ecocriticism 'the first concern [of which] would have been with worked (rather than "wilderness") land....in this scenario, ecocriticism would have had free access from the start to the intellectual heritage of historical and cultural materialism'. 'Romantic Ecocriticism: History and Prospects', *Literature Compass* 2018, pp. 2-3.

³ Perry Anderson, 'The Origins of the Present Crisis' (1964), quoted in Connell, *Romanticism*, p. 281.

⁴ Davies, 'Romantic Ecocriticism', pp. 12-13.

⁶ Old Ways and New Roads: Travels in Scotland 1720-1830, ed. John Bonehill, Anne Dulau Beveridge, and Nigel Leask (Edinburgh: Birlinn, 2021).

Highlands were rural, mountainous, deforested, Gaelic speaking, and economically underdeveloped, compared to Lowland Scotland, the latter (like Lancashire and Yorkshire) experiencing 'revolutionary' industrialisation in the shape of spinning mills, coal mines, soap, dye and glass works, iron foundries, breweries and distilleries, increasingly dependent on carbon energy.⁷

Especially relevant as a response to the essays included in this special issue is consideration of the so-called 'Highland Problem', the perception of industrial failure in the 18th and 19th century Highlands. ⁸ As Fredrik Jonsson argues in *Enlightenment's Frontier*: The Highlands and the Origins of Modern Environmentalism, such developmental 'failures' have new relevance in our anthropocene (or 'capitalocene') era. Failure in the Highlands was never an inevitable outcome in the eyes of 18th century improvers, any more than the triumphalist success story of Mancunian industrialism told by Edward Baines. Historical hindsight permits a view of the debate about Highland 'improvement' between proponents of economic self-sufficiency and globalizing neo-liberals as addressing some of the prime questions raised by modern environmentalism, especially concerning the limits of economic growth and fears of 'a stationary condition'. Far from being a peripheral region of Europe 'left behind by history', then, the apparently 'unimprovable' Highlands assumes an historical importance as a test case for the most urgent ecological crisis afflicting the modern world.⁹ In a similar way, Siobhan Carroll' account of Romanticism's 'energy unconscious' reminds us that such issues need to be understood in historical context, not just as retrospectively marked by 'the coal smoke of the later nineteenth century...rather than serving as a stepping stone on Britain's inevitable journey toward petromodernity, the Romantic

⁷ Tom Devine writes of the 'clear and decisive break' with the past that occurred in the economy of Lowland Scotland in the 1750s and 60s in contrast to much of the rest of Britain: 'not until forced Soviet state industrialisation in the 1920s and 30s could any country in Europe equal the speed and scale of the Scottish transformation'. T.M. Devine, 'Did Slavery make Scotia Great?', in Devine, ed., *Recovering Scotland's Slavery Past* (Edinburgh University Press, 2015), p. 233.

⁸ Failures by the publicly-funded Board for the Annexed Jacobite Estates in the 18th century to deliver the 'cornucopian promise of the north' foreshadowed failures of post-World War II economic development by the HIDB (Highlands and Islands Development Board) in projects such as the Invergordon aluminum smelter or Dounreay nuclear power station. See Andrew Penchard and Niall Mackenzie, 'Too Much on the Highlands? Recasting the Economic History of the Highlands and Islands', *Northern Scotland*, 4, 1(2013), pp. 3-22. ⁹ Fredrik Albritton Jonsson, *Enlightenment's Frontier: The Highlands and the Origins of Modern Environmentalism* (New Haven: Yale University Press, 2013, passim; Leask, *Stepping Westwards*, p. 13.

period...emerges in such energy histories as a moment of cultural contest between different kinds of fuel use'.

Likewise, Jeremy Davies's essay stresses that 'an environmental understanding of the industrial revolution need not mean seeing it as an invasion by mechanised industry of an older pastoral settlement'. ('Ghost Acres' p. 1) The post-Culloden Highlands were in fact in the throes of a certain kind of industrial 'improvement', although one that was neither 'revolutionary' nor carbon-based. In this sense Dr John Walker couldn't have been further from the mark when he described the Highlanders in the 1760's as being 'in almost the same Situation as in the Days of Oscian'. ¹¹ From the 1720's General Wade and Caulfeild's military roads established a transport infrastructure that opened the Highlands not only to the forces of British militarism but also to commerce and trade, as well as philosophical and scenic tourism. Jo Guldi argues that Wade's roads initiated Britain's 'infrastructure state' and achieved 'the technological, trigonometrical, measured connectivity of national space...modern road construction emerged in the military laboratory of Scotland between 1726 and 1773 as a craft known to soldiers and surveyors' (as well as engineers), subsequently active over the rest of Britain.¹² State investment in a transport infrastructure for purposes of military control here preceded (while of course enabling) economic growth. Connectivity (memorably evoked by the artist William Daniell as 'moral electricity') ¹³ was subsequently improved by the work of Thomas Telford in the wake of the Parliamentary Roads Act of 1803, repurposing military roads specifically for commercial transport, and constructing canals at Crinan and in the Great Glen, while the islands and kyles of the West Coast were opened up to the new carbon technology of steamboats in the early 19th century, as discussed in Eric Gidal's essay. Steam provided cheap tourist access to Highland sites consecrated by Ossian or the poetry and novels of Scott: writing of Loch Lomond in 1824, the geologist John Macculloch complained that 'the steam boat is now to be seen, daily ploughing its fiery way over the tranquil expanse; loaded with freight as intellectual as those of a Margate hoy'. ¹⁴

¹¹ Quoted Jonsson, *Enlightenment's Frontier*, p. 97.

¹² Jo Guldi, *Roads to Power: Britain Invents the Infrastructure State* (Cambridge, MA., and London: Harvard University Press, 2012), p. 27.

¹³ Daniell's Scotland: A Voyage Round the Coast of Scotland, 1815-22, 2 vols., (Edinburgh: Birlinn, 2006), I, 160.

¹⁴ John Macculloch, *The Highlands and Western Isles of Scotland* (London 1824), I, 211, 207.

Notwithstanding the region's contemporary image as a natural 'wilderness', it was in this period home to nearly one third of Scotland's total population, which continued to grow, despite the sporadic waves of emigration that had begun by the mid-18th century, although these would eventually leave it in its current condition of chronic depopulation. Industrial 'improvement' in the Highlands was stymied by the lack of coal, and the notorious coal duty further hindering distribution to remote areas until its repeal in 1792. In his important recent study Slaves and Highlanders, David Alston has described the establishment of three 'proto-factories' in Inverness, Cromarty and Invergordan between the 1760's and the early 1800's, the nearest thing to an industrial revolution in the region: significantly, all three produced hemp cloth for packing cotton in the slave colonies, known in the West Indies as 'Inverness Bagging'. ¹⁵ Although they struggled on until the mid-1800's, the replacement of hemp by jute led to their decline and faliure. Likewise, the erection of a water-powered cotton mill at Spinningdale on the Sutherland coast in the early 1790's had failed by 1806, plagued by distance from markets and difficulties in imposing work discipline on the Gaelic-speaking labour force.¹⁶ There were also sporadic attempts at creating iron foundries, lead mines, and timber extraction across the region, but as Andrew Mackillop has demonstrated, far more economically significant was the export of human capital. In particular, military recruitment from the Highlands after 1753 into the regiments of the expansionist British state proved 'more fruitful than the soil' to landowners and clan chiefs. 17

Focusing on contemporary accounts of the Highlands (rather than Manchester or Glasgow) perhaps enables a different inflection to key contemporary terms like 'industry', 'invention' and 'improvement' that resonate in all these essays. Addressing the new importance of energy humanities, they frequently evoke the notion of 'ghost acres' (as deployed by Pomeranz, Wrigley and others) with reference to 'coal and colonies', resources

¹⁵ David Alston, *Slaves and Highlanders: Silenced Histories of Scotland and the Caribbean* (Edinburgh: Edinburgh University Press, 2021), pp.223-225.

¹⁶ Ibid., p. 225.

¹⁷ Andrew Mackillop, '*More Fruitful than the Soil*': *Army, Empire, and the Scottish Highlands, 1715-1815* (East Linton: Tuckwell, 2000). Mackillop's recent *Human Capital and Empire: Scotland, Ireland and Wales and British Imperialism in Asia, c. 1690-c.1820* (Manchester: Manchester University Press 2021) explores the disproportionate role played by Highland gentry in the colonial service of the East India Company.

that seemed to confound the worst predictions of Malthus and the classical economists before him. But things looked different in the era of Britain's 'imperial meridian', when the loss of the American colonies and a protracted global war with France forced dreams of energy autarky and economic self-sufficiency. In 1775 Dr Johnson had written despairingly of the Highlands that 'an eye accustomed to flowery pastures and waving harvests is astonished and repelled by this wide extent of hopeless sterility'. ²¹ Yet just two decades later, an improver like Sir John Sinclair regarded the moors, mountains and mosses of the Highlands as potentially reclaimable, if not perhaps *internal* 'ghost acres', but at least *dormant* acres located on the island's land surface, unlike subterraneous coal mines or distant overseas colonies. Cultivating these boggy northern acres might just as well help Britons extricate themselves from the Malthusian bottleneck of population expansion, war, and scarcity of resources.

Sinclair's project of moorland reclamation via the newly established Board of Agriculture were largely a failure, like the other schemes to unlock the 'cornucopian promise of the north' mentioned above, but nonetheless it was a perfectly valid and rational response to the perceived bottleneck crisis. ²² As Jonsson sums up, 'rather than assimilating [the Highlands] directly to the Lowland model of industry and exchange, [improvers like Sinclair] favoured an alternative path to modernization that mixed distinctive historical stages - commerce and primitive agriculture - into a harmonious hybrid' (p.3). This hybridity is wonderfully captured by the title and thesis of Eric Gidal's *Ossianic Unconformities*. Although the Ossianic corpus he addresses hardly offered an ethic of environmental stewardship, it 'dramatized the active imagination of space as a dialogue between past, present and future - not a closed system of melancholic stupor beholden to a loss it can only repeat in different keys, but a process of perpetual recalibration and imaginative reconstruction'.²³ As an important precursor of Romanticism, *Ossian* challenges the 'antagonism' model of 'the two cultures' referred to above, chronologically anticipating Davies' discussion of Barbauld's *Eighteen Hundred and Eleven* as a 'synthesis between

²¹ A Journey to the Western Islands of Scotland with Boswell's Journal of a Tour to the Hebrides with Samuel Johnson, ed. Ronald Black (Edinburgh: Birlinn, 2007), p.88.

²² Jonsson, pp. 224-5. He notes that alongside Godwin's enlightened optimism, Sinclair's scheme was also a major target of Malthus's *Essay on Population* (1798) (p. 227)

²³ Eric Gidal, *Ossianic Unconformities*, p. 182.

dizzying novelty and historical continuity that characterised the Romantic experience of environmental change' (p. 11-12).

Even the 'revolutionary' discourse of techno-industrial progress didn't abide by any simple rural-urban dichotomy in the period, or distinguish between the instrumentality of human and non-human animals. It's chilling to compare Sinclair's dreams for reclaiming Highland ghost acres with those of Patrick Sellar, principle enforcer of the Sutherland Sheep Clearances, who in 1839 described improved Cheviot sheep as 'machines for converting Highland pastures into wool and mutton', his industrial rhetoric rejecting outright Sinclair's hybrid model of improvement.²⁴ Like Watt, Telford, and McAdam, Sellar was 'the very embodiment of "entrepreneurial flair, technological inventiveness, mercantile ruthlessness" in a new industry which required swift structural change in a hostile environment', heavily capitalised by his employer Lord Stafford's Shropshire and Staffordshire coal pits, ironworks, and the profits of the Bridgewater canal.²⁵ Sellar's 'techno-sheep' metabolizing pastures emptied of their human population invites comparison with Robert Owen's description of his cotton mill operatives as 'animate machines' in A New View of Society, as he admonishes factory owners 'to turn your thoughts more frequently from your inanimate to your living machines; you will discover that the latter may be easily trained...to procure a large increase of pecuniary gain, while you may also derive from them high and substantial gratification¹. ²⁶ As Mee writes, notwithstanding the paternalistic concerns of Owen and other factory owners, 'machinery trumpeted as labour-saving innovations... came to dictate the pace and labour for a new kind of workforce' (p. 4).

For all their differences, in industrialising wool and cotton production, both Sellar and Owen were inspired by a neo-feudal Tory vision of rural community as a palliative for social disruption caused by the factory system (also expressed in Scott's 1820 letter to John Morritt discussed by Carroll on p. 24), or Highland sheep walks cleared of their Gaelic tenantry. Cobbett denounced Owen's scheme of rurally-located workers' villages as

²⁴ Quoted in Eric Richards, *Patrick Sellar and the Highland Clear*ances, (Edinburgh: Polygon, 1999), p.312. Ironically, it was Sinclair who had first introduced Cheviot sheep into neighbouring Caithness in 1791 (ibid., p.39).

²⁵ Richards, ibid., p. 376, 122.

²⁶ Robert Owen, A New View of Society and Other Writings, (London: Dent 1927), p. 8.

'parallelograms of paupers', and similar invective was piled on the Sutherland's congested 'maritime crofting' settlements, hurriedly erected on bleak northern coastlines to house displaced tenants from inland glens cleared for sheep.²⁷ Sellar was unrepentant, citing the model of energy transition in his native Moray a generation earlier as another crucial lever of modernisation (the new Sutherland crofts were fitted with coal-burning fireplaces, abolishing what Carroll terms the 'energy independence' afforded by peat): 'Thirty years ago Moray used peats as the Sutherlanders do now. They did not practice alternate husbandry. They had not the time for it. Now coals are brought in at 5 ports and the face of things is changed'.²⁸

In the second part of my response, I want to discuss some select passages from a tour narrative that I touched on only briefly in *Stepping Westward*, the English chemist and physician Thomas Garnett's *Observations on a Tour of the Highlands, and Part of the Western Isles of Scotland* (1800). In a passage from Book 8 of *The Excursion* following shortly after the Wanderer's apostrophe to 'an inventive age' quoted in Davies's introduction, Wordsworth's narrator considers the transformation of Britain's transport network in the decades just before the railway revolution:

'The foot-path faintly marked, the horse-track wild, And formidable length of plashy lane... Have vanished - swallowed up by stately roads Easy and bold, that penetrate the gloom Of Britain's farthest glens. The Earth has lent Her waters, Airs her breezes; and the sail Of traffic glides with ceaseless intercourse, Glistening along the low and woody dale' (Bk 8, Il. 104-114)

²⁷ Quoted in Ian Donnachie, *Robert Owen of New Lanark and New Harmony* (East Linton: Tuckwell, 2000), p.140.

²⁸ Richards, ibid., p. 53. David Alston demonstrates that agricultural improvement in Moray was supported by capital derived from the East and West Indies, also the case in Invernesshire (*Slaves and Highlanders*, pp. 215-18).

Wordsworth's lines describe how an 'inventive age' has replaced Britain's 'old ways' with 'new roads' and canals ('the sail of traffic'), representing a homogenous infrastructure state with few barriers to the 'ceaseless intercourse' of commercial and human transaction. In contrast, the four preceding essays have identified a degree of geographical differentiation *within* Great Britain, demonstrating how the Industrial Revolution was powered by uneven intra-British development, and the extent to which writers responded to the changing regional landscapes around them: Barbauld's canal, Aikin's chorography of circulating manufactures around Manchester, Scott's Anglo-Scottish contrasts, *Blackwood*'s steamboat routes, etc. By following Garnett's tour along the 'stately roads' into 'the gloom / Of Britain's farthest glens' (i.e. the Scottish Highlands) in the remaining section, I will highlight the 'cornucopian promise' of the Scottish Highlands circa 1800, alongside the social, political and environmental obstacles that prevented the dreams of improvers like Garnett from being realised. Furthermore, I will argue that these uneven, intra-British developments are not fully intelligible unless they are seen as coordinated with, and enabled by, a larger Atlantic and colonial economy.

Scotland's 'farthest glens' have often been viewed as themselves subject to 'internal colonisation', but recent research has allowed a a more complex picture to emerge of the links between internal improvement and overseas colonial expansion. For example, Andrew Mackillop and lain MacKinnon have exposed the proactive involvement of the Gaelic gentry in Britain's colonial service, garnering wealth from the slave-based economies of North America and the Caribbean. This continued into the era of emancipation, when they estimate that over a million acres of the West Highlands and Islands were purchased by a 'new elite' (many from the Scottish Lowlands or England) who were beneficiaries of slavery, as well as from new industrial and manufacturing capital. Added to existing slavery-derived property already possessed by traditional landowners, this amounts to over a half of the total landmass of the areas, a staggering one tenth of Scotland's total land area. Such a picture complicates a view of the Highlands as a socially and economically isolated 'internal colony' of Great Britain. At the same time, especially regarding the 'new elite', 'those who secured such landed wealth [men like Gordon of Cluny in South Uist, or George Rainy in Raasay] tended in turn to see any land they owned, regardless of geography, in similarly

extractive terms'. ²⁹ This ultimately resulted in a tragic developmental failure that distinguished the Highlands from other areas of nineteenth-century Scotland and Britain, suggesting that colonal capital wasn't in itself sufficient to ensure industrial 'takeoff', especially considering that Scotland was proportionally more dependent on colonial wealth than England, given its relative poverty. Although there was relatively little 'triangular trafficking' of enslaved people from Scottish ports via Africa to the Americas (compared to Liverpool or Bristol), Tom Devine writes that 'the sugar, tobacco, indigo, rice, rum and cotton produced by these slave-based economies were central components in Scottish overseas commerce for most of the 18th century and the dominant factor in the country's international trade to a much greater extent than the equivalent sectors in England'.³¹

Thomas Garnett (1766-1802) connects well with many of the themes of the essays in this special issue, given his personal links with the 'Transpennine Enlightenment', and his adoption of the genre of topography/travel writing, which (as Mee notes) also claims 'a significant place within the genres of romanticism' (p. 3). Garnett personifies the associational network of northern innovation discussed by Joel Mokyr, Margaret Jacob, and Jenny Uglow. At the time of making his tour in 1798, he held the chair of natural philosophy and chemistry at Glasgow's newly founded Andersonian Institute (precursor of the University of Strathclyde), although he moved rapidly to a chair in London's Royal Institution in 1799 before his early death from typhus fever, contracted from a patient in 1802. His biographer describes him as 'a conscientious assimilator and organiser of historical and current scientific thought' rather than an innovator, whose principle interests were medicine, plant chemistry, and climatology. ³² Born in rural Westmoreland, following his apprenticeship Garnett matriculated in 1785 as a medical student at the University of Edinburgh, like several other luminaries of the Manchester enlightenment. The influence of Dr William Cullen's teaching at Edinburgh is evident in the thought and practice of his

²⁹ Iain Mackinnon and Andrew Mackillop, *Plantation Slavery and Landownership in the West Highlands and Islands: Legacies and Lessons: A Discussion Paper* (Community Land Scotland: Land and the Common good, November 2020), p.20. See also Alston, *Slaves and Highlanders*, pp. 240-56.

³¹ Devine, 227. See also Stephen Mullen, 'The Great Glasgow West India House of John Campbell, Senior, & Co.', in T.M. Devine, (ed.), *Recovering Scotland's Slavery Past: The Caribbean Connection* (Edinburgh: Edinburgh University Press, 2015), pp. 124-44.

³² S.G.E. Lythe, *Thomas Garnett: Highland Tourist, Scientist and Professor, Medical Doctor* (Glasgow: Polpress, 1984), p.11.

students, 'encourag[ing] a sense of the "precarious ecology"... of health as a fragile balance between "remote" and "proximate" causes that extended beyond physiology to include the natural environment and cultural history', strongly evident in Garnett's writing, as we will see. (Mee, p. 8) While practicing as a physician in Bradford and Harrogate Garnett moved in the circles of other alumni of Edinburgh's medical school, men like Thomas Percival and Erasmus Darwin: an active member of the Manchester Lit and Phil Society, he presented papers on climate and meteorology in the early 1790's.

Garnett's *Tour* was his most substantial work, running to over 600 pages, with 52 plates by W. H. Watts, the artist who accompanied him on his 1799 journey. By his own admission it depended heavily on previous travellers like Thomas Pennant as well as Sinclair's Statistical Account, even if he felt that 'considerable employment was left for a gleaner'. ³³ As a student at Edinburgh, Garnett had attended Dr John Walker's classes in natural history, and Dr John Hope's in botany, both of whom encouraged their students to make the Highland tour. Garnett's book, published in 1800, the year which saw a maximum boom in the genre, reveals that Highland touring was a popular pastime for practitioners of the 'industrial enlightenment', as well as of romantic poets and students of the picturesque. It invites comparison with the 'petit tour' made by the Leeds industrialist and flax-spinner John Marshall and his wife Jane in 1807. The Marshalls called on their friends William and Dorothy Wordsworth in Grasmere en route to Scotland, and Jane's letters to Dorothy echo some of the concerns of the latter's manuscript 'Recollections of a Tour in Scotland, 1803'. This underlines the Wordsworths' associational links with leading protagonists of the 'inventive age' like Marshall, a friend and collaborator of Edward Baines Senior and Junior. Kirsty McHugh notes that John Marshall's journals (including those describing an earlier tour of 1800 to visit Scottish flax mills) 'reflect [his] record-keeping practices which included compiling information to keep ahead of his rivals in the textile business', although he was also interested in landscape aesthetics and describing tourist sites. ³⁴

³³ Thomas Garnett, *Observations on a Tour through the Highlands and Parts of the Western Islands of Scotland*, 2 vols., (London: 1800), I, v. Hereafter references are bracketed in text.

³⁴ Kirsty McHugh, 'Yorkshire Tourists: The Beginnings of Middle-Class Travel in Georgian Britain', *Yorkshire Archaeological Journal* (2018), 10.1080/00844276.2018.1465700, p. 7. Robert Owen also made a Highland tour in 1801 or 2, although unfortunately the journal which he kept has been lost. Accompanied by Glasgow industrialist George Mackintosh, he visited Dale's cotton mill at Spinningdale on the Dornoch Firth, and other 'remote outposts of the British cotton industry' (Donnachie, *Robert Owen*, pp. 88-90).

Marshall had no intention of publishing: in contrast, Garnett's tour took the form of a Pennantian itinerary narrative littered with anecdotes and digressions, often of a medical or environmental nature, and was intended as a guide for future tourists. Taking a leaf from Darwin's *Botanic Gardens* he added scientific footnotes in the hope that 'some readers' might be allured from the straight path of the tour, to take a glance at the secret operations of nature' (I, vii). For example, in the course of describing Inveraray, he inserted a two-page footnote on intelligence in plants that assumed a certain celebrity (I, 89-90). Following Pennant, Garnett was primarily concerned with improvement, combining 'national description' of Scotland with critique of the landed status quo: notwithstanding his political caution in the vexed ideological climate of the late 1790's, he made no apology for the fact that his account of 'the wretched situation of the inhabitants in the Highlands, will give offence to some persons' (I, viii). In this respect his vision of improvement resembles John Aikin's sense that change is 'governed by human choices that ought to take account of social justice and environmental limits', while sharing Aikin's caution about expressing his political views in the reactionary climate of 1800 (Mee p. 2). Although Garnett's travel account also contains full descriptions of Scottish antiquities and history, I will focus here on his proposals for Highland improvements, keeping a critical eye on the blind spots, as well as the insights, of his 'national description'.

Garnett's clockwise long tour linked Lowland and Highland Scotland, starting (and ending) in Glasgow, which he described as 'perhaps the most improving place in Britain' (II, 185). Approaching the Highlands via the fast-industrialising Clyde estuary and Dumbarton, the Pennantian connection is cemented by a visit to Dr John Stuart in his parish at Luss, the botanist who had accompanied Pennant on his 1772 tour. Following a description of the local flora, and a Smolletian genuflection to the healthful arcadian charms of Loch Lomond, his next stop at Inverarary provided the occasion for a protracted, 13-page dissertation on the Duke of Argyll's herring fisheries, and the work of the British Association for Fisheries, of which the Duke was President. Acknowledging the natural limits to growth in the treeless Highlands, namely the 'poverty of the soil' that restrained agricultural potential, and a want of coal curbing the development of manufactures, Garnett represented herring fishing as a providential mitigation: 'the fisheries are an inexhaustible source of wealth, and can be carried to any extent whatever...larger fortunes might be acquired in the bleak highlands, and dreary wilds of the Hebrides, by the herring fishery... than have ever been done by the cotton manufactory in the low countries' (I, 97). Quoting liberally from John Knox's View of the British Empire, he described how the herring were propelled by an 'insurmountable instinct' to leave their 'secure retreats' and migrate southward into the nets of Highland fishermen, 'to serve the purpose of supplying myriads of created beings with food' (1, 98). Long neglected by local fishermen, the providential bounty of the herring fisheries had mainly been exploited by the Dutch, whose fishing busses he compared to a 'weaver's shuttle', and whose 'industrious mode of life' had converted the impoverished port of Damsluys into 'the opulent city of Amsterdam'. (I, 103) For all Garnett's cornucopian optimism, the Society's plan 'to build fishing villages on the West Coast [subsequently] foundered in part because the migration of the shoals unaccountably diverted into new and different waters'. ³⁵ Like most other fisheries projectors, however, he failed to mention that the principle market for Scottish salted herring was as cheap fodder for enslaved Africans on Caribbean plantations. Slavery emancipation in the 1830's further contributed to the collapse in the market for salt herring, which had seen Scottish exports to the West Indies in the previous decade reported to have between 50,000 and 80,000 barrels. ³⁶

Linen was another staple of the Highland economy: proceeding to the isle of Mull, Garnett turned to the topic of spinning and textile production, reflecting on the technological shift from distaffs and spinning wheels to mechanised flax and cotton mills: 'in such a manner that a child will now do the work of twenty grown persons formerly' (I, 156). Yet like the herring fisheries, there is no acknowledgement here that the linen industry itself depended upon distant Caribbean markets, so that by the 1790's about nine-tenths of the cheap linen exported from Scotland (known as 'Osnaburg' or 'slave cloth) was destined for the plantations.³⁷ After 1747 the British Linen Company established 'spinning schools' in the Highlands to satisfy their demand for a cheap and dependable form of yarn, especially

³⁵ Jonsson p. 43. Travelling projectors like Pennant, Knox and Garnett were subsequently blamed for raising unreasonable hopes about the herring prospects.

³⁶ Alston, *Slaves and Highlanders*, pp. 225-6.

³⁷ Ibid., pp.219-20. See also Michael Morris, 'The Problem of Slavery in the Age of Improvement: David Dale, Robert Owen, and New Lanark Cotton', in Alex Benchimol and Gerard Lee McKeever, eds., *Cultures of Improvement in Scottish Romanticism*, 1707-1840 (New York and London: Routledge, 2018), p. 114.

tapping abundent female labour. But Alston notes that the shift from distaff to spinning wheel tied women to the house and made them unavailable for farm work (which could be combined with with traditional distaff spinning), 'an enduring and significant social change in the Highlands...driven by the use of enslaved labour in North America and the Caribbean'. ³⁸

One of the most interesting passages from an environmentalist perspective is Garnett's five-page footnote on climate change, introducing a major challenge to improving Highland agriculture. Highland climate - 'nine months of winter and three of bad weather' had the effect of 'nipping' the crops before they were ripe. Climate conditions were fast deterioriating: warmer winters and cold, wet summers mark a 'considerable change, even within the memory of the present generation' (I, 174). Reaching to Ossian for scientific verification of this anecdotal account of climate change, Garnett mentions once 'woody Morven' as now destitute of trees, blaming deforestation for permitting the increasingly violent western winds to wreak havoc on exposed crops. Citing the research of the Irish meteorologist Mr Hamilton, and an article in the 4th volume of the Manchester Memoirs based on the meteorological journal of Mr Hutchison of Liverpool, he proposes that increasing wind strength is largely to blame, but attributed this ultimately to human action upon the environment. 'Have not our winds become more violent, and the temperature of our seasons more equable, since our forests were cleared, and the country cultivated?' (I, 179) Here Garnett identified a fatal flaw in the smooth progress of improvement: although his theory of anthropogenic climate changes remains tentative, it is nonetheless a prescient passage, offsetting all his optimism about the 'gifts of nature' (I, 180). He asks wonderingly whether 'so diminutive an animal as man, so temporary in duration, so impotent in strength, acting through the lengthened period and persevering efforts of a large portion of his species, can reasonably be deemed equal to the involuntary production of such vast effects; to a change even of the elements and climates of the earth' (I, 178). As with Barbauld's assessment of national progress in *Eighteen Hundred and Eleven*, 'the downright

³⁸ Alston, p.220-1. See also Devine, 'Did Slavery make Scotia Great?', in Devine, ed., *Recovering Scotland's Slavery Past*, p. 236, 235

inversion of nature's order appears flatly unsustainable' in this uncanny anticipation of the anthopocene. (Davies 'Ghost Acres', p. 21)

Fortunately, the effect of deteriorating climate in the Highlands has been temporally offset by another innovation, this time derived from eco-imperialism, namely the introduction of potato husbandry, 'more valuable than all the gold of Mexico, all the diamonds of Golconda, or all the tea of China' (I, 169), so that starving Gaels no longer need to 'drink the blood of their cattle' while 'their corn rotted on the ground' (I, 169). Like the panacea of providential herrings, however, Garnett's celebration of the miracle tuber would also soon be rendered futile, as a result of the micro-organism known as phytophthora infestans, the potato blight which caused famine in the Irish and Scottish *Gaidhealtachd* in the decades ahead. Working a familiar trope of Highland Tour narratives (reappearing in Scott's account of Tully-Veolan in *Waverley* discussed by Carroll) Garnett describes squalid, windowless black houses on Mull as little better than 'the cabins of the South Seas Islanders, or the wigwams of the American Indians', built around a peat fire, with only a single smoke hole, so that the interiors 'and particularly the roof, is lined with soot, and drops of a viscid redish fluid, (pyrolignous acid, I believe) hang from ever piece of wood supporting the roof'. (I, 159-60). The unhealthy atmosphere is 'particularly fatal to children, who require an air of great purity', while the 'pernicious custom of giving them spirits when very young no doubt hastens their destruction'. He cites an infant mortality rate of one in three, compared to one in twenty in his native northern England (I, 161).

Garnett appeals to the public spirit of landowners to mitigate the insalubrious and impoverished condition of their tenants by keeping rents low, offering longer leases, and (notably differing from Pennant on this point) putting an end to military recruitment as a condition of secure tenure. Given that many have failed to act benevolently, however, it is little wonder, he adds, that 'between the year 1773 and 1775, above 30,000 people from different parts of the highlands, crossed the Atlantic, and since that time numbers have followed' (I, 184). Garnett was writing before the mass sheep clearances of the 1810's and 20's, but he already found the Great Glen to be 'depopulated' by sheep farms, where 'the warriors of the mountains' have 'metamorphosed into sheep' (I, 296). Regarding the social consequences of sheep clearance, he observes that 'a very great change is said to have been observed, even in the disposition of the people: till then, they showed in general little wish to emigrate' (I, 300). Monocultural sheep husbandry creates a static condition with dire environmental as well as economic effects, in which 'the ground that has been reduced from wilderness by the industry and labour of ages, will become wilderness again', and rents remain stationary (I, 298). To avoid such a reversal, Garnett insists that 'pasturage must be conjoined with agriculture, and both of them with manufactories and commerce, before any great degree of prosperity can be achieved'. (I, 298) His plea for a balanced, diversified Highland economy was well-taken, even if it went unheeded by landowners and policy makers in the following century.

Returning to the Lowlands in the final sections of his Tour, Garnett's lengthy account of Glasgow as a hotbed of enlightenment focuses less on the ancient university and more on the breakaway 'Anderson's University' in which he was employed as Chemistry professor, affirming his faith in the links between enlightenment knowledge and technological enterprise. In the course of a detailed precis of his own course of scientific lectures, Garnett's progressive feminism is evident in his account of the Andersonian's pioneering lectures for women: 'the frivolous pursuits for which the fair sex have been condemned, ought not to be imputed to them, but to their education' (II, 204). He reflects at some length on the 'spirit of commerce and enterprise' everywhere observable in Glasgow, which he attributed largely to the 1707 Act of Union and 'the freedom of trade which this country enjoyed to America and the West Indies', although without mentioning plantation slavery (II, 189). Here in Glasgow we are on more familiar 'industrial' territory, as Garnett turns to describe the textile-based early stages of the 'short industrial revolution'. Although more enthusiastic about Scottish linen spun from home-grown flax than imported cotton, he recognises that mechanised cotton spinning is now 'the grand staple of the Glasgow manufacture' even if it lags behind Manchester: 'though great numbers of mills have been erected, still they are by no means able to supply the quantity of yarn required, so that large quantities are brought from England, and particularly from Manchester'. (II, 191).

A high point in many Scottish Tours of this period is the description of visiting New Lanark, one of the biggest cotton spinning factories in the world, powered by the new technology of Arkwright's water frame, which its Glaswegian founder David Dale had imported from England in the 1780's. As an epitome of enlightened industry, New Lanark plays a major role in the final section of Garnett's long narrative. Visiting the celebrated beauty spot of the Falls of Clyde at Cora Lynn, he describes the hall of mirrors that enhances the sublime spectacle of the waterfalls 'nearly equal to that from Ossian's hall near Dunkeld'. But with a difference: 'from the west window of this pavilion is a fine view of the cotton mills, and picturesque village of New Lanark, with the variegated banks of the Clyde'. (II, 231). The 'romantic' situation (Garnett's term) of David Dale's cotton mills as seen by a traveller visiting the hall of mirrors is a key to their moral and economic success: the fact that the raw cotton which they processed was imported from slave societies in Georgia, New Orleans, Trinidad, Jamaica, Grenada and Guadeloupe is by contrast kept out of sight, nowhere meriting a mention. ⁴¹

In a footnote Garnett describes his friend Robert Owen taking over management of New Lanark in 1800 (the year after his visit), and expressing hopes for even better things to come (II, 237). Owen purchased Dale's business for £60,000 on behalf of the Mancunian Chorlton Twist Company, exemplifying the reliance of Scottish cotton spinning on Manchester: in September 1799, Owen married Dale's daughter Caroline, making himself Dale's 'entrepreneurial heir' in personal as well as business terms.⁴² Although Owen's radical reforms at New Lanark over the following decades made history, Garnett's account suggests the extent to which he built on his father-in-law's earlier philanthropic management in maintaining balanced working hours, preserving a salubrious environment in the mills, and prioritising the wellbeing and education of the work force, especially the many children he employed: 'fresh air is constantly introduced into the mills by opening the windows', the floors and machinery are frequently washed with hot water, and the walls and ceilings with lime (II, 233). Echoing Aikin's solicitude for worker's well-being in northern factory towns, Garnett reassured his readers that only 14 children have died in the years 1785 to 1797, out of a staggering three thousand employed in this period (II, 234).⁴³

⁴¹ Morris, 'The Problem of Slavery', pp. 111-131, 116.

⁴² Donnachie, *Robert Owen*, pp. 73-81.

⁴³ This wasn't Owen's own view of Dale's managerial regime, writing in 1813: 'the population lived in idleness, in poverty, in almost every kind of crime; consequently, in debt, out of health, and in misery'. He then proceeded to detail his 'introduction of confidence, regularity, and harmony' (*New View of Society*, pp. 27, 30).

Michael Morris notes that among Dale's many philanthropic activities, he was chairman of the Glasgow Society for the Abolition of Slavery and a share-holder in the Sierra Leone Company: 'Dale's activities with the Abolitionist Society are noteworthy given that his own mills at New Lanark relied inevitably on slave cotton, and he risked alienating his fellow Glaswegian merchants whose fortunes relied on slave interests'. Morris links the abolitionist Dale's ideology of ameliorism in the Caribbean with his reformist policies as a mill-manager, 'promoting improvement-from-above as mitigating against revolution-from-below'.⁴⁴ Unfortunately, by contrast, and despite his radical credentials, Dale's successor Robert Owen 'consistently endorsed the arguments of slave masters and specifically opposed emancipation in the late 1820's....repeatedly employ[ing] the time honoured antiabolitionist rhetoric that 'white slaves' in Britain had it worse than black slaves in the colonies'.⁴⁵ Visiting New Lanark in 1819, Robert Southey exposed the paradox at the heart of Owen's radical improvements: 'he is part-owner and sole director of a large establishment, differing more in accidents than in essence from a plantation: the persons on it are white, and are at liberty by law to quit his service, but while they remain in it they are as much under his absolute management as so many Negro slaves'. ⁴⁶

Garnett's account of New Lanark provides the integrating link to his whole Scottish travel book, connecting the problems of Highland improvement with the rise of industry in the Lowlands. Epitomising the spirit of 'an inventive age' addressed by the essays in this special issue, New Lanark was a water-powered cotton mill situated in a rural industrial village surrounded by picturesque landscape, contrasting with the very different conditions of urban, steam-powered mills and factories typical of later decades of British industrialism. Importantly, Garnett sees Dale's benevolent paternalism as mitigating the dire conditions suffered by plebean Gaels witnessed in the earlier stages of his tour, given that 'a great proportion of the inhabitants [of New Lanark] are highlanders, chiefly from the counties of Argyle, Caithness, and Inverness'. He describes how in 1791 Dale had intercepted a Highland emigrant ship at Greenock and offered employment to nearly two hundred emigrants: 'soon afterwards, with a view to prevent farther emigration, he notified to the people of the

⁴⁴ Morris, 'The Problem of Slavery', p. 118, 119.

⁴⁵ Ibid., p. 120.

⁴⁶ Ibid., p. 122

highlands and Hebrides, the encouragement given to families at the cotton mills, and undertook to provide houses for two hundred families in the year 1792'. Dale's combination of enterpreneurial foresight and industrial philanthropy is thus represented as 'forming a striking contrast to what I had witnessed in the Highlands. If I was tempted to envy any of my fellow-creatures, it would be such men as Count Rumford [dedicatee of his *Tour* and his new boss at the Royal Institution] and Mr Dale' (II,236).

Maybe so, but it's perhaps hard to see how such schemes could contribute to a sustainable solution to the 'Highland problem', simply by re-routing Gaelic emigrants from transatlantic colonies into Lowland cotton mills. And as already mentioned, Garnett consistently fails to acknowledge the dependence of mechanised cotton spinning upon the products of coerced labour in the colonies (as John Aikin, for example, had done in his *Description of Manchester*), even although he must have been fully aware of the source of Dale's raw cotton. In conclusion, there's an implication here that Garnett regards Lowland industry, dependent upon Caribbean 'ghost acres', as offering a better solution for impoverished Gaels than the uncertainties of moorland reclamation, kelping, or canal building at home: just as even his best hope for the Highlands of developing herring fisheries or flax spinning factories also depended (as we have seen) on the Caribbean market for salted fish or cheap Osnaburg linen.

Romantic period writers couldn't have known of the cataclysmic environmental consequences of carbon consumption so alarmingly evident to us in the anthropocene, although the essays in this special issue have revealed how actively they engaged with industrial technology, energy systems, and modernization characteristic of 'an inventive age', and the extent to which 'energy representations' had the power to shape genre and narrative structure. But they can't be excused a similar nescience regarding colonial slavery. Carla Sassi and Michael Morris have discussed the distancing strategy exemplified by Baillie Nicol Jarvie's locution 'Yonder Awa' for the colonial sources of his wealth in Scott's novel *Rob Roy* (1818). Jarvie's is the voice of Glasgow's merchant class in the aftermath of the 1707 Act of Union, who can't (or won't) bring his tongue to pronounce the name of the colonial source of his commodities: 'Now, since St Mungo catched herrings in the Clyde, what was ever like to gar us flourish like the sugar and tobacco trade? Will onybody tell me

that, and grumble at the treaty that opened us a road west-awa' yonder?' ⁴⁷ Jarvie's distancing strategy anticipates the 'alien and alienated' Nature', "over yonder", of modern thinkers criticised by Timothy Morton, 'the reflected, inverted image of their own age'. ⁴⁸ For all Garnett's proposals for a mixed ecology of growth in 'improving' the Highlands (and Scotland in general), his best hope, it seems, still depended upon resources or markets located in an unnameable and invisible 'yonder awa', a blind spot in his travel account. David Dale's Lowland factory system is celebrated for capturing displaced Gaels who are to be reformed and disciplined as model workers, an alternative to military recruitment or emigration from a region that seemed doomed to remain forever in a stationary condition of depopulation and environmental degradation, the dark shadow of Britain's 'inventive age'.

But I will end on a positive note regarding the 'inventive age' that has been the subject of this special issue. Even if we have to abandon the 'teleology of growth' in drawing lessons from our environmental history, as Fredrik Jonsson reminds us, 'this is not the right moment for technophobia...perhaps the best bet we have is to exorcise the cornucopian promise of technology and reorient it toward a world of renewable energy and ecological restoration'.⁴⁹ For all this talk of developmental 'failure' in the Highlands, it's ironic that the move away from carbon-based energy has created new opportunities for a region endowed with abundant rainfall, steep gradients and high tidal bores. What would Garnett have made of the fact that the Highlands and Islands are now world leaders in renewable energy, hosting both the UK's largest hydro scheme, and the world's largest tidal stream array project, offering a better prospect of economic growth and employment than at any time in the last three hundred years?⁵⁰

⁴⁷ Morris, 'Yonder Awa: Slavery and Distancing Strategies in Scottish Literature' in Devine, ed., *Recovering Scotland's Slavery Past*, p. 42. See also Carla Sassi, 'Acts of (Un)Willed Amnesia: Dis/appearing Figurations of the Caribbean in Post-Union Scottish Literature, in Sassi et al (eds.), *Caribbean-Scottish Relations: Colonial and Contemporary Inscriptions in History, Language and Literature* (London: Mango, 2007), 131-47.

 ⁴⁸ Timothy Morton, *The Ecological Thought* (Cambridge, Mass., Harvard University Press, 2010), p. 13.
⁴⁹ Fredrik Albritton Jonsson, 'The Industrial Revolution in the Anthropocene', *Journal of Modern History*, 84 (Sept 2012), 679-696, 696.

⁵⁰ https://www.hie.co.uk/our-region/our-growth-sectors/energy/energy-in-our-region/