

“At night they glow red with fire”: tracing the environmental impact of industrialisation in travel accounts of Merthyr Tydfil, 1848–1881

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One would be forgiven for overlooking the fact that Cardiff is a city with a waterfront. Large-scale civil engineering projects such as the Cardiff Bay Barrage have obscured the Welsh capital’s relationship with its nearby expanse of open water.¹ However, venture beyond the factories and industrial estates situated to the east of the palatial Wales Millennium Centre, and the keen-eyed visitor will notice a small lay-by on Rover Way, suitable for only two or three cars. At the edge of this untidy space, a small K Barrier signals an entry point, and after a short walk down a litter-strewn path, Splott Beach offers picture-postcard views of the Severn Estuary, and an important link to other nations within “the Atlantic Archipelago,” John Pockock’s alternative term for the British Isles (1975, 606).²

From this coastal vantage point – with the Mendip hills of Somerset, England on the horizon and a body of water that eventually joins Cardiff to County Wexford, Ireland – the viewer is encouraged to think outwardly, and the interconnections between different, but closely related, nations become evident. This archipelagic perspective – developed by John Kerrigan’s seminal text, *Archipelagic English: Literature, History and Politics 1603–1707* – avoids the “dangers” and England-bias of many British studies, and instead, provides an opportunity for recalibration, in which overlooked nations, such as Wales, can be brought to the foreground (2008, 23). As Jos Smith argues, archipelagic thinking “does not privilege any one of the political powers that occupy it, reading under the national boundaries and revealing the more complex, cultural relations over, across and between the islands it describes” (2013, 9). Through examining nineteenth-century travel accounts of Wales, this article argues that the ecological disaster of industrialisation prompted a shift in artistic production, as writers began to depict new forms of landscape, altered by human intervention. As a result, these texts – although largely neglected by contemporary readers – deserve to be included as part of a longer cultural anticipation of today’s climate emergency.

The secret shoreline of Splott Beach would never find itself displayed on the postcards for sale at the cultural venues of Cardiff Bay. Stained for well over a century by the black waste of south Wales’s coal mines, the Welsh capital’s only beach is an appropriate monument to the nation’s industrial legacy. Of course, it was the numerous arterial rivers of the south Wales valleys that transported vast amounts of pollution from the

upland mining towns and villages – where local water sources were used both as a depository for colliery waste and as a facility to wash coal – to the city. The most famous of these rivers, the Taff, bore the waste of industry southwards for generations, and, in the process, became a dead river. The source of the Taff can be found high up on the grassy slopes of the Brecon Beacons. However, before flowing out into the Severn Estuary at Cardiff, the river meanders its way down through the many former coal mining communities that constitute the Taff Valley. Arguably, the *de facto* capital of this loosely defined peri-urban region is Merthyr Tydfil, Wales's first industrialised town (Figure 1).

In the latter half of the eighteenth century, Merthyr commenced its transformation from a small, rural community of sheep farmers to a burgeoning centre of iron production. Although iron smelting had occurred earlier in the century, it was – as Philip Jenkins explains – “between 1759 and 1765,” when “a number of famous names appeared in the iron industry (Dowlais, Plymouth, Tredegar, Cyfarthfa),” that Merthyr’s industrialisation truly began (1991, 217). However, the early nineteenth century is the period in which the town underwent what can only be described as a revolution. As Jenkins further notes:

Between 1750 and 1796, the number of iron furnaces in south Wales rose from nine to 26. By 1830, there were 113 furnaces; by 1848, there were almost 200 furnaces producing 631,000 tons. The figure of a million tons was approached in the 1850s. (1991, 220)

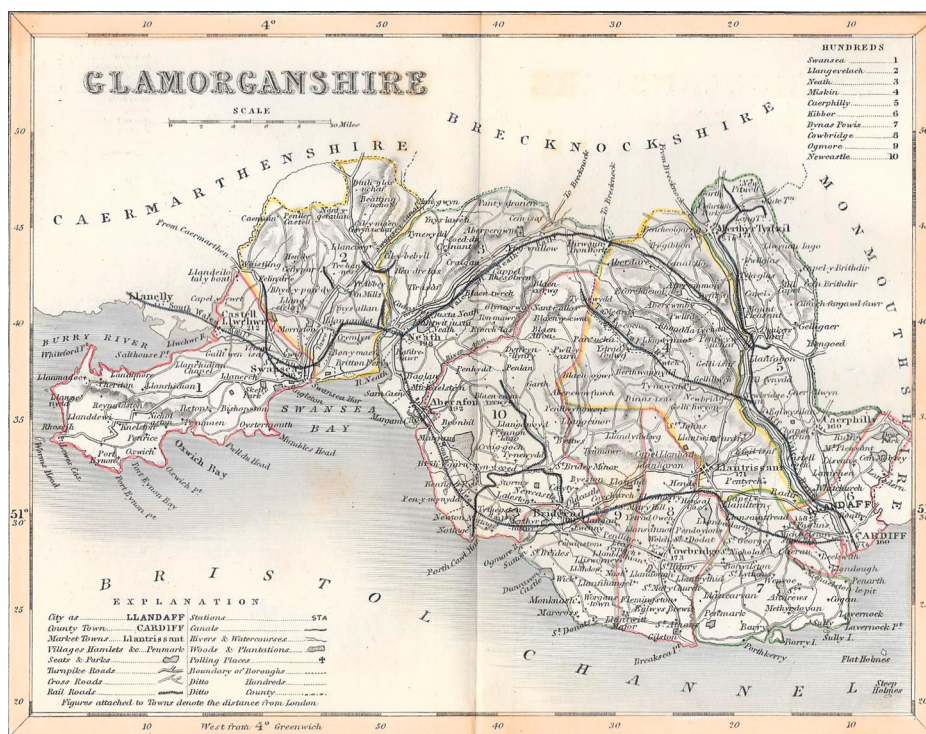


Figure 1. A map of Glamorganshire (Welsh: *Sir Forgannwg*), c. 1845. Merthyr Tydfil is visible in the top-right corner, and the port city of Cardiff sits at the bottom right. The map also details the growing canal and rail networks of nineteenth-century south Wales. Image courtesy of Reginald Beer, Frontispiece Ltd.

At first, Merthyr's ironworks attracted a workforce from across Wales. Consequently, rural communities in the north and west of the country were depopulated as labour relocated to frontiers of opportunity. However, as both Merthyr and Wales's industrial project expanded, the domestic populace failed to satisfy demand, and migrant workers from its archipelagic neighbours – mostly England and Ireland – arrived to drive production onward. By 1851, Merthyr Tydfil was “the largest urban settlement in Wales, with a total of 46,738 inhabitants” (Williams 2019, 357). However, by the 1860s, “there had been troubling changes in the industry,” and Merthyr's iron production began to decrease, creating additional difficulties for the ever-increasing population (Jenkins 1991, 222).

The influx of labour into Merthyr overwhelmed the town's already inadequate water infrastructure, resulting in dangerous living conditions. As Joe England clarifies, the insufficient preparation for the arrival of a new workforce had terrible consequences from a public health perspective, exacerbated by the lack of uncontaminated water:

The result was extreme squalor, filth, disease, and appalling rates of mortality, all compounded by the delay of the ironmasters in making clean drinking water generally available. The situation deteriorated further as the population grew. In 1852 the average age at death in Merthyr was 17.5 years. More than half of all children died before reaching the age of five and more than a quarter died before reaching one. (2017, 27)

Numerous outbreaks of water-borne diseases such as cholera and typhoid were reported both in local and national newspapers for well over a century, ranging from the early nineteenth century to the beginning of the twentieth.³ The lack of proper sanitation was intensified by an increase in the town's population, caused by the industries that also used the scarce water sources as a depository for their waste.

The upsurge in industrial activity demanded a new transport infrastructure to aid production. Roads, canals, and railways were built to convey raw materials from upland communities such as Merthyr Tydfil, down to the ports of Cardiff and Barry, and onwards to centres of production and consumption across the Atlantic archipelago. As a result of this increase in infrastructural connectivity, a new tourist industry flourished, and the nation's attractive landscape became another commodity to exploit. As tourism grew, a surge in demand for guidebooks and instructive pamphlets on Wales created a new arm of the publishing industry. Many of the writers were English tourists, but as Mary-Ann Constantine and Nigel Leask explain, the Welsh writer Thomas Pennant “inspired hundreds of subsequent travellers” with his “pioneering and widely read *Tours in Scotland and Wales*” in the late eighteenth century (2017, 2). Initially, travel accounts documented Wales in all its rural splendour, but as Merthyr scaled up its iron production in the early nineteenth century, writers turned their attention to the nation's industrial communities, and the plethora of accounts published on these areas suggests that the material was very popular. This article focuses on a selection of tourist accounts concerning Merthyr Tydfil published in the mid-to-late nineteenth century, many of which can be found in Cardiff University's Special Collections and Archives.⁴

As Elizabeth Edwards remarks in her article on Romantic-period travel writing in Wales, although the form found a substantial readership in the nineteenth century, the “popularity in the period is now little recognised” (2018, 135). Edwards's article

focuses specifically on travel writing that draws attention to Wales's unique geology, examining scientific writers such as Humphry Davy and Michael Faraday. Building on Edwards's research, this article approaches nineteenth-century travel writing from a slightly different perspective, informed both by archipelagic and ecocritical studies. This approach allows for fresh insights, in which the ecological disaster of Welsh industrialisation can be incorporated within a wider narrative of environmental transformation in the Atlantic archipelago. Concentrating specifically on depictions of Merthyr Tydfil by T. E. Clarke (1848), Edwin F. Roberts (1853), George Borrow (1988 [1862]), and Wirt Sikes (1881), I aim to shed further light on an overlooked form of nineteenth-century literature, in which the town's iron industry prompted a shift in literary production. In order to offer a wide-ranging account of the industry, I have selected some texts that depict Merthyr's iron industry at its peak and, in the case of post-1860 texts, some that witness the beginning of its decline.

Kirsti Bohata and Alexandra Jones have identified tropes in Welsh women's industrial fiction from 1880 to 1910, such as "industrial accident, injury, death and disability ... that would become central to later industrial fiction" (2017, 499). Although working with a different period, this article argues that a trope-based analysis is a constructive way of examining depictions of industry in nineteenth-century travel writing. Throughout the texts surveyed, fire and smoke are two features of Merthyr's ironworks that, through the frequency of use, become tropes for the chaos of the industry itself. Tracing the emphasis on these tropes throughout a range of texts, I will examine the abovementioned shift in literary production from three perspectives: the natural, the emotional, and the cultural. First, writers are conscious of the extent to which the natural – specifically non-human – world had been compromised by industry, creating a new topography that exhibits the mark of humanity in manifold ways. Second, there is an acknowledgement of how this perceptual shift triggers an emotional response in the writer, and their ensuing disorientation by the chaos of industry is evident. Third, the writer attempts to make sense of this new reality and returns to familiar cultural imagery from Classical and Biblical sources, in order to render the unreal in recognisable terms. However, I begin with the town of Merthyr itself, and how it became such an important part of Wales's industrial identity.

"The greatest iron and coal mining town in all Britain": the pull of Merthyr (Sikes 1881, 45)

In addition to widespread pollution, industrialisation brought transport infrastructure to large parts of south Wales. Initially, canal networks were built to convey raw materials down from the isolated valleys to the larger port cities, situated on the Severn Estuary and Bristol Channel. However, as demand for iron and coal increased, rail became the preferred mode of logistics. The movement of commodities simultaneously provided an opportunity for people to travel further, and as W. E. Minchinton explains, Wales soon became linked with England:

Brunel built the South Wales Railway from Chepstow to Swansea in 1850 and, two years later, by the construction of Chepstow bridge, linked it with the Great Western Railway and thus provided direct rail communication between south Wales, the Midlands and London. (2006 [1969], xix)

In 1853, the line was extended north to Merthyr, and the industrial heartlands of south Wales became part of the larger archipelagic transport network, and as a result, open to its literary tourists. Although accounts of Merthyr differ slightly, the majority of travel writing in Wales was written by English visitors and took a specific form.⁵

As Elizabeth Edwards (2018, 143) notes: “comparatively few visitors to Wales left accounts that cover the whole of the country: trips to either the north or south, or along the Wye Valley are more common.” Of those that chose to visit the south, many accounts exist of the industrial towns and villages of Glamorganshire, and here Merthyr Tydfil features repeatedly. However, with the beauty of the Wye Valley and the Brecon Beacons nearby, what was it that attracted Victorian tourists to the fire and frenzy of Merthyr?

Perched within dramatic surroundings at the top of the Taff valley, Merthyr was a striking, vibrant spectacle to any visitor. The town had already gained recognition due to its four ironworks, with many of the new infrastructure projects throughout the British Empire being built using Merthyr’s iron. Indeed, testimonies of the town’s importance bolster the introductions of many nineteenth-century travel accounts. In 1848, T. E. Clarke published a travel companion to Merthyr, with the following descriptive title: *A Guide to Merthyr-Tydfil: And the Traveller’s Companion, in Visiting the Iron Works, and the Various Interesting Localities of the Surrounding Neighbourhood, Containing a Concise History of the Rise and Progress of Merthyr-Tydfil, with Brief Notices of Glamorgan and Antiquities*. I quote this title in full to highlight how – in the absence of glossy images and critical endorsements – nineteenth-century travel writers had to sell the merits of their books in more descriptive ways. As is evident, the famous ironworks appear early in this extended sales pitch, and the trajectory of the presentation is one of progress, which was crucial to the ideology of industrialisation. As one of the earlier accounts of the industrial boomtown, Clarke’s text might be viewed as a catalyst for subsequent literary documentation of Merthyr. Early in the book, the author provides a brief introduction to the town, highlighting its importance, and distinctiveness, both from a national and international perspective:

About 90 years ago, Merthyr was a small village inhabited by shepherds and farmers. Mr Evans, speaking of this spot, says “it was naturally retired, and calculated to aid reflection; but to silence and quiet have succeeded the rude bustle of manufactories, the noise and tumult of business.” But “perseverance,” which is the motto of one of the great ironmasters, has enlarged this once small village to a place of vast and increasing importance. The celebrated geologist, De la Beche, cites the growth of Merthyr-Tydfil as “more rapid than that of any town in the United States.” (1848, 15)

This final point is worth emphasising in order to understand the unique nature of Merthyr and its appeal for tourists. In the 1840s, there were many industrial towns and cities throughout the rapidly developing Atlantic archipelago. However, there were few that had experienced the speed of growth to which Merthyr had been subjected. As a result, the town clearly radiated a distinctive sense of chaos that would have disturbed locals, but excited tourists. Perhaps it was T. E. Clarke’s guide to the town that encouraged the famous English writer, George Borrow, to visit Merthyr during his pedestrian tour of Wales in 1854. Borrow’s Welsh walk would later be published as *Wild Wales* (1988 [1862]), a text that shaped perceptions of the country for generations. As

Borrow arrives at Merthyr, he provides a brief topographical introduction to the town, before declaring its reputation in no uncertain terms:

Merthyr Tydvil [*sic*] is situated in a broad valley through which roll the waters of the Taf. It was till late an inconsiderable village, but is at present the greatest mining place in Britain, and may be called with much propriety the capital of the iron and coal. (1988 [1862], 88)

The rapidity with which Merthyr has been transformed is clear in Borrow's writing, and the town's status as an industrial hub highlights its importance within the larger archipelago. Wirt Sikes, an American journalist and writer – whilst also serving as the U.S. Consul in an increasingly globalising Cardiff – wrote extensively of his pedestrian excursions throughout Glamorganshire. In his account of south Wales published in 1881, the American dedicates a large section to Merthyr, in which he echoes Borrow's sentiments:

The greatest iron and coal mining town in all Britain is a wondrous quaint and interesting spot, in itself, besides being the *raison-d'être* of Cardiff. Were it not for Merthyr Tydvil, dusty and begrimed as it is, small use would there have been for building Cardiff docks. (1881, 45)

Note that Sikes acknowledges the scale of Merthyr's pollution as a slight detriment to the town's greatness. However, despite its filth and furnaces, the American is fascinated by the place, as well as the close connection between Merthyr and Cardiff, which would not become the capital of Wales until 1955.

The lure of Merthyr Tydvil was difficult to resist. Although it was dirty, dangerous, and in many places deprived, the town awoke something in its visitors and provided a sensory experience that lived long in the memory. Wales in the mid-to-late nineteenth century offered the Romantic tourist an opportunity to sample all aspects of the sublime. Natural beauty could be found within the lush valleys along the river Wye, and terrible ecstasy was in plentiful supply among the fiery ironworks of Merthyr. However, these flames extended beyond the ironworks, and came to characterise the town and its surrounding topography.

“An immense glowing mass”: smoke and fire as tropes of industrial Merthyr (Borrow 1988 [1862], 689–670)

In an article on J. M. W. Turner's “Solway Moss” (1816), Fiona Stafford highlights a potential allegorical interpretation of the painting as depicting “the traditional rural economy, in retreat from the dark clouds of industrialization” (2017, 47). This description might be equally suitable for George Childs's famous depiction of Dowlais, with the murky clouds above the ironworks declaring the displacement of an earlier rural economy by the iron industry (Figure 2). In Childs's painting, environmental degradation is the focal point in a new form of landscape painting. From the top of the image, the colossal chimney stacks bring a darkness to the sky, obscuring the sun and disturbing diurnal rhythms. Daniel Finch-Race has produced valuable work on the depiction of smokestacks in French Impressionist paintings, including Camille Pissaro's *Bords de l'Oise à Pontoise* (1867), Claude Monet's *Le Ruisseau de Robec, à Rouen* (1872), and George Seurat's *Une baignade, Asnieres* (1884).⁶ Finch-Race's work foregrounds the subtle presence of industry in familiar works of art, highlighting the extent to which contemporary viewers are desensitised to pollution. Childs's rendering of Dowlais stands as a



Figure 2. Dowlais Ironworks by George Childs (1840). © Amgueddfa Genedlaethol Cymru – National Museum Wales.

significant precursor to these Impressionist works, and emphasises how the scale of Merthyr's industrial expansion ensured that pollution remained central in artistic depictions.

In the middle section of Childs's painting, the horizon is concealed by more flaming funnels, obscuring the surrounding hills and severing the connection between people and green space. In the foreground, Childs highlights Wales's industrial future in his depiction of a coal wagon set on rails. Black spoil tips and other colliery waste litters the middle and right of the picture, where three labourers work. Significantly, a woman is part of the group, which reminds the viewer that unlike the male-dominated workforce of twentieth-century Welsh collieries, women played an equal role in nineteenth-century Merthyr; a point further expanded by Anne Kelly Knowles's analysis of the painting:

Two men in the foreground, probably furnace fillers, strain to lift chunks of ore or coal that they will load in a tram car and dump down a chute at the top of a furnace stack. The woman standing with them could have been a filler as well, for the 1851 manuscript census recorded a few women in that occupation. (2012, 74)

Like the texts examined in this article, Childs's painting can be included as part of a shift in cultural interpretations of Wales. In addition to depictions of rural scenery, writers and artists began to represent the new landscape of industry, in which environmental transformation is a dominant feature. Although Childs's painting of Dowlais conforms to Victorian notions of progress, the fiery pandemonium of the artist's depiction seems to suggest that industrialisation comes at a cost for both human and non-human alike.

As Childs's painting illustrates, the scale of Merthyr's ironworks dominated depictions of the town. Raging fires and polluted air became familiar tropes for the environmental degradation caused by industrialisation. In the last ten years, there has been an upsurge in academic research on literary representations of air pollution, with a particular focus on Victorian, mostly English, writing, and especially with regards to representations of the city of London. Allen MacDuffie's *Victorian Literature, Energy, and the Ecological Imagination* (2014) established the burgeoning field, with a book-length study on how the concept of energy is depicted by a range of nineteenth-century writers, including Charles Dickens, John Ruskin, Robert Louis Stevenson, Joseph Conrad, and H. G. Wells. Expanding the field further, Christine L. Corton's *London Fog: The Biography* (2015) traces the enduring cultural impact of air pollution in the English capital. "London fog," Corton explains:

... was born in the 1840s, when the city's rapid expansion multiplied the number of domestic coal fires and mingled their smoke as it poured out into the atmosphere with the noxious emissions of factory chimneys and workshops in the early stages of the industrial revolution in the capital. (2015, 1)

However, Jesse Oak Taylor perceives the cause of the city's air pollution in more singular terms:

Whereas the smoke pollution of such cities as Manchester, Leeds, and Birmingham was synonymous with industrialization, London's smog was the product of a simpler and more profound force – population growth. It was a sign of consumption rather than production. (2016, 3)

What Macduffie, Corton, and Oak Taylor's interventions highlight is an opportunity to focus more on places of production beyond the English border. In the introduction to Glenda Norquay and Gerry Smyth's edited collection on changes in cultural identity in the Atlantic archipelago, the editors point out that "insufficient attention" has been given to the "relationship between 'Celtic spaces' and other areas of 'difference'" (2002, 2). Wales was a major industrial centre throughout the nineteenth and twentieth centuries, beginning with iron and then moving to coal. If there is more to be understood about the history of climate change, then producer and consumer must be afforded an equal focus. Examining these issues using an archipelagic framework is particularly successful in its recognition of all constituent parts. François Noudelmann suggests that the archipelago should be viewed "not as a geographic form but as the multiplicity inherent in each identity," where history is understood holistically, rather than centrally (2018, 208). Building on Macduffie's argument that the Victorian era can be characterised as the "period that first articulated questions about sustainability, the limits to growth, and the implications of energy pollution for the entire global environment" (2014, 1), this article considers how these questions were articulated from a Welsh perspective. Examining depictions of smoke and fire – the dominant tropes of nineteenth-century travel accounts of Merthyr – I will trace shifts in artistic production against the backdrop of environmental catastrophe. As a result, it will become evident how the following accounts display a recurrent unease over the ways in which industrialisation was enacting change.

The natural

“Studded with beautiful flames”: the burning hills of industrial Merthyr (Clarke 1848, 14–15)

In nineteenth-century descriptions of Merthyr Tydfil, travellers frequently comment on the town’s distinctive topography amid sizeable hills. However, as iron production increased, Merthyr’s landscape was modified by the necessity to store industrial waste. At the beginning of Clarke’s account, the mountains that surround Merthyr are juxtaposed with a new type of elevation:

Merthyr-Tydfil is situated in the uppermost part of Glamorgan, and lies between rough bleak mountains, beside heaps of cinders which rise to an immense height. These heaps have been formed by the accumulation of refuse matter thrown out from the mines and furnaces. Railway embankments, compared with these tips or heaps, are mere pigmies; the great heat of the cinders causes them to smoulder for many years. In the evening they may be seen studded with beautiful flames of various hues, caused by the burning of the sulphur which is emitted from the minerals. (1848, 14–15)

This description stands in contrast to later, twentieth-century depictions of industrial Wales, which present the nearby rural topography in stark contrast to the dirty, industrial town. Instead, in this earlier account, Clarke sees bleakness in both, as if the pollution of extractive development has dulled the appeal of the surrounding hills. However, when darkness falls, Merthyr’s refuse heaps come to life, as the chemical modification of industry creates an internal glow. Compared to the dull hills that surround the town, these mutant mounds exist in a space between the natural and the industrial. In Clarke’s description of Merthyr’s waste heaps, there is an early articulation of what Timothy Morton defines as “the mesh,” and a growing awareness of “how human beings are connected with other beings – animal, vegetable, or mineral” (2010, 7–8).

Writing some years later, Borrow also comments on the startling appearance of Merthyr’s glowing heaps, which by day lack the fiery menace evident at night:

The mountain of dross which had startled me on the preceding night with its terrific glare, and which stands to the north-west of the town, looked now nothing more than an immense dark heap of cinders. It is only when the shades of night have settled down that the fire within manifests itself, making the hill appear an immense glowing mass. All the hills around the town, some of which are very high, have a scorched and blackened look. (1988 [1862], 689–670)

In this passage, Borrow’s vivid description of the industrial waste brings the mounds to life. They “startle” the author and “glare,” possessing a curious “fire within,” which evokes images of the supernatural. There is a near identical passage – almost to the point of slight plagiarism – in Sikes’s account of Merthyr:

Many of the hills, and these not always the lowest, are composed wholly of dross from the iron forges. Some of these huge dumping heaps are almost worthy the title of mountains, so high and steep are they. By day they are black, but at night they glow red with fire, and are very picturesque to see, in conjunction with the chimneys which belch smoke and flame all round the sky. There is a general scorched and blasted look to the natural scenery about Merthyr (1881, 58)

It is striking that Sikes should view these glowing hills as “picturesque,” given the cultural significance of the term. The notion of the picturesque originates in William Gilpin’s “An Essay Upon Prints,” in which the writer-cum-priest describes the term as “that peculiar kind of beauty, which is agreeable in a picture” (1768, 2). In accordance with Gilpin’s terminology, Merthyr’s fiery hills are so peculiar to Sikes that he is forced to acknowledge their painterly quality. When met with a scene that disturbs orthodox formations of space and landscape, the writer refers back to familiar imagery in order to make sense of this new chaos. This practice of observing the environmental impact of industry through art is crucial and will be developed later.

These Victorian-era accounts of industrial Merthyr are arresting in their stark presentation of a landscape transformed by humans. The hills surrounding the town exist as remnants of a former age, as fiery heaps created by industrial waste begin to define Merthyr’s new topography. In the literary accounts, there is a distinct lack of sentimentalism in the description of this industrial disfiguration, as if the writers describe an environment that is not worth saving. The rapid industrialisation of Merthyr has unsettled expectations of what landscape should represent. What impact does this transformation have on the writers themselves?

The emotional

“What shall I say?”: the disorientating impact of industrialisation (Borrow 1988 [1862], 689)

In 1819, the English scientist Michael Faraday embarked on a pedestrian tour across Wales. Perhaps unsurprisingly, due to his interest in engineering, and what might now be defined as environmental science, Faraday stopped at Merthyr Tydfil. After visiting the famous Dowlais ironworks, Faraday later took note of what he had witnessed:

Men black as gnomes ... flame upon flame ... scorch[es] the air ... the heat, the vibration, the hum of men, the hiss of engines, the clatter of shears, the fall of masses, I was so puzzled, I could not comprehend them except very imperfectly. (1972, 24)

Here, the identification of the men as “gnomes” consigns Welsh people to the realm of fantasy, which – as Shaun Richards reminds us – is a tendency that has continued to the present, with English critics such as the late A. A. Gill describing the people of Wales as “an assortment of ugly trolls” (2002, 139). As Edwards (2018, 144) notes, there is also a sense of the gothic in this passage, which – as Jane Aaron highlights – was influenced by the visual characteristics of Welsh industrialisation itself: “[t]he flare of the furnaces, the blackened landscapes ... became part of the image of Wales and lent themselves very readily to Gothicization” (2013, 6). However, Faraday’s frantic description also highlights a sense of disorientation on the author’s behalf, with the restless narrative becoming distracted by folkloric imagery. Furthermore, in terms of language, the staccato listing of images reflects the mechanisation of industry, and the frantic nature of this description further supports the notion that the speaker is experiencing some degree of agitation of the nervous system. In Laura Salisbury and Andrew Shail’s edited collection, *Neurology and Modernity: A Cultural History of Nervous Systems, 1800–1950* (2009), a number of essays converge to examine the connections between the modernisation of society and

the perceptible impact this has on the human body's nervous system. Like other travel accounts from the early nineteenth century, Faraday appears to exhibit a certain nervous response to the flame and fury of the ironworks, as the human body struggles to keep pace with the speed of industry. For many nineteenth-century tourists like Faraday, walking was the preferred form of movement during extended tours. The decision to be a pedestrian was an aesthetic choice; it allowed for contemplation, note taking, and spontaneous meetings. However, at Dowlais, Faraday's pedestrian sensibilities have been shaken, and the onomatopoeic nature of the writer's language highlights the extent to which his senses are battered by the chaos of industry. At the conclusion of his frantic cataloguing of images, Faraday declares a final attitude of puzzlement, followed by a failure to truly comprehend what it was that he was witnessing.

This disorientating power of industry is a recurrent theme throughout other accounts of Merthyr in the mid-nineteenth century. Edwin F. Roberts was another writer who published a record of a visit to Merthyr around this time. The title, *A Visit to the Iron Works and Environs of Merthyr-Tydfil in 1852* (1853), suggests the extent to which industry dominated the tourist's motivations for visiting. It is an apologetically unliterary account of the town. At the beginning, the author offers a prolonged explanation of why he has chosen to write about his visit to the town: "The impression made upon me was so vivid and striking the interest awakened so novel, so strange, and hitherto so utterly distinct from anything I had ever before felt" (Roberts 1853, 3). Roberts acknowledges the impact that Merthyr has had on his character, and the resultant account is equally a form of – what would be described today as – self-therapy, as it is a work of travel writing.⁷ As in Faraday's account, Roberts's visit to Merthyr triggers a response in his nervous system and, ultimately, the chaos of industry is a stimulant for the artist. This sentiment is echoed ten years later by Charles Baudelaire, who remarks that "inspiration has some connection with congestion" (1981 [1863], 398).

In an attempt to recreate the bewildering rhythm of Merthyr, Roberts proceeds to describe his initial walk through the town:

... with a half-stupefied sense of the mighty energies of men and fire combined, such as we might feel in the neighbourhood of some occult monster, with horrent form and myriad antennae – my ears and pulses throbbing with the rush of ceaseless and sounding machinery. (1853, 4)

The chaos of industry has a hallucinatory effect on Roberts, as well as triggering a bodily reaction, further highlighting both the psychological and physical effects of industry. Moreover, there is an obvious sense of the gothic in this passage, as the trope of fire comes to represent a supernatural embodiment of Merthyr's frenzied ironworks.

Visiting Merthyr one year after Roberts, Borrow experiences a similar form of disorientation, this time during an appointment at one of the town's other major ironworks:

What shall I say about the Cyfartha Fawr? I had best say but very little. I saw enormous furnaces. I saw streams of molten metal. I saw a long ductile piece of red-hot iron being operated upon. I saw millions of sparks flying about. I saw an immense wheel impelled round with frightful velocity by a steam engine of two hundred and forty horse power. I heard all kinds of dreadful sounds. (1988 [1862], 689)

The writer appears to pause at the beginning of this passage, as he attempts to accurately describe what he has witnessed. Then, in a similar style to Faraday, Borrow frantically

lists his still-vivid memories, in which images of fire dominate. The repetition of “I saw,” and then “I heard” indicates a state of agitation, triggered by sensory overload. In this anxious description, Borrow is critical of the industry that has transformed Merthyr from a rural backwater to a blistering ironopolis. In comparison to the many pastoral episodes in *Wild Wales*, Borrow’s arrival in Merthyr represents a moment of crisis, after which the previously innocent simplicities of rural Wales are somehow tainted by the flaming pandemonium of this new industrial nation.

The cultural

“As if Acheron was belching forth fire and flame”: the language of industry (Roberts 1853, 19–20)

As industrialisation challenged habitual perceptions of place, writers were tasked with finding a suitable language to describe the associated notions of change and disorder in comprehensible terms. Cultural understandings of chaos and destruction had been defined for centuries by various traditions, from Classical and Biblical sources to Renaissance and Romantic movements. Industrialisation vividly brought to life imagery that until the nineteenth century had been rarely witnessed beyond art and literature. It is unsurprising, then, that travel accounts of Merthyr Tydfil in the mid-to-late nineteenth century returned to established conventions in an attempt to successfully capture the reality of industry.

When Roberts visits Merthyr’s Penydarren ironworks, the writer explains the ensuing bedlam with references to Classical imagery:

... ten or fifteen minutes’ walk brings you in front of “Penydaran” iron-works, and you stand outside the wall gazing on a scene that seems like a vision [of] Hades in its milder form. Just now it does not seem as if Acheron was belching forth fire and flame; and that the horrible noises described by the poets as appertaining to the infernal regions, were, for some reason or other, subdued. (1853, 19–20)

Although the ironworks is a “milder” version of the Greek underworld, it still exhibits enough disorder to invite a comparison. In *The Odyssey*, Homer describes “Acheron” as a larger river, into which “Cocytus runs, and Pyriphlegethon,” the latter of which is described as a river of fire (2002, 203, ll. 631–632). Roberts’s naming of the river anticipates a later reference to the Italian poet, Dante:

Terrible as is the aspect of the blast-furnaces, I doubt not if the puddling furnace does not realize a more perfect and Dantean “hell of fire” than even they do. One looks into the troubled molten sea with something very like awe. (1853, 28)

As the river Acheron provides an entry point to Dante’s vision of Hell, the threshold of Penydarren’s puddling furnace designates access to a new inferno, forged by industry. Here, there are echoes of Milton’s depiction of hell in *Paradise Lost*, as once more, amid the fiery chaos, Roberts interprets the scene using familiar imagery. However, in the final quotation, the ironworks remind the writer of more recent representations of fire and fury:

Sounds of blast and steam, and metallic reverberations all mingling together with the cries of men in a sky where the very winds are dead as if with fear, give to the lurid hue of this grand

and impressive picture touches that are superior to art. It is as if, in Turner's paintings of tempests, you heard the furious roar of the storm, the hoarse booming of the sea, and the boiling hiss of the surges, with drowning men crying for help, and with thunders rolling in the concave that belts all in. Fire-flashing volcanoes by the dozen do all those furnaces become. (Roberts 1853, 31)

In a form of ekphrastic writing, Roberts's senses are bombarded with the frenzy of the blast furnace, and he appears oddly detached from the experience; reality becomes art. In this quotation, there is a great deal owed to the aforementioned notion of the chaotic Sublime and the Romantic imagining of catastrophe and, in addition to directly referencing Turner, Roberts's description evokes works of art such as Joseph Wright's *Vesuvius in Eruption* (c. 1776–1780), and John Martin's *Destruction of Pompeii and Herculaneum* (1822). Moreover, there is a clear sense that Roberts – in lines like, “the cries of men in a sky where the very winds are dead as if with fear” – perceives the chaos of the industrial landscape in distinctly gothic terms.

Writing after Roberts, Borrow recalls similar imagery in an attempt to describe the fiery reality of Merthyr. In a particularly memorable moment in his text – quoted at the beginning of Raymond Williams's noteworthy essay, “The Welsh Industrial Novel” – the English traveller first catches a glimpse of Merthyr's burning glow from the small village of Llan, situated between Swansea and Neath:

I had surmounted a hill and had nearly descended that side of it which looked towards the east, having on my left, that is to the north, a wooded height, when an extraordinary scene presented itself to my eyes. Somewhat to the south rose immense stacks of chimneys surrounded by grimy diabolical-looking buildings, in the neighbourhood of which were huge heaps of cinders and black rubbish. From the chimneys, notwithstanding it was Sunday, smoke was proceeding in volumes, choking the atmosphere all around. From this pandemonium, at the distance of about a quarter of a mile to the southwest, upon a green meadow, stood, looking darkly grey, a ruin of vast size with window holes, towers, spires, and arches. Between it and the accursed pandemonium, lay a horrid filthy place, part of which was swamp and part pool: the pool black as soot, and the swamp of a disgusting leaden colour. Across this place of filth stretched a tramway leading seemingly from the abominable mansions to the ruin. So strange a scene I had never beheld in nature. Had it been on canvas, with the addition of a number of diabolical figures, proceeding along the tramway, it might have stood for Sabbath in Hell—devils proceeding to afternoon worship, and would have formed a picture worthy of the powerful but insane painter Jerome Bos. (Borrow 1988 [1862], 682)

Taken as a whole, this passage offers a complete perspective of environmental degradation caused by industry, with images like “huge heaps of cinders and black rubbish,” smoke “choking the atmosphere all around,” and a “pool black as soot,” converging to present an ecologically dead space. As is evident from Borrow's tone of astonishment, he has never seen a place like Merthyr. This notion is especially surprising given that the writer was a well-travelled man who, at this point, had already visited some of the world's greatest cities, such as Edinburgh, London, St. Petersburg, Madrid, and Istanbul. The rapid industrialisation of south Wales was clearly a shock to the system. However, like Roberts, when Borrow looks to Merthyr his mind involuntarily interprets the scene through the hellish paintings of Hieronymus Bosch. As earlier, Sikes acknowledges the “picturesque” quality of Merthyr's fiery hills, Borrow interprets the strangeness of environmental degradation through familiar works of art.

Finally, this process is repeated in the closing section of Borrow's visit to Merthyr. As the writer uncovers a peculiar industrial structure wafting smoke and flames into the night sky, he is immediately reminded of the defining figure of the Flemish Primitives:

Then there is an edifice at the foot of a mountain, half way up the side of which is a blasted forest and on top an enormous crag. A truly wonderful edifice it is, such as Bos would have imagined had he wanted to paint the palace of Satan. There it stands: a house of reddish brick with a slate roof – four horrid black towers behind, two of them belching forth smoke and flame from their tops – holes like pigeon holes here and there – two immense white chimneys standing by themselves. What edifice can be of such strange mad details? I ought to have put that to question to some one in Tydvil, but did not, though I stood staring at the diabolical structure with my mouth open. (1988 [1862], 690)

The writer's failure to determine the identity of the mysterious building is perhaps a deliberate oversight, as the anonymity only compounds the sense of terror. Echoing Roberts's earlier description of Penydarren, the enigmatic structure is "belching forth smoke and flame" from its threatening towers, and here, Borrow's use of industrial tropes bestows a monstrous character on the inanimate object. However, it is the reference to Bosch that reminds the reader that the sheer scale of Merthyr's industrial expansion places limitations on the writer's ability to convey the scene. As a result, Borrow recounts the memory with a description that blurs the line between reality and art.

Conclusion

In nineteenth-century Wales, the ecological disaster of industrialisation prompted a shift in many aspects of artistic production, from fine art to literature. Reading these largely neglected accounts of Merthyr Tydfil from both an archipelagic and environmental perspective, Wales's key role as an early centre of iron production is brought to the foreground of a long description of climate change that began with the industrial revolution. Throughout the early nineteenth century, the expansion of Merthyr's iron industry resulted in infrastructural developments across Wales, connecting the previously underdeveloped nation with other parts of the archipelago, allowing raw materials to be exported, and a domestic tourist industry to flourish. In terms of cultural production, tourist narratives became a popular means of describing this new, altered nation. As industrialisation expanded, travel writers widened their point of focus, and began to look towards centres of manufacture in south Wales. In the town of Merthyr Tydfil – which pulled in swathes of people from across the Atlantic archipelago – this shift in representation is noticed most fervently. The recurring images of smoke and fire are useful tropes with which to examine this shift, and can be characterised in three ways. Firstly, the extant travel writing begins to foreground sites of industrial development, where more emphasis is placed on human-altered landscapes. In a particularly potent example of recurring imagery, industrial waste results in burning mounds of fire that continue to glow once the sun has set. This marks a shift in representations of Wales, as the industrial transformation of the environment becomes a focal point for artists and writers. Following this alteration of space, there is a perceptible shift in the emotional tone of the narrative, as writers express a consistent sense of disorientation at the flaming chaos of the iron industry. From the perspective of cultural history, this results in a forced modification of the language used to describe this new reality, as

writers clamber for established imagery with which to render the unreal spectacle in recognisable terms.

Notes

1. This obscuration also disrupts the Welsh capital's relationship to other nearby nations. As Nicholas Allen, Nick Groom, and Jos Smith explain in their introduction to *Coastal Works: Cultures of the Atlantic Edge* (Oxford: Oxford University Press, 2017), "the greater part of the coastlines of England and Wales open onto waterways that connect them to other regions of Britain, Ireland, and Europe," and although, the "coastal margins of the Atlantic edge" are "both inward and outward facing" (3), it might be argued that Cardiff's obscured relationship with its coastline has an impact on the city's sense of connection to other places.
2. For a comprehensive discussion of the term "archipelago" in relation to Wales, Ireland, Scotland, and England, see John Kerrigan's seminal text *Archipelagic English* (2008). For more contemporary contributions to the topic, see John Brannigan's introduction to *Archipelagic Modernism* (2015, 1–20), and also Marie-Louise Coolahan (2018).
3. "Cholera," *Monmouthshire Merlin*, 15 September 1832. "Typhoid Fever at Merthyr," *Evening Express*, 20 September 1900.
4. The catalogue of Welsh travel writing has been made available via the website of Cardiff's Special Collections and Archives: Accessed 1 November 2020. <https://www.cardiff.ac.uk/special-collections/subject-guides/travel>.
5. The Welsh writer, OM Edwards, wrote travel accounts in response to English accounts of Wales, such as *O'r Bala i Geneva* (1889), *Cartrefi Cymru* (1896), *Tro i'r De* (1907), and *Tro trwy'r Gogledd* (1907). These texts were often used as school textbooks to teach school children about their heritage. Furthermore, there are also accounts of Wales written by European travellers, such as Joseph Rodenberg. A project at Bangor University documented many of these accounts and remains available online: Accessed 1 November 2020. <http://etw.bangor.ac.uk/welcome>.
6. Daniel Finch-Race's conference paper, entitled "Sensing the nature of northern French smokestacks from the 1860s to the 1880s," is available to view online at: Accessed 1 November 2020. <https://www.youtube.com/watch?v=jMB6TqZyiX4>.
7. The term, "self-therapy" would not have made sense to a nineteenth-century reader. The closest equivalent, Samuel Smiles's *Self Help* (1859) had quite different values and meaning. They might have understood Humesian empiricism, or even a Romantic framework for exploring feeling. For example, the idea that impressions were of value in arriving at true knowledge of phenomena, and that it was of aesthetic and philosophical value to reflect on experience.

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