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Industrial Specters of Nineteenth-Century Literature:
Mills, Ports, and Mines

By

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DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

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Industrial Specters of Nineteenth-Century Literature:

Mills, Ports, and Mines

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2022

Abstract

"Industrial Specters of Nineteenth-Century Literature: Mills, Ports, and Mines" argues that the century's transition to steam power resulted in authors grappling with the lingering presence of industrial pollution. In order to depict the particulate dangers born out of industrialization, authors came to include spectral figures within their realist texts; often, the specter appears at the moment when individual characters merge with nearly invisible dangers. By bringing together scholarship on environmental risk and spectrality, the project consistently contends that the specter is an appropriate figure for portraying particulate hazards, since apparitions often function as imitations or shadows of other entities. The specter also lingers, like industrial pollution itself, as a reminder of uneven environmental risk.

My dissertation includes three chapters, each showing the abundance of nineteenth-century fiction with haunting descriptions of unique industrial dangers: the polluted air of mills, the hazardous water of ports, and the contaminated soil of mines. In each, the specter takes on the form of the polluted space: the first chapter includes air specters; the second chapter adds water specters to the project; the third chapter includes the metallic specter. Each chapter either begins or ends with John Ruskin's proto-environmentalist works, which describe the spectral components of these three industrial locales. In addition to Ruskin, each chapter is comprised of a constellation of nineteenth-century literature with settings in Britain, the United States, Central America, South America, and the Caribbean, illustrating that these industrial locations form a trans-imperial, interconnected production network of extraction, transportation, and manufacturing. By the end of the project, I show that these spectral, industrial locales are fully interconnected; describing these entanglements through hauntings makes visible the accumulated particulate hazards that cause further harm.

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For June Larson and Rachel Surridge

From the prospectus to the final chapter drafts and beyond, I have had the good fortune of a supportive and encouraging committee, whose feedback has continually strengthened and guided this project. I am incredibly grateful for Elizabeth Miller, my advisor, who gave me feedback that actually made me excited about something I had never before enjoyed: revision. Throughout my time at UC Davis, Professor Miller's own writing has been a model for me of clear and compelling prose that I will continually attempt to emulate in my own work. In many ways, the project began in Professor Miller's seminar on extraction. Michael Ziser has frequently helped me talk through and narrow down the main focus of each chapter, and I am thankful for the times he helped me make my case for the project's experimental scope. I am also thankful for Professor Ziser's seminar on forests, which helped solidify my interest in environmental humanities. Many of my initial inquiries that led to this project were formed and cultivated in Parama Roy's graduate seminar on nonhuman empire. I am forever thankful for the questions Professor Roy raised, throughout this process, which always got to the heart of the argument. My first publication, which is featured in this dissertation, began as a paper in Hsuan Hsu's seminar on environmental risk. Professor Hsu's comments helped at every scale of each chapter's argument, and this feedback also led to a second publication. I am so appreciative of Professor Hsu for helping me formally enter these scholarly conversations.

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I dedicate this dissertation to my grandmother, June Larson, and Martin's grandmother, Rachel Surridge, who both passed away in the last two years and who both let me know, at different points of this project, that they wished they had been able to earn a PhD in English.

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Introduction

Industrial Specters of Air, Water, and Earth

"The light, the air, the waters, all defiled! How of the earth itself?"
John Ruskin, *The Queen of the Air* (1869), 293

"There was a whispering in my hearth, / A sigh of the coal," the speaker of Wilfred Owen's poem "Miners" (1918) reveals (1-2). To add to these unsettling sounds from the coal, Owen details the coal's haunting appearance, as the speaker describes wisps of "steam-phantoms" (9). With full attention now turned to the coal, the speaker listens intently, and then understands that the coal's sighs entail a haunting retelling of their extraction: "the coals were murmuring of their mine / and the moans down there" (13-14). Owen draws together the coal and the miners, as first shown through the alliteration of "murmuring" and "moans"; he then writes of the coal and miners as becoming one entity: "I saw white bones in the cinder-shard" (17).¹ The bones of the miners are "in" the coal and the coal is in them: "Many the muscled bodies charred," the poem continues, "And few remember" (19-20). These lines invite a re-reading of the "steam-phantoms" as the miners merged with the coal, refusing to be forgotten after their death. In other words, these ghosts haunt the speaker's home in order to express the steam-powered horrors of the past.

Before the early twentieth century, authors writing amidst the rise of industrialism were tasked with portraying its hazards—many of which were difficult, if not impossible, to see with the naked eye. John Ruskin's early contributions to ecological thought are well documented, such

¹ As Owen is primarily remembered as a World War I poet, it is fitting here to explain that "Miners" also draws upon his observations of the war. In a letter to his mother, Owen explained that he got "mixed up with the War at the end" of the poem. These "white bones in the cinder-shard" portray mining deaths, war deaths, as well as the deaths of those who mined in the war under no-man's land (Owen 1973).

as in Vicky Albritton and Frederik Albritton Jonsson's *Green Victorians: The Simple Life in John Ruskin's Lake District*, which posits that Ruskin "explicitly linked the degradation of the air to industrial production" (35). In making this link, Ruskin revealed his grasp of particulate pollution, as well as the hazardous particle's mobility. As he wrote in *The Storm-Cloud of the Nineteenth Century* (1884), "every breath of air you draw is polluted, half round the world" (39). In addition to air pollution, Ruskin was also attentive to the pollution of water and soil, elements encapsulated by this introduction's epigraph from *The Queen of the Air* (1869). As Albritton and Albritton Jonsson explain, the "degradation of the air" for Ruskin was at once both "physical and spiritual" (36). The same is true for the waters and earth, which are, in Ruskin's phrasing, "defiled" by surrounding industries (*The Queen of the Air* 293). When describing industrial pollution, Ruskin often uses supernatural language, referencing spirits, phantoms, ghosts, or specters; when the "physical and spiritual" air, water, and earth are "defiled" by industry, industrial specters arise.

Like the "steam-phantoms" of Owen's "Miners" who are a disturbing combination of coal and miner, the industrial specter makes visible the merging of the body with industrial matter. I focus on the term "specter," since it is derived from the Latin verb "specĕre," meaning to "look" or "see" ("spectre"); the term "spectral" itself can mean "of or pertaining to, appearing or observed in, the spectrum" ("spectral, adj.5"). While the specter is an "an unreal object of thought" ("spectre, n.1"), it is also a "faint shadow or imitation of something" ("spectre, n.1"). The industrial specter helps one see the "faint shadow" of particulate dangers. Whether formed by inhaling, ingesting, or otherwise absorbing the hazards brought on by steam power, the industrial specter is a reminder of the body's permeability and subsequent vulnerability. Stacy Alaimo's critical framework of "trans-corporeality" is central throughout the project because it

draws attention to the body's immersion and material exchange within its environment. As Alaimo puts it, "the human is always inter-meshed with the more-than-human world" (2). Throughout my dissertation, the "more-than-human world" includes the materials of industry that then transform individuals into the "more-than-human" specter. In Ruskin's own work, he argues that industrial particles are incompatible with bodily health. In *Unto This Last* (1860), while discussing labor, value, and resources, he creates another haunting image of industry, emphasizing that "the world cannot become a factory nor a mine" and "men can neither drink steam, nor eat stone" (223). This project analyzes the haunting literary depictions of trans-corporeality, including those within Ruskin's own writing, when individuals in and near industrial sites do, in fact, "drink steam" and "eat stone."

Drinking steam and eating stone transform the individual subject into what Jesse Oak Taylor has called a "polluted body" (99), a phenomenon that is difficult to see and subsequently challenging to depict. As Taylor shows in his analyses of fin-de-siècle works, the Gothic "helps dramatize" the "polluted body" (99). In a related argument, but describing twentieth-century environmental threats, Ulrich Beck posits that there is currently a nearly invisible "shadow kingdom" of toxicity: "The world of the visible must be investigated," Beck argues, "relativized and evaluated with respect to a second reality only existent in thought and yet concealed in the world" (72). Beck's "shadow kingdom" illustration makes the "specter," which can itself be a "shadow" ("specter, n. 1"), a particularly well-suited figure for depicting the "polluted body."

One of the project's main interventions is that it brings together scholarship on environmental risk and scholarship on specters in order to theorize why haunting figures appear in literature contemporary with industrialism's rise. Some of this scholarship is already in

conversation. For instance, in *Slow Violence and the Environmentalism of the Poor*, Rob Nixon references Beck's "shadow kingdom" to argue that this haunting figuration may help represent "slow violence," the "calamities that are slow and long lasting" that may no longer hold an audience's attention like a "spectacle" momentarily can (6). Pollution violently turns individuals into industrial matter, or more specifically, it turns them into industrial waste. The industrial specter is a disturbing reminder of "slow violence"; in other words, the industrial specter lingers since the specter is composed of lingering pollution.² Specters break the rules of time as we know them, because they refuse to be forgotten, as Jacques Derrida in *Specters of Marx* explains. In Derrida's discussion of *Hamlet's* ghost, he writes of the "spectral moment," a moment of "questioning in this instant ... asking ourselves about this instant that is not docile to time" (xix). Why does the specter disrupt time, and what does the specter require in this moment of haunting? The specter haunts in "the name of *justice*. Of justice where it is not yet, not yet *there*" (xviii). In a project on uneven environmental risk, Derrida's theorizing of the specter's demands is especially pertinent when discussing environmental justice.

As Ruskin linked air pollution to industrialism, he specified the industrial locales that bore the greatest responsibility for producing industrial specters, and these included the nineteenth-century's mills, ports, and mines that were increasingly powered by steam. Each chapter of this dissertation takes on one of these locations and either begins or ends with Ruskin's haunting writing on pollution, which provides an opening lens or culminating point throughout the project. The primary texts of the project are mostly concentrated around the

² On the figure of lingering pollution, see also Margaret Ronda's *Remainders*, which, in part, analyzes "toxic lingering and decay unfolding at divergent tempos," as depicted in postwar poetry (9).

middle of the nineteenth century in order to capture this transitional moment for the mill, port, and mine. Regarding mills, Andreas Malm observes that the 1830s were a critical moment for steam within the English textile industry: "perhaps most importantly," Malm argues, "a range of decisions were taken over the 1830s by manufacturers and legislators that, for all practical purposes, ended water power expansion in the cotton industry and cleared the way for steam, not only there, but throughout British manufacturing" ("The Origins of Fossil Capital" 27). As midcentury mills were turning from water power to steam power, so too were ships turning from sails to steam, which significantly contributed to the pollution of ports—locations that also include newly steam-powered mills. The mine is a special case when it comes to steam power, since, as Elizabeth Carolyn Miller explains, the first steam engines had "a narrower purpose: they were built to pump water out of mines" (5). Each of these three locations—the mill, the port, and the mine—saw an overwhelming transition to steam power by the midcentury, and this transition left writers grappling with the figure of industrial pollution.

In literature that depicts the devastating effects of pollutants, apparitions arise, even within the realist mode. The project centers the permeability of individuals, and permeability is also a characteristic of the project's realist texts. Describing the porosity of realism's boundaries in *Victorian Hauntings: Spectrality, Gothic, the Uncanny and Literature*, Julian Wolfreys explains that "there are always other voices, other disembodied, ghostly articulations within and against the dream of full, simple, self-evident speech to be read in any apparently stable voice, such as that desired in and for realist narrative" (13). Wolfreys's observations show that occasional turns to the spectral should not be altogether surprising within the realist mode. What is surprising, and what became crucial to my project, is the pattern I have traced where midcentury, realist prose turns to the supernatural at precisely the moment when the author

describes industrial pollution. Partly due to this pattern within realism, the project is preoccupied with prose, both fiction and nonfiction, including novels, short stories, as well as autobiographical works focused on specific industrial locales.

Each chapter includes a constellation of nineteenth-century British and American literature, illustrating that these haunting industrial locations form a transimperial, interconnected production network of extraction, transportation, and manufacturing. On the "transimperial," Sukanya Banerjee explains that "while certainly not valorizing 'empire,'" the transimperial perspective "nonetheless redirects attention toward rather than away from it" (221). Take, for example, my project's inclusion of iron, which appears throughout this dissertation: in Rebecca Harding Davis's "Life in the Iron-Mills," at the port of Liverpool in Herman Melville's *Redburn*, as well as within Joseph Conrad's *Nostromo*.³ A similar list could be included here for indigo, since it also appears within numerous texts of this project.⁴ As shown by the repeated appearances of specific raw materials throughout this dissertation, such materials operated within a transimperial network of circulation; within the project's scope, I show these materials moving to the manufacturing sites of Britain and the United States. By including the industrial locales that were imperially linked, I continue drawing on the theme of porous boundaries. By doing so, I draw together three chapters that help trace the spectral links of imperial production networks, with the aim to make these even more visible.

³ Throughout the nineteenth century, iron was mined in Britain, but iron was also mined in Latin America, as *Nostromo* suggests and Richard Harding Davis's *Soldiers of Fortune* (1897) depicts. While not a main text within this project, Davis's *Soldiers of Fortune* would also fit in this list of primary texts featuring iron, as Davis re-writes his mother's tragic story of the iron mill into an iron-mining adventure set in Latin America.

⁴ While indigo is not, of course, mined, it is an extracted raw material that circulated widely. The project's texts that name indigo include Melville's *Redburn*, Mary Seacole's *Wonderful Adventures of Mrs. Seacole in Many Lands*, Conrad's *Nostromo*, as well as a lecture of Ruskin's that I analyze in the second chapter.

Within single chapters, I also trace several links between similar sites of steam-powered industry. Each chapter contains pairings of primary texts from more than one literary tradition, as well as numerous, widespread settings. With each chapter having a distinct industrial locale as its focus, every chapter also has a distinct geographical scope. In my chapter on mills, I primarily incorporate texts that depict the steam-powered mills of northern England, as well as the mills of New England; with ports, the primary materials connect the ports of Britain, primarily Liverpool, to the ports of the Caribbean, specifically Navy Bay; lastly, for the scope of my mining chapter, I include both literature of the western United States and of South America. By juxtaposing primary materials in each chapter, I continually find depictions of uneven environmental risk, where the particulate hazards of industrialism primarily impact the laborers. With the midcentury as the focal point of my temporal scope, these are working-class wage laborers in certain contexts and the enslaved in other contexts. As especially the chapter on ports and the chapter on mines make clear, forced labor continued to fuel the British economy well beyond Britain's Slavery Abolition Act of 1833. As Saidiya Hartman has made clear, the "afterlife of slavery," or the years following abolition in the early nineteenth century, actually entailed the following: "the volume of slave trading increased" (6, 186). In this nineteenth-century project, slavery is never described as a past practice for either the United States or Britain; rather, industrial settings and forced labor are often depicted in the same text, as in the striking image of tarry "particles of dirty cotton" that Melville's Redburn keeps noticing in Liverpool (253)—dirty particles that are haunted by slave labor, as these particles then form industrial specters when inhaled by dock laborers.

My first chapter elucidates the mill specters of Elizabeth Gaskell's *Mary Barton* (1848), Melville's "Paradise of Bachelors and Tartarus of Maids" (1855), and Rebecca Harding Davis's

"Life in the Iron-Mills" (1861). Beginning with Ruskin's 1871 diary entry on the haunting "plague-wind" (47), which was later included in *The Storm-Cloud of the Nineteenth Century* (1884), I open with the large-scale, atmospheric transformation that Ruskin linked to industrialization. From here, the scale of my analysis becomes increasingly smaller, until the spectral atmosphere I analyze is within a single mill. With *Mary Barton*, I analyze the spectral figures of Manchester whose lungs are damaged, as shown by their labored breathing. Rather than simply inhale, these characters gasp; rather than exhale, they cough. Melville's diptych depicts both Britain and the United States, and so the text creates my chapter's transatlantic transition. In the second half of Melville's story, paper mill workers, all women, have become "sheet white" just like the paper they create, and as the narrator approaches the mill, he experiences a gust of wind "laden with lost spirits" coming from the direction of the paper mill (325)—a description that echoes Ruskin's own characterization of the plague wind. Melville's story complements the chapter's final text, "Life in the Iron-Mills," for both take the reader inside the mill, but Melville explicitly describes the dangerous particles while Davis directly shows that these particles produce ghostly workers. By constellating works on the haunted, steam-powered mill, I argue that these novels and short stories depict ghosts and dangerous air as analogous. In other words, the polluted, industrial air is spectral, and it turns mill workers into specters.

In the second chapter, I analyze Melville's *Redburn* (1849) and Seacole's *Wonderful Adventures* (1857)—two midcentury autobiographical works that include port specters. As I turn from the steam-powered mill to the midcentury port, I also move from a focus on polluted air to the polluted waters of these waterfronts. I argue that the midcentury transition from sails to steam power in maritime trade made the port specter an appropriate figure for the port's many spectral traces—traces of lethal matter that were difficult to detect. Since ports also housed steam-

powered factories, the additional smoke from steamers made these locations feel like one giant "brick-kiln" (227), as Melville's *Redburn* describes Liverpool. In *Redburn*, the port's spectral traces include the watery pollutants of Liverpool, including effluent that manufactories dumped into the drinking mains. Seacole's memoir depicts the industrialization of Panama and Jamaica and likewise includes ghostly figures to depict the port's spectral traces; the dangerous traces in this text, however, are of disease. I argue that Seacole's depictions of steam power connect to her haunting portrayals of disease, for by the time an outbreak becomes visible in Panama or Jamaica, the travelers have already departed by steamer or railway. The disease, particularly cholera, appears like an invisible "fellow-traveller" (29), and by describing the outbreaks as ghostly, Seacole helps make the mechanisms of the disease visible. In Seacole's text, those who quickly spread disease in Panama and Jamaica include American slave-owners who board the Panama Railroad to cross the Isthmus. At multiple points in the chapter, I connect the steam-powered hauntings of ports to their central role in the transatlantic slave trade, a trade that had paved the way for steam routes between Liverpool and the Caribbean. Unlike the first chapter, the second chapter culminates with Ruskin's writing. I turn to his discussions of polluted ports in *The Harbours of England* (1856) and *Time and Tide* (1867), which further contextualize his analysis of J. M. W. Turner's "Slave Ship." I end by positing that the haunting port specters of Melville, Seacole, and Ruskin contributed to port regulations.

The third chapter considers the mining specters of John Rollin Ridge's *The Life and Adventures of Joaquín Murieta: The Celebrated California Bandit* (1854), Mary Hallock Foote's "A California Mining Camp" (1878), and Joseph Conrad's *Nostramo* (1904). Like the first chapter, I begin with Ruskin, but here I turn to *The Ethics of the Dust* (1865), which contains Ruskin's warning that the mine, being hazardous and deadly, is full of spirits. This warning

connects to Ruskin's characterization of dust as spectral, which is a repeating refrain in the chapter. While my first chapter considered polluted air and the second chapter focused on polluted water, this third chapter turns fully to polluted and hazardous soil. Focusing on the "silvery" metals—silver, quicksilver, lead, and iron—I argue that the mining specters of this chapter's texts help depict and dramatize the particulate hazards of mining, especially those toxic particles that can be inhaled, ingested, or absorbed. This chapter has the longest temporal scope, and so Foote's narrative forms a bridge between Ridge's publication and Conrad's publication, and since Foote is situated at a quicksilver mine, her text also features a metal that literally binds to the metals of Ridge's and Conrad's novels. This final chapter also ends with Ruskin, as I turn to *Unto This Last* (1860) and the first volume of *The Stones of Venice* (1853). These texts emphasize the stakes of polluting the earth, for Ruskin explains that the earth is both the source and destination of self.

I conclude that the mill, the port, and the mine are even more entangled than they may appear in these separate chapters, for single primary materials of the project often featured more than one of these industrial locales, if not all of them in the same text. With their inseparability, these industrial locales layer their hauntings through their production network, as mine specters further haunt the port and the mill, which are already haunted locations. These compounding hauntings can be understood literally, as the particulate dangers of the mine can make their way to the port and to the mill, gathering with the lethal particles of those spaces, and finally making their way into the home. The second half of my conclusion turns to the ways in which the "Age of Coal" haunts our present moment, as shown through uncanny echoes throughout the project, as well as current research confirming the latest industrial specter: individuals merging with microplastics. The industrial specters of the nineteenth century, in other words, remain.

Chapter I

"Laden with Lost Spirits": Ruskin, Gaskell, Melville, and Davis on Spectral Mills

"There are two forms in which the evil to be remedied presents itself, namely the visible and the invisible."

Peter Spence, *Coal, Smoke, and Sewage, Scientifically and Practically Considered* (1857), 4

In an 1871 diary entry, later included in *The Storm-Cloud of the Nineteenth Century* (1884), John Ruskin made an unsettling claim about the "plague-wind" blowing from Manchester: "It looks as if it were made of poisonous smoke" (33). The wind's erratic movements, however, made him believe that the gusts contained more than smoke. "But mere smoke," Ruskin noted, "would not blow to and fro in that wild way. It looks more to me as if it were made of dead men's souls—such of them as are not gone yet where they have to go, and may be flitting hither and thither, doubting, themselves, of the fittest place for them" (33). While Ruskin was explicitly referencing the "Franco-German Campaign" with this statement, he continues to use spectral language to describe the human quality of this hazardous air—air that he explains is a "dense manufacturing mist" (37).⁵ In a response to letters he received about the "blights," included in the first "Storm-Cloud" lecture, Ruskin also describes a "visible phantom of an evil spirit" in the wind (68), earlier explaining that, in contrast to typical wind storms he had observed, "plague-wind is more panic-struck, and feverish; and its sound is a hiss instead of a wail" (34). It is thus fitting that Ruskin relates this wind to a haunting production of *Faust* he attended: "a strange ghastriness being obtained in some of the witch scenes merely by fine management of gesture and drapery; and in the phantom scenes, by the half-palsied, half-furious,

⁵ While Ruskin refers to "two hundred furnace chimneys," his use of "manufacturing mist" points to steam-powered mills as a source of the "smoke-cloud" (33, 37).

faltering or fluttering past of phantoms stumbling as into graves; as if of not only soulless, but senseless, Dead, moving with the very action, the rage, the decrepitude, and the trembling of the plague-wind" (34). These passages reveal that—for Ruskin—the haunted plague-wind contained a myriad of souls, spirits, and phantoms. The spectral manufacturing air included human traces.

Ruskin's articulation that the wind seemed both poisonous and full of phantoms relates to his earlier and later works, which often describe organic and inorganic matter, as well as living and non-living matter. As Ella Mershon explains in her discussion of Ruskin's *The Ethics of Dust* (1866) and Charles Dickens's *Our Mutual Friend* (1864), they both "insert their human characters into complex systems of inorganic exchange" (464). Indeed, Ruskin's organic-inorganic entanglements occur throughout much of his writing. Deanna Kreisel suggests that "Ruskin's commitment to the porosity of the life-nonlife border is more intractable, recurring throughout his own work and aligning with a much longer line of thinking throughout European intellectual history" (109-110). Kreisel analyzes the "porosity of the life-nonlife border" in Ruskin's discussions of sustainability, or as Kreisel articulates, the paradoxes present in his sustainability writings. Rather than confusing categories, Ruskin's writing, according to Kreisel, reveals a "category refusal" (110). "Ruskin, perhaps inadvertently," Kreisel continues, "reintroduces a different kind of materialism, which manifests itself in an unwillingness to distinguish the organic and the inorganic" (111). This "porosity of the life-nonlife border" in Ruskin has been explored by scholars, including these recent works by Mershon and Kreisel, in terms of animals and minerals. Ruskin's entanglements, moreover, include the supernatural, as Allen MacDuffie makes clear, arguing that in Ruskin's writing, there lies a "mystification of energy" (160). As Vicky Albritton and Frederik Albritton Jonsson argue, "Ruskin denied that the Storm Cloud was *purely* a physical form of pollution," to which they add that "the material and

the metaphysical were intertwined in Ruskin's mind" (36). Ruskin's observations of phantoms within hazardous mill air further illustrate his refusal to separate the living from the non-living, the organic from the inorganic, and the material from the supernatural.

In this chapter, I argue that specters and hazardous mill air became inseparable in Ruskin's and his contemporaries' writing in order to portray an invisible mechanism: the deadly exchange between dangerous air and vulnerable bodies. By making the assertion that the polluted air was haunted by a human presence, Ruskin's words resonate with literary depictions of specters and matter becoming entangled in industrial mills. As Jesse Oak Taylor asserts, "At the centre of *The Storm-Cloud of the Nineteenth Century* is a very literary challenge: how do you describe something that has no name, and for which there is no language?" (15). During the time period that Ruskin was chronicling the changing winds (1831-1884),⁶ literary portrayals of spectral mill air appeared in the works of Elizabeth Gaskell, Herman Melville, Rebecca Harding Davis, and others.⁷ This chapter analyzes these literary portrayals of death-filled, spectral air emanating from mill towns from the late 1830s to the early 1860s.

As this chapter's texts articulate, industrial pollution cannot be contained. Ruskin describes the ever-expanding pollution explicitly: "By the plague-wind every breath of air you draw is polluted, half round the world" (39). This chapter begins in Manchester, but includes

⁶ As Ruskin explains in the opening of *The Storm-Cloud of the Nineteenth-Century*, he began "constant and close observation" of the skies in 1831, when he would have been twelve years old, "for the phenomena in question came on gradually" (10). Ruskin's use of "gradually" anticipates Nixon's articulation of "slow violence," which is an enduring environmental risk. Albritton and Albritton Jonsson, in *Green Victorians*, point out that Ruskin's first painting of this phenomenon was in 1845 (35).

⁷ Margaret Kennedy explains that "before Ruskin, Octavia Hill, and William Morris, all of whom are generally acknowledged as proto-environmentalists, were directing attention to this reality, realist novelists began shaping eco-consciousness" (511). Kennedy analyzes Gaskell's *Mary Barton* and Charlotte Brontë's *Jane Eyre* as anticipating Ruskin's "The White Thorn Blossom" (1871).

transatlantic descriptions of haunted mill air. Herman Melville's "The Paradise of Bachelors and the Tartarus of Maids" (1855) describes the wind gusts near a paper mill as being "laden with lost spirits." In addition to Melville's connections to Ruskin, Melville's diptych also links Gaskell's and Davis's texts temporally and geographically, being published in 1855 and featuring two settings: England and New England. I end the chapter with a reading of Rebecca Harding Davis's "Life in the Iron-Mills," arguably also a transatlantic text, since its main character is from Cornwall and the narrative was partly inspired by Dickens's *Hard Times*. Davis's short story complements Melville's. While Melville explicitly describes the hazardous mill air as having "fine, poisonous particles" (329), Davis's text portrays the air as a "nightmare" (13); while Davis clearly refers to the mill workers as "ghosts," Melville describes the workers as having "sheet-white" faces (33).

Ruskin's specific characterizations of the "plague-wind," as well as his discussion of this wind's source, also frame and inform my analyses of these contemporary literary texts. Albritton and Albritton Jonsson explain that, for Ruskin, the plague-wind was a "new force in nature" (34). Ruskin's descriptions of this wind include the following: "a malignant *quality*"; sometimes involving "drenching rain"; exhibiting a "dry rage"; including "ruinous blasts," "bitterest chills," and "venomous blights" (34). Ruskin's other characterizations also depict the wind as alive and devious: the wind has a "fretful flutter" (38); the skies transform to have "diabolic clouds," as well as a "darkness" that "settles," as if by its own design (38). These supernatural characterizations come into play in my readings of Gaskell's, Melville's, and Davis's text, but especially Ruskin's observation that he makes in a note near the beginning of his second lecture:

The "plague-cloud . . . is *always* dirty, and *never blue under any conditions*" (51).⁸ In *Mary Barton*, "Tartarus of Maids," and "Life in the Iron-Mills," dirty air infiltrates homes and bodies, becoming repeatedly connected to industrial pollution and the specters this pollution produces.

For Ruskin, dirty air was often synonymous with industrial pollution, making the primary sources of the "plague-wind" the industrial centers of Britain. His emphasis on Manchester's role in this plague-wind becomes clear early in this text. In the first "Storm-Cloud" lecture, Ruskin famously refers to "Manchester devil's darkness," referring to the devil of industrialism in Manchester (37). In another diary entry (1871) shared in the first lecture, Ruskin describes seeing one white cloud "through the sulphurous chimney-pot vomit of blackguardly cloud" (38).⁹ In some passages, Ruskin refers to Manchester without naming this textile center. For example, in a diary entry from 1883, the source of the plague-wind appears most likely to be Manchester due to Ruskin's geographical references: "Yesterday a fearfully dark mist all afternoon, with steady, south plague-wind of the bitterest, nastiest, poisonous blight ... I could scarcely stay in the wood for the horror of it" (38). With Manchester lying south-southeast of Ruskin's Brantwood home, this diary excerpt likely alludes to this industrial center. Consider here, also, that this wind from the south is poisonous, evoking hazardous chemicals of manufacturing. The plague-wind may indeed blow from any direction, but this wind blowing from the south, likely from Manchester, has some distinctions, and also figures first on Ruskin's list: "It will blow either with drenching rain, or dry rage, *from the south*,—with ruinous blasts from the west,—with bitterest chills from

⁸ Margaret Kennedy explains Ruskin's use of "plague-cloud" this way: "Deliberately conflating his terms, Ruskin uses 'plague-wind' and 'plague-cloud' synonymously with 'storm-cloud' to indicate the unnatural and unprecedented severity of late nineteenth-century weather" (513).

⁹ The choice of sulfur is indeed accurate, as Robert Angus Smith noted in his study "On the Air and Rain of Manchester" (1852): creating alkali in Manchester's factories resulted in significant quantities of sulfur released into the atmosphere (Smith 209.).

the north,—and with venomous blight from the east" (34; emphasis mine). Ruskin's claim that one would breathe in the pollution of the plague-wind "half round the world" indeed echoes his sentiment that the plague-wind has sources in all directions. Ruskin thus invites an analysis of the polluted winds outside of England, which this chapter includes with the analysis of Melville's and Davis's texts. His prioritization of Manchester makes the analysis of *Mary Barton's* specters and spectral winds an appropriate starting place.

The narratives I analyze by Gaskell, Melville, and Davis all feature ghosts produced by nightmarish mill atmospheres. The moments of the ghost appearances are particularly significant for my discussion of haunted mills: I focus on the realist narrative's inclusion of ghosts and hauntings, arguing that they function as explanatory tools of otherwise unexplainable properties of polluted air. The texts complement one another to give a more complete picture of industrial pollution and the havoc wreaked on working-class bodies. Ruskin's and Gaskell's scopes prioritize larger, spectral atmospheres, whereas Melville and Davis depict the interior, spectral atmospheres of individual mills.¹⁰ The chapter's overall movement, in other words, is from the outside to the inside of these steam-powered locales. Gaskell's *Mary Barton* depicts a hazardous, "dirty" atmosphere and the multiple attempts to keep this air out of homes and bodies, and while the novel depicts the ensuing ghostly transformations of the mill workers and others living near the mill, the novel never takes us inside to witness the mill labor.¹¹ As Melville's diptych

¹⁰ The contrast in scope between the British texts and the American texts is worth probing further; arguably, the greater industrial cities at this moment in Britain contribute to the atmospheric thinking of Ruskin and Gaskell. In contrast, when Melville's narrator visits the paper mill, it is the only mill in sight.

¹¹ As Susan Fraiman explains, "Gaskell never actually ushers us inside a textile mill, never offers a perspective from the factory floor, never directly shows us the machinery that disabled Mrs. Wilson on the eve of her wedding" (131). Jem's foundry work is the closest the novel comes to portraying industrial labor: "The men, like demons, in their fire-and-soot colouring, stood swart

transports us from London to New England, it also makes the significant transition from spectral atmospheres to witnessing the inner workings and toxicity of a paper mill. Ending the chapter and making the full move inside the mill, Davis's text depicts mill labor and the workers' transformations to spectres. Davis, importantly, still begins where Ruskin, Gaskell, and Melville begin: the haunted air, or, as Davis writes, "the nightmare fog" (13). While I examine these texts in their chronological order of publication, I also examine them in their complementary and increasingly vivid depictions of mill air entering bodies, forming phantoms. In the first half of this chapter, the exchanges between the body and hazardous air become clear in the haunted atmospherics surrounding the mill; in the second half of the chapter, the exchanges between the body and hazardous air become clear with the spectral individuals inside the mill. As spirits mingle with the mill air, so, too, does the mill air form ghostly mill workers.

For each text, the temporal and geographical settings reveal further elements of haunting. Gaskell and Davis, for example, both set their narratives in a recent past. Gaskell's *Mary Barton*, while published in 1848, is set in 1839-1842; Davis's "Life in the Iron-Mills," while published in 1861, is similarly set in the 1830s. These settings reveal the fundamental hauntings of both texts: the 1830s marked an important period in the industrialization of mills and subsequent boom for both Manchester and Virginia.¹² And yet, *Mary Barton* famously depicts the unsustainability of this boom, marking the "economic downturn and slowing factory trade of the late 1830s and early 1840s" (Nadeau 37). Gaskell refers to this period directly in the novel, naming 1839, 1840, and 1841 as "the terrible years" when "trade had been getting worse and worse and the price of

around, awaiting the moment when the tons of solid iron should have melted down into fiery liquid" (196). Notice the simile, "like demons," which resonates with the hauntings in this novel.¹² On the industrialization of British manufacturing in the 1830s, see Malm, *Fossil Capital*, p. 288. When I refer to "mills" in this chapter, I am referring to the steam-powered mill, which used raw materials in their manufacturing processes.

provisions higher and higher" (76). Like Gaskell, Davis's temporal setting also reveals a haunting, but with steady mill work: "Virginia emerged as a leading textile-producing state in the South by the 1830s" (English 53). While Davis's text primarily portrays an iron mill, Davis's story includes the textile industry through the character of Deborah Wolfe, Hugh Wolfe's cousin, who is a "picker in some of the cotton mills" (15). As in Manchester, the industrialization of Virginian mills resulted in worsening living conditions for workers. As Jill Gatlin explains, Davis portrays the "public sanitation inadequacies, social stratification of space, and industrial labor conditions that ensured poorer populations' exposure to smoke and other wastes" (206). For Melville, hauntings also function geographically, as the narrator moves from an affluent circle in London to the bleak labor conditions in New England; the geographical move functions like a temporal move. As the narrator goes to the Massachusetts paper mill, he feels as if he has stepped back in time.

At this moment of mill industrialization, there was simultaneously a developing understanding of dangerous air—a move away from miasma theory and toward theories that considered other particulate dangers. Gaskell and Davis sometimes rely on miasmatic language, which further reveals the midcentury as a moment where the understanding of "bad air" was in transition. Rather than center miasma theory, Gaskell, Melville, and Davis focus on industrial pollution as the main cause of deteriorating health. Accurate representation of polluted air, for Ruskin, Gaskell, Melville, and Davis alike, necessitated the use of the spectral; accurately describing hazardous air, or "nightmare fog," and the ensuing bodily transformations paradoxically evades the language of realism. This chapter answers Hsuan L. Hsu's call in "Literary Atmospheric" to illustrate "the materiality of air" (2). Hsu asks, "How does air transform bodies?" and "what makes atmospheres become imperceptible or perceptible?" (4). He

furthermore asks how bodies become "transformed" by their atmospheres (4). While many industrial hazards in the middle of the nineteenth century were difficult, if not nearly impossible, to represent or perceive, hazardous air entering and transforming the body, posed an especially difficult representational dilemma. The following narratives reveal that spectral language was particularly well-suited in portraying the materiality of polluted atmospheres.

***Mary Barton's Depictions of Manchester's "Invisible Evil"*¹³**

Gaskell shared Ruskin's concern over their immediate atmosphere of Manchester, and they both prioritized accurate representation. Their comradeship, Anne Longmuir notes, becomes "most apparent in their shared disquiet at the social cost of industrial capitalism" (2).¹⁴ They likewise shared the concern to represent this social cost accurately in their writings. As Anna Unsworth and Josie Billington have also noted, Ruskin's argument in *Modern Painters* to represent "faithfully all things" became an edict in Gaskell's writing (Longmuir 3). For Ruskin and Gaskell, this faithful representation necessitated the language of "plague-winds" and specters; the spectral language aided in their attempts to represent Manchester's atmosphere accurately.

Through exchanges with the greater, smoke-filled atmosphere of Manchester, the working-class characters of Elizabeth Gaskell's *Mary Barton* (1848) turn into ghosts with every breath they take. The novel depicts scenes of suffering and death, often illustrating bodily vulnerabilities to illnesses and lack of nutrition. Gaskell takes a step further to connect disease and starvation, as with her early depiction of Mary's younger brother, Tom, who dies "for want

¹³ I include this section with the permission of *Venti*.

¹⁴ While they likely attended the same event in 1851, Ruskin and Gaskell probably did not meet until 1855, over lunch, according to Anne Longmuir. Analyzing their ten surviving letters, Longmuir concludes that Ruskin and Gaskell had an "intimate and valued friendship," full of "mutual esteem" and "mutual influence" (2).

of better food” (12). Tom is one example of many who lack nutrition in this novel; as Gaskell explains, “whole families went through gradual starvation” (76). Throughout the narrative, Gaskell is attuned to bodily intake — not only of pathogens and of food, but also of air. While this novel on industrial Manchester clearly focuses on scenes of starvation, Gaskell shows that the working-class’s hunger is also for “the open air” — a phrase repeated in the novel five times. Gaskell draws attention to breath over sixty times, where inhales are often gasps and exhales are often coughs, and while illness features heavily in the novel, Gaskell includes the “smoky” skies as an exacerbating factor (252).

The air is thick with largely unseen, particulate threats, which both surround Manchester's workers and infiltrate their lungs. The labored inhales and exhales are constant reminders of bodily porosity, or "trans-corporeality," which Stacy Alaimo explains as a recognition that “the human is always inter-meshed with the more-than-human world” (2). Alaimo's "trans-corporeality" framework disrupts the idea of the human as a bounded entity, but this recognition also suggests bodily risk. Manchester contained five hundred factory chimneys by the early 1840s; it is therefore no surprise that its residents “imbibed the sulphurous, smoke filled air with every breath they took” (Mosley 51). While the mechanisms of dangerous particles remained invisible, residents “tasted” the smoke daily (Mosley 51). Breathing itself revealed the disturbing materiality of this heavily polluted atmosphere. Pale, gaunt, and somewhere between life and death, the working-class characters of Gaskell’s novel resemble specters, and as specters, they resemble the hazardous air surrounding them, passing through them, and transforming them. This chapter's section will draw attention to Gaskell's reliance on spectral elements that make vivid a changing industrial city that created smoke-filled inhabitants.

In the years directly following the publication of *Mary Barton*, chemical climatologists would connect Manchester's polluted skies to the damaged lungs of its residents. In their "battle against the bad air," groups contemporary with Gaskell's novel sought solutions: "Smoke-abatement reform groups and city ordinances date to the early 1840s, when the central city had 250,000 inhabitants crammed in the shadows of its mills and warehouses" (Platt 30).¹⁵ While harmful particles in the forms of bases (like alkalis) and acid (such as sulfuric acid) were invisible, their effects certainly were not. In Robert Angus Smith's study titled "On the Air and Rain of Manchester" (1852), he carefully shows the connection between Manchester's factories and their harmful effects on plant and animal life. Harold Platt explains that Smith alarmingly discovered "three times more pollution in the inner city than the outskirts" (31). In Smith's own words, his rainwater analysis showed "sulphuric acid in proportion as it approached the town" (212). He concluded that the acid, as well as other organic matter, devastated the immediate area.

In addition to Smith's chemical analyses, spectral language fills his 1852 report. Near the end of his findings, he added a spirit-air description: "We cannot say much for the increases of clearness of thought when we compare this with a description of air written ... in 1552: 'Aer est spiritus, spiritus est ventus.' The air is spirit, spirit is wind" (208). Smith equated air and wind to spirits, animating the air in this section of his report and ultimately describing it as material, especially in Manchester, due to its chemical "impurities." For Smith, the air had become a living, destructive force. Making his metaphysical analysis of air clear, while also connecting to health, Smith continued: "Modern chemistry has gone far towards proving the correctness of ancient impressions, that the air goes with the blood through the whole body, and some have

¹⁵ Harold L. Platt draws attention to the "invisible evil" associated with air pollution in Manchester in the 1830s and 1840s (30).

almost gone as far as a Greek philosopher, who said that 'the soul is in the lungs'" (209). Smith was not the only scientist to find these results, nor to describe them in supernatural terms. In a study titled *Coal, Smoke, and Sewage, Scientifically and Practically Considered* (1857), Peter Spence extended Smith's research of Manchester's atmosphere and the effects on surrounding life. Personifying Manchester's smoke, he argued that "atmospheric poisons" made their way up chimneys and were "pouring themselves down the throat of the first pedestrian they meet in the street" (14). In despair, Spence found that "the invisible evil is completely ignored" (5). Using anthropomorphic imagery, Spence's report attempts to enliven the particulate dangers his audience cannot see and therefore could overlook.

Spence's descriptions of particulate hazards as an "invisible evil" anticipate Ulrich Beck's foundational work on contemporary environmental risks born out of industrialism, including radiation and other forms of industrial toxicity. Using the language of supernatural hauntings, Beck describes a "new 'shadow kingdom' ... which is hidden behind the visible world and threatens human life on this Earth" (72). By using the haunting image of a "shadow kingdom," Beck makes the case for a Gothic materiality,¹⁶ where the invisible becomes visible through depictions of the supernatural: "The world of the visible must be investigated, relativized and evaluated with respect to a second reality," Beck claims, "only existent in thought and yet concealed in the world" (72). This "second reality," in other words, is the "shadow kingdom" consisting of toxic, deadly material threats.

¹⁶ On "Gothic materiality," see also Kelly Hurley's *The Gothic Body: Sexuality, Materialism, and Degeneration at the Fin de Siècle*. While this dissertation does not take on the Gothic tradition, "Gothic materiality" is a helpful concept for understanding the specter and toxicity. For a recent work that does situate industrial texts within the Gothic tradition, see Bridget M. Marshall's *Industrial Gothic: Workers, Exploitation and Urbanization in Transatlantic Nineteenth-Century Literature* (2021).

In *Slow Violence and the Environmentalism of the Poor*, Rob Nixon asks how to represent “calamities that are slow and long lasting” and that disproportionately affect the poor, especially when the calamity is not (or no longer) a “spectacle,” and may no longer hold an audience’s attention (6). Nixon, referencing Beck's "shadow kingdom," shows that deploying supernatural depictions is one option. Similarly, in *The Sky of Our Manufacture*, Jesse Oak Taylor describes Gothic literature's capacities in rendering environmental pollution and the "polluted body." Taylor explains that the fin-de-siècle Gothic, such as *Strange Case of Dr. Jekyll and Mr. Hyde*, "stages the precariousness of bodies ... produced by exposure to environmental disturbance or pollution" (99). Published in 1848, Gaskell's *Mary Barton* offers an earlier example of the Gothic's ability to not only portray dangerous air, but also to depict the body's inhalation of this air and its subsequent transformation.

If Spence anticipated Beck’s “shadow kingdom” argument, Gaskell anticipated them both. Lucy Sheehan has argued that the combination of realist and supernatural modes in *Mary Barton* enables Gaskell to more fully depict the factory workers: “the novel imbricates fantastic and realist modes in order to broaden, rather than constrict, our view of social reality in mid-century England, granting access to the ghastly conditions that underlie industrialized society and that cannot be adequately captured by non-fantastic narration alone” (36). Sheehan notes that scholars have seen Gaskell's use of the Gothic as concealing the harsh realities faced by Manchester's working class. Instead, Sheehan shows that Gaskell's use of the Gothic enables a direct engagement with this reality: “But what if we were to take appearances of the Gothic seriously?” Sheehan asks, explaining that the Gothic plays a vital role in Gaskell’s “critique of

representation” (36).¹⁷ My argument likewise takes the Gothic seriously, analyzing Gaskell’s representations of the working class with an examination of her spectral atmosphere and spectral characters.

Years prior to Smith’s and Spence’s experiments in Manchester, Gaskell was attentive to an “invisible evil” stemming from industrialization, and she likewise turned to supernatural language to depict industrial pollution. Published in 1848 but set in the late 1830s, *Mary Barton* is haunted by the earlier decade’s energy transition from water power to steam power within the English textile industry (Malm 288).¹⁸ In an interlude nearly halfway through the novel, Gaskell writes of the “mighty agency of steam,” which is “capable of almost unlimited good or evil” (153). With its characters frequently turning into phantoms, *Mary Barton* decidedly shows the “evil” sides of steam power. In Gaskell’s preface to the novel, she famously explains that she “endeavoured to represent” the “factory-people in Manchester” (6). Gaskell’s use of the supernatural contributes to her project in depicting the working class, making the “evil” atmosphere’s damage to the lungs hauntingly visible.

Gaskell frames the novel with an epigraph on humans becoming spirits, showing the centrality of specters in *Mary Barton*. The spectral, in other words, is not only occasionally evoked, but is a lens for reading the entire novel. While the novel’s epigraph by Carlyle on novelists and readers is often quoted and examined, another epigraph, in German, appears before Carlyle’s. Only the last stanza of Johan Ludwig Uhland’s “On the Crossing” appears on the page, which A.W. Ward has translated — in the Knutsford edition of Gaskell’s novels — as

¹⁷ See also David Ellison (2004) and Catherine Gallagher (1985) for discussions on the ghosts of *Mary Barton*.

¹⁸ Andreas Malm explains that the 1830s mark a critical period for the transition to steam power for the English textile industry (*Fossil Capital* 288). See also Stephen S. Eisenman's "In the Air: Ecology and Air Pollution in Nineteenth-Century British Art and Literature."

“Take, good ferryman, I pray / Take a triple fare today; / The twain who with me touched the strand / Were visitants from another land” (2). Evoking the afterlife with the crossing by “visitants,” the image evokes the mythical River Styx, with the dead making their journey to the underworld. Further supporting the idea that these “visitants” are ghostly figures, the previous stanza reads: “And yet, what binds all friendship, / Is when spirit finds fellow spirit, / Spiritly were those hours, / With spirits am I still bound.”¹⁹ The opening epigraph shows beings on a journey to the underworld, which frames my readings of the ghosts in *Mary Barton*: the epigraph reveals that one appropriate lens for reading the novel is through ghostly transformations.

The epigraph also clarifies some oddities in the opening chapters of the novel. In the opening dinner scene with the Wilsons at the Bartons’ home, the narrator peculiarly uses “human” as a modifier: “At length the business actually began. Knives and forks, cups and saucers made a noise, but human voices were still, for human beings were hungry and had no time to speak” (19). The use of “human” may first appear strange; yet, with the lens of the opening epigraph, the narrator must clarify with these adjectives that the story is now occupied with the living. The use of “human” as a modifier appears again in the chapter describing Ben Davenport’s death. The narrator directs us to the Davenports’ cellar-home below street level: “You went down one step even from the foul area into the cellar in which a family of human beings lived. It was very dark inside” (55). Even though the narrator insists that “human beings” live in this cellar, the narrator then turns to descriptions of the abhuman, the “not-quite-human subject” (Hurley 3).²⁰ When Ben dies, it is from a “ghoul-like fever” within a chapter with its

¹⁹ Translation by Sophia Bamert.

²⁰ In *The Gothic Body: Sexuality, Materialism, and Degeneration*, Kelly Hurley defines the “abhuman” by drawing attention to the body’s transformation implied in the word: “The abhuman subject is a not-quite-human subject, characterized by its morphic variability, continually in danger of becoming not-itself, becoming other. The ‘ab-’ signals a movement

own epigraph describing a “dark demon foe” (67). Ben’s death haunts the rest of *Mary Barton*, and ghosts or ghost-like characters exist throughout the novel, continually informing the plot. Some of the passages in *Mary Barton* contain the explicit terms “phantom,” “ghost,” “spectral,” or “spirit.” For other passages, the novel’s opening epigraph invites an interpretation of specters, even when not explicitly stated in the text.

The epigraph foregrounds the transformation of the novel’s first ghost, Mary’s mother, as well as subsequent others. Soon after Mrs. Barton dies, Mary sees her form at night: “and Mary would start from her hard-earned sleep, and think, in her half-dreamy, half-awakened state, she saw her mother stand by her bed-side, as she used to do ‘in the days of long ago;’ with a shaded candle and an expression of ineffable tenderness” (27). Mrs. Barton’s death has numerous contributing factors and is not overtly connected to mill labor, and yet John Barton immediately thinks about her work in the factories after she dies, drawing attention to Mrs. Barton’s vulnerable body, shaped by Manchester. This first ghostly apparition (excluding the epigraph) sets the tone for the other apparitions in the text: these ghosts are the working-class figures of Manchester, and they serve as a warning that the working class is made disposable, filled by smoke, the waste-product of steam-powered industry, their Gothic materiality illustrating Gaskell’s social critique.

The entire working-class population in *Mary Barton* has been shaped by their proximity to industrialized mills. This population is distinguishable even from other industrial towns, as the narrator describes the “specimen of a Manchester man; born of factory workers, and himself bred

away from a site or condition, and thus a loss. But a movement away from is also a movement towards—towards a site or condition as yet unspecified—and thus entails both a threat and a promise” (3-4).

up in youth, and living in manhood, among the mills.” The “manufacturing population,” the narrator notes, has become pale, with “sallow complexions and irregular features” (9). The workmen’s spectral appearance becomes clearer with the depictions of the union men who come looking for John Barton. Mary becomes terrified of these “desperate” men, who had been “made ready by want” for “any thing.” The narrator explains that Mary’s dreams are “haunted” by the “strange faces of pale men with dark glaring eyes [who] peered into the inner darkness” of the home where she lives with her father (105). The focus in this spectral description is on starvation; however, the surrounding context clarifies that the workers are also vulnerable to Manchester’s dangerous industrial atmospheres. Juxtaposing nutrients and breathing in the same description, the narrator explains that the workmen were “starving, gasping on from day to day” (151), again showing Gaskell’s emphasis on bodily intake.

While Gaskell occasionally uses “gasping” to depict a character’s shock, “gasping” occurs frequently to describe the labored breathing of Mary’s father, John Barton, especially near his death. The main focus of Barton’s end-of-life struggle is on his breathing. His transformation into a phantom during his life makes clear that he had transformed into the dangerous air surrounding and flowing through him. Undergoing a “period of bodily privation,” John Barton inhales the smoke of Manchester’s skies and the smoke of opium rather than ingesting food. Opium usage dramatizes the depiction of Barton’s body being transformed by atmospheric toxins, as he increasingly becomes a specter. Before learning of John Barton’s gasping, the narrator alerts us that “no haunting ghost could have had less of the energy of life in its involuntary motions than he, who, nevertheless, went on with the same measured clock-work tread until the door of his own house was reached” (299). His “measured clock-work tread” illustrates what E.P. Thompson foundationally called “the new time-discipline” of industrial

time, which means that this passage juxtaposes John Barton's spectral transformation with his factory labor. The narrator emphasizes Barton's transformation in a passage on the following page, which also ends the chapter: "Jem drew the resolution to act as if he had not seen that phantom likeness of John Barton; himself, yet not himself" (300). In the span of the next two chapters, the spectral John Barton has lost his ability to fully inhale. Three passages draw attention to his attempts: "I'm getting scant o' breath," he says, which is followed by Jem's suggestion to purchase medication for this "gasping breath," but the chapter ends when John Barton's "breathing seemed almost to stop" (320-21).

Gaskell describes John Barton's fellow mill weavers as having a similar fate awaiting them. When the textile mill weavers meet with the mill masters in the middle of their strike, Gaskell depicts the men's vulnerable bodies in the presence of industrial hazards: "Unshaded gas flared upon the lean and unwashed artisans as they entered." The men must cover their eyes due to the brightness of the flames, showing both the intensity of the light and the complete lack of boundaries between themselves and the gas. Even their clothing cannot shield their bodies, since they could not afford any new material: "air-gaps were to be seen in their garments" (161-64). It is only during the "Sabbath stillness" that the spectral workers find respite from their labors, as the skies show a brief lessening of pollution. There are "no factory bells" on Sundays, and "no early workmen going to their labours." Instead, they experience the "fresh sharp air" (235).

Gaskell explicitly describes the smoke-filled skies of Manchester on only a couple of occasions in the novel; at other times, the smoke depictions appear nearly hidden within other descriptions. Even without numerous depictions, the steam power in this novel remains omnipresent. Nathan Hensley and Philip Steer, in their introduction to *Ecological Form*, discuss coal as "obliquely omnipresent" in the Victorian novel, which leads to their argument for a

“hermeneutics of coal” that can make the steam-power energy visible in Victorian novels, including Gaskell’s *Cranford* (1853) and *North and South* (1855) (10). Gaskell’s *Mary Barton* further illustrates Hensley’s and Steer’s argument, for the novel only discusses the coal-filled atmosphere when characters perceive Manchester from a distance — either while in other industrial locales, such as Liverpool, or as they depart Manchester. The characters do not describe the smoke while they are in it, for they have become accustomed to these skies, and there are no clear skies present for comparison. The smoke becomes visible, in other words, when characters can detach from the area, no longer inhaling and exhaling its pollution.

It is only when Mary is on her way to Liverpool that the novel explicitly notes the smoky skies of Manchester, and in these descriptions, Mary explains that these skies are a sign of home for her. As Mary and Charley (the character who aids Mary in her voyage) first spot Liverpool, they disagree on which location has the smokiest skies. The conversation occurs as they wait to dock their boat, and this moment is yet another instance when Gaskell describes respiration: the pause “gave Mary time for breathing.” Referring to Manchester, Charley asks, “A nasty, smoky hole, bean’t it? Are you bound to live there?” When Mary replies that it’s her home, Charley reveals his “intolerance of the smoke of Manchester”: “Well, I don’t think I could abide a home in the middle of smoke,” he replies (252-53). Mary, on the other hand, believes Liverpool to be the more polluted city. As illustrated by this conversation, Mary and Charley have unsettling attachments to their chosen polluted landscapes. Home has become equated with smoke. Earlier, Mary had further revealed this attachment while seeing the smoke of Manchester from a distance as her train departed: “She had a back seat, and looked towards the factory-chimneys, and the cloud of smoke which hovers over Manchester, with a feeling akin to the ‘Heimweh’” (246). The passage’s use of “Heimweh,” meaning homesickness, takes on a double meaning in the context

of Gaskell's novel. While Mary will miss Manchester during her trip, her home of Manchester is also the location of much illness, especially respiratory illnesses.

The novel's additional depictions of Manchester's pollution reveal the smoke's omnipresence in all seasons. Near the novel's opening, Gaskell draws attention to the pervading dirt that the wind has blown about and the low temperatures have frozen, and thus captured, within ice. In the middle of discussing Mary and Jem's initial courtship, the narrator describes a nightmarish atmosphere, where everything is covered with frozen coal dust:

It was towards the end of February, in that year, and a bitter black frost had lasted for many weeks. The keen east wind had long since swept the streets clean, though on a gusty day the dust would rise like pounded ice, and make people's faces quite smart with the cold force with which it blew against them. Houses, sky, people, and everything looked as if a gigantic brush had washed them all over with a dark shade of Indian ink. There was some reason for this grimy appearance on human beings, whatever there might be for the dun looks of the landscape. (42)²¹

The last sentence explains that the workers resemble their industrial landscape, showing that they are transforming into their polluted environment. The reason for the grime, the narrator later explains, is a lack of water for washing. The narrator calls the water needed "soft water," in contrast to the frozen water, or "thick gray ice," that needed to melt. Even the solution to cleaning this dust, the water, remains full of dust itself. Importantly, this "dust" is not simply

²¹ The "east wind" also has great significance in *Bleak House* (1852), as Jesse Oak Taylor explains in "The Novel as Climate Model: Realism and the Greenhouse Effect." References to this wind function figuratively as an "ill omen," Taylor explains, as the wind also brings "infectious effluvia" from the Essex's marshes to the city (12).

dirt. As Platt explains in his scholarship on Manchester's pollution, "dust" was often used to describe the remnants of coal smoke (33). The use of "bitter" when describing the "bitter black frost" is telling: there is an acrid taste to the frost, a chemical component. Certainly, the use of "bitter" when describing frost may only refer to the severity of the cold. However, the combination of "bitter" and "black" when describing the frost evokes coal in this passage. As a part of Smith's study, he describes tasting the rain samples he collected in and near Manchester. It had a "peculiarly oily and bitter taste when freshly caught," he explained (213). Margaret Kennedy makes a similar claim about the bitterness of Manchester's frost: "Countering expectations of a white winter, the 'black' frost startles us into an awareness of Manchester's smoke" (513). No white winter is possible in Manchester, where water becomes united fully with soot.

To further depict and explain this pollution, Gaskell describes the dusty wind as haunted — a feature of the "shadow kingdom." The wind takes on a malevolent personality as Gaskell describes it supernaturally: "People prophesied a long continuance to this already lengthened frost. ... Indeed, there was no end to the evil prophesied during the continuance of that bleak east wind." With the wind's connection with evil, it is no surprise that characters in *Mary Barton* attempt to keep the wind from entering their bodies and homes. In the novel, it is Mary who first does so: "Mary hurried home one evening, just as daylight was fading, from Miss Simmonds', with her shawl held up to her mouth, and her head bent as if in deprecation of the meeting wind" (42). While holding the shawl to her mouth could also signify the need for warmth, this passage appears directly after the description of the grime and "bitter black frost." Rather than hold her shawl up to her nose, which could make "dust" appear more as excrement or another foul-smelling source, the dust in this context appears more as soot. Keeping her shawl

over her mouth, Mary attempts to avoid ingesting polluted, “evil” air.

As Mary blocks the malevolent, frigid wind from entering her body, others attempt to keep the grime from entering another porous location: their homes. As the weather warms, and the rain warms, the narrator discusses the possibility of spring flowers: “But in Manchester, where, alas! there are no flowers, the rain had only a disheartening and gloomy effect; the streets were wet and dirty, the drippings from the houses were wet and dirty, and the people were wet and dirty. Indeed, most kept within-doors” (8). This list compounds the ever-pervasive dirt, while also showing what Smith had found in his study only four years after the novel’s initial publication: the acidic rain was killing plants in Manchester. The attempt to block out grime by keeping “within-doors” becomes impossible for many in the novel, including the Davenports, as “the gray dawn penetrated even into the dark cellar” (61). While a host of atmospheric dangers threaten the Davenports’ home, the details of the scene, particularly the gray color of the dawn, show that smoke also enters the home. In the early spring, John Barton becomes morose, and the scene highlights his inability to keep Manchester’s polluted winds out of his home: “when the bitter wind piped down every entry, and through every cranny, Barton sat brooding over his stunted fire.” Certainly, with the use of “stunted fire,” a main concern is the wind’s frigidness, as this is a “cold, bleak spring” (54). However, the descriptions of the wind as carrying grime frame this passage, and so keeping out the wind also means keeping out the dirty air. Each attempt in the novel to keep dangerous air out of the home and body is futile.

Trans-corporeal exchanges with Manchester’s atmosphere become most apparent in *Mary Barton* through chronic coughs — especially coughing with unexplained sources, as if coughing is to be expected. Coughing shows trans-corporeality in action even more violently than inhaling and exhaling, as the characters forcibly expel air — dangerous air which is already

transforming their lungs, as shown by the cough itself. Gaskell describes these coughing characters as those transforming into specters, now resembling the hazardous air around them. Clarifying the connection between environmental impacts and respiratory illnesses of the 1840s in Manchester, Mosley explains that “increasing death rates from respiratory diseases were also associated with other environmental sources of illness, such as damp, overcrowded housing” (64). Evidence suggests, Mosley explains, that Manchester’s residents formed committees to confront the coal-powered industries. Mosley points to Reverend John Molesworth of the Select Committee on Smoke Prevention as an example, who articulated in 1843 that the smoky air “must tend to disease.” That the smoke “tends” to disease reveals the known connection between coal-powered industries and prolonged illness, especially respiratory illnesses. These illnesses included an “increased incidence of chronic respiratory diseases, especially bronchitis, in poor urban areas” (64). Indeed, bronchitis increasingly became normalized, as Platt explains, including a quotation from a physician of Manchester in 1868: “The normal condition of the working man of middle age in Manchester is bronchitic,” the physician wrote, adding that “an impure atmosphere increases enormously the tendency to consumption” (32). Newspaper advertisements in the *Times* and the *Manchester Mercury* contemporary with *Mary Barton* further illustrate Mosley’s and Platt’s findings: promises of cures for bronchitis, asthma, and consumption frequently appear in the late 1840s onwards, and such medications included “Hoppers Black Currant Cough Elixir, for coughs, asthma, [and] incipient consumption,” which appears directly below multiple advertisements for coal in *The Times* on Friday, November 10, 1854 (12). These historical contexts of sickness and smoke go far in explaining the ubiquitous coughing in *Mary Barton*; however, unlike *Mary Barton* with its ghostly characters, these

historical sources do not address how best to depict the body's transformation within the "invisible evil" of Manchester.

Coughing appears quotidian in the novel, as if expected, but coughing also functions as a marker of identity. One character in *Mary Barton*, perhaps most studied for the toll factory life can take on the body, is Jane Wilson, who has been of particular interest to scholars for her mill accident before marrying George. However, Jane also suffers from an unexplained cough. Whether through accidents or atmospheric exchanges, Manchester continually transforms Jane Wilson into a specter. Alice, speaking to Mary, mentions Jane's cough nearly as an aside: "I felt it sore one fine day when I thought I'd go gather some meadow-sweet to make tea for Jane's cough; and the fields seemed so dreed and still, and at first I could na make out what was wanting; and then it struck me it were th' song o' the birds, and that I never should hear their sweet music no more, and I could na help crying a bit" (109). This passage appears after Jane loses her twins and her husband George; her cough possibly stems from her own battles with typhus. Since the source of her lingering cough is never explicitly explained or addressed, the cough appears ordinary in this Manchester setting. Mary and John Barton's conversation about Jane further shows that her health had been deteriorating in Manchester for decades. Mary, in response to her father's explanation of Jane's mill accident, responds by claiming that "she has never been a strong woman." A similar articulation about strength previously describes her twin boys. According to John Barton, Jane had — for some time — been turning into a specter: "all pale and limping she went up the aisle... Her face was white like a sheet when she came in church." John Barton links this earlier moment of Jane's life to her current health: "I didn't like her looks to-night," he adds, and is then haunted by her death-in-life appearance as he tries to sleep (80-81).

A variety of other characters have nonchalant coughs like Jane's, showing a pervasive issue in the working-class population. Job, Esther, and Jem also have unexplained coughs. Rather than merely speaking, Job's words are twice described as coming out in coughs. Esther has a cough that the narrator only begins to explain: "Esther went on, without noticing Mary's look. The very action of speaking was so painful to her, and so much interrupted by the hard, raking little cough, which had been her constant annoyance for months, that she was too much engrossed by the physical difficulty of utterance, to be a very close observer" (170). Esther has a "cough to tear her in two," according to Jem. Esther also, in her first conversation with Jem, reveals that she is being haunted by ghosts, such as the ghost of Mary's mother and Mary herself, even though Mary is alive. She explains to Jem the "dim form" that these ghosts take on at night. "There they go round and round by bed the whole night through," Esther explains (145). She appears to be already in a spectral atmosphere, as if she experiences a death-in-life: "they see me," she adds. As her health deteriorates and she sees her own "approaching death," Esther's final desire is for "open air" (310). Through Esther, especially, Gaskell makes clear that a transformation into the realm of ghosts is a painful transformation.

Jem Wilson is actually known by his cough in a way similar to that through which Mary becomes known by the sounds she makes while breathing. Margaret, who has become blind, explains to Mary that she recognized Jem after hearing his cough: "I heard a cough before me, walking along. Thinks I, that's Jem Wilson's cough, or I'm much mistaken. Next time came a sneeze and a cough, and then I were certain" (126). Like his mother Jane's, Jem's cough could be the result of battling the same typhus that killed some of his family members. His "hellish" work atmosphere could also explain his lingering cough: "Dark, black were the walls, the ground, the faces around them" at Jem's furnace-house, showing the porosity of the workers who

become a reflection of their workplace. Jem's work places him in direct threat of daily smoke inhalation, and on more than one occasion he appears covered in soot even when he is no longer working. Moreover, Jem and his workplace appear supernatural: "a deep and lurid red glared over all"; the workers, "like demons," smelt iron into a "fiery liquid" (196). Laura Kranzler argues that this workplace is particularly Gothic: "Gaskell describes with Gothic intensity the hellish conditions of the foundry where Jem Wilson works" (51). There are many reasons to have a persistent cough in this haunting Manchester setting, and since the novel never directly explains or addresses Jem's cough, a combination of illness and smoke appears likely.

Jem's interactions with Mary further highlight coughing as a marker of identity in the novel, and their courtship remains haunted by Manchester's specters. As Sheehan argues, even the marriage plot concerning Mary and Jem only "attempts to escape" the "continual spectral presence" in the novel (39). When Mary falls ill, the narrator nearly counts her among the specters, much like Esther does in her visions of Mary as a ghost: "Mary still hovered between life and death when Jem arrived." At this moment, Jem witnesses Mary's "laboured breathing" (300-301). Gaskell only uses "laboured breathing" to describe Mary's respiration during this illness, but by the end of the novel, this description appositely describes the gasping and coughing of the workers throughout the narrative, whose breaths are strained due to the conditions and settings of their labor. Margaret, who had recognized Jem by his cough, also recognizes Mary by her breathing, which she announces to her grandfather: "It's Mary Barton! I know her by her breathing!" (307). What does it mean for Mary's breath to be audible, and for how long had Mary's breathing made a recognizable sound? The novel does not answer either of these questions directly, but for Margaret to "know her by her breathing" at this point in the novel means that Mary's breathing was likely audible, perhaps through wheezing, long before

her illness. Identified through her breathing, Mary has become her struggling breath, and while Margaret may hear the sound of Mary's distinct cough-identity, Gaskell shows that as a member of the working class in Manchester, Mary was expected to have a struggling respiratory system. Asking if she would consider moving to Canada with him, Jem poses this question: "Would it grieve thee sore to quit the old smoke-jack?" (312). Manchester had become synonymous with smoke, and while Jem and Mary arguably leave due to John Barton murdering Mr. Harry Carson, Jem's question also shows that a fresh start requires finding fresh air.

Midway through the novel, John Barton wonders about the "rich and the poor" and why they are "so separate, so distinct" (150). Gaskell clarifies that these distinctions include respiration: who can inhale, and who can only gasp; who can exhale, and who must cough; who remains corporeal, and who transforms into a ghost. The rich, in other words, are never known by the sounds of their breathing in *Mary Barton*. Directly after witnessing the gasping and dying John Barton, the wealthy mill owner named Mr. Carson stands "at one of the breathing-moments of life" near the end of the novel (327). The rich in *Mary Barton* are never breathless, as Mary is while listening to Will Wilson tell a story from one of his voyages (134). In this fantastical interlude, Will describes a mermaid coming to the surface of the water, "like a creature come up to take breath." How can Will help Mary understand what this sounds like? What would serve as a clear analogy for the working class of Manchester? "Well; you've heard folks in th' asthma, and it were all the world like that," he explains. This startling image, like the many startling images of spectral figures, disrupts the narrative. Gaskell's turns to the supernatural, especially the hauntingly spectral, make clear that industrial pollution, the "invisible evil" which disproportionately affects the poor, cannot go ignored then or now. For the respiratory calamities of *Mary Barton*, Gaskell uses specters to draw attention to the "slow violence" created by

Manchester's pollution and those who reap the financial benefits. Gaskell's specters create haunting spectacles throughout the novel, and their spectral lungs — shaped by respiratory illnesses and smoky skies — not only depict the mechanisms of pollution, but also mirror, or haunt, our current calamities and invisible evils.

Melville's "Sheet-White" Paper Mill Ghosts

To perceive the ghostly workers *inside* industrial mills and view the mechanism of their transforming bodies more closely, I move to Melville's diptych, which serves as an interlude in this chapter. As stated, Melville's "Paradise of Bachelors and Tartarus of Maids" (1855) transports the chapter geographically from England to New England, beginning with a jovial scene in London with a group of male lawyers, moving to a hellish, industrial scene in New England featuring a paper mill with only women working. The short story mirrors Ruskin's claims and Gaskell's depictions of the plague-wind. Rather than a trembling wind containing "dead men's souls . . . trying to find the fittest place for them," Melville writes of a "gust . . . laden with lost spirits bound to the unhappy world" just before spotting the paper mill (325). Melville's reading of Ruskin is well documented, especially his reading of *Modern Painters*. In a discovery made by Scott Nosworthy as recently as 2006, Melville's notes within a text on the Italian painter Giorgio Vasari quote Ruskin word-for-word: "Attain the highest result," Melville wrote on one page, quoting a footnote within Ruskin's *Modern Painters* (Ryan & Parker 496). The scholarship on Gaskell's connections to Melville has so far concerned their later works. In addition to arguing that their later works "share inspiration and sources," some evidence reveals that Gaskell and Melville read each other's work, and that *Sylvia's Lovers* (1863) was influenced by *White Jacket* (1850) and went on, in turn, to influence *Billy Budd* (1891) (Lawson 37). Ruskin's, Gaskell's, and Melville's portrayals of haunted mill air further connect the three writers,

especially in terms of their shared source materials and influences. Unlike Ruskin or Gaskell, however, Melville's text moves from the haunting wind to the haunting figures within the mill.

Graham Thompson's "The 'Plain Facts' of Paper" reminds us that Melville's short story was anonymously published in *Harper's* in 1855, and one possible reason for this anonymity was the critique Melville was making regarding the very paper used by magazines like *Harper's*. Thompson's stated goal is to "show that Melville displays a much more specific and sophisticated interest in paper, its manufacture, and its uses than critics have so far recognized" (25). Closely studying the various technologies used for making paper of different quality, Melville was deeply interested in his own consumption of paper, and the labor that went into making it: "Melville shows himself a generous and thoughtful custodian of the material that had withstood the clanging and whirring metallic rollers, presses, and cutters to arrive on his desk and in his hands" (Thompson 30). Melville, indeed, visited a paper mill like the one he describes in the second half of this diptych. Recently, A. J. Valente, a paper historian, narrowed down this paper mill to the Old Berkshire Mill in Dalton, Massachusetts (Thompson 31).

Visiting the Old Berkshire Mill meant that Melville was witnessing two eras at once through a mill caught between two worlds, having recently incorporated new machinery at the time of his visit. While the narrative explains the visit as a trip to buy paper, Melville likely visited in order to witness the new machinery and the new roles that workers played, finding that "[t]he girls did not so much seem accessory wheels to the general machinery as mere cogs to the wheels" (328). "The detailed picture of the papermaking factory," Jonathan Cook argues, "shows the author as an outspoken critic of the new factory system" and the working conditions within this system (84). The paper mill Melville visited was for fine paper: "what differentiated the paper Melville bought in Dalton was its comparative strength, substantiveness, and longevity"

(Thompson 32). We know that this paper mill is in-between worlds with its outdated method for cutting up the initial material: by hand. "Mechanical rag cutters," Thompson explains, "could not open seams as deftly as hand cutters, and neither could they remove the buttons the narrator notices 'are all dropped off' from the old shirts and that he imagines may have come from the bachelors in the first part of the story" (34). The rags—"Cupid," our narrator's guide, explains—are from "far over sea—Leghorn and London," making the narrator realize that "among these heaps of rags there may be some old shirts, gathered from the dormitories of the Paradise of Bachelors" (330). The women of the paper mill, in other words, use the waste from the lawyer bachelors in London, while they also send them back fine paper for their legal work: "All sorts of writings would be writ on those now vacant things . . . sermons, *lawyers' briefs*, physicians' prescriptions" (333; emphasis mine). This passage illustrates Jonathan Cook's claim that Melville's diptych makes vivid the "hidden links between male social privilege and female economic oppression in a rapidly industrializing age" (82). The narrator's many questions intimate not only his lack of knowledge concerning this labor, but also the London bachelors' ignorance of this labor. What the bachelors do not realize, but what the narrator grows to understand, is that their paper is haunted by the spectral women who manufacture it.

The risks inside the mill are at first visible outside the mill, as Melville links the ghostly workers with a greater ghostly atmosphere surrounding the paper mill. Importantly, the narrator repeatedly calls the valley where the paper mill exists the "Devil's Dungeon"; the "white sepulchre" of the paper mill lies at the bottom of this dungeon (324). With its dungeon appearance and snowy surroundings, the setting evokes Dante's *Inferno*—in particular, the icy ninth circle (Cook 85). Like *Mary Barton's* revelation that vegetation was killed off by Manchester's atmosphere, plants are likewise unable to grow by this paper mill, but the cause

appears to be more than the temperature: "None grow in this part of the country," Cupid explains, "The Devil's Dungeon is no place for flowers" (330). The spirit-filled wind passes the narrator just before descending into this "dungeon": "The gust shrieked through the shivered pass, as if laden with lost spirits bound to the unhappy world," making his horse run "downward madly" (325). It is not until we enter the paper mill that we begin to understand who these spirits are.

Both visible and invisible dangers exist in the paper mill, and it is these invisible dangers that Melville's use of spectrality help make vivid. The narrator begins with the visible dangers—the blades that turn their cut-up shirts into pulp: "That moment two of the girls, dropping their rags, plied each a whet-stone up and down the sword-blade. My unaccustomed blood curdled at the sharp shriek of the tormented steel. Their own executioners; themselves whetting the very swords that slay them; meditated I" (330). While the blades are the most obvious danger posed in the mill, the narrator immediately turns to the effects of the mill's toxic particles. After both the narrator and the guide begin coughing in the rag-room, the narrator again turns to his guide, posing this question: "What makes those girls so sheet-white, my lad?" The guide's cruel answer clearly links their hazardous mill atmosphere to their paleness: "'Why'—with a roguish twinkle, pure ignorant drollery, not knowing heartlessness—I suppose the handling of such white bits of sheets all the time makes them so sheety" (330-331). While Cook argues that the women's "blank" faces express their machine-like appearance (90), I would argue that they have become the blank paper that they manufacture. To best portray this process, Melville describes the women as spirits. Trans-corporeality comes to the forefront, as "sheet-white" specters form from imbibing paper particles, resulting in a scene that haunts the narrator. Philip Young's scholarship on "Tartarus of Maids" likewise reads these women as spirits, situating the narrative, as Jonathan

Cook does, in Dante's *Inferno*: "The Maids of Tartarus, though spoken to, do not in the tale speak. They are Dante's 'shades,' which is to say spirits of the dead inhabiting hell" (218). The women's spectrality makes clear what had been impossible to fully see: "The air swam with the fine, poisonous particles, which from all sides darted ... as motes in sunbeams, into the lungs" (329). The rag-room specters make visible what would be impossible to witness: the mechanism of these particles moving into the lungs and transforming the women's bodies.

The guide's "heartlessness" reflects a greater lack of public attention with the atmospheric hazards of the paper mill. As Judith McGaw argues in a recent chapter on women's roles in paper mills, these "fine, poisonous particles" "remained invisible to contemporaries or were deemed too trivial to report" (344). Cook likewise draws attention to the unanswered appeals for improved working conditions in paper mills like the one featured in Melville's story, as New England paper mill workers "had constant concerns about cleanliness, ventilation, excessive heat or cold" and more (89). An additional, invisible hazard included disease, as some women "contracted smallpox from infected rags before mills began providing vaccination" (McGaw 344). New paper mill machines, like the one featured in "Tartarus of Maids,"²² further endangered workers: "Mechanization increased the number of women at risk," McGaw argues (344-345). Back in London, the bachelors themselves are ignorant of the increased risks these ghostly women face in manufacturing their paper.

Other spectral figures inhabit the space of the paper mill, including the man the narrator first meets, as well as the narrator himself. The narrator is first introduced to Cupid by a "dark-complexion man," a description that Melville uses on four occasions in the short story (327, 328,

²² Thompson claims that the new machine Melville observed was likely the Fourdrinier (33), as shown by the speed of the belt carrying pulp and the cost, stated by Cupid, of "twelve thousand dollars" (331).

329, 334). Not until the end of the story does Melville reveal that this man is "an old bachelor" as well as "the principal proprietor" (334). The man remains a mystery, but his presence invites a further reading of the mill as haunted by the enslaved in the United States, since this mill relies on the extraction of cotton. In London, the bachelors' paper is thus not only haunted by the ghostly women, but also by the enslaved. The narrator, who traverses the Atlantic and moves into numerous spaces with ease, is a voyeur of all these haunting connections: "The voyeur in the mill is a bold invention," Young observes, "like nothing of its time and place" (212). Seamlessly in and out of jovial circles and violent atmospheres, the spectral narrator—while apparently moved by what he witnesses at the mill—travels about freely.

The Toxic Ghosts of Davis's "Life in the Iron Mills"²³

Near the opening of "Life in the Iron-Mills," the narrator invites readers into the stifling atmosphere of an Appalachian iron-works town: "I want you to hide your disgust, take no heed to your clean clothes, and come right down with me,—here, into the thickest of the fog and mud and foul effluvia. I want you to hear this story. There is a secret down here, in this nightmare fog, that has lain dumb for centuries: I want to make it a real thing to you" (13-14). The narrator recounts the tragedy of Hugh Wolfe, once a miner in the Cornish tin mines, then a coal-furnace tender, who kills himself in jail after keeping a wallet first stolen by his cousin, Deborah. Told in a journalistic style, the story has become well known as a landmark in American literary realism. The "secret down here, in this nightmare fog" remains cryptic, however, and the narrator admits that s/he cannot articulate it: "I dare make my meaning no clearer, but will only tell my story. It will, perhaps, seem to you as foul and dark as this thick vapor about us, and as pregnant with death" (14). The deadly air, in other words, can replicate itself. As shown by the end of this

²³ I include this section with the permission of *Literary Geographies*.

quotation, the focus shifts to the mill's devastating air. In this smelting location, the smoke lingers "everywhere," "clinging in a coating of greasy soot to the house-front, the two faded poplars, the faces of the passers-by" (12, 11). However, like the Davenports' home, there are additional atmospheric hazards present besides smoke. The narrator makes this clear in the initial invitation. An entanglement of dense "fog and mud and foul effluvia" surrounds and saturates the area and residents. Additionally, the "stagnant and slimy" river contributes to "all the foul smells ranging loose in the air" (13, 11). This "nightmare" atmosphere becomes most vivid when the narrator describes the mill at night: "crowds of half-clad men, looking like revengeful ghosts in the red light, hurried, throwing masses of glittering fire" (20). Like Ruskin, Gaskell, and Melville, Davis shows that a hazardous air amalgamation surrounding a mill appositely includes dreadful phantoms. Yet, within these texts, Davis most clearly links a mill town's hazardous atmosphere to the dangerous air inside mills, and finally, to the ghostly workers inside.

Nineteenth-century popular and medical sources in the United States provide further context concerning toxic ghosts. These sources describe ghosts materially. In the United States, attempts to explain ghostly phenomena took a scientific turn in the middle of the nineteenth century. Ghost sightings and scientific rationale were intertwined, according to Matthew Taylor: "in the mid-to-late nineteenth century, ghosts and materialist science were mutually possessed, each haunted by the other" (416). Sheri Weinstein describes this relationship as the link between nineteenth-century spiritualists and scientists, both searching for empirical evidence to corroborate spectral sightings. "It is crucial to realize," Weinstein argues, "that scientific and spiritual discourses about the infinite possibilities of human vision and communication emerged in conjunction with one another" (131). The era's "endless fascination with ghostology" appeared in articles, stories, and studies "as likely to be conjured by

Scientific American as by *The Spiritual Telegraph*" (416). While the experiments and discoveries vastly diverged among those studying ghosts, similar methods were used: "In each case, ghosts were given flesh—shades brought into the light—through association with known scientific laws and technologies" (417). In Davis's narrative, the ghosts reflect current debates surrounding pollution and miasma.

The mill's imagery—both the effluvia and the specters—evokes dangerous air. While my section on *Mary Barton* briefly mentions miasma, it is important to analyze definitions of miasma in the antebellum American context. In *The Health of the Country*, Conevery Bolton Valenčius describes nineteenth-century Americans' understanding of miasma as an "unhealthy fog" (115). Like Engels's definition, miasmas "could emanate from stagnant water, from earth, and from rotting objects. Transferring imbalance and ill health from the surrounding world to the interior of the human body, they were the causal mechanism whereby elements of the environment affected individuals' health" (114). Defining miasma in the nineteenth century also posed some challenges. Valenčius argues that miasma, as a concept, was "difficult to capture" (114). Drawing a comparison to the supernatural, Valenčius suggests: "Like malevolent sprites, miasmas were at once wispy and possessed of great power, ethereal in nature but chillingly tangible in effect" (114). Melanie Kiechle's definition of miasma in *Smell Detectives* explains why the experience was "chillingly tangible": "Foul odors portended the presence of miasma, the disease-causing effluvia released by rotting corpses and swampy environs" (5). In addition to other rotting matter, decomposing bodies became understood as channels for diseases, making miasma a macabre image, and resulting in portrayals including ghosts.²⁴ As the opening of

²⁴ In 1859, two years before "Life in the Iron-Mills" was published, Dr. John H. Rauch suggested that "the emanations of the dead are injurious to health and destructive to life" (24).

Davis's story shows, miasmas are not the only forms of hazardous air present. American mid-nineteenth-century depictions of "bad air" amalgams ground my contextualization of Davis's ghost references in "Life in the Iron-Mills": The iron mill's industrial hazardous air ultimately kills its workers, turning them into spectral, disease-spreading agents.

The ghosts in this narrative evoke the "real" mechanisms of dangerous air. One character who learns this firsthand is Mitchell. When Mitchell—a relative of the mill owner's son, young Kirby—sees the mill at night, he first describes the "smouldering" scene as "ghostly, unreal" (31). We cannot, however, take Mitchell's juxtaposition of "ghostly" and "unreal" as an accurate description. Gatlin reads Mitchell's assessment as invoking the ghost image to ignore the "disturbing aesthetics" of the iron mill: "Refusing to confront the physicality of disgust, Mitchell substitutes an image corresponding with a classic aesthetic standard and continually reduces the mills to cliché" (223). Mitchell even announces that he "like[s] this view," referring to the smoldering mill (30). Kirby's response to Mitchell, however, significantly shifts Mitchell's description from "unreal" to "real." Kirby explicitly questions Mitchell's claim that the scene is unreal: "These spectral figures, as you call them" Kirby asserts, "are a little too real for me to fancy a close proximity in the darkness" (31). Note that Kirby does not necessarily question Mitchell's use of "spectral figures." He questions Mitchell's assessment that these ghosts are not real. Directly after Kirby's response to Mitchell, they come across another "ghostly" scene. This time, Mitchell responds in fear when he sees "a woman, white, of giant proportions, crouching on the ground, her arms flung out in some wild gesture of warning" (31). This is, of course, the sculpture carved by Hugh Wolfe from kohl—the byproduct of iron smelting. When he sees the figure more clearly, "Mitchell drew a long breath." "I thought it was alive," Mitchell confesses (31). Since this occurs immediately after his conversation

about specters, and because he uses the word "it" to describe the large, white figure, Mitchell momentarily believes he sees a real phantom. The ghosts of the iron mills have become, even if only momentarily, a "real thing" for Mitchell, as the specters had been "too real" for Kirby.

Another noteworthy aspect of Mitchell's and Kirby's dialogue is that Mitchell uses spectrality to describe the environment (as "ghostly"), while Kirby uses this language to describe the workers (as "spectral figures"). Again using Alaimo's "trans-corporeality" framework, boundaries between the human and the non-human become difficult to distinguish in this passage. The workers and their environment mesh together. Quoting Linda Nash, Alaimo draws upon a particularly nineteenth-century configuration of the body's relationship to its surroundings—a belief that the "body is characterized by its 'permeability,' 'a constant exchange between inside and outside, by fluxes and flows and by its close dependence on the surrounding environment'" (116). In Mitchell's and Kirby's dialogue, this conflation between person and place happens more than once. Mitchell references ghosts twice: once to describe the fires of the mill ("ghostly, unreal") and again to describe the workers. Looking at the mill, Mitchell continues to interpret his view: "One could fancy these red smouldering lights to be the half-shut eyes of wild beasts, and the spectral figures their victims in the den" (31). Kirby's use of "spectral figures" echoes Mitchell's interpretation. Mitchell's use of "ghostly" refers to the environment of the mill: the combination of "heavy shadows" and "smothered fires." His use of "spectral figures," however, refers to the workers in front of a glowing smelting flame, where they would appear as silhouettes. The "smouldering lights," or "eyes of wild beasts," make the "spectral figures their victims." Therefore, the spectral figures suffer from that ghostly, industrial environment and then they replicate that same environment. The industrial air "flows" into

individuals, reproducing its dangerous air by transforming the workers into spectral figures.

Two additional references to ghosts appear in close proximity near the beginning of the narrative. When Deborah—Hugh Wolfe’s cousin—first sees the workers at the mill, the narrator describes them as ghosts in Hell. Significantly, this is the first description of the workers. In a scene that mixes specter and warlock imagery, which I have partly shown, Deborah sees "wide caldrons filled with boiling fire, over which bent ghastly wretches stirring the strange brewing; and through all, crowds of half-clad men, looking like revengeful ghosts in the red light, hurried, throwing masses of glittering fire. It was like a street in Hell" (20). Here, as with Mitchell’s and Kirby’s conversation, the workers’ bodies appear in a material exchange with their environment: both have become hellish. The ghost-workers, stirring over the caldrons like sorcerers, have become their environment. The term "revengeful" is indeed significant, as it not only describes the workers’ attitudes towards the mill but also resonates with depictions of miasma in the period. This scene makes possible a variety of transatlantic connections²⁵. Revenge played a significant part in the metaphoric explanation of corpses spreading disease through their ghost-like vapors. This explanation relied heavily on folklore of the period: the popular belief was that "the dead return from the grave," Louise Henson explains, "like restless and vengeful ghosts" (12).

When the narrator again references ghosts, s/he juxtaposes real-life encounters and "ghost Horror" narratives: "If you could go into this mill where Deborah lay, and drag out from the hearts of these men the terrible tragedy of their lives, taking it as a symptom of the disease of their class, no ghost Horror would terrify you more" (8). Why, then, does the narrative use ghosts

²⁵ Notice that Davis's description of Hugh's furnace work mirrors Gaskell's description of Jem's furnace work.

to explain the realities of industrial toxicity? "Life in the Iron-Mills" must be "no ghost Horror" fabrication, and the ghost references must not be in tension with the journalistic style. Rather, these ghosts function *within* Davis's realism to make the material, hazardous air vivid and terrifying.

The workers in the mill, our narrator explains, are neither fully alive nor dead; moreover, those who share the workers' air also transform into ghosts. When the narrator describes the "terrible tragedy" of the workers' lives, s/he explains that the men resemble a "living death" (23). I would argue that this condition spreads like a disease in the story, as the nineteenth-century miasma theory supports. The narrator describes our protagonist, Hugh Wolfe, as a member of the living dead: "his muscles were thin, his nerves weak," and his face was "yellow with consumption" (24). During Hugh's transformation to a specter, he endures "bleeding at the lungs" and a "death-cough," illustrating his material exchange with his atmosphere (52). Deborah, who does not work at the mill as Hugh does, has ghost-like features, too. The narrator specifically remarks that the "woman named Deborah was like him," referring to Hugh. The difference, however, is that she seems even closer to death at the story's beginning: "only her face was even more ghastly, her lips bluer, her eyes more watery. She wore a faded cotton gown and a slouching bonnet. When she walked, one could see that she was deformed, almost a hunchback. She trod softly, so as not to waken him, and went through into the room beyond" (16-17). Other direct ghost references in the story invite the reading that Deborah also transforms into a ghost. The narrator encourages this interpretation of Deborah: Crouched over with a light-colored cloth covering her body and her head, Deborah treads quietly, nearly floating across the floor.

The atmosphere of the Wolfes' home partly explains Deborah's transformation, because

its description invites the same trans-corporeal lens that the ghostly scenes of the mill do. The cellar has, like the Davenports' cellar in *Mary Barton*, a "a fetid air smothering the breath" (16). Foul air was considered easily trapped in confined spaces, like this cellar. The use of "fetid" to describe the air is especially provocative of decomposition, which could simply refer to miasmatic, decaying matter in this cellar. However, the house's proximity to the mill, as well as the inhabitants' traveling back-and-forth from the mill, creates the possibility that polluted air spreads to this home and saturates it. The home itself becomes a site of toxicity for both Hugh and Deborah, transforming them both further into toxic ghosts. The hazards of industry cannot be separated from the home. As Kiechle explains, "Thinking about air requires considering the insides of homes as well as a city's streets, waterways, and parks. Too often our histories stop at the threshold . . ." (16). With a trans-corporeal reading, this threshold vanishes as there are no boundaries for hazardous air—both organic and inorganic.

This dangerous air is likewise not confined to the time of Hugh's experience. In the narrative's preface, the narrator witnesses and describes phantasmal transformations taking place right outside the window. Even at this early point in the narrative, before any ghost references, the narrator describes those passing by as if they are a part of a haunting: "Something of the same idle notion comes to me to-day, when from the street-window I look on the slow stream of human life creeping past, night and morning, to the great mills" (12). Those who work in the iron mills do not walk by, they creep by. Importantly, the narrator uses the term "creeping" on four different occasions, each of which insinuate ghostly movement or even death during life. For example, Deborah describes those transforming into a "living death" by using the term "creeping": "That gray shadow,—yes, she knew what that meant. She had often seen it creeping over women's faces for months, who died at last of slow hunger or consumption. That meant

death" (53). This "creeping" shadow illustrates most clearly, aside from the direct references to ghosts, the ghostly transformations of the people working or residing near the mills during and after Hugh's lifetime.

Davis's intervention in these ghostly transformations is to expose that industrial toxicity has no benefits. As Gatlin explains, Davis's narrative put her at odds with pro-industrial arguments: "Entering a debate that would remain contentious for the next half-century," Gatlin explains, "Davis counters idealized claims linking smoke to economic equality, progress, and health. She portrays pollution not as a source of awe or a sign of wealth, nor as simply a nuisance or an annoyance, but rather as a lethal hazard to laborers" (203-204). A web of influences kept the iron mills open. In the United States, "physicians declared," for example, "coal smoke not only '*anti-miasmatic*' but also, 'from the carbon, sulphur and iodine, . . . highly favorable to lung and cutaneous diseases'" (Gatlin 213). Industrial toxicity, for Davis, did not combat miasma; rather, Davis shows the industrial pollution as a greater threat.

This entanglement of toxic atmospheres and bodies becomes even more apparent in the descriptions of the mill's material air. The narrator describes the residents near the mill as "breathing from infancy to death an air saturated with fog and grease and soot, vileness for soul and body" (12). The air is not simply sooty, but also foggy, greasy, and vile. The miasma exists within a hazardous mixture that is difficult to disentangle. The descriptions, at first, all sound like by-products of iron smelting. However, the narrator also describes the air as foul due to the mass of people: "The air is thick," we learn, "clammy with the breath of crowded human beings" (11). The adjectives that appear to describe iron smelting also have "human" qualities. The use of

"fog," for instance, appears in *Bleak House*²⁶ (1853) to describe the foul air coming from a group of "hoary sinners" (Henson 15). In addition, "grease"—while a common adjective for soot—also stands out as having "human" qualities. Living near the mill, and thus ingesting its fumes, the breath of humans is suspect and indivisible from the toxicity of the mill. The poor air quality, already difficult to define at the start, becomes altogether a "nightmare fog" (13). The nightmare in the story resonates with Ruskin's later analysis of nightmarish air, appearing as the inability to disentangle the corporeal from the industrial, the organic from the chemical, the human from the non-human, and especially the living from the deceased.

Consider also how the narrator's invitation reflects an eerie report on the Chicago cemetery. "I want you to hide your disgust, take no heed to your clean clothes," the narrator beckons, "and come right down with me,—here, into the thickest of the fog and mud and foul effluvia" (13). The narrator's directions here are telling. Why is it that we must go "down" with the narrator to view the "foul effluvia"? It appears that we are stepping into a grave. Two years prior to "Life in the Iron-Mills," Dr. Rauch's report on the Chicago cemetery claimed that "emanations or effluvia from dead bodies, or the exhalations and exudations of living but diseased bodies, may excite in the fluids of the system fermentative action, resulting in functional derangement or organic lesion" (28). Rauch's report eerily mirrors the narrator's reference to effluvia and to the air being "thick" with "crowded human beings." The flow of material air between the living functions like the air flow between the living and the dead.

²⁶ Charles Dickens's industrial portrayals, such as those in *Hard Times*, influenced Davis's own portrayals in "Life in the Iron-Mills." On this point, see Arielle Zibrak's "Writing Behind a Curtain: Rebecca Harding Davis and Celebrity Reform" (2014: 531-32) and David Bordelon's "Blackpool on the Picket Line: *Hard Times* Goes Viral in Nineteenth-Century America" (2017: 55-6).

Hugh's korl sculpture adds to the story's focus on permeable bodies. Gatlin's description of this byproduct, the korl, elucidates its trans-corporeal nature in the comparisons between it and the workers: "the story calls attention to waste—be it soot, smoke, korl, or workers—and refutes the assumption that it is categorically valueless . . ." (219). The korl is like the workers and the smoke because they are all byproducts. This likeness moves beyond simile: The workers and the korl share material properties. Thomas Fick, in his article "Authentic Ghosts and Real Bodies," describes nineteenth-century ghost stories written by women in a similar, material fashion: "the supernatural is frequently the natural in masquerade. I mean this quite literally" (82). Similarly, these ghost workers are "literally" replications of the mill's toxic air. These workers are also indistinguishable from the korl:

In the neighboring furnace-buildings lay great heaps of the refuse from the ore after the pig-metal is run. Korl we call it here: a light, porous substance, of a delicate, waxen, flesh-colored tinge. Out of the blocks of this korl, Wolfe, in his off-hours from the furnace, had a habit of chipping and moulding figures. (24)

This description of the korl evokes the human body's permeability. The korl, as Gatlin claims, is a form of "waste," like the workers. The narrator's description takes the comparison a step further by describing the korl not simply as skin-like but indeed having "porous" skin, which suggests that the workers' bodies are industrial waste, as well. When Hugh chips away at the korl, he further animates it by creating "figures." The korl woman, of course, is the korl figure with the most attention in the story. By creating this figure, Hugh has uncovered a porous body from the smelting pit—one that can exchange materials, including "human" materials, with others and its environment.

This human-like quality of the korl woman accounts for the narrator's initial unease with

the figure. The narrator confesses to keeping the korl woman "hid behind a curtain" (64). S/he explains that s/he hides it because it is a "rough, ungainly thing" (64). Yet, the narrator reveals that the sculpture is not a "thing" at all, but Hugh Wolfe. Sometimes, when the narrator uncovers the statue "at night," s/he sees "a bare arm stretched out imploringly in the darkness, and an eager, wolfish face watching [his/hers]" (64). It seems no coincidence that the face is described as "wolfish," for it is the face of Hugh Wolfe. The narrator continues: s/he sees "a wan, woful face, through which the spirit of the dead korl-cutter looks out, with its thwarted life, its mighty hunger, its unfinished work" (64). The narrator's fear and fascination—as shown by purposefully and repeatedly bringing the sculpture out at night—regards the "spirit" of Hugh, which looks *through* the porous face of the sculpture. Hugh's death completes his full transformation into a specter. Hugh, as described by the narrator, has seeped into the pores of the statue, as the iron smelting byproducts had seeped into him before his death. Recall that at the opening of the narrative our narrator speaks in riddles, suggesting that s/he "dare not put this secret into words," even though no "secret" has been previously divulged. The riddle becomes layered: "It is this: that this terrible dumb question is its own reply; that it is not the sentence of death we think it" (14). Perhaps the narrator simply refers here to the "great hope" s/he has in an afterlife (14). However, shortly after this "great hope" articulation, the narrator again brings up the "secret," exploring why s/he chose to tell Hugh's story: "Perhaps because there is a secret, underlying sympathy between that story and this day with its impure fog and thwarted sunshine,—or perhaps simply for the reason that this house is the one where the Wolfes lived" (14-15). The narrator is staying, it appears, in the Wolfes' home, and a connection between Hugh's experience and "this day" is the "impure fog." That is, Hugh's continued, ghostly presence haunts the narrator. The characterizations of the sculpture make that continued presence clear.

The final words of the narrative promise a transformed atmosphere, but the korl statue—the smelting "waste" with the ghost of Hugh peering through—points towards it. As "its groping arm points through the broken cloud to the far East" (65), the narrative's use of spectrality points towards a clearer understanding of industrial pollution. If the narrator only suspects that Hugh haunts the home at the beginning of the story, by the end, the narrator has fully recognized this haunting. "While the room is yet steeped in heavy shadow," the narrator writes, just after the Quaker interlude, "a cool, gray light suddenly touches [the korl statue's] head" (65). The personified "cool, gray light" appears welcome in this final scene, even though it is ghostly. The ghost has become the narrator's new reality and also the most suitable image to realistically represent the body's entanglement with its toxic environment. Sharon Harris describes the scene in similar terms. This ending "will again draw on the language of romanticism but will contextually demand a rethinking of the issues in decidedly realistic terms" (6). All the narrative's specters, I would add, have become "real" for us (Davis 14). As Jesse Oak Taylor explains, "modernity is haunted" and its material atmosphere reveals its "ghostly residue" (44). Challenges abound for illustrating the body's role within a "thick" mixture of hazardous air—a material with an untraceable and indistinguishable combination. The specter completes the final action of the narrative in pointing to the dawn, and whether this ghost is Hugh or another, this image reinforces not only the entanglement of the body with its environment, but the entanglement of the dead with the living.

Conclusion

As shown by the narratives of this chapter, spectral language—with its own uninhibited intrusion into realistic stories—strikingly mirrors the movements of dangerous air into and from the body. This chapter's primary texts, furthermore, each supply pieces of the interconnected,

porous locales of the mill, the body, and the home. The ghostly, "cool, gray light" at the end of "Life in the Iron-Mills" mirrors Gaskell's own portrayal of the Davenport home, where "the gray dawn penetrated even into the dark cellar" (61), and as Hugh's ghostly presence within this gray light compels the narrator to write his story, so, too, do the haunting mill scenes of Manchester and New England demand narration. "Haunting is a frightening experience," Avery Gordon explains; "It always registers the harm inflicted or the loss sustained by a social violence done in the past or in the present. But haunting . . . is distinctive for producing a something-to-be-done" (xvi). Gordon's argument here reflects Derrida's own in *The Specters of Marx*, an understanding central to the framing of this dissertation, which posits that the specter seeks "justice" (xviii). Hugh's ghost, like the other haunting figures of the iron mill, the haunting figures of *Mary Barton*, as well as the "sheet-white" figures of Melville's paper mill, all register "a something to-be-done." This "something-to-be-done," Gaskell, Davis, and Melville make clear, is to document paradoxical observations—spectrality repeatedly illustrating the tangible dispersal of dangerous air from industrial mills, as well as the material mechanisms of ingesting dangerous air. Gordon likewise draws attention to the material composition of literary ghosts: "The ghost, as I understand it, is not the invisible or some ineffable excess. The whole essence, if you can use that word, of a ghost is that it has a *real* presence and demands its due, your attention" (xvi; emphasis mine).²⁷ Immediately after observing that the plague-wind appeared as "dead men's souls," Ruskin, too, explains that his next step must include documentation: "Since that

²⁷ While Gordon works within sociology for *Ghostly Matters*, many of her examples come from literary fiction, including works by Luisa Valenzuela and Toni Morrison. As she explains, "Literary fictions play an important role in these cases for the simple reason that they enable other kinds of sociological information to emerge" (25).

Midsummer day, my attention, however otherwise occupied, has never relaxed in its record of the phenomena characteristic of the plague-wind; and I now define for you, as briefly as possible, the essential signs of it" (48). Regarding Ruskin's "Storm-Cloud" lectures, Taylor reminds us that "Ruskin's original audience thought he was crazy," with some linking his "madness" to his descriptions of the wind ("Storm-Clouds on the Horizon" 5). As with Gaskell, Melville, and Davis, the spectral air of mills consumed Ruskin's mind, compelling him to accurately describe its spectrality.

Chapter II

Melville, Seacole, and Ruskin on the Spectral Traces of Ports

"Those fine steamers ... have done so much toward annihilating time and space."

"General View of the Port," *The Liverpool Mercury* (1847), 3

When Melville's eponymous Redburn first sets eyes on the port of Liverpool, he sees ghosts: "Presently, in the misty twilight," he explains, "we passed immense buoys, and caught sight of distant objects on shore, vague and shadowy shapes, like Ossian's ghosts" (189).²⁸ Startled by the haunting view, he leans over *The Highlander's* side, taking a closer look "to see how the reality would answer to [his] conceit" (189). The "reality" of this port remains supernatural for Redburn. Within the smoke-filled setting of Liverpool's cotton warehouses, he discovers a starving family—a mother with her children, one of whom is a dead infant in her arms—whose appearance prompts him to ask, "who were these ghosts that I saw?" (253). At this point in the narrative, they are within a below-ground "spirit-vault" where they had "crawled to die," as if entering their own grave (270, 253). After first bringing them food, Redburn returns a second time with water. When he approaches the vault for the third time, he finds only a manufactured chemical compound, "a heap of quick-lime," where they once stood (257). The family haunts Redburn for the rest of his time in Liverpool and beyond, as he repeatedly imagines their ghostly figures inside the vault. As Liverpool transformed through steam power, the family transformed into specters; Melville's novel suggests that even if their bodies

²⁸ Numerous epic poems by James Macpherson written in the 1760s were narrated by "Ossian," a figure of Irish provenance. In *Ossianic Unconformities: Bardic Poetry in the Industrial Age*, Eric Gidal explains that Macpherson's Ossianic poems were a "European-wide sensation," and that they contain "a tragic sense of inevitable loss" (3). *Redburn's* inclusion of Ossian supports Gidal's reading of "Ossian's capacity to speak both to the deep time of geological history and to the rapid temporal shifts of the industrial age" (9).

disappear, haunting traces will remain.

The sight of newly steam-powered ports exceeded realist descriptions. Since the port transformed into a location full of smoky air and tarry water, descriptions required language that could capture these indecipherable and alarming surroundings. The very sight of the "commercial-industrial complex of Liverpool," Harold Beaver explains, resulted in a "critical shock" for newcomers, raising the question of "what ... to make of all this" (14-16). Elizabeth Gaskell's own eponymous character, Mary Barton—who figured prominently in my chapter on mill specters—looks aghast at the site of Liverpool in the early 1840s. Charley, Mary's guide, asks her to take in the scene of Liverpool's docks:

And Mary did look, and saw down an opening made in the forest of masts belonging to the vessels in dock, the glorious river, along which white-sailed ships were gliding with the ensigns of all nations, not "braving the battle," but telling of the distant lands, spicy or frozen, that sent to that mighty mart for their comforts or their luxuries; she saw small boats passing to and fro on that glittering highway, but she also saw such puffs and clouds of smoke from the countless steamers, that she wondered at Charley's intolerance of the smoke of Manchester. (253)

Mary and Charley do not understand how the other can tolerate the smoke of their respective home towns: Charley has an "intolerance" for Manchester's smoky skies, while Mary is shocked to see the "clouds of smoke" arising from "countless" steam-powered vessels. She is also astounded to see the "forest of masts," a phrase suggesting deforestation on a massive scale. This combination of steamships and sailing ships suggests that Charley and Mary are witnessing a critical moment of energy transition in maritime trade, and Mary's reaction reveals her own

grappling with this smoke-filled view. The port's transformation is an "entire novelty" for Mary, and the chapter concludes with her at a loss for words (253).

Mary's journey from Manchester to Liverpool mirrors the movement from my first chapter on mill specters to this chapter on steam-powered ports and the specters that haunt them. In my first chapter, I argued that literary mill specters made visible the damaging effects of polluted mill air on laborer's lungs. In this chapter, I argue that port specters, like mill specters, depict hidden—and sometimes microscopic—dangers produced by industrialization, but unlike mill specters, port specters primarily haunt the many sources of adjacent water, including the port's bays, rivers, canals, and drinking mains. The family in *Redburn*, for example, stands within a below-ground vault that Melville also describes as a "well" (255). As the aftermath of this family's death shows, the midcentury port contained both traces of hazardous materials and traces of death, and unlike Manchester's mills, these lethal traces of the port were further hidden by ubiquitous smog. At the steam-powered port of the mid-nineteenth century, water, air, and smoke combined, and the smoke actually increased the intensity of the fog.²⁹ With Liverpool's own pollution exacerbating the fog rising from the River Mersey, it is no wonder that Redburn sees "Ossian's ghosts" upon his first sight of Liverpool.

While many of the specters I analyze are ghosts, port specters take on the full meaning of "specter." These meanings include "an unreal object of thought," as well as a "faint shadow or imitation of something," which may appear in numerous forms ("spectre, n.1"). As we shall see,

²⁹ As Peter Brimblecombe explains, the air pollution made the fogs in nineteenth-century London "thicker, more frequent and of a different colour from those of the past" (109). In *The Sky of Our Manufacture*, Jesse Oak Taylor likewise explains the neologism "smog": "Woven out of the smoke issuing from the city's innumerable chimneys and the natural fog of the Thames estuary, smog reveals the breakdown of 'nature' even in that realm proverbially furthest from human influence, the weather" (1). With London as the primary focus for Taylor's and Brimblecombe's works, neither discuss Liverpool's smog.

these specters include the "water-spirit," which Mary Seacole and John Ruskin both describe as haunting midcentury ports. Water specters include those in *Redburn* haunting Liverpool's River Mersey and the port's well-like vaults, and they also include other "monstrous" figures in the novel, such as "gorgons and hydras," which sit by "sooty and begrimed bricks" within a "shroud of coal-smoke" (265, 259). Like the "sooty spectre" of Dickens's *Our Mutual Friend*, the port specter is a consequence of coal-fired industry. Pollution here can be understood both metaphorically and materially, a remainder of the past that hangs on and infects the present. Like the smog that enshrouds them, these port specters are often becoming industrial refuse, and like industrial waste, these port specters linger, even if only as a haunting trace.

At the coal-fired port—a place defined by mobility—the specter also remains and serves as a reminder of past and ongoing horrors; to use Derrida's language, the specter haunts in the "name of *justice*" (vxiii). What is a port? Sarah Palmer defines the port as a location of movement: "commercial ports are fundamentally about cargoes" and "a port town, port city or port region is more than just a settled area beyond a waterfront. To put the point metaphorically, we cannot stay within a port's boundaries if we are to understand its reality" (427). Not all, however, can leave the boundaries of the port. As with the family in *Redburn* who perishes in the vault, and others who suffer at ports in the literature I examine, the port specter haunts the industrial waterfront, becoming a trace of who and what had been there previously. For Melville, traces of chemicals and the deceased abound, as the dead merge with industrial waste. For Seacole, hazardous and microscopic refuse from steamboat and rail passengers produce ghostly inhabitants in Panama. For Ruskin, paintings of pre-industrialized ports contain haunting traces of an earlier way of life, causing him grief and spurring his proposals for regulation. In their descriptions of these haunted waterfronts, these three authors describe the legacy of the

transatlantic slave trade and ongoing slavery in distinct ways. In the mid-nineteenth-century writings of Melville, Seacole, and Ruskin, specters have become a part of the port's new reality. While hauntings are typically grounded to place, they can also be mobile, such as the haunted ship; similarly, the waterfront is a fixed location, but the port has constant movement.

The new reality also included an increase of transatlantic lines for steamboats, which makes this chapter resolutely require a transimperial perspective. Sukanya Banerjee explains that "while a transnational viewpoint looks above, below, between, and beyond the category of 'nation,' the transimperial, while certainly not valorizing 'empire,' nonetheless redirects attention toward rather than away from it" (221).³⁰ This chapter's texts necessitate a transimperial approach because they show the close intersections of Europe and the Americas and focus on the trade and traffic across the Atlantic. The passage from *Mary Barton* demonstrates the chapter's scope, since the sight of Liverpool, with its many boats that had traveled great lengths, makes Mary imagine "distant lands, spicy or frozen" connected to the port of Liverpool through "that glittering highway" (253).³¹ Similarly, Redburn remarks in Liverpool that "here are brought together the remotest limits of the earth" (234). Mary Seacole describes numerous ports in her narrative, including those of the Caribbean, such as Panama's Navy Bay, the gateway to the Panama Railroad, and later the entry point to the Panama Canal.

Melville's, Seacole's, and Ruskin's ports were thoroughly connected. Even before the completion of the Panama Railroad, Liverpool and Navy Bay were already linked through

³⁰ Further, Banerjee observes that the transimperial viewpoint "underlines the Victorian Empire in all its freightedness and relationalities, keeping alive the asymmetries, tensions, and collaborations that hold multiple constituencies—human and nonhuman—together" (221). In my chapter, the "nonhuman" is spectral.

³¹ Echoing Mary Barton's articulation of these connections, Seth Armstrong-Twigg has explained in his recent study on commercial ports that the "viewer is encouraged to think outwardly, and the interconnections between different, but closely related, nations become evident" (291).

steamship routes. With the ability to cross the isthmus by train, Navy Bay and Liverpool became further linked. In an article titled "Short Cuts to America," published in 1851, a British writer explains that the rail will shorten travel times to numerous locations: "It is confidently stated, that with the aid of the railway across Panama, to be completed next summer, it will be possible to reach New Zealand from Liverpool in about thirty-four days. The Pacific, which has hitherto been comparatively untravelled, will then be opened up in all directions to steam transit; for the Panama railroad may be said to be the key by which that vast and placid ocean is to be permanently unlocked" ("Short Cuts to America" 203). While this writer greatly underestimated the time needed to complete the railroad, he accurately predicted that travel times would significantly decrease with its completion. In another example that describes travel times from Britain to the western side of Canada, one contributor for the *National Era* wrote in 1858 that "the time from Liverpool to Fraser River, *via* Panama, is thirty-nine days" ("The British Railroad to the Pacific" 159). These routes, as both the writer of the 1851 article and the 1858 article explain, depended on Liverpool and Navy Bay. Within the *Illustrated History of the Panama Railroad* (1861), a table of routes and goods further links Liverpool and Navy Bay (174). Under the heading "LIVERPOOL AND WEST INDIA LINE OF SCREW STEAM-SHIPS," one of the raw materials listed is indigo, which appears in both Melville's and Seacole's texts, as well as a documented speech of Ruskin's, and plays a significant role in their discussions of port specters.

Well before the completion of the Panama Railroad, these ship routes between Liverpool and the Caribbean had been forged through the transatlantic slave trade, with the earliest known slave ship sent from Liverpool in 1699.³² Melville's novel, Seacole's memoir, and my main

³² Liverpool Museums explains that "the first known slave ship to sail from Liverpool was the *Liverpool Merchant*, which left the port on 3 October 1699 and carried 220 enslaved Africans to

selection of Ruskin's writings were published in the period after Britain's 1833 Slavery Abolition Act and prior to the US Emancipation Proclamation of 1863, and they illustrate not only the continued slave trade of the United States, but also Britain's continued roles within the transatlantic slave trade (14).³³ Jessica Moody explains that "of the British ports involved in the transatlantic slave trade, none transported more enslaved African people from Africa to the Americas than the port of Liverpool" (30).³⁴ This history cannot be separated from the industrialization of the mid-nineteenth-century port—an entanglement Susan Gillman describes as the "slavery-industrial complex" (14). Melville gives a prime example of this complex through material objects that Redburn notices more than once in Liverpool: "little particles of dirty cotton,"³⁵ which illustrate that Liverpool's post-abolition reliance on slave labor is a key financial support within its "tarry" environment. These "particles of dirty cotton"—cotton that, the novel clarifies, arrived from Savannah, Georgia, having been cultivated and extracted by enslaved people in the United States—are consequently collected by some of Liverpool's many spectral figures (253, 293).

As with my first chapter, this second chapter includes mid-nineteenth-century texts that primarily use the realist mode while also incorporating spectral language.³⁶ In this chapter, every work is also autobiographical to varying degrees, which heightens the ostensible realism.

Barbados. The trade grew slowly over the next 20 years but then developed rapidly. By 1750 Liverpool had overtaken Bristol and London" ("Liverpool and the Transatlantic Slave Trade").

³³ Susan Gillman describes Britain's "national amnesia": "when Emancipation did come, slave owners were financially compensated while the slaves received nothing but their legal freedom - along with a system of apprenticeship, forcing the newly freed men and women into another form of unfree labour for fixed terms" (2, 7).

³⁴ As Moody further specifies, "recent scholarship has estimated that the total number of enslaved African people taken in Liverpool's ships to the Americas was around 1.4 million" (30).

³⁵ Redburn repeats this observation a few pages later, describing "dirty fragments of cotton" (258).

³⁶ On spectrality within realism, see Wolfreys, p. 13.

Autobiography is particularly well suited to describe industrial transformation, since this genre typically documents transformations across time, as memoirists track changes occurring within their lifetimes. Both Melville's and Seacole's texts have been described in terms of their accuracy and realistic portrayals, making their specters an extension of, rather than an exception to, their realistic accounts. In David Seed's collection titled *American Travellers in Liverpool*, he goes as far as saying that Melville's account is the most accurate we have of nineteenth-century Liverpool in fiction, since Melville carefully drew upon his observations while staying there from July 1839 to September 1839: "The fact remains," Seed asserts, "that *Redburn* gives the most detailed account of Liverpool dockland life in nineteenth-century fiction" (82). Similarly, Sarah Salih describes Seacole as fully immersed in the atmospheres she describes. Seacole gives a "local, eyewitness account," showing that she is an "engaged participant and spectator" (xxxiii). While the writings of Ruskin I analyze are not necessarily autobiographical, he documented the industrial transformation of ports and other waterways for decades of his life, similar to his famous documentation of the changing skies in "Storm-Cloud of the Nineteenth Century" (1884). Like Melville and Seacole, Ruskin aimed for thorough and accurate representation in his writing, as Caroline Levine argues: "It is Ruskin, of all the Victorian theorists, who is most insistent that seeing and representing the world demands serious and significant work" (75). For all three writers, a paradox arises: their realist depictions of these transforming waterfronts require specters.

Haunted ports abound in nineteenth-century literature, but Melville's, Seacole's, and Ruskin's writings capture the port's haunting midcentury transformations. From the early nineteenth century with Mary Shelley's *Frankenstein* (1818) (the port setting of Clerval's murder) to the mid-nineteenth century with Emily Brontë's *Wuthering Heights* (1847)

(Heathcliff's connections to the port of Liverpool) to late-nineteenth-century publications, such as Joseph Conrad's *Heart of Darkness* or Bram Stoker's *Dracula* (1897) (the arrival of Dracula on a ship steered by a dead man), the nineteenth-century port was a place to be feared. In contrast to the novels in this list, Melville's, Seacole's, and Ruskin's works track the midcentury industrialization of waterfronts. All three authors depict the frightening mobilities of the midcentury port—including ongoing slavery, industrial pollution, as well as organic disease—as spectral traces.

Spectral Remains in Melville's *Redburn*

Melville's *Redburn* (1849) marks his literary transition from adventure fiction to his more explicitly political works, as he wrote *Redburn* after *Typee* (1846) and *Omoo* (1847) and before his later works, including *Moby-Dick* (1851), "Paradise of Bachelors and Tartarus of Maids" (1855), *Benito Cereno* (1855), and *Billy Budd* (1891). *Redburn* itself makes the transition from adventure fiction to somber prose midway through its semi-autobiographical narrative, as Redburn transforms from an enthusiastic young sailor to an experienced sailor. His time at the Liverpool docks—around ten weeks, like Melville's own trip—marks his transformation.

Redburn does not arrive at Liverpool until the middle of the novel, during the twenty-seventh chapter, but this port setting permeates, or rather haunts, the entire narrative. During the voyage from New York Harbor to Liverpool, *The Highlander's* crew, including Redburn himself, speak frequently of Liverpool. Much of the crew is returning to a port they know well, and they speak of their anticipation as well as their fears: the people they will return to, like their lovers, as they had "wives and sweethearts in every port" (191), along with their fortune-tellers; they also worry that Liverpool will fulfill their nightmares, at one point predicted from a "Dream Book" (147). Redburn narrates from the perspective of years after his return to New York, which

we are reminded of when he occasionally interrupts his linear narrative with references to a future moment. The narrative's interruptions often concern Liverpool, which reveal the haunting grip the location has on Redburn. "While I was at Liverpool," our narrator states, beginning an anecdote, even though, at this point in the narrative, he is aboard *The Highlander* on the Atlantic, only partway to England (150). At one point our narrator becomes aware that he is getting ahead of himself: "But we have not got to Liverpool yet," he says in his attempt to hold off on describing more experiences at the port (173). While the crew's stay at Liverpool makes up only about a third of the novel, the setting's profound effect is clear: Liverpool haunts the entire narrative, due to the horrors that Redburn witnesses there, but also, I argue, because Redburn continually attempts to decipher and articulate these bleak and smoke-filled sights.

Redburn's experience of Liverpool begins with disappointment and quickly turns to dread. Expecting an English countryside scene upon arrival, Redburn complains, "It was quite dark, when we all sprang ashore; and, for the first time, I felt dusty particles of the renowned British soil penetrating my eyes and lungs. As for *stepping* on it, that was out of the question, in the well-paved and flagged condition of the streets" (194). It is unclear here if Redburn's use of "soil" means dirt, or if the "dusty particles" that enter his body are soot, since he sees all of Liverpool as one large industrial chamber. Remarking on the port's suffocating environment, Redburn asks, "Is there nothing in all the British empire but these smoky ranges of old shops and warehouses? Is Liverpool but a brick-kiln?" (227). Moreover, there are no dirt paths where they land, but rather "well-paved ... streets" (227). The scene attacks his senses, as Redburn breathes in dust, sees "Ossian's ghosts," and then hears a frightening noise. Not yet having set foot on land, Redburn hears a haunting sound: "I was startled by the doleful, dismal sound of a great bell, whose slow intermitting tolling seemed in unison with the solemn roll of the billows" (189).

Redburn's observation that the bell tolls with the movement of the waves is accurate, as he learns that it was the sound of the famous "*Bell-Buoy*, which ... tolls fast or slow, according to the agitation of the waves" (189). If the bell rings in quick successions, Redburn learns, this warns sailors that the waves are too agitated, and it is not safe to enter the port. Redburn's initial understanding is that it announces deaths, like the traditional death knell from a church. Redburn asks, "Who was dead, and what could it be?" (189). Even after learning what the bell is for, Redburn is not convinced that the bell functions only as a warning sign. The sound registers another meaning: "But," Redburn counters, "it seemed fuller of dirges for the past, than of monitions for the future; and no one can give ear to it, without thinking of the sailors who sleep far beneath it at the bottom of the deep" (189). The sound, he argues, "seemed to come out of the vaults of the sea, and out of the mist and fog" (189). Liverpool's haunting view matches its haunting sounds, and both the sight and sound point to spectral traces of death.

Along with a host of other dangers, starvation, drowning, and disease made the average age at death in Liverpool only seventeen when Melville published *Redburn* (1849).³⁷ The land adjacent to the docks, according to Melville, is full of the dead. Redburn daily watches as dock workers walk over gravestones near the docks, and he becomes overwhelmed by their routine of eating over the dead:

At noon, when the lumpers employed in loading and unloading the shipping, retire for an hour to snatch a dinner, many of them resort to the grave-yard; and seating themselves upon a tomb-stone use the adjoining one for a table. Often, I saw men stretched out in a drunken sleep upon these slabs. (251)

³⁷ The list and statistic come from Beaver's introduction to *Redburn*, reprinted in 1986. Regarding disease, "typhus and consumption raged continually" in mid-nineteenth-century Liverpool, Beaver explains (15).

Redburn's frustration, he explains, stems from the erasure of the dead: "multitudes are constantly walking over the dead; their heels erasing the death's-heads and crossbones, the last mementos of the departed" (250). Death has become commonplace in Liverpool, but for Redburn, who is unfamiliar with the area, the amount of death and treatment of the dead at this port seems inexplicable.

The graveyard by the docks reminds Redburn of the nearby morgue. Morgues, also referred to as dead-houses, were regularly found at British ports, and Liverpool was no exception. Since the dead-house was a terrifying "spectre of death," wharves, being at the furthest edge of the city, were deemed a "suitable" location for them (Brown-May and Cooke 401). Another reason dead-houses were placed near bodies of water was because of frequent drownings; wharves were chosen by authorities to avoid having to frequently transport drowning victims, who may show signs of decomposition, through the streets of the city, terrorizing those living there (Brown-May and Cooke 402). Liverpool's dead-house, as Melville describes it, was in a church basement, which barely allowed those passing by to see the deceased, as they had to peer down through the windows that were slightly above ground level. Melville, through Redburn's narration, explains that there were rewards for the recovery of individuals, dead or alive, from the docks, which resulted in some finding full-time work looking for bodies. These workers, Redburn explains, "get their living from the dead," showing that there is a demand in Liverpool's economy for dead bodies (251). Again, Redburn does not dwell long on a scene of death before moving to another: "The dead-house reminds me of other sad things," Redburn states, "for in the vicinity of the docks are many very painful sights." Here, Melville emphasizes the bleak surroundings through the consecutive terms "many" and "very." The "many very painful sights" include specters who Redburn directly links to the industrialization of Liverpool.

Before discussing these specters, it is important to briefly give an overview of the sail-to-steam transition in nineteenth-century maritime transport, noting the key and early landmarks of this transition, which point to Liverpool's central role. David M. Williams and John Armstrong explain that short routes were taken by steamers as early as 1807 within the United States, and that longer steam routes were established within Britain beginning in 1812.³⁸ 1838 is a landmark year within maritime history, Williams and Armstrong note, since this is when a regular steam liner for transatlantic passages was established (179). Attempts to make these liners cheaper and faster followed. For example, in the 1840s, steamers became increasingly made of iron, which made them less expensive to make and allowed for the creation of larger ships (Cohn 481). Also in the 1840s, screw technology, now commonly referred to as propeller technology, began to replace the paddle-wheel in Britain, but it was not until after 1855, when this technology's leakage issue was solved, that it took hold in both Britain and the United States (Cohn 481). As illustrated through this screw technology example, these early transition decades in maritime history witnessed ships using a range of technologies.³⁹ Redburn's ship itself, *The Highlander*, exemplifies the era's combination of wind and coal power, since the ship is equipped with only sails, but its cargo from Liverpool to New York includes coal (386).⁴⁰ At times, a single ship contained a combination of technologies, such as both steam and sails, as was the case with the

³⁸ In the United States, these routes included New York to Albany, and in Britain these included London to Glasgow.

³⁹ Visualizations of this technological range in the United States appear in the famous works of Fitz Henry Lane, whose numerous mid-nineteenth-century paintings of Boston Harbor depict both sailing ships and steamers; Lane emphasized the steamers by centering them. For a discussion of Joseph Turner's depictions of sailing ships and steamers in Britain, see Sarah Gould's "The Polluted Textures of J.M.W. Turner's Late Works" (2021) and Judy Egerton's *Turner: The Fighting Temeraire* (1995).

⁴⁰ Redburn describes the sails numerous times, and he complains that the ship is "harassed by head-winds" as it carries "pigs, fowls, firewood, and coals" back to New York (373, 386).

first transatlantic steamer, the SS *Savannah*, which arrived in 1819 in Liverpool, a port capable of docking large steamships.

Sarah Palmer explains that Liverpool had a layout suitable for large steamships, which resulted in a significant increase of these ships in Liverpool by the middle of the nineteenth century (136). Peter Malpass illustrates Palmer's claim with examples of new steamers that could not necessarily fit at other ports, and instead made their way to Liverpool: "*The Great Western*, launched in 1837,⁴¹ was a paddle steamer that was too wide to pass through the lock gates [of Bristol] without removing at least one paddle wheel, and its owner, the Great Western Steam Ship Company, soon transferred it to Liverpool" (181). Liverpool soon became the "main west-coast passenger port," causing some jealousy from other port towns, where the dock design did not support such large vessels (Malpass 182). The colossal Albert Dock warehouses of Liverpool, which reached five stories high by 1848 and stretched around seven acres of water, enabled ships to unload more quickly, as well as fully turn around within its enclosed water⁴² (Littler). By the late 1840s, docks occupied nearly four miles of the River Mersey's banks, and the river appeared to be "filled" with steamers "of every size," as a contributor to the *Liverpool Mercury* wrote in 1847, adding that "through the port of Liverpool are poured into the interior the raw materials of our manufactures" ("General View of the Port" 3).

Both the steamboats and industries of Liverpool would quickly produce pollution that caught the attention of Liverpudlians. Richard Hawes has detailed the locations in Liverpool that were most frequently referenced as smoke nuisances in the middle of the nineteenth century. For

⁴¹ 1837 is one year prior to *Redburn's* temporal setting, and so this increased use of Liverpool for large, steam-powered vessels happened concurrently with the narrative.

⁴² Before 1810, according to Dawn Littler of the Merseyside Maritime Museum, privately-owned warehouses were at a distance from the docks.

example, there were complaints against steamboats, with some specific boats reported numerous times (85). Hawes also explains that a "wide range of businesses" are listed in complaints to the city council. These included a range of processing industries: "Rice millers appear on sixteen occasions, as do sugar refiners and flour mills with ten each" (85). In manufacturing, the following were listed in complaints: "Manufacturing was represented by glass firms, iron foundries, cement grinders, and a brass foundry, but there were also five soap boilers, five saw mills, an upholsterer, a comb maker, hair and feather dressers, a scale beam maker and a sausage manufacturer" (85). The increase in cargo-bearing steamships on the River Mersey was met with an increase of industries vying for proximity to Liverpool's docks and warehouses,⁴³ and while the River Mersey had long been a dumping site for a variety of wastes, the increase of Liverpool's coal-fired industries exponentially increased the amount of effluent in this main river, as well as other bodies of water in and near Liverpool.⁴⁴

Mid-nineteenth-century Liverpool was steeped in polluted water, due to chemical waste leaking or directly dumped into the port's sources of water.⁴⁵ The River Mersey was repeatedly used as a dumping site, and there is clear evidence that this effluent entered the drinking mains. In the same year Melville published *Redburn* (1849), the Liverpool council requested a study of the city's water supply, as they planned to transition from a well system to a gravitational system.

⁴³ Within an online project titled "Global Urban History," Lasse Heerten and Daniel Tödt explain that "ports in the age of steam were sites of massive manpower . . . situated closely to industrial as well as commercial zones, to warehouses and factories" ("Some Reflections on Imperial Port Cities in the Age of Steam").

⁴⁴ The River Mersey remains one of the most polluted sites on the planet. In 2019, Greenpeace International stated that "River Mersey is proportionally more polluted than the Great Pacific Garbage patch" ("UK River more polluted").

⁴⁵ For a case study on the effluent dumped into rivers by early nineteenth-century British gasworks companies, see Leslie Tomory's "The Environmental History of the Early British Gas Industry, 1812-1830."

Like many facets of life in mid-nineteenth-century Liverpool, the wells were powered by steam engines, and the two engineers who authored the study, James Simpson and James Newlands, warned the city council that many of the steam engines for these wells were under "enormous pressure," and that there existed a "liability to explosion" (75). In their report, Simpson and Newlands call the current system of steam-powered wells an "evil," but they downplayed the risks: "The evil has lately, to some extent, been palliated," they claim (7).

In one of the contradictions in the report,⁴⁶ Simpson and Newlands claim that the city's water quality is "satisfactory" as drinking water, even though many of the pipes are "furred up by incrustation" (9). Part of their reasoning for calling the water satisfactory was that it could be worse, like the condition of London's water.⁴⁷ While this was the case, a table on the last page of their study lists the pollutants filling and encrusting these pipes, including a slurry of hazards. Professor Brande, who conducted the water-quality tests, lists "silica, alumina, and organic matter" under the table listing the samples, and he adds a note that "the residue of [the sample] BB4 became gray and nearly black, when highly heated, and exhaled a very slight, but distinct odour, as if of bituminous matter"—all of which reflect the industries listed by the locations of the city's wells.⁴⁸ The "bituminous matter" hypothesis reflects the locations of the pipes: "the pipe line passes," the engineers explain, "for a great part of its length, over coal fields, in some

⁴⁶ Simpson and Newlands also write that there was no need to worry that seawater entered the water mains, as "the water does not appear to give any trace of salt" (32). In the appendix, which contains the water quality report by Professor Brande, one of the "leading substances" listed in his samples from Liverpool was "chloride of sodium," or salt.

⁴⁷ Simpson and Newlands write, "Hence the water from the sandstone at Birkenhead and Greenlane is proved to be many degrees softer than any used in London" (31). Birkenhead and Greenlane are two locations of wells listed in the report.

⁴⁸ As I further detail in this section, the locations of wells listed in the report include ironworks, gasworks, and a variety of other coal-fired industries (57).

parts of which the coal is now in course of working" (47).⁴⁹ Even with these findings, the study concludes that the water is "all very pure, and quite fit for domestic purposes" (50). The urgency of their report undercuts their reassurances, including the statement that "the quality of water is satisfactory, or may be easily made so" (50). The second half of this statement connects to the infrastructural change the council and engineers request—from the steam-powered well system to a gravitational system.

By the time this report was published, at least some Liverpoolians had already detected that their water was hazardous. On the front page of the *Liverpool Mercury* on September 5, 1848, one year before Melville published *Redburn*, the newspaper ran an advertisement for a "PATENT WATER FILTER": "by a very simple arrangement, the arrested impurities are expelled," the advertisement claims. The advert promises much: in an hour, the device would produce eight gallons of "pure water," no matter the water's previous condition ("Advertisements and Notices"). The drinking water was not the only water that posed risks to Liverpool's residents; many of their homes were also inundated by the city's dangerous water. In 1850, the *Edinburgh Review* included a description for the "parliamentary costs of a water bill" focused on the "drainage of nine thousand of the worst-conditioned houses" of Liverpool ("Sanitary Reform" 224). While the water's contaminants were documented as early as the 1830s, Parliament would not act for over another three decades with its Alkali Act (1863).⁵⁰ Liverpool's 1849 study reveals at least one reason that the effluent was not regulated: it is "scarcely

⁴⁹ Bitumen was also used at this time for asphalt.

⁵⁰ "Historians have accounted for Parliament's slowness in reacting to environmental problems in various ways," Leslie Tomory explains, "including the strength of laissez-faire and pro-business sentiment, the lack of any notion of the environment and the deleterious effects of pollution stemming from industrial sources particularly, and the reluctance to implement laws that infringed on property rights in a generic way" (30).

perceptible," they claim (98). The word "traces" appears five times in the report, including this instance: "All these waters are almost entirely free from sulphates, and yield slight traces of silica, alumina, and organic matter" (98). In one sample, they explain that there are "traces, and only traces" of contaminants (90).

Redburn's encounter with the woman and her children in the below-ground vault engages with this history of Liverpool's dangerous drinking mains. While the mother chose this vault for her malnourished family to die out of sight, Redburn is determined to revive them by giving them food. When he attempts to enter the vault with them, he compares the below-ground space to a well: "like getting down into a well," Redburn explains, "I contrived to descend with [bread] into the vault" (253). The focus on wells continues, as Redburn gives the mother bread, but she cannot eat it, for her mouth is too dry: "She placed it to her mouth; but letting it fall again, murmuring faintly something like 'water'" (255). Her plea for water launches Redburn's quest to find a well in Liverpool, stopping at numerous locations and finally remembering a source of drinking water: "the Boodle Hydrants" (255), which refers to Liverpool's Bootle station.

Taking into account the quality of water dispersed by Bootle station reveals that the water Redburn brought the family—the water they likely drank most frequently, for it was closest to the cotton warehouses—was full of pollutants. Bootle station appears nearly twenty times in Liverpool's 1849 water report, including one page where Simpson and Newlands explain that Bootle's five boilers pose a "dangerous risk" due to "overstraining" (6), which corresponds to the great amount of water this station pumped each day. One table in the report shows Bootle station as pumping the most gallons out of all the stations: 1,093,950 gallons daily, using 781 cwts. of coal weekly, supplying both the north and south docks with water (14). The water samples from Bootle station in Professor Brande's report are B1 and B2, which he describes as contaminated,

employing litotic language to make the risks appear minimal: "this water was not perfectly bright," he explains (98). That this sample was "not perfectly bright" comes at no surprise when taking into account an 1849 map of Liverpool, which shows the locations of the Bootle station and its reservoirs, as well as Lancelots Hey—the location of the "spirit-vault," which is near the Bootle hydrant Redburn finds.⁵¹ The streets near Bootle station and the streets near the Bootle hydrant had industries listed in the 1849 water quality report. Near Lancelots Hey, these included gas works on Dale Street and tar works on Caruthers street. Brande's water-quality test also showed the presence of "carbonate of lime," which could signal a wide variety of sources, such as gasworks, which used large reservoirs of lime water for their purification process. Gasworks locations would often place the spent lime water into cisterns that then overflowed, and prior to the Alkali Act of 1863, there were no laws—except for the outdated nuisance common law, which "had its roots in medieval law"—prohibiting these companies from simply dumping their waste into rivers, canals, or sewers (Tomory 34). Leslie Tomory has shown that this "spent lime" from gasworks companies was found to be "poisoning" drinking water and killing river wildlife in Britain's industrial waterfronts (41).

As Melville's *Redburn* suggests, the source of this "carbonate of lime" could also be from the process of manufacturing quick-lime, as well as the use of quick-lime in Liverpool. In 1849, a lime works factory existed on Hatton Garden, just north of Lancelots Hey. In his entry on

⁵¹ The report describes the distribution of water from Bootle station: "The engines at Bootle lift the water into reservoirs at Everton-valley, Devonshire-place, and Atherton-street, from the former and latter of which the water is distributed by its own gravity over the northern portion of the town, while a small engine raises water from the Devonshire-place reservoir to supply the more elevated district" (4). Taking the report's explanation into account, the distance between the reservoirs and the approximate location of the "Boodle hydrant" in *Redburn* is over two miles and through Liverpool's industries.

quick-lime in *Lectures on the Applications of Chemistry and Geology to Agriculture* (1844), James Finlay Weir Johnston describes the process of creating quick-lime, as well as its many uses in the 1840s: "When limestone is burned along with coal or wood in kilns so constructed that a current of air can pass freely through them, the carbonic acid is driven off, and the lime alone remains," and "in this state," Johnston continues, "it is generally known by the name of burned or *quick-lime*, from its caustic qualities" (194). The caustic nature of quick-lime is what makes the compound useful, Johnston states, since it can be used in "hastening the decomposition of vegetable matter" (194). While Johnston's explanation may be for the "practical agriculturist" (194), others were purchasing quick-lime for its caustic quality, as stories circulated of quick-lime used by murderers and prisons.⁵² These stories, as well as Johnston's explanation, are only partly accurate, for quick-lime, we now know, does not directly decompose tissue; rather, quick-lime quickly binds with water, acting as a desiccant. Describing this reaction, Johnston's explanation is accurate: "The most remarkable property of quick-lime," he explains, "is its strong tendency to combine with water. This is displayed by the eagerness with which this liquid is drunk in by the lime in the act of slaking, and by the great heat which is at the same time developed" (194). This "strong tendency to combine with water" shows why lime compounds were showing up in the drinking mains. Quick-lime's strong reaction with water also helps explain why the quick-lime is "glistening" in *Redburn*: the vault is like a "well," and so the quick-lime reacted with the moisture of this location, which the novel suggests included human remains. The scene becomes even more haunting upon this closer analysis, for now it is clear that *Redburn* brought the family water only for them to be desiccated after their deaths,

⁵² One fictional example comes from Dickens's *All the Year Round* in 1879: "the body was brought back to Derry and laid under quick-lime in the gaol-yard" (548).

combining with the industrial waste that would become barely traceable in the port's drinking water. *Redburn* depicts the water pollution of Liverpool as daily compounding: residents drink the polluted water that the disposal of their remains further pollute. The "human and industrial poisons" merge, increasing the water's contaminants.⁵³

Redburn associates the Bootle hydrant's location with additional industrial waste, including the waste of cotton and dye works. He had remembered the exact site of the hydrant since he witnessed a fire put out by this water: "I hurried to one of the Boodle Hydrants, which I remembered having seen running near the scene of a still smoldering fire in an old rag house; and taking off a new tarpaulin hat, which had been loaned me that day, filled it with water"

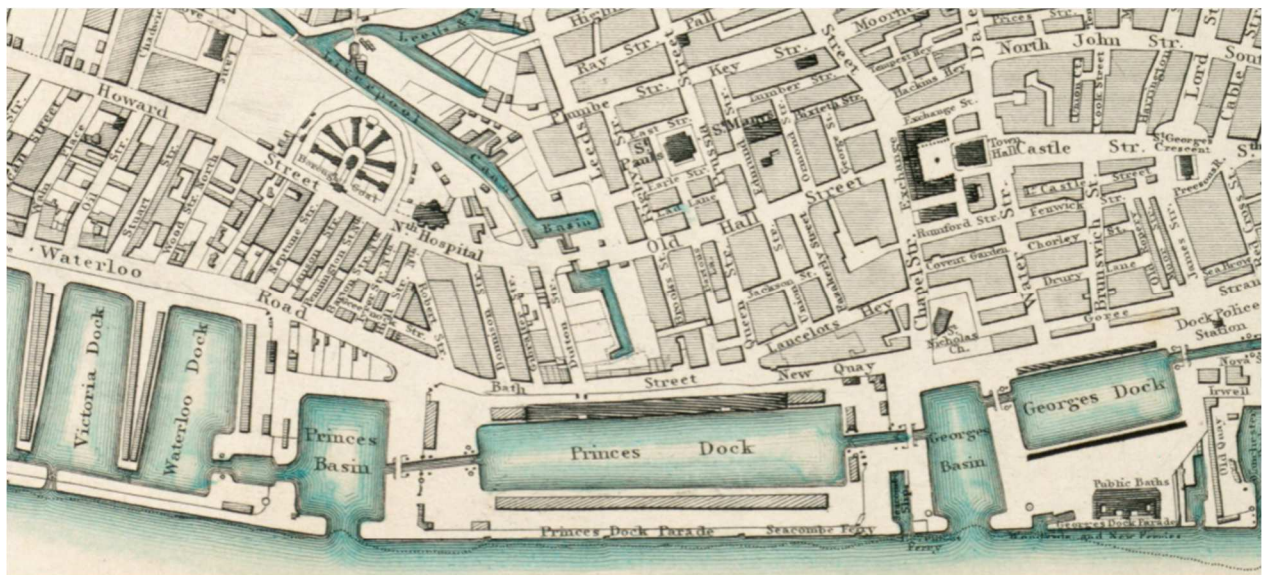


Fig. 2.1: The map featuring some of Liverpool's docks and adjacent streets is from 1849 and is held by the Boston Public Library's Norman B. Leventhal Map Center; it is currently viewable at ark.digitalcommonwealth.org/ark:/50959/3f463241d.

(255). This "old rag house," as well as the presence of "dirty cotton" near the vault, reveals the

⁵³ According to John Broich, the gravitational water system was being employed increasingly in the 1840s to reduce toxins in the drinking mains: "In their eyes, it was the best technology for keeping cities flush with water for drinking and bearing away human and industrial poisons" (46).

presence of the nearby cotton industry. Melville explains that Lancelots Hey is a "narrow street" that is "lined with dingy, prison-like cotton warehouses" (252), and as a map from 1849 shows, Lancelots Hey was adjacent to Princes Dock, the main dock for cotton ships, especially from Savannah. The family is within a vault directly under one of these cotton warehouses, and Redburn's descriptions of this family shows that they had become waste of nearby industries even before the use of quick-lime. The starving woman's infant had been dead for hours by the time Redburn returned with water; Melville alerts us to this fact through a grotesque description of the infant's eyes, which had become "like balls of indigo" (256). The deep blue of the infant's eyes match the mother's arms, which Redburn had previously described: "Her blue arms folded to her livid bosom two shrunken things like children" (252). By using "indigo" and "blue," Redburn depicts the woman and her dead child as raw materials of the port, particularly those used in the textile industry of Manchester, where Liverpool sent cotton and processed indigo through its new rail. Notice that the other two children have also become "things" associated with textiles: they are "shrunken things," like heat-processed cotton.

Indigo at the middle of the nineteenth century, Banerjee explains, was a "much prized commodity in European markets" (214-215). Liverpool was a prime example of a market flush with indigo in need of processing. Andrew Ure's *Dictionary of Arts, Manufactures, and Mines* (1856) contains a table depicting sixteen years of indigo supply in European markets (1053).⁵⁴ I have highlighted "INDIGO" and "Liverpool," drawing attention to the column near the right. In

⁵⁴ Banerjee explains that these European markets relied on a "forced system of indigo cultivation": "from the late eighteenth century onward, the East India Company (EIC) encouraged a (European) planter class to grow indigo, a much prized commodity in European markets. Given the dwindling supply of indigo from the Caribbean, indigo from India fetched the highest remittance for the company" (214-215).

the 1840s, the stock of East India Indigo in London and Liverpool was consistently near or above 30,000 chests, consistently more than tripling the amount of the second-highest importer, France. With this supply, industries in Liverpool often processed the raw materials for dye works in textile centers, primarily Manchester. This process required significant amounts of water, which would become laden with the byproducts, or "soluble filth," as Ure describes in his section on Liverpool's "bone black" processing, which was comprised of "animal charcoal from burnt bones," as well as indigo and lime (227). The liquid waste also included insoluble filth, as shown by the inclusion of an unspecified oil; no matter the type of waste, the effluent was dumped into nearby canals (227).⁵⁵ As Ure explains, industries "should therefore be placed ... near a river or

Stock of E. I. **INDIGO**, in the chief EUROPEAN PORTS, at the end of the following Years.

Years.	Rotterdam,*	Amsterdam,*	Antwerp.	Hamburg.	St. Petersburg.	Trieste.	Genoa.	Bremen.	France.	London and Liverpool.	Total Stock in Europe.
	chests.	chests.	chests.	chests.	chests.	chests.	chests.	chests.	chests.	chests.	chests.
1812	1,590	1,600	100	255	1,707	150	149	50	6,66	2,381	31,328
1811	664	1,242	170	350	1,600	249	255	10	7,72	26,975	39,361
1845	550	650	100	220	2,011	280	25	60	10,485	34,372	40,193
1844	337	492	100	215	1,389	400	165	50	10,615	32,978	47,741
1847	934	560	60	150	1,938	230	130	20	11,17	32,802	47,825
1848	1012	531	50	450	2,060	200	120	48	7,42	29,472	41,315
1849	595	828	100	550	1,655	150	107	20	4,501	29,230	37,745
1850	395	851	150	340	1,460	150	40	50	5,311	27,25	35,982
1851	80	320	100	260	1,681	50	50	20	5,933	30,452	38,969

Fig. 2.2: The table, "Stock of E. I. Indigo," is from Ure's *Dictionary of Arts, Manufactures, and Mines* (1856), p. 1053. I have highlighted "indigo" and "Liverpool."

canal ... and with such a slope to the voider [*sic.*] stream as may ensure the ready discharge of all liquid impurities" (501).

As the 1849 water report now shows, these "liquid impurities" posed bodily risk to Liverpudlians. At times, these mid-nineteenth-century dye works instructions themselves suggest bodily risk. Indigo was processed by "deoxidizing it," according to a national report of raw

⁵⁵ Citing an example from Manchester in the middle of the 1840s, Peter Maw, Terry Wyke, and Alan Kidd have shown that waste products from dye works plagued industrial waterfronts in Britain (1516).

materials from 1851, so that it "becomes soluble in water" ("Burch's Exhibit of Dye-Stuffs and Their Products" 87). The main purpose of deoxidizing indigo, the report states, is to ensure it "readily enters the pores of the cloth immersed in the indigo vat" (87). While "pores" refers to fabric here, the term evokes skin, such as the skin of the woman and child in *Redburn* that seems to have absorbed indigo. Banerjee explains, "indigo has mobility; it circulates" (220). As shown by *Redburn*, the circulation of indigo does not end when it reaches dye works processing, but remains mobile, dumped into canals, moving through drinking mains, and creating specters out of those collecting scraps of cotton. Redburn explains that the food and water he gave the family could not provide "permanent relief," but would rather "prolong their misery" (256). Like the watery waste of Liverpool, the family was nearly invisible and then left a spectral trace: "I said she was alive, and not dead," Redburn tells a witness when he first finds the family in the vault, to which the witness responds, "Then she'll never die" (253). The witness, a collector of cotton scraps, was correct in her prediction,⁵⁶ as Redburn continues to imagine their figures in the vault.

Before Redburn stands by the cotton warehouses, he had traced his father's own footsteps, and by doing so, connected Liverpool's current conditions with its key role in the transatlantic slave trade. Melville's Redburn walks the streets of Liverpool in the late 1830s, within the same decade of Britain's abolition of slavery (1833), but more than two decades before the United States would abolish slavery. As Beaver explains, "a journey to Liverpool for an American, as Redburn realizes, is a journey in time, as well as space, to the capital source and principal beneficiary of the American slave trade" (17). Redburn experiences this "journey in time" not only in the transatlantic voyage, but also by using his father's map of Liverpool, which

⁵⁶ Today at this same location in Liverpool—along the road that was once "Lancelots Hey," north of Prince's Dock—there is a hotel called "Hotel Indigo."

enables Redburn to re-trace his father's exact footsteps in 1808: "I took out my map, and traced my father right across Chapel-street" (221). While using his father's map, Redburn finds the statue of Nelson, and reads the figures below Nelson as enslaved Africans:

At uniform intervals round the base of the pedestal, four naked figures in chains, somewhat larger than life, are seated in various attitudes of humiliation and despair. ... These woe-begone figures of captives are emblematic of Nelson's principal victories; but I never could look at their swarthy limbs and manacles, without being involuntarily reminded of four African slaves in the market-place.
(222)

Others have since interpreted these bronze figures similarly. The Nelson monument was designed by Matthew Coates Wyatt, sculpted by Sir Richard Westmacott, finished in 1813, and had significant funding by William Roscoe who, according to Liverpool Museums,⁵⁷ was "an anti-slavery campaigner," which has led to "debates around the sculpture having a dual role in symbolising both prisoners of war and the suffering produced by slavery" ("Conservation of the Nelson Monument"). Redburn takes his reading of this statue and the transatlantic slave trade a step further, linking the Liverpool he witnesses to the slave trade: "And my thoughts would revert to ... the historical fact, that the African slave-trade once constituted the principal commerce of Liverpool; and that their prosperity of the town was once supposed to have been indissolubly linked to its prosecution" (222). Redburn's note about the "prosperity of the town" can be directly illustrated by the very docks of Liverpool, which expanded drastically in the early 1800s. Clarence Dock, Trafalgar Dock, Victoria Dock, and Waterloo Dock were all built

⁵⁷ Liverpool Museums have taken on the responsibility of conserving the Nelson monument ("Conservation of the Nelson Monument").

between 1800 and 1840. Princes Dock, the largest of the group, took ten years of planning and was unveiled on the coronation day of George IV in 1821 ("General View of the Port" 3).

Princes Dock, Redburn explains, are "most frequented by American shipping," especially the "Savannah cotton ships and traders" (231).⁵⁸ These docks, the very foundations of Liverpool's steam-powered port, were financed by and continued to facilitate the slave trade. As an 1847 *Liverpool Mercury* article stated, "Liverpool, her trade, and her docks grew up together" ("General View of the Port" 3). What Redburn fails to see in this moment, standing by the statue, is that he should be using present tense, rather than past tense,⁵⁹ to describe Liverpool's role in the transatlantic slave trade.

As Saidiya Hartman has documented, the "afterlife of slavery," or the years following abolition in the early nineteenth century, saw the following: "the volume of slave trading increased" (6, 186). Susan Gillman observes that "slavery did not end with Emancipation but continued in other forms of unfree labour" (14). Naming Liverpool directly in her discussion of *Wuthering Heights* (1847), Gillman argues that Emily Brontë portrays this "slavery-industrial complex" (14).⁶⁰ The new docks of Liverpool that facilitate steam-powered trade of cotton, or what becomes "dirty cotton" in *Redburn*, also depict this complex. Further uncovering the "afterlives of slavery" is a recent collection titled *Britain's Black Past*, which centers the history

⁵⁸ Melville had paid close attention to Princes Dock on his own visit, as shown by the accurate details he includes, such as the acreage encircled by the dock.

⁵⁹ Beaver's own explanation of Redburn's "journey in time" arguably obfuscates Liverpool's continued role in the slave trade.

⁶⁰ Gillman argues that by using the settings of Liverpool and the Yorkshire hinterland, Brontë shows that "slave ownership was spread across the British Isles, by no means confined to the old slaving ports" (14). Liverpool's role in the slave trade is typically discussed in terms of the slaving ships they sent to West Africa and the Caribbean, returning with commodities of cotton, sugar, tobacco, and cocoa, as if owners of enslaved people only lived in the colonies. Countering Britain's "historical amnesia," Gillman explains that three thousand slave owners lived "not in the colonies but across the British Isles" (7).

of Black communities in Britain, including those living near the south docks of Liverpool in the middle of the nineteenth century. In an interview for the BBC Radio 4 series on this collection, Gretchen Gerzina walks along the Liverpool docks, explaining that Black individuals who lived there were "always vulnerable to being kidnapped" and then taken to "the Caribbean as slaves" ("Britain's Black Past: Sailors"). Turning to the spectral, Alan Rice writes of "the ghostly presence of blackness" in Britain's economy, including "black slave-servants," "working-class black voices," and fugitives, spanning decades beyond Emancipation (191). For Rice, this haunting presence culminates in the horrifying image of a Black mummified hand, kept on display in a Lancaster home as late as the 1940s. Taking Gilman's, Gerzina's, and Rice's scholarship into account, Redburn's discussion of slavery in the past tense is too restrictive temporally; however, his depiction of the haunted port evokes a temporal expansion, as does his discussion of haunting slavers.

When Redburn makes these remarks about slavery by the Nelson monument, he had recently arrived in Liverpool; beyond this moment, Melville's novel complicates Redburn's understanding of the slave trade through the character named Jackson. If Liverpool is the place that haunts Redburn throughout the novel, Jackson is the character who terrifies him from beginning to end. Jackson, or "diabolical Jackson," as Redburn frequently refers to him, had himself been a slaver: "He had served in Portuguese slavers on the coast of Africa; and with a diabolical relish used to tell of the *middle-passage*" (107). Listening to Jackson's horrifying tales, his "evil eye" gleaming, Redburn realizes that Jackson is also dying: "*he* was being consumed by an incurable malady, that was eating up his vitals, and was more fit for a hospital than a ship" (109). Throughout the novel, Redburn discusses Jackson's frequent coughing fits, as well as Jackson's own belief that his end, a judgment, would soon occur, and Melville implies that the

judgment is for Jackson's slaving past. Melville writes again of a haunting trace, now those of Jackson: "But in truth, he carried about with him the traces of these things, and the mark of a fearful end nigh at hand" (108). By beginning a paragraph with this statement, with no clear antecedent, Melville's use of "things" remains ambiguous, but Jackson has himself become a haunting trace, a spectral remainder, of the transatlantic slave trade he actively facilitated. Arguably, these "things" also include illnesses Jackson caught at ports. In the previous two paragraphs, Melville names numerous locations Jackson had been, such as Cape Verde, Batavia (now Jakarta), India, Canton (now Guangzhou), and Gaspar (of Cuba). Jackson was in Batavia, Melville writes, "during a fever" (108), providing a possible source for his chronic cough.

While Jackson had long been sick, others onboard *The Highlander* develop a fever on the journey from Liverpool to New York Harbour; since Jackson's health worsens on this voyage, Melville implies that Jackson had caught this same fever—a fever that would be his last. The port to finally kill Jackson, a slaver, and fully transform him into a specter is appositely Liverpool, a port haunted by its legacy and ongoing role within the transatlantic slave trade. Through Jackson's demise, Redburn witnesses a terrifying spectacle while approaching the New York Harbor.⁶¹ Upon sight of land, "just previous to entering port," Jackson appears on the deck, "damp and death-like," looking like "a man raised from the dead" (384-385). After yelling out one final direction, he covers the sail in his own blood and falls headfirst into the ocean: "But the wild words were hardly out of his mouth, when his hands dropped to his side, and the bellying sail was spattered with a torrent of blood from his lungs [and] Jackson fell headlong from the

⁶¹ Arguably, Redburn witnessed more than one spectacle on his return home to New York. In a chapter titled "A Living Corpse," a passenger spontaneously combusts, beginning with a "swarm of worm-like flames" on his face (326). This spontaneous combustion arguably evokes an anxiety onboard *The Highlander* about carrying cargo that is substantially comprised of fuel.

yard, and with a long seeth, plunged like a diver into the sea" (386). In his depiction of Jackson's death, Melville shows that the "traces of these things" that Jackson "carried" may have been disease, but the illness also had a supernatural quality, as shown by this judgment day. In the "bubbling spot" in the water where Jackson plunged, Redburn believes his "soul" was "driven ... from his lacerated lungs" (386). Those onboard *The Highlander* make no rescue attempt, and some claim he died before hitting the water.⁶² Others turn to "hushing up his memory," viewing him as a menacing spirit who haunts their ship (387).

After Jackson's death, Redburn's description moves from the haunted ship to the haunted port in a single paragraph, and now he fully turns his attention to the port's spectral traces of disease. Redburn is astounded by the ease at which ships may bypass quarantine at New York Harbour; they need only to make the disease momentarily invisible. *The Highlander*, full of passengers suffering from a fever, easily avoids the quarantine period at New York Harbor. To accomplish this, all evidence of sickness was thrown overboard: "every bed, blanket, bolster, and bundle of straw in the steerage to be committed to the deep. ... So, all around, the sea was strewn with stuffed bed-ticks, that limberly floated on the waves" (389). Secondly, the interiors were cleaned: "The place was then fumigated, and dried with pans of coals from the galley; so that by evening, no stranger would have imagined from her appearance, that the Highlander had made otherwise than a tidy and prosperous voyage" (390). Lastly, the captain and crew would need to lie: "to avoid detention at quarantine," Redburn explains, "a captain will state the case in the most palliating light, and strive to hush it up, as much as he can" (382). Even with a trace of Jackson's blood still detectable on a sail, *The Highlander* easily bypasses New York Harbor's

⁶² Redburn names Harry Bolton specifically as one who never mentioned Jackson again, which is important, since Harry had known Jackson only for the duration of the voyage, since he joined Redburn only on his return to New York. In other words, Jackson haunted Harry immediately.

quarantine officer. While this may shock Redburn, Melville suggests that the reason no quarantine officer boarded the ship was to streamline the port's reception of goods to manufacturing sites. Redburn takes in the scene of others also moving past the quarantine officer, noting "scores of ships, all bound to one common port"—all ships with "devious wakes" braiding into a single line, spectral traces funneling into the harbour (388). Disregarding health on a massive scale, the port officials demand speed.

While disease in New York becomes central near the end of the novel, Melville explains that no port haunts Redburn like Liverpool has. The port of New York has its own "grim-looking warehouses" (44), but Redburn makes no comparisons to Liverpool's warehouses, dead-houses, or walked-over cemeteries. New York Harbor, for Redburn, certainly has a mysterious, and even supernatural, quality, but not to the extent of the spirit-vault encounter. When speaking of the port of New York, Redburn speaks of its supernatural qualities with nostalgia: "All these my imaginations were wonderfully assisted by certain shadowy reminiscences of wharves, and warehouses, and shipping, with which a residence in a seaport during early childhood had supplied me" (44). Redburn's childhood included only stories of Liverpool from his father, but his own trip made Liverpool a reality for him—a reality filled with steam power's spectral remains.

Steam-Powered Illness in Seacole's *Wonderful Adventures*⁶³

Like Melville, in his descriptions of the dead and dying in *Redburn*, Seacole describes the sick in *Wonderful Adventures* as ghosts, and like Melville, she depicts the lethal traces of the industrialized port. Writing of her time in Jamaica, Panama, the Crimean Peninsula, and Britain,

⁶³ Part of the section on Seacole was published by *Gothic Nature*; it is included here with the journal's permission.

Seacole describes numerous waterfronts in detail.⁶⁴ As a nurse near the frontlines of the Crimean War, Seacole documented numerous "sights of suffering" at Balaklava's waterfront: "I wonder if I can ever forget the scenes I witnessed there?," she asks, adding, "Oh! they were heartrending" (88). The violence and sickness at the Crimean Peninsula haunt Seacole in a distinct way, as do the waterfronts of Jamaica and Panama. Seacole, who identifies as Creole,⁶⁵ witnesses Americans crossing Panama, "accompanied by their slaves" (52). This was a common sight, as crowds of Americans, especially those from the East Coast, boarded a steamer for Navy Bay and then crossed Panama on their way to the California Gold Rush. Seacole tracked industrial transformations of Panama, particularly the Panama Railroad, which was completed in 1855. Seacole was also attentive to widespread sickness in both Jamaica and Panama, and I argue that her depictions of disease actually go hand in hand with her depictions of industrial transformation. Seacole portrays illness in the Caribbean as an invisible, spectral entity that was spreading quickly at ports because of steam-powered vessels, primarily steamers and rail.

Seacole's theory of contagion stands out among her contemporaries, who relied solely on the miasma theory, as well as racialized pathologization. In 1855, two years before Seacole published *Wonderful Adventures*, the Office of the Panama Railroad invited Robert Tomes, a self-described "poor devil of an author," to join a group of American stockholders to see the completion of the railroad across the Isthmus of Panama, "passing from Ocean to Ocean" (15, 14). Tomes recorded this invitation and the subsequent journey in his work titled *Panama in*

⁶⁴ As Miller explains, these locations are "politically significant largely because of their accessibility by sea, and strategically located for commercial operations that are global in scope" (100).

⁶⁵ Sarah Salih explains that "Creole" "in the eighteenth and nineteenth centuries ... referred to black people born in the Caribbean or America," and it was a term "adopted by and applied to a variety of people in the New World who were descended from European colonists, African slaves or both" (182).

1855: An Account of the Panama Rail-Road, of the Cities of Panama and Aspinwall, with sketches of Life and Character on the Isthmus. Presented with the opportunity to experience the "tropical" climate of Panama while he endured winter in New York—with a host, he stated, "representing I don't know how many hundred thousands of stock and bondholders"—Tomes eagerly accepted the invitation (13, 15).⁶⁶ He would travel in a group of seventeen, leaving February 5, 1855 from New York in a steamer called *George Law*, and everything, Tomes explains, including transportation, meals, and lodging, would be covered by the Office of the Panama Railroad (17). Revealing that illness on the Isthmus had become well known, Tomes explains, tongue-in-cheek, that any diseases he suffers will also be given to him free of charge: "... how we might stay a fortnight on the Isthmus, to wander among its tropical delights, or to stretch ourselves beneath the shade of its beautiful mangroves, in the agonies of Chagres fever, *gratuitously*" (17). Augustus Campbell and Colin D. Campbell explain that the fevers surrounding the Chagres included, most frequently, "cholera, malaria, or yellow fever" (227). Tomes's toponym, "Chagres fever," by equating the area with fever, shows a racialization of disease, which, I later show, Seacole's descriptions work against.

Tomes turns to the power of steam engines, as *George Law*, "throwing out its black banner of smoke" (19), brings its over 450 passengers to Aspinwall in the span of only ten days, traveling approximately 250 miles per day. Entering Navy Bay in order to dock at Aspinwall/Colón,⁶⁷ Tomes uses supernatural language for the first time in his narrative, and he continues using this language while disembarking and locating his lodgings. They "floated in

⁶⁶ Tomes writes, "I accepted the invitation, of course" (15).

⁶⁷ The American Railway Company had recently renamed Colón as Aspinwall, after William Aspinwall, their chairman. Both Tomes and Seacole explain this re-naming. Tomes writes that "the Yankee settlers insist upon calling it [Aspinwall]" (48-49). Seacole uses both names in her memoir.

like a tired sea-monster, and leaned breathless against the dock at Aspinwall," Tomes explains (40). While the panting, monstrous figure is at first his own vessel transporting Americans, Tomes's narrative turns to the docks and their surroundings, describing this environment as monstrous in its exhalations, which have created, he claims, ill inhabitants: "As the steamer neared the town, the general view was dissolved into its separate details, and the eye glanced from object to object," which included a "pelican," "cocoa-nut palms," and "ghostly inhabitants" (43). Wishing he had never criticized New York's freezing weather, Tomes writes that he and his companions had no desire to now disembark:

Nor were we eager for the embrace of those denizens of that famous town, as they stalked aboard, with their gaunt, skeleton persons clothed in white, and with ghastly death's heads under Panama hats, and stared with ghostly wonder upon us animated beings, fresh and fat from the land of the living. (44)

By explaining that those aboard dreaded disembarking at the "famous town" of Aspinwall, Tomes shows that this bay had a reputation for ill inhabitants. This reputation had indeed been circulating around the time of Tomes's 1855 trip. As the Jamaican periodical *The Daily Advertiser and Lawton's Commercial Gazette* wrote in 1854, Navy Bay was a "house of pestilence and proverbial charnel house." Again, a midcentury waterfront becomes a place to house the dead, as Melville showed with *Redburn's* dead-house. At Navy Bay, the source of these ghostly residents' illness is clear for Tomes, as he describes the popular miasma theory: "The sun was rising through the gray mist of night," Tomes explains, "which had exhaled from the dank verdure flooding the land, and still lingered above the thick-wooded heights of Point Manzanilla" (41). The exhalation from the "thickly-matted jungle" is dangerous—a "poisonous breath," because the island "is, of course, unhealthy," "like a pall of death" (50-51). The fevers

suffered at Navy Bay, Tomes suggests, are due to this "miasmatic exhalation" (51).

By pointing to miasma as the cause of the illnesses at Navy Bay, Tomes echoes a host of others who had done the same, and he also anticipates those who would continue to misattribute the causes of illness at Navy Bay. In 1852, the *New York Journal of Medicine and Collateral Sciences* published an article titled "Upon the Diseases of the Isthmus of Panama" that outlined observations made at Navy Bay, Chagres, and near the Chagres river in 1851. The article follows the hypothesis of "malaria or harsh miasmata," also known as the "climate fever," as the culprit for disease (365). In addition to fevers and paroxysms, the patients had a "jaundiced hue" (365), which also appears in Tomes's description. Similarly, in the spring of 1853, in a "Letter from California" within the *Christian Watchmen and Reflector*, an individual going by "HR" writes of the arrival in Panama: "we arrived at Aspinwall on the 31st following. The town, situated twelve miles south of Chagres, is a low, swampy, unhealthy place, deriving all its importance from its being the best landing spot in the vicinity, though *itself* a very poor one" ("Letter from California" 1). This letter again shows the centrality of Navy Bay on the passage to California from the East Coast, and by using "swampy" and "unhealthy," HR suggests that illness is due to miasma.

In 1859, four years after Tomes's publication and two years before Seacole's publication, *The American Journal of Medical Sciences* wrote on Panama's heavy traffic and sweeping disease, but the journal does not link the two together: "The discovery of gold in California, ten years since, has vastly increased the transit of persons, merchandise, &c., across the Isthmus—greatly augmented the importance of this strip of land, and, indeed, rendered it the great highway of nations" ("Observations on the Isthmus of Panama" 359). Instead of following this thought, the "increased ... transit of persons" who are now quickly coming into contact with one another,

the article echoes the miasmatic theory: "Near its centre is a swamp flooded with water. ... The people of Aspinwall are, therefore, at all seasons infested with miasmatic fevers" (359). The article also explains that "miasmatic fevers" are to blame for the deaths of "a thousand lives, chiefly those of Chinese labourers" who had constructed the Panama Railroad that connects to the swampy Navy Bay (359). In *Wonderful Adventures*, Seacole also addresses the deaths of these laborers: "every mile of that fatal railway," she states, "cost the world thousands of lives" (19). Since the Panama Railroad construction began at Navy Bay, the port itself was also haunted by the laborers' deaths. Seacole's memoir explains that this new railway was seamlessly linked to the steamers of the port, and as I show in the following discussion, Seacole emphasized the role of these steam-power vessels in Panama's cholera outbreak.

Seacole describes Navy Bay as immersed in death, and like Tomes, she notes ghostly individuals on the docks; unlike Tomes and the numerous articles discussing miasma in Panama, Seacole traces the creation of these ghosts to contagious disease exacerbated by industrializing Navy Bay. Before discussing the role of steam power, it is important to first establish that Seacole emphasized germ theory of communicable diseases over the miasma theory. Part of what led Seacole to this understanding was her close observations—observations that, at times, were of morbid situations. Investigating the causes of cholera, Seacole performed her "first and last *post mortem* examination" on a deceased child (34). While she feels "guilty" after this macabre task, she explains that she now has a better understanding of cholera: "the knowledge I obtained thus strangely was very valuable to me" (34). This moment mirrors others in Seacole's narrative: unafraid of witnessing disease up close, Seacole observes the sick more thoroughly than others, and she is able to find causes and treatments. Seacole does, at times, engage with the discourse of miasma, such as describing the Isthmus of Panama as an "unhealthy and wretched country," but

she never uses the word "miasma" or any variations of the word, and she clearly uses the framework of germ theory through her use of the word "contagious" (19, 29). As Jessica Howell observes, Seacole's close observations of disease contributed to her ability to effectively treat her patients: "Seacole also documents those skills by narrating her confident application of remedies and medicines" (45). Her success with patients in Jamaica, Panama, as well as the Crimean Peninsula, partially arose from witnessing the mechanics of communicable disease and the causes of outbreaks.

For Seacole, diseases like cholera can spread rapidly through the fast pace of steam-powered boats and rail and the large groups that are quickly transported by these vessels. By the time an outbreak becomes visible, the travelers have already left, whisked away by boat or train, and so the disease appears like a ghostly trace of those who had spent little time at the previous location. Seacole's narrative may not at first appear to address the industrial scenes of the Caribbean; however, her references to "steam" make the industrial backdrop of her opening narrative clear, as she alludes to the frequent arrival of steamboats full of travelers who spread disease. With midcentury steam power significantly increasing the speed and frequency of movement,⁶⁸ sickness becomes more difficult to trace. Seacole first describes this phenomena in Jamaica: "In the year 1850," Seacole explains in her second chapter, "the cholera swept over the island of Jamaica with terrible force. Our idea—perhaps an unfounded one—was, that a steamer from New Orleans was the means of introducing it into the island" (16-17). Even though there is some room to doubt the source of cholera—"perhaps an unfounded" idea—Seacole includes this

⁶⁸ As Tomes's example showed, it took only ten days to travel by steamboat from New York to Aspinwall.

passage at the time of the book's publication, years after this occurrence.⁶⁹ Seacole's use of metonymy—"a steamer ... was the means"—places emphasis on the steam power used in traveling and bringing disease to Jamaica. Compare Seacole's analysis of a steamer to Tomes's analysis of a steamer: Tomes had called the steamer a "sea-monster," but Seacole explains that the steamer's monstrous influence in the Caribbean is that its hundreds of passengers quickly disperse, spreading disease with no quarantine period. As was the case at New York Harbour at the end of *Redburn*, speed is a main concern at the port.

When Seacole first witnesses the cholera outbreak in Panama, she uses spectral language immediately. Following her brother to the Isthmus of Panama—the "great high-road to and from golden California" (17)—Seacole herself boards a steamer and witnesses a central location of disease: the wharf of Navy Bay. Seacole's portrayal here likewise echoes Tomes's own experience of seeing phantoms when first disembarking at Aspinwall: "the white men who met us on the wharf," Seacole explains, "appeared ghostly and wraith-like, and the very negroes seemed pale and wan" (18). Seacole's use of "wraith-like" captures the disease's Navy Bay setting, since mid-nineteenth-century uses of "wraith" included "water spirit" ("wraith, n."). The second half of the quotation, "the very negroes seemed pale and wan," arguably connects to the "charnel house" reference from Jamaica's *Daily*. When the newspaper called Navy Bay a "charnel house" in 1854, they were warning Jamaicans about illness in Panama. At this midcentury moment, Jamaica experienced "rapid depopulation," since Jamaicans, many of whom were formerly enslaved, left for Panama to construct the railroad.⁷⁰ As the article explains,

⁶⁹ Later in her narrative, Seacole again attributes disease to incoming ships, but the type of ship remains ambiguous. She traces Jamaica's outbreak to "ships in the harbour" (58).

⁷⁰ Christer Petley explains that "about 650,000 enslaved people in the Caribbean became juridically free in 1838 as a consequence of the 1833 Emancipation Bill" (857). Explaining population percentages of enslaved people in the Caribbean, Petley notes the following statistics:

Panama "requires all the available labor that can be procured"—an implication not only of the monumental construction at hand, but also that laborers in Panama were constantly in demand because workers were often becoming sick or dying.⁷¹ While the labor was primarily for the new railway, Seacole's description shows that there was also a demand for dock laborers from Jamaica, and her eyewitness account confirmed the Jamaica's *Daily* warning that Navy Bay was becoming a spectacle of disease and death. Attempting to understand what formed the wharf's specters, Seacole gathers information from those at Navy Bay. "According to all accounts," Seacole finds, "fever and ague" were rapidly taking over the port (18). She personifies both the fever and the ague, explaining that they "were having it all their own way at Navy Bay" (18). The illness is spectral and endowed with human qualities, and as Seacole continues to clarify, this language best captures a disease like cholera, which is imperceptible and born out of human waste.

Further putting together the causes of Panama's outbreak, Seacole turns to the industrial scene before her: steamers juxtaposed by the railway. Seacole writes that "the railway, which now connects the bay with Panama, was then building, and ran, as far as we could see, on piles, connected with the town by a wooden jetty. It seemed as capital a nursery for ague and fever as Death could hit upon anywhere" (18). Seacole certainly engages with the miasmatic theory in this passage, as the piles suggest a swampy atmosphere, but her attention to the railway construction, as well as its connection to the bay through the new jetty, reveals another point: the new construction is what makes this a "capital" spot for disease. As the steamer "was the means"

"in 1815 in Barbados, enslaved people were about 70 per cent of the population. The corresponding figure for Jamaica was 85 per cent" (857).

⁷¹ Peter Pyne observes that railway work in Panama was "supplemented for a time by a number of Jamaicans, to replace men who had completed their contracts or who were ill, had died, or had deserted" (44).

of introducing cholera to Jamaica, the new rail of Navy Bay contributes to the disease outbreak of Panama. The steam-powered rail transports those who arrive by a steam-powered ship, and so disease can spread as quickly as those vessels can transport these large groups of people. Notice Seacole's repetition, as she uses "connects" and "connected" in describing the industrialization of Navy Bay. As Robert Aguirre explains in his analysis of Seacole's memoir, "the isthmus quickly became a quintessential contact zone" (9). Seacole witnessed steamers and rail increasing transportation speeds and the amount of contact.

When Seacole herself rides the rail through the Isthmus of Panama, she further explains the mechanics of how steam power in Panama contributes to disease. Seacole notes that the Americans—who first landed at Navy Bay and were now quickly on their way by rail to Panama City—leave a path of disease behind them. In Cruces, Seacole makes this observation: "But it was destined that I should not be long in Cruces before my medicinal skill and knowledge were put to the test. Before the passengers for Panama [City] had been many days gone, it was found that they had left one of their number behind them, and that one—the cholera" (29). The Americans had left for Panama City before those in Cruces became sick,⁷² and the power of the new rail has allowed them to do this. In an earlier description of the railroad, Seacole explains: "iron and steam, twin giants subdued to man's will, have put a girdle over rocks and rivers" (18). As the passengers speedily cross this terrain, those passengers who are sick leave a trail of illness behind them. The diseases left behind are mere traces of the travelers themselves—a personified disease that was "one of their number," a ghostly apparition much like the wraiths at Navy Bay (29). The trace that was left behind is a menacing, lethal trace, and so Seacole uses spectral

⁷² Seacole herself had "only stayed one night" in Navy Bay (18), again showing the rapidity of movement powered by steam in Panama.

language to explain its mechanics. When she explains that cholera is contagious, she contrasts her view with the current, prevailing theory—the theory of "the faculty," an undefined group: "the faculty have not yet come to the conclusion that the cholera is contagious," Seacole suggests, "and the poor Cruces folks did not hesitate to say that this new and terrible plague had been a fellow-traveller with the Americans from New Orleans or some other of its favoured haunts" (29). Seacole again personifies cholera as a specter with its own "favoured haunts,"⁷³ and this spectral language captures the nearly invisible path that the disease had taken. When Seacole later explains that the "crisis was so rapid" (30), she again draws attention not only to the speed at which cholera could overcome the body, but also to Panama's new reality of steam-powered illness.⁷⁴

These ill passengers from New Orleans who contribute to Panama's outbreaks include slaveholders. At Panama's waterfronts, scenes of ongoing slavery haunt Seacole. She explains that the wharf has a "large crowd" of Americans, who are "always uncomfortable in the company of coloured people, and very often show this feeling in stronger ways than by sour looks and rude words" (21). Seacole leaves these "stronger ways" up to the imagination, not explaining exactly how she was mistreated at this moment in the memoir.⁷⁵ Rather, she states her relation to those enslaved in the United States and those who had been enslaved by the British, asserting that she has grown "impatient" with Americans' "airs of superiority": "I have a few shades of

⁷³ With Seacole's use of spectral language prior to this passage, "haunts" sounds more like the dwelling of a specter than simply a "place of frequent resort" for humans ("haunt, n.1").

⁷⁴ Aguirre writes that after 1840, "the rapid development of new forms of industrial technology such as steamships, locomotives, trestle bridges, telegraphs, and steam printing presses. . . profoundly shaped the modernization of the isthmus" (6). This "modernization" included the increase of disease that Seacole describes.

⁷⁵ It is worth noting here that Seacole had a similar experience in London when she was a young woman: "some of the most vivid of my collections," she writes, "are the efforts of the London street-boys to poke fun at my and my companion's complexion" (13).

deeper brown upon my skin," she states, "which shows me related—and I am proud of the relationship—to those poor mortals whom you once held enslaved, and whose bodies America still owns" (21). Seacole had closely observed numerous American slaveholders, since "Americans crossed the Isthmus, accompanied by their slaves" (52). At the waterfront of Panama's Gorgona, Seacole witnesses one such American who was also sick. She was a particularly "vicious" woman, who "fell ill at Gorgona, and was left behind by her companions under the charge of a young negro, her slave, whom she treated most inhumanly, as was evinced by the poor girl's frequent scream when under the lash" (52). When a local magistrate becomes involved and tells the enslaved woman that "she is free," the American slaveholder threatens her, saying that she will harm her young child in New Orleans if she accepts the magistrate's offer (53). Seacole convinces the enslaved woman to take this risk, but Seacole is also left guessing what will happen to the child. The story then ends abruptly, since the American slaveholder leaves quickly by rail "into the interior of the country" (53). Seacole implies that the woman left in a hurry because of her interactions with the magistrate, and so this woman is most likely still sick as she boards the train, yet another ill American potentially spreading cholera throughout the isthmus.

While Seacole does not explicitly describe what we now know as the process of cholera transmission—typically the contamination of drinking water or food with feces of an infected person—she does show her understanding of human waste as a contributing factor. She writes that "New Granada ... is powerless to control the refuse of every nation" (18). Here, "refuse" can mean organic waste or "household waste" ("refuse, n.1"). The trace that Americans leave is also their personal waste, as is the case in Cruces: "To be sure," Seacole states, "I found Cruces as like Gorgona, in its dampness, dirt, and confusion, as it well could be" (24). It is here in Cruces

that Seacole herself becomes ill with cholera (37-38), after she had explained that Cruces has "damp streets" that show the "rotting accumulation of months" (31). "Household waste" would also include fecal matter, and the "fresh air" that the suffering need may again point to this waste (18). When Seacole makes her remark about "refuse," she is in Navy Bay, where some docks are owned by Americans, while other docks are owned by the British. The Americans had, in the creation of the rail, formed a pond that become the receptacle for the filth that Seacole describes. Sarah Salih explains that the American Railway Company had, in its creation of the new settlement named Aspinwall, "filled in the channel so that Manzanillo became part of the mainland" in 1852 (194). *The American Journal of Medical Sciences* also wrote that they partially filled the swamp with "earth next the harbour," and this resulted in a nearby pond that received the "overflowing water" and turned into a "receptacle of filth" ("Observations" 259).⁷⁶ In other words, the pond became a prime location for, in Seacole's phrasing, the "refuse of every nation." With their waste, both the Americans and the British have transformed the water of Navy Bay into a disease-spreading agent. As in Melville's depiction of Liverpool, Navy Bay became a receptacle for filth, and this refuse turned into an invisible threat.

Seacole's spectral language also vividly depicts the devastating effects of cholera. Rather than becoming "pale," these figures became shadows of their prior selves: "Generally speaking," Seacole explains, "the cholera showed premonitory symptoms; such as giddiness, sickness, diarrhœa, or sunken eyes and distressed look; but sometimes the substance followed its forecoming shadow so quickly, and the crisis was so rapid, that there was no time to apply any

⁷⁶ The article from *The American Journal of Medical Sciences* also uses the word "stagnant" in describing this water; while it would be decades before malaria transmission was attributed to mosquitoes, we can see that the industrialization of Navy Bay—with its formation of this large, stagnant body of water—greatly increased the number of malaria cases.

remedies" (30). The sick individuals have become so dehydrated that their appearance—the "sunken eyes," in particular—accounts for Seacole's prior use of "ghostly and wraithlike." The "forecoming shadow" that Seacole here observes, I would argue, is also spectral,⁷⁷ and in one example, an individual's shadow-like appearance even mirrors the blue-tinted family that Redburn finds in the vault: "the face became," Seacole describes, "of an indigo tint" before he died (30). In cholera patients, this deep blue color reveals a critical moment of the patient's dehydration. Robert Morris, an epidemiologist and physician, explains that cholera became known in the mid-nineteenth century as "the blue death," since dehydration starves the blood of oxygen, resulting in the dark blue color (14). Again, Seacole's description of the "indigo tint" shows her close observation and thorough documentation of the disease.

While Seacole and Melville both use "indigo" to describe haunting deaths, Seacole's reference to indigo in her Caribbean setting helps us re-read Melville's reference to indigo in Liverpool. In short, Seacole's setting evokes the centuries-long specter of indigo at ports, from pre-industrial to industrial production. In the seventeenth and eighteenth centuries, the British used slave labor in Jamaica and Barbados to produce this raw material, but by the late eighteenth century, Banerjee explains, there was a "dwindling supply of indigo from the Caribbean" (215).⁷⁸ While the Caribbean was not a major producer of indigo in the nineteenth century, indigo frequently circulated there; between Panama's Caribbean coastline and Pacific coastline, indigo passed over the isthmus regularly on the Panama Railroad.⁷⁹ The sources of indigo were now

⁷⁷ A specter is, according to the *Oxford English Dictionary*, a "faint shadow or imitation of something," which may appear in numerous forms ("spectre, n. 1").

⁷⁸ *The Cambridge Economic History of India* partially explains this decline of indigo production: "In the West Indies, the planters had been steadily changing over to coffee and cotton, and between 1783 and 1789 the indigo production fell off by more than 50 per cent" (315).

⁷⁹ *Illustrated History of the Panama Railroad* lists indigo on more than two dozen occasions, such as in tables of materials shipped from South America to American and British ports.

predominantly lower Bengal, the American South, South America, and Western Africa. In Seacole's Panamanian context, Banerjee's observation that "indigo has mobility; it circulates" again rings true, as in Melville's Liverpool. While indigo circulated, it left haunting stains—reminders of the brutality in its cultivation, as well as the dangers involved in manufacturing the dye.⁸⁰ Documenting the history of indigo from West Africa, Catherine E. McKinley describes the dye's enduring mark as a haunting stain: the dye "left ghostlike traces of blue" (8). As shown by Melville's and Seacole's references to indigo, the dye left spectral marks on its shipping routes, an additional haunting of the midcentury port.

Even after her return from the Crimean Peninsula where she served as a nurse for the British army, Seacole continues to see the docks of Navy Bay as specters of death. In her section titled "Unburied Irishmen at Navy Bay," Seacole's account of Navy Bay echoes Melville's account of Liverpool: the mid-nineteenth-century dock has become an apt place for both waste and storage of the dead: "I found Navy Bay but little altered. It was evening when I arrived there; and my friend Mr. H——, who came to meet me on the wharf, carefully piloted me through the wretched streets, giving me especial warning not to stumble over what looked like three long boxes, loosely covered with the débris of a fallen house" (61). When Seacole asks what is in the boxes, the response shocks her: "'Oh,' her guide says, 'they're only three Irishmen killed in a row a week ago, whom it's nobody's business to bury'" (61). The answer explains why Seacole states that Navy Bay is "but little altered" by these dead bodies, since Seacole had seen plenty dead and

⁸⁰ In 1856, an article in *The Scientific American* called on southern planters to manufacture indigo that would rival the high quality of Bengal's; the article complains that, in the American South, "inferior kinds are by far too plentiful." The article explains that producing the dye involved great quantities of "pure strong sulphuric acid," and "its manufacture was found to be very injurious to the health of the negroes on the plantations" ("Cultivation of American Indigo"). On indigo and slavery in the American South, see Tiffany Lethabo King's "The Labor of (Re)reading Planation Landscapes Fungible(ly)."

dying previously. Like the cemetery that the dock workers walk over in *Redburn*, the dead here in Navy Bay pose a risk of stumbling. How long would the bodies remain there, being slowly concealed by a decaying house? The matter-of-fact response that it is "nobody's business to bury" these men also further uncovers Navy Bay as designated for other business, business deemed more important than attention for the living or the dead.

Navy Bay may be "but little altered" when Seacole returns, but the landscape would monumentally change with the Panama Canal, which followed the path of the Panama Railroad and was beginning to be constructed only two and a half decades after Seacole published her memoir. Aguirre explains that the railway deserves more critical attention: "Although the canal overshadows it in the popular and scholarly imagination," Aguirre explains, "the railroad's significance is difficult to overestimate—both as a transformative reality in its own time and a harbinger of the canal" (2-3). Aguirre's argument about the railway's significance could also be applied to Navy Bay, as it served and remains the gateway to both the railway and now the canal. If the railway was a "harbinger" of the canal, Navy Bay was a harbinger of the steam-powered illnesses and deaths that would catastrophically increase in the canal's construction.

"Floating Troughs of Ashes": British Ports, According to Ruskin

In the decades between the publication of Melville's *Redburn* (1849) and the beginning of the Panama Canal's construction (1881), John Ruskin mourned pre-industrialized waterfronts to varying degrees in numerous works, including *The Stones of Venice* (1851-53),⁸¹ *The Harbours of England* (1856), *Unto This Last* (1860), *Munera Pulveris* (1862-63), *The Crown of Wild Olive*

⁸¹ My third and final chapter, which discusses soil pollution and the specters of mining, focuses on Ruskin's *The Stones of Venice*. It is worth mentioning here that Ruskin uses spectral language when describing Venice. He portrays the city as "a ghost upon the sands of the sea," as well as a site that raises a haunting ambiguity: "which was the City, and which the Shadow."

(1866), *Time and Tide* (1867), *The Queen of the Air* (1869), *Fors Clavigera* (1870s), and numerous volumes of *Modern Painters*.⁸² Steven Finley has argued that Ruskin's works reveal his obsession with water, since many of Ruskin's projects "tend to associate with and cluster around water" (385). I argue that Ruskin frequently returned to scenes of water because, like Melville and Seacole, he was tracking transformations of these waterfronts, much like his tracking of the skies in *The Storm-Cloud of the Nineteenth Century* (1884). For example, in *Munera Pulveris*, Ruskin describes "English dockyards" as becoming funeral scenes, for their industrial militarization, partially shown through new "iron ships," has made them "become costly biers enough for the grey convoy of chief-mourner waves, wreathed with funereal foam, to bear back the dead upon" (251). Waters surrounding the English dockyards had become laden with death, as Melville suggests in *Redburn*. In *The Crown of Wild Olive*, Ruskin famously decries the pollution of the Wandel river in South England, where "black slime," "shreds of old metal," and the "bricklayer's refuse" have "shed into the stream" (386). In *The Queen of the Air*, Ruskin discusses water's vitality through the figure of a "water-spirit," and he famously condemns the pollution of the port of Neuchâtel, including "dust and refuse": "The light, the air, the waters, all defiled!" (293). In England's rivers, one source of defilement was indigo, the haunting dye of Melville's and Seacole's texts. Describing a painting of Turner's which portrayed Leicester, Ruskin reportedly stated that "the colour of the stream is supplied on one side by the indigo factory" (Scott 604).⁸³ In this final section of chapter two, I turn to Ruskin's *The Harbours*

⁸² Since I have given this list, it is important to note that some of these are, to borrow Caroline Levine's word, "interwoven" texts. Discussing *The Stones of Venice* and *Modern Painters*, Levine explains that these writings are "picking up recurrent themes, cross-referencing one another, and even intersecting chronologically" (73).

⁸³ Interestingly, indigo here function in at least two ways: it is both represented in the painting and a material of art.

of England and *Time and Tide*, as well as Ruskin's letters, to show the great loss he sensed in the transformed waterfronts and the subsequent regulations he proposed.

In *The Harbours of England* (1856), Ruskin writes on Turner's collection titled *The Ports of England*, which Turner created from 1827 to 1828. Ruskin writes in short sections—each section detailing one of Turner's ports. In the decades between Turner's port paintings and Ruskin's *Harbours*, British ports had predominantly transformed into coal-fired sites, as my section on Liverpool detailed. This time gap and the change in these ports becomes clear in *The Harbours of England*, for Ruskin discusses the ports in both Turner's depiction and their contrasting current state. In returning to Turner's earlier depictions of these ports, Ruskin reveals his grief over these transformed waterfronts—a transformation that was already underway when Turner painted these ports. However, in *The Ports of England*, steamers do not yet fill the docks, as shown by the myriad sailing ships in this collection. As *The Harbours of England* makes clear, the pollution of waterfronts for Ruskin marked a moral and spiritual failing. As Sara Atwood explains, focusing on *The Crown of Wild Olive*, Ruskin "expresses a sense of the death of an entire way of life and vision of the world" (30). In *The Harbours of England*, Ruskin reveals this mourning—the "death of an entire way of life" that had transpired in less than three decades and that Ruskin argues will only worsen.

Ruskin first describes his affinity for ships and the waterfront sceneries surrounding them. The bow of a boat, Ruskin confesses, still fills him with child-like "wonder" (13). Ships ought to be the focus of great works of art, he states, if only these ships will be visible enough to paint through England's increasingly smoky skies and polluted waters: "how far our great artists ought seriously to devote themselves to such perfect painting of our ships," Ruskin asserts, "as should reveal to later generations lost perhaps in clouds of steam and floating troughs of ashes"

(29). With this statement about "steam" and "ashes" in mind, an earlier passage of his forty-two-point introduction now arguably describes ships enveloped in smog.⁸⁴ "But there are few things more impressive to me," Ruskin confesses, "than one of these ships lying up against some lonely quay in a black sea-fog, with the furrow traced under its tawny keel far in the harbour slime"

(26). Ruskin's modifier, "black," before "sea-fog" makes this seem less like fog and more like a combination of smoke and fog, which makes the "harbour slime" also sound less like pre-industrial ocean plant life and more like oozing effluent.⁸⁵ Further making this appear as an industrial scene, in the same numbered point, Ruskin remarks that commerce is "costly, but not venerable" and that "homely and stay-at-home ships" are the ones he admires most (26). Ruskin continues to hauntingly describe this waterfront, a non-specific location, as having "two skeletons of pier-heads" (27), mirroring Melville's and Seacole's descriptions of death-laden ports.

Turner's paintings within *The Ports of England* may be brooding images, but they are not full of smog and death. The paintings combine beauty and terror; in short, Ruskin reads them as sublime. On the painting of Sheerness port, Ruskin writes "the Plymouth storm will very thoroughly wet the sails, and wash the decks, of the ships at anchor, but will send nothing to the bottom. For these pale and lurid masses, there is no saying what evil they may have in their

⁸⁴ Ruskin had made a similar observation a decade before 1856. In 1846, Ruskin wrote a letter to George Richmond that also described his inability to see even an "outline" of ships through smoke, but this was in Geneva: "But, precisely between them and my window, a little chimney of some 'works' on the opposite quay was throwing up its thread of brown smoke, which, the air being perfectly calm, stayed, in a browner cloud, precisely at the level of the brightest low sky, and dimmed the aiguilles, so that there was no drawing or seeing their outline, any more than through a smoked glass" ("Morning Thoughts at Geneva" 574).

⁸⁵ Even if not industrial waste, the use of "slime" has a negative connotation here, and as the *Oxford English Dictionary* clarifies, there are no positive historical uses of this word. Furthermore, Ruskin uses the word "slime" in *The Crown of Wild Olive* to depict industrial waste.

thoughts, or what they may have to answer for before night" (58). As Ruskin later makes clear, "masses" refers to the ships, and while he says there is "evil" lurking in them, he does not refer to an industrial evil. On Scarborough, Ruskin similarly writes, "observe the anxious doubling of every object by a visible echo or shadow throughout this picture ... so that the one looks like the phantom of the other" (74). There may be ghosts in these paintings, and even the uncanny, but they are welcome phantoms in Ruskin's readings, for what disturbs Ruskin is the sight of industrialized ports in 1856. Further revealing this source of anguish, Ruskin makes the point that Turner did not include some important ports in his collection: "They did not include any illustration whatever of such harbors of England as Liverpool, Shields, Yarmouth, or Bristol" (10). Liverpool had especially undergone a drastic transformation from the 1820s to the 1850s, and Ruskin's point that it was left out, I argue, shows his great desire to see an image of Liverpool prior to the 1820s, before it became, in Melville's words, one giant "brick-kiln" (227).

Liverpool and Bristol, two of the ports Ruskin specifies as missing in the collection, had, of course, been ports of the transatlantic slave trade; arguably, an essay on Ruskin, haunted ports, and Turner requires a discussion of Turner's "The Slave Ship." First titled "Slavers Throwing Overboard the Dead and Dying, Typhoon Coming On," the painting was given to Ruskin for New Year's in 1844 by his father, and it apparently "delighted" Ruskin (Lootens 34). His famous review of Turner's piece, where he expressed his "enthusiasm" for it, has sparked many debates (Lootens 34).⁸⁶ For example, Daniel Williams and Tricia Lootens both discuss Ruskin's take on the "Governor Eyre Controversy," and as Williams explains, Ruskin gave "notorious support ... to oppose the prosecution of Governor Edward John Eyre, after the latter's violent suppression of

⁸⁶ See Daniel Williams's "Atmospheres of Liberty: Ruskin in the Clouds" for a recent list of scholarship discussing Ruskin's initial review.

the Jamaican uprising in 1865" (167). Marcus Wood observes that Ruskin in fact wrote two reviews of "The Slave Ship," the first in *Modern Painters* and the second a "virtually unknown" review where he "negates the 'enthusiasm'" of the earlier review (59). What the scholarly discussion over Ruskin and this painting often emphasizes is that Ruskin removed the painting from his home in 1872. In Wood's words, it became a "domestic presence he could not bear to live with" (57). For my analysis of *The Harbours of England*, this timing of the painting's arrival and departure is relevant. If Ruskin received the painting in 1844 and sold the painting in 1872, Turner's "Slave Ship" was hanging in his home—and possibly within his own bedroom—when he wrote *The Harbours of England* in 1856. In other words, while Ruskin analyzed Turner's depictions of ports, Turner's "Slave Ship" was within his view. Ruskin's attention to the missing ports in the collection, namely the slaving ports of Liverpool and Bristol, may have been prompted by the haunting presence of this painting. On the other hand, Ruskin never mentions slavery in *The Harbours of England*.

As Ruskin eventually kept the painting out of his sight, he also kept Liverpool out of view. Liverpool's substantial industrial transformation actually resulted in Ruskin refusing to visit this port. In 1884, decades after he wrote *The Harbours of England*, Ruskin would specify a particular port city he loathed: Liverpool. In a letter to James Allanson Picton—a Liverpoolian councilman, who asked Ruskin to aid in the efforts to develop the city's museums and libraries—Ruskin revealed his disgust for this port: "You and I feel exactly alike about what is pretty and proper—we agree about the disagreeableness of chemical works and the delightfulness of antiquities." Ruskin then reveals his full disdain: "But I consider Liverpool the cause of the destruction of Flint, and of most of Lancashire!" (Ruskin, *The Letters of John Ruskin* 493).⁸⁷

⁸⁷ Flint is a Welsh town that lies southwest of Liverpool.

More than once in his letters, Ruskin refuses to visit. Liverpool was not only ruined by its "chemical works," but the port had transformed and destroyed, according to Ruskin, all the surrounding areas. The port's hazards can never be fully confined to the port, for it is, by definition, a place of moving parts.

While Ruskin refused to visit Liverpool, he did propose remedies in the form of regulations for hazardous ports. Some of these proposals appeared in letters, gathered and published in *Time and Tide*, and some of these letters appeared in newspapers, with Ruskin's permission, such as in the *Leeds Mercury*. In one letter, Ruskin wrote to Thomas Dixon, who worked at the port of Sunderland as a cork cutter, and who also suffered from asthma. In the letter, he includes a list of regulations and rights for workers, including those of ports. Ruskin proposes the following: "And it being the general law that the entire body of the public should contribute to the cost, and divide the profits, of all necessary public works and undertakings, as roads, mines, [and] harbour protections" (380). Ruskin writes an entire section on "harbour-making," which describes "safe and convenient" harbors, as well as a section on "portage," which proposes that canal boats should be utilized more than the steamships, which require the port's main docks.

Ruskin, Melville, and Seacole reveal the coal-fired port's haunting transformations, as well as its lack of boundaries. What further makes the port haunting in these texts is that its specters—its industrial waste, microscopic diseases, and its legacy of slavery—do not remain confined at the port. For Ruskin, Liverpool will destroy every place it can touch, as Melville and Seacole also illustrate. In *Redburn*, waste and disease know no boundaries within water systems of Liverpool itself. Moreover, *The Highlander* had brought its own hazards to Liverpool and returned to New York with others. In Seacole's memoir, spectral diseases from New York,

Liverpool, and elsewhere were powered by steam to and across Panama. The spectral traces of industrialized ports, in other words, spread rapidly outwards. At ports, Seth Armstrong-Twigg argues, the "viewer is encouraged to think outwardly, and the interconnections between different, but closely related, nations become evident" (291). When these "interconnections" include microscopic hazards, spectral language can make the hazards easier to visualize. Tomory explains the stakes of seeing these hazards: "Historians have accounted for Parliament's slowness in reacting to environmental problems in various ways," one being "the lack of any notion of the environment and the deleterious effects of pollution stemming from industrial sources particularly" (30). As these texts demonstrate, seeing the "sources particularly" requires imaginative comparisons, as does envisioning the port's connections to locations of manufacturing and resource extraction.

Chapter III

The Silvery Mining Specters of Ruskin, Ridge, Foote, and Conrad

"But in that dismal place, their wizard-like forms and appearance, relieved but by the light of a single tallow candle stuck on the side of a rock, sufficing to make 'darkness visible,' is like opening to us the shades of Tartarus; and the throes elicited from over-wrought human bone and muscle, sound like the anguish wrung from infernal spirits, who hope for no escape."

S. A. Downer, "The Quicksilver Mine of New Almaden," *The Pioneer* (1854), 223

"But although we now live in an age of philosophy, these marvellous tales of bygone years are still full of thrilling interest. ... They still possess a strange influence over the grown man, and they even still serve as animating incentives to the intelligent, enquiring mind in its efforts to penetrate the secrets of nature and understand the magical wonders of science."

W. P. Shield, *Cutty Soams, or The Spectre of the Mine* (1871), 5

John Ruskin's *The Ethics of the Dust* (1865) includes a warning for aspiring miners: the mine is full of specters. In this text—where Ruskin speaks through an "old lecturer (of incalculable age)," teaching young women about minerals—the so-called "Valley of Diamonds"⁸⁸ evokes a mine in its appearance, composition, and dangers. The lecturer explains to Florrie, Isabel, Sybil, Kate, and May that the "Valley" is "very real indeed" and that its entrance is "under a steep rock" (210); when May asks what it is "like" on the inside, the lecturer responds with nursery-rhyme language that describes a mine: "up and down, broken kind of ground" (212). This valley also contains precious stones and metals; in addition to diamonds, it has amethyst quartz, rubies, gold, and "pure silver" (213).⁸⁹ While the young women initially want to

⁸⁸ The student named Florrie first mentions the "Valley of Diamonds," alluding to *Arabian Nights*, and particularly to "The Second Voyage of Es-Sindibád of the Sea" (*Ethics* 209). The lecturer explains to Florrie that there is another "Valley of Diamonds"; this other valley is the one I reference here (210).

⁸⁹ In *Time and Tide's* "Letter XVI" (1867), Ruskin writes that clergy should "plainly tell [their congregations] they are not to hunt for rubies or gold any more" (394).

visit the valley, the Old Lecturer changes their minds by asserting that the valley is dangerous (210): the diamonds "hurt one's eyes" (211); the valley's river is "thick and red" with "blood" (212, 367); moreover, there is a dangerous labyrinth with "great cliffs," where "wanderers ... fall, one by one" into a "burial cloud" (214-215). His haunting warning continues, for even if the wanderers do not fall off the cliffs, they will find it "very difficult to get out again" (215). In Ruskin's notes for this section, he clarifies that the valley is full of "the souls of all who had perished in misery through the pursuit of riches" (367). Underscoring that the "Valley" is a mine, the Old Lecturer asks the girls to retrieve from his room some ore, which has both gold and diamonds embedded within it. Sybil remarks that this ore could be "found by digging," which leads to the Old Lecturer again warning the girls: these are "fatal jewels" (217). As Ruskin continues to argue, the many dangers of extraction create mining specters.

When they cannot escape, the wanderers become inseparable from the valley, which Ruskin further emphasizes by comparing the atomic composition of humans to the atomic composition of this "Valley." Both humans and the valley, the Old Lecturer explains, are made of "dust." Gold dust combines with the "grave-dust" of humans (368); as a silver coin can become molded to reveal a face, so too, the Old Lecturer explains, Eve was formed (343). As Ella Mershon puts it, Ruskin describes "dust's infinite recombination" (481). Dust's ability to recombine, according to Ruskin, shows that "things are not either wholly alive, or wholly dead. They are less or more alive" (346). Deanna Kreisel reads this line as suggesting the "porosity of the life-nonlife border," which she connects to Ruskin's repeated use of "spirit" in *Ethics* (110). As Mershon and Kreisel help explain Ruskin's depictions of bodily entanglements with stone, their observations also provide helpful language concerning Ruskin's depiction of mining. When

miners and the earth become one through mining, this "recombination" of dust forms mining specters.

While I have shown that the mill specter predominantly haunts the air and the port specter haunts the waterfront, the specter of the mine resides in the ground. With Ruskin's *Ethics* as my model, I employ the phrase "mining specters" in two distinct ways in this chapter: at times, "mining specters" functions as a verb phrase (*to mine specters*), but I also use "mining specters" as a compound noun. In the verb-phrase formation, the extracted matter is a specter to behold, including the mineral itself or the victims of a mining accident, such as those who fall off the cliffs in *Ethics*. Alternatively, the compound noun, "mining specters," describes a type of specter, where hazardous materials, such as lead or mercury, enter and harm the individual. This type of mining specter most clearly resembles Ruskin's discussion of atomic composition in *Ethics*. At one point, the lecturer tells his students that they have mercury inside of them: "Quicksilver there's enough of in you," he says, and then the topic abruptly changes (248). To put these two meanings of "mining specters" another way, the mine fills with miners and miners fill with (materials from) the mine. In both configurations of "mining specters," individuals and the ground merge through mining.

My epigraph from W. P. Shield's *The Spectre of the Mine* suggests that mining specters operated as "animating incentives" for understanding the "secrets" of nature (5), and I would argue that these "secrets" had much to do with visibility. Much like my first and second chapter's arguments on the mill specter and port specter, mining specters point to visibility constraints. The meaning of the term, "mine," historically encompassed issues of sight, particularly the inability to see danger, since the term could mean "to ... destroy by secret methods" ("mine, v.2"). This "secret" destruction extends to the mine's invisible lethality that I have laid out: a

mine may conceal a body or a body may conceal the mine's hazardous dust. Nineteenth-century discourse surrounding dust, Kate Flint explains, reveals the "Victorian interest in the visible and the unseen," as dust functioned as "a meeting point for the intersection of science, vision, and the imagination" (47, 48). As dust's sources and destinations are unknown, dust was also a frightening material: "Danger ... may well lie concealed," especially, Flint argues, for miners, whose "lungs ... were all subject to injury from dust" (48, 49). Because it was difficult to see and potentially hazardous, dust was a supernatural substance; it "partook of something far more metaphysical" (Flint 60). This metaphysical categorization of dust is particularly shown through mining specters—apparitions that, I argue, arose in fiction of the mid-to-late-nineteenth century as authors grappled with representing the polluted bodies of miners and mining communities, a phenomenon exacerbated by industrialized mining practices.

The issue of visibility in mining extends to the mines' locations, especially the mines of precious metals. The gold and silver Ruskin describes in *Ethics* were not mined in the British Isles, but within Britain's formal, as well as "informal" empire.⁹⁰ Consider an advertisement in *T.P.'s Weekly* that appeared in December of 1904, alongside Joseph Conrad's *Nostramo*, which centers a fictional silver mine of South America. The advertisement is for a "real silver" photo frame and the description insists that the item is "English-made throughout" ("Real Silver"), even though there were no silver mines operating in England. On October 7, 1904, one month after the last installment of *Nostramo*, there appears a full-page article titled "How to Become a Mining Engineer," which explains the locations of precious-metal mines: "In any case," the article

⁹⁰ While Jessie Reeder did not coin the phrase "informal empire," her explanation of the phrase in *The Forms of Informal Empire: Britain, Latin America, and Nineteenth-Century Literature* is helpful in this context: "even after it became clear that Latin America would govern itself, the British continued to see it as a place they might dominate, particularly in industry and trade" (2).

explains to the aspiring mining engineer, "you will almost certainly see a good deal of the world before you settle down. And if you want to see how far afield you are likely to have the chance of travelling, get the prospectus of the Redruth School of Mines, and run your eye over the list of 'old boys' and the appointments at present held by them" ("How to Become a Mining Engineer"). The seven appointments listed include the following: the Kolar Gold Field in India, the Egypt and Sudan Mining Company, and the Minas Geraes of Brazil. In the article's subsection titled "A ruler of men," the writer includes a caveat of the job: "Robust health is requisite, for the life is hard, and the climate of the countries in which most of the best mines are situated is abominably bad."⁹¹ In other words, the "best mines" are not in the British Isles, but are in Britain's imperial grasp.

Some of this chapter's texts are set in California and they feature a suite of metals beyond gold. In addition to the South African Gold Rush and the Australian Gold Rush, there was, of course, the California Gold Rush, but the focus on gold overshadows other mined metals, even though these were often necessary for the full extraction of precious metals. For example, before the California Gold Rush,⁹² miners in California were already extracting an essential metal for the reduction of gold and silver ore: quicksilver. Andrew Scott Johnston explains that quicksilver, or mercury, "was valuable for its ability to form an amalgam for gold and silver recovery; ... This property made the control of the production, trade, and use of mercury a

⁹¹ The article concludes by giving advice, which is full of imperialistic, racist language: "And it is also very important that a mining engineer should be something of a ruler of men. He will have tough crowds to deal with, whether white, or black, or yellow, and it may be a long way to the nearest police station." A mining engineer, according to this article, needs to police the region.

⁹² Andrew Scott Johnston explains that "before the discovery of gold, quicksilver was mined in California—the state was the largest producer of the element in the Western Hemisphere, and the single richest mine of any type in the state was a quicksilver mine" (1).

powerful tool for the British merchant capitalists, their partners, and their successors who established the mercury industry in California" (2). Since mercury was essential for the full extraction of precious metals, it is no surprise that new sources of quicksilver were in high demand. The Almaden mine of Spain famously supplied Latin American smelters with much of their quicksilver in the early 1800s, as Alexander von Humboldt explains in *Political Essay on the Kingdom of New Spain* (1811): "New Spain," he states, "consumes annually 16,000 quintals of mercury," which is equal to 1.6 million kilograms (281). By the middle of the nineteenth century, a quicksilver mine in northern California named New Almaden, after Spain's own Almaden, supplied much of the world's quicksilver: "The first mercury mine, and the first commercial mine of any sort in the state, New Almaden, was just south of San Jose and by 1851 accounted for half of annual global production" (Johnston 2). Referring to the famous "Golden State" title of California, Johnston asserts, "California is also the Quicksilver State" (19).

This often-overlooked history of California's quicksilver mining mirrors its obfuscated history of lead mining. The mines in California's silver-lead mining districts of Inyo County, which include Modoc, Cerro Gordo, and Darwin, have yielded millions of dollars' worth of lead. While lead mining was already underway in California by the midcentury, in the 1870s, Darwin's silver-lead mines were industrialized with the addition of numerous smelters, one of which processed "100 tons a day" (Knopf 3). Like mercury, lead was necessary for gold and silver extraction, since it contributed to the "industrial-scale refining" of these precious metals (Johnston 4). As the history of these California mines demonstrates, lead ore was often found alongside silver ore, and in some documented cases, lead ore was first mistaken for silver ore.⁹³

⁹³ One of these documented cases occurred in 1851 in northern California ("Discovery of a Lead Mine in California" 263).

Lead ore, as well as mercury and iron ore, have close and longstanding associations with silver ore, which leads me to describe the main group of metals in this chapter—lead, mercury, iron, and silver—as the "silvery" metals, a term my sources also employ.

As my first chapter focuses on the mill's industrialization and my second chapter focuses on the port's industrialization, this chapter focuses on the mine's industrialization. One key matter that separates the mine's industrialization from the mill and the port is that the mine was a landmark location for the steam engine. Drawing a distinction between the mill's use of steam power and the mine's use of steam power, Elizabeth C. Miller explains that "the earliest steam engines had a narrower purpose: they were built to pump water out of mines" (5). While mining had occurred for centuries, the use of the steam engine led to a "dramatic acceleration" of extraction, beginning in the 1830s (Miller 5). A type of steam engine called the blowing engine further accelerated the smelting of metal ore, since these engines avoided the "fluctuation" of water power, as the London periodical *The Mining and Smelting Magazine* explains in an 1864 issue ("The Metallurgical Processes" 9). Industrial-scale mining in California, especially in the 1850s to the 1870s, included intermittent furnaces, which were akin to an enormous brick oven with a looming smoke stack ("Intermittent Furnaces"). At California's New Almaden, smoke stacks released an amalgamation of smoke from wood fire, as well as the mercury vapors that escaped the distillation process.⁹⁴ Because this reduction process created hazards that were difficult to see, smelting and other forms of reduction feature prominently in this chapter.

Exposure to toxic metals like mercury occurred even in "cold" processing, which was the dominant method in British-owned mines of South America, particularly in the silver mining of

⁹⁴ Johnston explains that New Almaden was a "fully developed industrial center of global importance" by the 1850s (12).

the Andes. The "cold" method that began in the sixteenth century and endured to the nineteenth century used an amalgamation of mercury, crushed silver ore, and water, forming a "torta."

Nicholas Robins explains this disturbing process: "Once the slippery torta had been spread out in the patio, it would undergo the first of many treadings, called the *repaso* process. Here Indians, known as *repasaris*, who were usually barefoot and often immersed up to their knees or thighs, would march systematically through the paste This was done up to five times a day, usually after the sun had somewhat warmed the mass" (86). Since many steps of this refinement process used mercury, the risk of mercury poisoning, as Robins explains, was prevalent and had a devastating effect on the Indigenous population.

The inextricable link between the metals mined in North America and Latin America form the literary and geographical scope of the chapter. While my chapter on mills focuses on northern England and New England and my chapter on ports primarily includes British ports and Caribbean ports, my chapter on mines includes the settings of the American West and South America, with some characters from Central America. Not only were the metals from these two locations amalgamated, but these two geographical regions were also linked through their miners. For example, Barron, Forbes & Co., a British mining company that owned New Almaden until the American Civil War,⁹⁵ "brought skilled miners from Mexico and Chile" for hardrock mining in California; they were "wage" laborers, but Johnston explains this was a form of "bondage or peonage" (13). The two main literary characters in this chapter are the eponymous protagonists of John Rollin Ridge's *The Life and Adventures of Joaquín Murieta* (1854) and Joseph Conrad's *Nostramo* (1904)—the first, a Mexican miner of northern California

⁹⁵ In 1865, Dickens's *All the Year Round* mentioned California's mercury mines: "What's to be seen? would be thus answered. The Big Trees, Eusamity Valley, Napa, and the Quicksilver Mines" (424).

who is forced to leave the trade, and the second, an Italian expatriate who becomes entangled with the fictional San Tomé mine in South America. Both men seek wealth through precious metals and subsequently turn into mining specters. Between these two main sections, I turn to "A California Mining Camp" (1878) by Mary Hallock Foote, whose husband was the mining engineer at New Almaden. I include this interlude for two reasons: first, the 1870s text bridges the temporal divide between the two novels; secondly, the quicksilver in Foote's texts, as a key ingredient for amalgamation, materially connects to the silver in both Ridge's novel and Conrad's novel.

As with my first two chapters, the texts of this chapter abruptly include spectral language within otherwise realist narratives. Hsuan L. Hsu writes that while *Life and Adventures* "blends elements of epic, folk tale, revenge tragedy, and romance, ... historians have often treated it as a factual record"; this interpretation is possibly linked to Ridge's use of numerous newspaper accounts (Hsu xv, xx). The chapter's interlude text, Mary Hallock Foote's observations at New Almaden, was published in *Scribner's Monthly Magazine*, and while she describes the place as haunted, the introduction explains that Foote's descriptions are both "realistic" and "raw" (Perham 478). Lastly, Conrad's *Nostramo* opens with "forbidden treasures" near figures who are "spectral and alive," but Conrad predominantly writes this novel in the realist mode, using material from George Masterman's *Seven Eventful Years In Paraguay*.⁹⁶ As this example begins to show, the abrupt turns to spectral language occur when depicting the body's entanglement with mining, and these haunting intrusions work to make the long, violent histories of extraction visible. I am once again extending Rob Nixon's "slow violence" framework, as well as Ulrich

⁹⁶ Miller reads *Nostramo* as a "novel that unites provincial realism with aspects of the colonial adventure story" (37). Nathan Hensley and Phillip Steer, while examining its realist mode, read *Nostramo* allegorically (75).

Beck's "shadow kingdom" depiction of environmental risk, but now to extraction zones.⁹⁷

Centuries of mining violence become "unspectacular," but mining specters make vivid these haunting histories.

The material specters of this dissertation have taken on various forms of matter, such as gas and liquid. The mill specters of chapter one resemble dangerous air, while the port specters include watery spirits; in this final chapter, the mining specters are dense, like stone. For example, an 1854 account written by S. A. Downer for *The Pioneer* suggests that the miners are solid ghosts. As her observations within the mine suggest, Downer's tour of New Almaden haunted her. Using a candle in the mine, she writes, or "sufficing to make 'darkness visible,' is like opening to us the shades of Tartarus; and the throes elicited from over-wrought human bone and muscle, sound like the anguish wrung from infernal spirits, who hope for no escape" (223). These "infernal spirits" are dense, as they are "over-wrought human bone and muscle." The metallic specters that follow—formed of lead, mercury, iron, and silver—also find themselves becoming part of the haunting underworld of the mine.

Spectral Amalgamations in Ridge's *The Life and Adventures of Joaquín Murieta*

Joaquin Murieta, a character who rides on a "spirit-steed" and can only be killed by "a silver bullet" (120), haunts the mining towns of California—towns that John Rollin Ridge knew well and that his "mining country audience" would have recognized immediately (Goeke 453). Ridge himself had attempted to mine when he fled to California from Arkansas in 1850, having

⁹⁷ Both Nixon's and Beck's arguments focus on visibility and industrial pollution; Nixon explains that "the insidious workings of slow violence derive largely from the unequal attention given to spectacular and unspectacular time" (6). He, like Beck, occasionally uses haunting language to describe environmental risk. Beck writes that the "shadow kingdom" of risk "is hidden behind the visible world and threatens human life on this Earth" (72).

killed a man who supported the assassinations of his father and grandfather, Cherokee leaders who signed the Treaty of New Echota in 1835, which "established a basis for forced removal" (Hsu xvii). In *Life and Adventures*, which was published under the name Yellow Bird, Ridge's Cherokee name, Murieta is also forced to flee on numerous occasions. Moving between California's coastal mining towns to the mining regions of the foothills, as well as to Southern California, Murieta moves between the quicksilver mines of San José and the silver and gold mines of Calaveras, Mariposa, Stanislaus, and Santa Barbara County, mirroring the transportation of quicksilver to locations of precious-metal processing. Much like mercury itself, Murieta is, as Hsu explains, "elusive" and "difficult to pin down" (xv). The mercurial Murieta is not the only specter of metal mining in Ridge's novel; from the arrangement of events to the characters' compositions, Ridge's *The Life and Adventures of Joaquín Murieta* is fully shaped by the mines of California.

While the violent assaults on Murieta end his mining endeavors early in the novel, his robberies throughout the novel involve stealing from miners, and so he essentially extracts what they have already mined.⁹⁸ The novel begins with Murieta mining in the Stanislaus placers, but after a group of "Americans," a "band of ... lawless men" brutally attack Murieta and his wife, Rosita, they leave "for a more northern portion of the mines" (9-11). When Murieta "went again to mining," Americans again attack him—this time killing his "half-brother" (12). Murieta no longer mines the earth after this second attack; instead, he robs miners. From this point onward, Ridge emphasizes that Murieta specifically targets miners, beginning with his first robbery, where Murieta spots, kills, and then robs "travelers, laden with the produce of the mines" near

⁹⁸ A comparable phenomenon occurs in treasure-hunting novels of the nineteenth century, such as *Treasure Island*, as Miller elucidates in *Extraction Ecologies and the Literature of the Long Exhaustion*.

Calaveras County's "Murphy's Diggings" (13). While this area—now Murphys, California—is primarily known now for gold mining, it was also known for its silver and lead mining, and so these miners may have been "laden" with any combination of these.

At times, Ridge makes the robbery's setting seem like a mine, which further makes Murieta's theft appear like mineral extraction. On the way to San Gabriel, the group robs "two helpless Chinamen" in a mine-like cavern, a "dark hollow, walled on each side with precipitous rock" (42). Within this setting, Murieta uses mining tactics. Since "their picks and prospecting pans showed them to be miners," Murieta and Three-Fingered Jack extract their precious metals, which they first do by "giving their pockets an examination," which suggests an excavation (42). Ridge writes that Three-Fingered Jack "told [one of] the terrified Chinamen to 'shell out,' or he would blow a hole through him in a minute" (42). On more than one occasion, Three-Fingered Jack uses this phrase, "shell out," which evokes the removal of an interior from its shell, to dig out the interior goods; indeed, contemporary American authors used "shell" to refer to mined spaces.⁹⁹ If the two men refuse to "shell out," Three-Fingered Jack will "blow a hole" through them, which is comparable to a miner's use of explosives, primarily black powder, which makes the reference to mining even clearer, since Three-Fingered Jack's rifle likely also relied upon black powder.¹⁰⁰ Angered by the small amount the miners have, the low yield of this extraction, Three-Fingered Jack brutally murders them by slitting their throats. When Rosita asks Murieta when his "dangerous career" will end, he answers: only after obtaining "an equivalent" of his stolen wealth, the wealth he had accumulated through mining (26). Murieta equates the mining of the earth to his robbing of miners.

⁹⁹ Foote is one of these authors: "the shell is constantly sinking" at New Almaden, which concerns her greatly (480).

¹⁰⁰ In 1854, TNT and dynamite had not yet been invented.

This series of events—finding, robbing, and then brutally murdering miners—repeats in Ridge's novel, and so the mining landscape of California shapes the novel's arrangement of events, since Murieta goes from mining town to mining town to locate these miners. In the mining regions of San José, Mariposa, Calaveras, and more, locating "mining utensils" makes the group descend on their victims, most often Chinese men, "for the purpose of plunder" (54). And while the yields are often small, they sometimes locate a rich vein—as they do upon a return to Calaveras County—when they rob and kill two miners for their "heavy bags of gold dust" (61). At one moment in the novel, in its conflation of robbing and mining, Murieta refers to mid-nineteenth-century mining legislation of California. Right before robbing a Dutchman who had "honestly labored six months in the mines" (118), Murieta's group targets German miners. When only given a "pitiful sum," Three-Fingered Jack uses mining language, as he threatens to dig further: he "declared that he would dig their hearts out of them" (112). Murieta had previously attempted, and failed, to dissuade Jack from violence like this, but at this moment he is successful: "Joaquín, however, interfered and prevented him from executing his threat, remarking that it was better to let them live as he might wish to collect taxes off of them for 'Foreign Miners' Licenses' at some other time" (112). Murieta here refers to the Foreign Miners' Tax Law of 1850, which, Jesse Alemán explains, was a twenty-dollar monthly tax on miners who were "Mexican, Mexican American, and Latin American" (81); Hsu notes that California would later enforce this against Chinese miners (xviii). Harry J. Brown observes that "the law exempted German, Irish, French, and Australian immigrants and implicitly encouraged persecution of nonwhite Californians" (131). When Murieta states that he might "wish to collect taxes off of them," he shows his awareness that California is not collecting the tax from these

Germans, while California would collect a tax from Murieta, if he were still mining. Moreover, Murieta equates the taxation of Mexican miners to a form of robbery by the state.

When Murieta or the other bandits murder someone, the mines serve as ideal locations to discard bodies. Beyond having miners to rob, another reason Murieta selects mining towns as his "theater of ... operations" (94) is because nearby mines could conceal bodies, and they were also locations of anticipated lethal accidents, which made the mine a well-suited location for those brutally murdered by Murieta and his crew. For example, when Murieta murders one of the Americans who attacked him in the novel's opening, Ridge writes that "it was not long after this unfortunate affair that an American was found dead in the vicinity of Murphy's Diggings" (12). Notice Ridge's passive voice,¹⁰¹ "was found dead," as if the only known fact about the death is the connection to "Murphy's Diggings." Notice also that the description of the person's remains makes it seem as if he had died in a mining accident: "Though horribly mangled, he was recognized as one of the mob engaged in whipping Joaquín" (12). The word "mangled" appears in numerous nineteenth-century accounts of mining accidents, such as a report from the aftermath of an accident in 1876 in Pennsylvania within *Reports of the Inspectors of Mines*: "they were mangled almost beyond recognition" (16). Ridge's word choice further shows that a mangled body at Murphy's Diggings fits the mining setting, since Ridge also emphasizes "recognition."¹⁰² The word "mangled" goes hand in hand with recognition, for "to mangle" means to injure through "repeated blows," resulting in a "more or less unrecognizable condition" ("mangle, v.1"). The "repeated blows," or impacts, of the mine include cave-ins and falls. Lethal

¹⁰¹ On Ridge's use of passive voice, see also Hsu's "Introduction," p. xxv.

¹⁰² Ridge also describes "mutilated" remains being left by a quartz mill, which is also arguably a fitting location, for the numerous accounts of mills mutilating workers (106). See also Miller's discussion of "mangled" miners in the context of Fanny Mayne's *Jane Rutherford: or, The Miners' Strike* (1854), p. 59.

cave-ins in Calaveras occurred every few years; or, the county recorded them every few years. According to the Calaveras Clerk Recorder archives, cave-ins that resulted in deaths are listed at least four times from the 1850s to the 1870s,¹⁰³ and the same record includes "mining accident," which appears from the 1850s to the 1930s ("Inquest"). In addition to these listings, two other categorizations that appear in the 1850s and 1860s may well connect to the mining industry: "accidental" and "suffocation." In addition to the Calaveras County mines, Murieta's crew selects the vicinity of a Santa Barbara mine to discard a body; Jack throws remains "over the rocks," and the next evening a group of miners bury the bodies "with picks and shovels" (52). With the same equipment they use to mine, they readily and quickly bury the body, as if burying bodies near the mine has regularly been a part of their practice.

The mines also serve as ideal locations for Murieta and his fellow bandits to hide themselves. Repeating the line, "a fine theater for his operations" (72), Ridge describes Calaveras mining: "the picks and shovels of a thousand miners were busy" (72). While this portion of the narrative is not yet explicitly supernatural, it is worth analyzing this line's spectral connotations, as Ridge makes it seem like the mining equipment is moving on its own, as if cast by a spell. Entering an abandoned mine for their hiding place, Murieta's men enter a haunting underworld: "long tunnels, dimly lighted with swinging lamps or flickering candles, searched far into the bowels of the earth for her hidden secrets" (72).¹⁰⁴ Reis, one successful robber of Murieta's group, chooses a tunnel for himself, only coming out of the tunnel when hidden by nightfall: "Reis had managed most cunningly. Hid in an old abandoned tunnel ... All his thefts and

¹⁰³ These are the years listed in the Calaveras records: 1857, 1859, 1876, and 1879 ("Inquest").

¹⁰⁴ For a discussion of mines and mining maps described as women's bodies, see Anne McClintock's *Imperial Leather: Race, Gender and Sexuality in the Colonial Context*, p. 241, also see Miller's *Extraction Ecologies*, p. 127.

robberies had been done in the night" (84). Working out of this tunnel, Reis becomes not only nocturnal, but also like a specter of the underworld: "One moonlight night at the hour of twelve when silence had fallen upon the world of mountains, woods, and valleys, and all quiet spirits were asleep, Reis issued from his tunnel, three hundred feet under ground" (85). Ridge's juxtaposition of "quiet spirits" and Reis suggests that Reis is a spirit now awakened, coming forth from the deep—a considerable depth, in fact, that Ridge then emphasizes. After Reis kidnaps a woman and brings her to their hideout, she finds escaping to be impossible, for she could not see, and she feared falling to her death; Ridge explains, "she might be stepping off into some deep abyss below" (89). Until Murieta arrives and declares she can leave, the fear of merging her body with the rocks below keeps her within the outlaws' control.

In their proximity to the mines, the crew becomes one with the mines. In other words, in *Life and Adventures*, mining dictates the plot as much as the mines' metals infiltrate the characters' bodies. I begin with a focus on lead, which was being mined in northern California when Ridge published this novel, as an 1851 notice in *Hunt's Merchants' Magazine and Commercial Review* suggests: "The *Sacramento Transcript* states ... a large mine of lead, in almost a pure state" was discovered by two Irishmen ("Discovery of a Lead Mine in California" 263).¹⁰⁵ Like quicksilver, lead has longstanding associations with silver, since lead often pointed to the existence of silver ore. The notice continues: "it is fair to presume that the ore contains a fair proportion of silver, the latter being generally found to a greater or lesser extent in all lead mines" ("Discovery of a Lead Mine in California").¹⁰⁶ In the aftermath of this unearthing, Ridge

¹⁰⁵ Ridge was the founding editor of the *Sacramento Bee*, a fact that was brought to my attention by Jonathan Radocay.

¹⁰⁶ In a later example of lead and silver ore, Rossiter Worthington Raymond writes of "lead-veins, rich in silver" in the 1874 publication *Statistics of Mines and Mining in the States and Territories West of the Rocky Mountains* (8).

includes two references to molten lead merging with characters' bodies. The first concerns Rosita, Murieta's wife. When "the people of Los Angeles" hang Rosita's seventeen-year-old brother, Reyes Feliz, who was "arrested ... and charged with being a party to the assassination" of a general, her shock manifests in a metallic sob: "the storm of her grief poured itself forth in fast and burning drops, which fell like molten lead upon her lover's heart" (47). Lead, a heavy metal, appositely describes the heaviness of Rosita's grief as well as the weight of her tears. Being her tears, the lead pours out from her body, as if her tear glands had already been filled with this bluish-gray metal.

In contrast, another woman in the novel turns lead into a weapon. When a widow named Margarita enters her second marriage with a member of Murieta's crew, Guerra, she finds him to be "brutal," at times "giving her a wholesome thrashing" (71). When she kills Guerra, she pretends that she is content in the marriage and she mourns him when he is found dead: "She submitted to the infliction with great apparent humility, but the next morning at breakfast time when Guerra was called and did not come, several of his companions went into his tent to arouse him and found him stone-dead" (71). Ridge's choice of "stone-dead" fits the mechanics of his murder, as Margarita had used an extracted metal for her weapon: lead. Ridge explains, "But the fact of the case was, that unconscious sleeper had received at midnight just one drop of hot lead into his ear, tipped from a ladle by a small and skillful hand" (71). With only "one drop of hot lead" entering his body through his ear, Guerra dies quickly and silently. Since Margarita marries again within Murieta's group of bandits, she successfully keeps this murder a secret, meaning that the "fact of the case" is only known by her, the narrator, and readers. As with Rosita's lead tears, metal and Guerra's body merge, and both instances are associated with death.

With Guerra's death, Ridge highlights that molten lead is dangerous, which encourages a re-reading of Rosita's tears as a dangerous substance, too. While there are gruesome historical accounts of deaths-by-molten-metal, Ridge's focus on just "one drop" emphasizes, and even dramatizes, the lethal power of lead. Citing studies of the 1830s, Michele Augusto Riva et al. explain that industrialization led to frequent lead exposure and a greater understanding of lead poisoning: "Only during the beginning of the 19th century have scientists clearly understood the mechanisms of lead poisoning by dietary intake," and it was only then that "a full awareness of the chronic damages related to lead poisoning was ensured" (13).¹⁰⁷ Riva et al. include a section on mining in their discussion of lead poisoning, illustrating with an eighteenth-century example that the mining and smelting of lead turned the metal into dust and vapor, respectively, both of which easily enter and harm the body (12). While Guerra's death is not from repeated exposure to lead dust in a mine, the lead Margarita uses does resemble lead's molten state during smelting; further, Guerra's death mirrors a key aspect of lead poisoning: cognitive damage, which was key in the first half of the nineteenth century in understanding lead's devastating effects. For example, Tanquerel des Planches (1810-1862) coined the term "encephalopathy" to name the "neuropsychiatric manifestations of lead poisoning" (Riva et al. 13). Ridge's description of Guerra's death suggests that the molten lead, just "one drop," kills him by making its way to Guerra's brain through his ear. Rosita's own, dangerous lead tears, dropping on Murieta's chest, will later inform my reading of the "silvery" Murieta.

The source of Margarita's "drop" of lead was likely a melted bullet, and as Ridge continues to show, characters' bodies in *Life and Adventures* fill with mined metals when they

¹⁰⁷ In the United States, physician T. D. Mitchell wrote a landmark study titled "Practical notes on lead poisoning" in the *Western & Southern Med. Recorder* in 1841.

are shot and when they are stabbed. Not to be confused with the molten metal that kills Guerra, "hot lead" appears at least twice in Ridge's novel to describe flying bullets. First, "a piece of hot lead" grazes Reis's cheek; next, near Angel's Camp, a group of Americans locate Murieta and "poured hot lead into his midst" (110). In both passages, the "hot lead" misses the target, but pistol balls in Ridge's novel often do gruesomely fill bodies. In Yuba County, a sheriff dies this way: "they were attacked from behind by three Mexicans who had been hid, and the sheriff was severely wounded with a pistol-ball" (20). Here, Ridge puts the blame on the pistol-ball through his sentence's structure, as he does when Murieta kills a character named Wilson: the "pistol-ball penetrated his skull" (41). In these two examples, Ridge obfuscates Murieta's responsibility, as if the metal has a power of its own. In contrast, Ridge places the emphasis on Three-Fingered Jack when he robs and murders individuals, such as his murder of General Bean. After stabbing him three times with a "glittering bowie-knife," Three-Fingered Jack fills General Bean with metal, "discharging two loads from his revolver into the lifeless head" (43). This moment not only shows Jack's monstrous violence—the topic I turn to next—but again serves as an example of bodies merging with the metals extracted from California. Jack's knife, too, demonstrates the metals of the American West merging with flesh, since the "glittering" knife, we previously learn, is a "silver-mounted bowie-knife" (27). Silver also shows up on the guns that contain lead bullets, since they are "silver-mounted rifles" (62)—again illustrating the juxtaposition of lead and silver ore.

When metal merges with the body, Ridge explains, ghostly apparitions arise: "Every one must know," Ridge explains, "that death from a bullet flings a sudden and extreme paleness over the countenance" (79). One character Ridge continuously describes as supernatural is Three-Fingered Jack, who is marked by violence beyond the loss of his two fingers. He has also been

riddled with bullets, particularly on his face: "his face and forehead [are] scarred with bullets ... and his intensely lighted eyes [glare] maliciously, like caverned demons" (73). Jack's face, marked by lead bullets, reveals the violent impact of mined metals; his cave-like eyes similarly reveal that he is a specter of the underworld. While Ridge repeatedly describes Jack as monstrous, such as "detestable monster" and "bloody monster" (15, 73), he also uses a host of other names and descriptions that further associate this monstrous character with the underworld, such as "old Satan himself," one with "hellish ghastliness," and a "horrible-looking devil" (73, 15, 42). The mine was associated with hell and other underworld mythologies,¹⁰⁸ as my analysis of Ruskin's *Ethics* began to show. In the "Valley of Diamonds," there is a king "sitting on his throne," and this is, Ruskin explains, none other than Satan himself (215). Like the perilous mine, Three-Fingered Jack mangles a multitude of California miners, and he finds demoniacal pleasure in ending their lives. Even after death, Three-Fingered Jack and Murieta remain lingering specters through their preserved body parts: Jack's hand and Murieta's head. While it would seem that Murieta's head would be more haunting for viewers, it is actually Jack's hand that causes immense fear. The hand gave "the public the actual sight of an object which had flung a strange, haunting dread over the mind, as if it had been a conscious, voluntary agent of evil" (135). More than once, Murieta attempts to dissuade Jack from killing miners, but with little success; Jack, a specter of the underworld, could be satisfied with nothing short of their deaths.

The character Ridge describes most frequently as metallic is his eponymous protagonist, Murieta. Notably, in the passage where Rosita cries lead tears, those tears fall on Murieta,

¹⁰⁸ For more examples of nineteenth-century connections between mines and underworlds, see Miller's *Extraction Ecologies*, especially pages 149, 150, and 152.

making him covered in lead: "like molten lead," the tears fall, "upon her lover's heart" (47). Murieta's own transition to a metallic being occurs early in the novel when he first begins mining: "The first we hear of him in the Golden State is that," Ridge explains, "in the spring of 1850, he is engaged in the honest occupation of a miner in the Stanislaus placers, then reckoned among the richest portions of the mines" (8). Again, while Ridge may at times stress the "Golden State" in this novel, silver is actually his focus here. This precious metal merges with Murieta's body, or at least enters his throat at this point. Ridge writes of Murieta's "silvery voice full of generous utterance" (9),¹⁰⁹ a phrase that characterizes Murieta before the attacks, before his transformation. The phrase also foreshadows his transformation, since Ridge's use of "silvery" rather than simply "silver," evokes other "silvery" metals, like mercury, lead, and iron—all metals that become associated with Murieta as he seeks his revenge.

The violence Murieta endures and witnesses in the narrative's opening transforms his metallic composition. Iron—which has the appearance of silver, but can easily rust—now enters his body. After the first attack, his "soul ... darkened," but "his spirit was still unbroken, nor had the iron so far entered his soul as to sear up the innate sensitiveness to honor and right which reigned in his bosom" (10). Having hot iron enter his soul, in other words, would scorch Murieta, destroying his empathic capabilities. After the second attack, the iron fully enters and scorches his soul: "the iron had entered too deeply in his soul for him to stop here. He ... was determined to shed their blood" (13). Ridge's use of a scorching iron certainly points to a cauterizing effect on Murieta. Iron, a "silvery-grey" metal, also evokes the figurative meaning of "inflexibility," and was used in 1850s literature to show toughness¹¹⁰ ("iron, n.1"). While iron's rigidity is

¹⁰⁹ See also Miller's reading of the "brassy voice" in Dickens's *Hard Times*, p. 66.

¹¹⁰ Henry Wadsworth Longfellow's narrative poem *The Courtship of Miles Standish* (1858) includes the line, "Broad in the shoulders, deep chested, with muscles and sinews of iron" (12).

important here, the iron of Murieta's soul also evokes shackles, and indeed the phrase "the iron entered into his ... soul" has been frequently used, according to the *Oxford English Dictionary*, to mean one who is "permanently affected by captivity, affliction, or ill-treatment" ("iron, P1"). The mining context of this passage points to another reading, which also connects to Murieta's "silvery" interior. Iron can withstand high temperatures without alloying with gold or silver, and it was also, as a *Scientific American* article in 1852 explained, "ruinously cheap" (186), making it the metal of choice for molding other metals, including silver and mercury. S. A. Downer's 1854 article for *The Pioneer*—the same year Ridge published *Life and Adventures*— explains that New Almaden used iron to shape their mercury; furnace laborers ladled the molten mercury into the cast iron to create the desired shape (225). Cast iron, like the iron of Murieta's soul, rigidly shapes the metal in its grasp, and since Ridge describes Murieta as "silvery," he is appositely shaped by iron.

Murieta is also "silvery" from his associations with mercury. By the end of the novel, silver, lead, and iron have infiltrated the bodies of Murieta and his crew, but the story repeatedly includes San José, meaning that the story revolves around quicksilver mines. When one of his men, Luis Vulvia, is arrested and nearly hanged, Murieta pretends to be a merchant from the San José mines, which had, at this point, become synonymous with quicksilver. New Almaden, south of San José, was one of the largest producers of mercury in the world when Ridge wrote *Life and Adventures* (Johnston 2). Even while New Almaden was and remains one of the most famous quicksilver mines of California, quicksilver mines ran north and south of San José. Rescuing Luis from the noose, Murieta explains to the judge, "I am a merchant and packer in the town of San José, and I am just now on my return from the more northern mines" (82). Murieta does not

even need to explain the type of mine he references; readers would have assumed these were the famous and lucrative quicksilver mines. The judge appears to make this assumption, as well, immediately releasing Luis, influenced by the powerful sway of a so-called quicksilver merchant.

Through his metallic transformation, Murieta's power increases and he then becomes associated with the supernatural. It is on his "spirit-steed" that Murieta appears "super-human," as he is, at least for the moment, "untouched by a ball," taunting those trying to kill him: "I am Joaquín!" he yells, "kill me if you can!" (76). Part metal, he is attuned to the mining landscape, as in one shootout when Ridge describes him as "leaping and plunging" through the "holes and ditches" that had been "dug up ... by the miners" (104). Even when his enemy, Prescott, successfully shoots him, he does not fall: He "discharged both barrels of his shot-gun into Joaquín's breast, and was amazed to see him stand firm after a momentary stagger and return the fire" (121). Murieta survives these shots, and spends the next three weeks picking "buck-shot from his breast" (122), essentially mining the metal from his flesh with no consequence to his health. What had made Murieta resilient in the face of these shots? Ridge gives a clue in a previous section, which aligns Murieta with the supernatural: "the vampire of despair was sucking his heart's blood" (92-93). His heart, where Rosita's lead tears had fallen, now has a vampiric presence, and as a bite from a vampire can transform the victim into another vampire, so too, does Murieta take on a vampire's characteristics—a fitting supernatural figure for extraction. Ridge marks Murieta's vampiric transformation when he notes that nothing "but a silver bullet" can kill him, and Rosita, early in the narrative, anticipates a supernatural end for Murieta: "she knew the secret history of his soul, his sufferings, and his struggles with an evil

fate" (120, 26). The "secret history of his soul," we had previously learned, was that metal had entered and transformed him.

All along, as Ridge describes the iron entering Murieta's soul or when he describes Rosita's lead tears, he was considering the atomic composition of their bodies. "In his newspaper writings," Hsu explains, Ridge "endorsed amalgamation and cultural assimilation as the best path forward for Native Americans" (xix). As I have shown, Ridge's uses of California mining settings suggest another sense of "amalgamation": the merging of mercury with precious metals, which is another reason the mercurial Murieta is associated with the silver bullet. Like Ruskin, Ridge's discussion of mining leans into the mysteries of atomic matter, as he describes the composition of the earth and the body at the microscopic level. At one point, Ridge's atomic language uncannily mirrors Ruskin's from *The Ethics of the Dust*: "His soul swelled beyond its former boundaries," Ridge writes of Murieta, "and the barriers of honor, rocked into atoms by the strong passion which shook his heart like an earthquake, crumbled around him" (12).¹¹¹ Later, Ridge echoes this earlier articulation: "but the eternal God allows no fragment of our souls, no atom of our dust, to be lost from his universe" (48)—a striking statement for Ridge to make within a novel depicting frequent and gruesome deaths.

These grisly deaths—being spectacles and most often occurring within targeted, vulnerable communities—complicate Ridge's use of the mining specter. Murieta's "silvery" components actually make him more powerful at times, rather than deteriorate his health, in contrast to many of the other specters of this chapter and project. To what extent, then, can the figure of Murieta align with the miners of California, who suffer drawn-out deaths by lead or

¹¹¹ For a vitalist reading of metal, which resonates with Ridge's statement on atoms, see Jane Bennett's chapter "A Life of Metal" in *Vibrant Matter*: "a metallic *vitality*, a (impersonal) life," Bennett observes, "can be seen in the quivering of three free atoms" (59).

mercury poisoning? Rather than depict a slower time-scale, Ridge shows metals in *Life and Adventures* quickly merging and killing victims. Murieta also attacks miners, especially Chinese miners, who were already targeted by the Foreign Miners Tax. Ridge's text may underscore the representational challenge of depicting the mine's "slow violence," but his spectacular and troubling murders displace the violence of extraction in many ways. In Ridge's indirect approach to mining violence, he obfuscates the most vulnerable.

The Quicksilver Specters of Foote's "A California Mining Camp"



Fig. 3.1: Mary Hallock Foote's "Dump of the Great Eastern Tunnel," 1877, Library of Congress

Like Ridge, Mary Hallock Foote approached the metallic mining specters of the American West indirectly, or through suggestion, and this was true in both her writing and her illustrations. Foote's narratives about the American West's mining communities were often accompanied by her illustrations, as was the case with "A California Mining Camp," which she published in *Scribner's Magazine* in February of 1878. Of this piece's many illustrations, "Dump of the Great Eastern Tunnel," which she completed in 1877, best portrays miners becoming one

with their mining environment. Foote captures New Almaden, the quicksilver mine in the Santa Cruz mountains south of San José, in ink wash, which, because of the water content of this technique, tends to blur lines, creating two haunting figures that are difficult to decipher. Exactly where the miner's body in the center of the illustration ends and where the refuse from the quicksilver mine begins is unclear. A second miner, left of center on the mound, appears to be crouched down, nearly kneeling, on the crushed waste. It is likely that the two miners are not actually dumping crushed rock at this location; instead, Foote is probably illustrating the men mining this dump for additional mercury. By 1877, the Great Eastern Tunnel was "thought to be exhausted" (Bailey and Everhart 135), but the "rejected material" at New Almaden dump sites were "reworked many times" (Bailey and Everhart 180). Either way, whether the men are shoveling the mined material onto the dump or taking material out of the dump, they are coming in contact with cinnabar ore—ore that, having been crushed, disperses dusty particles of mercury that enter the miner's bodies. As shown by the illustration, the mining activity at New Almaden forms quicksilver specters, but Foote does not address the "dump" or the Eastern Tunnel in "A California Mining Camp," nor does she identify the miners. Foote explains she is haunted by the transforming landscape and the miners' deaths, but the details she withholds are some of the most haunting aspects of the text.

In 1876, Foote traveled from New York to join her husband, New Almaden's chief engineer, Arthur De Wint Foote, whom the Quicksilver Mining Company had recently hired. Their living quarters situated her within sight of much of the mine's activities. As Darlis A. Miller explains, for just over a year, the couple "lived in a small company-owned cottage" that was between the miners' camps, which were in the direction of the mine, and the company's headquarters, which was in the direction of the reduction works (42). Foote observed and

documented workers on the move, noting when laborers—"people of every nationality" (Foote 486)—made their way to the furnaces and when they went down into the mine. In her letters to friends back in New York, Foote wrote about the Quicksilver Mining Company's mistreatment of miners, but felt it was "useless to make public their complaints ... and the miners feared to speak out" (D. Miller 56). In 1877, Arthur quit, and they moved to Santa Cruz.¹¹² They left New Almaden before the publication of "A California Mining Camp," a text that reveals she remained wary of publically critiquing the Quicksilver Mining Company even after her spouse was no longer employed by them.

Foote's criticisms in the text instead focus on the landscape and mines themselves. She describes the mines at New Almaden as a threatening space, and suggests that they have an ominous, supernatural quality. Foote is not only worried about active mining shafts, but also the abandoned ones: "besides the danger of being lost, is that of wandering into some disused 'labór,'¹¹³ where the rotten timbers threaten a 'cave'" (480). Foote had good reason to be fearful of falling into these, as New Almaden had a "bewildering maze of tunnels" (Johnston 9). Foote never documents any venturing into the space of a labór of New Almaden, and as she explains witnessing miners disappear into them, she reveals that she also considers the mine to be a supernatural space: "It gives me a strange feeling," she explains, "to see the miners go down into the underworld. The men's heads show above the top of the 'skip,' the bell strikes, the engineer moves a lever, the great wheels of the engine slowly swing round and the heads disappear down the black hole" (480). As Foote here describes the miners as descending into a hellish space, she

¹¹² They would continue to move to other mining locales, including to the "Silver Valley," specifically Coeur d'Alene, Idaho.

¹¹³ Foote here refers to the labóres, which translates to "labors," and are the large, excavated spaces of the mine.

is the most forthcoming with her own attitude towards the scene: it gives her a "strange feeling" (480), but this is as far as her explicit judgment goes. The engineer who lowers the miners appears like one cog in a great mining machine; because a "bell strikes," they push the lever, which then makes the wheels move. It is the mine itself, this "underworld," that appears haunting in this text.

In the year that Foote lived at New Almaden, she also documented the area's seasonal transformations, and in these portrayals, she shows that New Almaden's "dust" takes over the landscape when there is a lack of rainfall. As summer heads into fall, Foote describes the invasive dust that envelopes them: "toward the close of the dry season ... brown and dusty August burns into browner, dustier September" (488). Foote continues, explaining that the dust becomes worse the further into the "dry season" they get: "Every day the dust-cloud grows thicker in the valley, the mountains fade almost out of sight against a sky which is all glare without color" (489). The plumes of "dust" that Foote describes are "thicker" in the "valley,"

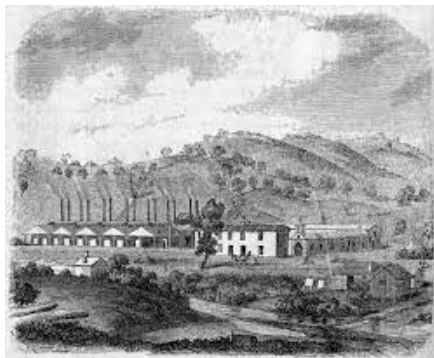


Fig. 3.2: James M. Hutchings's "Quicksilver Mines," 1862

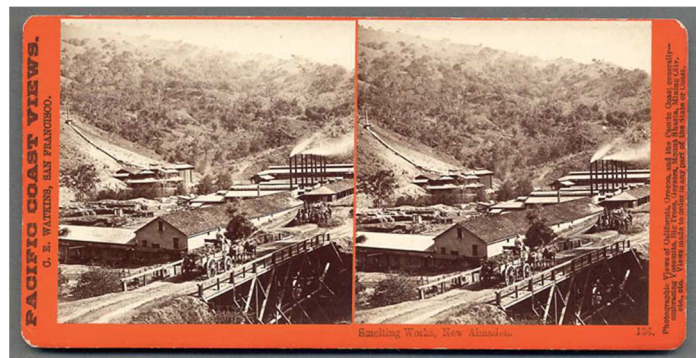


Fig. 3.3: Carleton Watkins's "Smelting Works, New Almaden," 1863

which is also where New Almaden's reduction works, the smelting furnaces, were located.¹¹⁴

While she does not explain this, the "dust" Foote describes, I argue, includes the particulate

¹¹⁴ The brick structures of these furnaces remain there today and can be viewed a short distance from the New Almaden Quicksilver Mining Museum.

matter dispersed from these furnaces, which, even though it was financially disadvantageous for the Quicksilver Mining Company since they lost refining materials and their project, included arsenic and mercury.¹¹⁵ As shown by both James M. Hutchings's 1862 illustration, "Quicksilver Mines," and Carleton Watkin's 1863 photograph, "Smelting Works, New Almaden," the plumes of smoke from the furnaces settled into a haze by the nearby mountains. Over a decade after these images were produced, Foote's description shows the intensified haze at a moment when New Almaden became "one of the world's largest producers of quicksilver" (D. Miller 42): the "mountains fade almost out of sight" (Foote 489).

Like her depiction of the mines themselves, Foote's portrayal of the valley's dust takes on a surreal valence. Foote writes that when the "dust-cloud in the valley becomes a bar of color stretching across the base of the mountains," the "constantly changing hues made them look like something unreal" (489). The "bar of color" is indescribable, and so Foote's use of "something unreal" reveals her grappling with the description of the atmospheric transformation: "every day it seems like something one has dreamed of" (489). The dream-like quality of the landscape, for Foote, is nightmarish. The "unreal," artificial quality of her surroundings, she implies, is brought on by the industrialization of the landscape. In this stifling atmosphere, the birds are quiet, or have left entirely: "no birds chirp and twitter themselves to sleep" (489). But there is a distinct sound she hears: "the stillness is only broken," Foote explains, "by the dull throbbing of the engine like a stifled breath in the distant shaft-house" (489). This comparison is an oblique critique of the mining operations at New Almaden. The simile, "like a stifled breath," is a

¹¹⁵ In her article for *The Pioneer*, Downer explains that, at times, New Almaden used "large cylinders or even wooden boxes" and so some "quicksilver escaped" or was lost by "evaporation" (225). Furnace workers had to keep replacing parts of the furnace's brick encasings in attempts to prevent mercury and arsenic from escaping (Downer 226).

suggestive comparison to the engine's sound, since it connects steam power to deaths at the mine. Foote's use of "throbbing" to personify the engine suggests a quickened pulse, which results in the "stifled breath": the accelerated engine threatens life.

By the end of the text, after describing and illustrating New Almaden's shocking transformation, Foote nearly states that she knows the landscape is not fully at fault for the deaths that fill New Almaden's cemeteries. In one final surreal description, on the last page of the sketch, her use of personification suggests that the surroundings are being forever shaped by human forces: "these mountains," she confesses, "are beginning to have a human expression as I watch them day after day" (493). While Foote here refers to the mountain faces themselves, the furnace smoke and mining dust enshrouding them have also become the landscape's "human expression."¹¹⁶

Life cannot flourish at New Almaden, as shown in Foote's repeated remarks about the birds as well as the surrounding lack of plant life. Anticipating Rachel Carson's *Silent Spring*, Foote writes that even when spring arrives, "there is no chorus of birds" and "grass is like a miracle, growing out of places that looked as if they had been sowed with salt" (487, 493). Any colorful vegetation that may have brightened the hillside has "faded into the same dull, gray pall, which, to the valley stretched beneath, is never anything more" (489). No matter the season, in other words, the valley remains gray, having been transformed by mining. In a phrase suggesting mining's destruction, Foote calls this "earth-shock weather" (489). The "sounds and sights" of spring, including the birds, the blooms, and even the "rushing of the stream" are no more, Foote

¹¹⁶ On this "human expression" on the landscape, see also Tobias Menely's *Climate and the Making of Worlds: Toward a Geohistorical Poetics*, which describes the Anthropocene as "human world making" (8).

writes, and can only now "haunt the memory" (489).¹¹⁷ It is not the current landscape that Foote describes as haunting here—that is a dream-like landscape. The flora and fauna that were once there, what could still be but no longer remains, haunt Foote.

Since the landscape can no longer support life, Foote fittingly next describes the graves of New Almaden, explaining that the land is filled with dead laborers.¹¹⁸ Foote describes a Christmas-day walk to a New Almaden cemetery, which was on the hillside; in her description, she juxtaposes the smoke-filled environment and the dead: "The valley was filled with haze. The mountains had withdrawn themselves into fainter outlines against the sky. Columns of smoke from burning stubble-fields rose and floated away over the valley.... I took a long walk ... where there are some lonely graves" (492). She later repeats "lonely graves," explaining again that the land appears surreal: "the whole country lay in a sort of trance, there were the lonely graves, each with its wooden cross slanted by the wind, and its rude fence to keep stray donkeys and cows from trampling what lay within" (492). While the mining depths at New Almaden ever increased, the dead had only shallow graves, as shown by Foote's description that remains could be easily trampled. Foote's remove from the dead, as shown by her phrase "what lay within," matches her peculiarly worded remark: "It is a sadness which comes from a perpetual lack of sympathy between Nature and the pitiful creatures whom she so grandly and calmly refuses to recognize as her children" (492). The "pitiful creatures" of the cemetery had been refused by

¹¹⁷ Connecting to Foote's stream reference, fishing is currently not allowed at New Almaden Lake, due to high mercury levels: "Operation of the New Almaden Mine released injurious amounts of mercury into the Guadalupe River watershed and south San Francisco Bay" ("New Almaden Mine"). On mining and seasonal temporality, see Miller's *Extraction Ecologies*, p. 27.

¹¹⁸ In a 2009 article from the *Mercury News* titled "New Almaden cemetery traces ghastly history," Stephen Baxter describes the haunting history of these graves: "the boundaries of the cemetery were not known for many years, and nearby houses likely were built on top of graves. Because of the graves, some believe that a few of the structures on Bertram and Almaden roads are haunted — and deeds to some of the homes contain warnings of spirits."

"Nature," which here suggests that those in the cemetery died from their encounters with "Nature," or with the mine. Foote casts the blame on "Nature" in this configuration, and notably does not say that she, or anyone else, is saddened by the deaths: rather, "It is a sadness," she states (492).

In another example of blaming "Nature," Foote writes of the laborers' proximity to mercury dust and mercury vapor. Transporting the crushed ore was done by human and mule labor: Foote explains, "the quicksilver ore was carried in leather sacks on the miners' heads, up ladders made of notched logs, and 'packed' down the mountain to the furnaces, on the backs of mules" (480). Since the miners have dusty, crushed cinnabar on their heads, Foote's later description of a "driver covered with dust" seems to again refer to the ore's transportation (493). Foote describes one packer as "something inhuman in his gaunt old age" (490), but it is unlikely that only age made him appear "inhuman." Miners could work for "years" before "succumbing to debilitating salivation," or mercury poisoning, but would still bear the signs, such as losing their teeth and suffering from tremors (Johnston 168). Especially if this packer did not work at the furnaces, it would take longer for mercury poisoning to kill him through its dust form.¹¹⁹

In the text, Foote does not follow the packers "down the mountain to the furnaces" to document the refining process (480); while these observations likely would have implicated the company in the miners' deaths, Foote may have avoided the furnaces since the risks were already well known by the 1870s. Johnston explains that "mercury poisoning, or salivation, was always a major problem at mercury reduction plants, and the Hacienda plant at New Almaden was no

¹¹⁹ Johnston explains that the gaseous mercury is the most hazardous, but solid and liquid forms are also dangerous: "Humans absorb mercury through the skin, through respiration, and through ingestion Gaseous mercury is most dangerous but liquid mercury—although more stable—is also constantly sublimating, giving off fumes of gaseous mercury" (169).

exception" (169). In the 1870s, there were advertisements for respirators and masks to be worn near these furnaces, but the workers could not afford them, and instead carried "wet sponges in their mouths" (Johnston 168). S. A. Downer, who in 1854 described the miners at New Almaden as specters in a hellish underworld, also addressed the mercury poisoning by the furnaces: "The length of time required for the extraction of quicksilver is about fifty-six hours from the solid ore," and so at least half of the furnaces are running at a time (225). The molten mercury travels through condensers and finally through a pipe "into iron vats," and "from these vats the molten liquid is ladled out into scales" (225). Downer's passive voice, "is ladled out," makes it seem like she ignores the workers handling this toxic metal; yet, she does address the harm they experience. There is, she explains, a "deleterious effect upon those who labor among the furnaces," and so the furnace workers have rotating shifts (226). The cows that roam freely near the furnaces, Downer includes, salivate and die (226).

Foote's and Downer's descriptions of New Almaden reveal the mechanics of invisibilizing labor, and they also show that labor is subject to internal, visible hierarchies. What Foote and Downer do not explain is the racial dynamics at New Almaden. Foote explains that there is a "Cornish camp," a "Mexican camp," as well as a "camp" of Chinese workers "below the hill," who, Foote says, she was "not encouraged to investigate," most likely by the company (487). Foote does not describe the racist practices of New Almaden. As Johnston explains, the "level of control that a laboring group had over their working situation, that is, of being able to keep track of their own pay and to limit the pollution of their bodies, was largely based on their race," and the riskiest position was "cleaning the condensers and occasionally cleaning the furnaces" (169, 168). Stephen J. Pitti explains that Mexican laborers suffered greatly from mercury poisoning at New Almaden: "conditions such as 'mercurial trembling' and 'obstufecation

or imbecility' became ghastly reminders of the new industrial system's consequences for ethnic Mexicans and others who labored in the Santa Clara Valley quicksilver mine" (58). In her own description of a family living in the Mexican camp, Foote reveals that she knows the dangers of mercury mining and refining. In her portrayal of the family, she assumes that she knows these dangers better than they do: "The cheerfulness of the whole family,—brown, ragged, ill-fed, sickly and numerous as they were,—a cheerfulness which implied no hope or even understanding of anything better, was the saddest thing in the whole of that warm, sunny desolation" (487). They are sick, possibly from the furnace fumes or the mercury dust, but she claims that they lack the "understanding of anything better."

Foote's illustrations further reveal broader forms of racialized ghosting. When Pitti writes of "others" who bore the "consequences" of quicksilver mining, these included the Chinese laborers. Chinese men were "ore pickers who, from the mid-1870s to August 1884, worked on the old rock dumps and tailing piles searching for missed bits of good ore" (Bailey and Everhart 169). They were, according to Edgar Bailey and Donald Everhart, "most subjected to mercurial poisoning" (162), which means that the dust of the "old rock dumps" was particularly dangerous and that these men also worked on the furnaces. This timeline, "from the mid-1870s," was when Foote finished the "Dump of the Great Eastern Tunnel." Again, Foote does not describe who these workers are who sift through crushed ore, but Bailey and Everhart's observations reveal that they were likely Chinese miners. Like Ridge, Foote writes of the Chinese miners as expendable, adding to the sensationalism of the narrative. One of Foote's few descriptions of the Chinese laborers includes a murder. Sam, who is Chinese, kills another man, but Foote explains that Sam was "acquitted" because he "only killed another Chinaman" and he's an "excellent cook" (488). At another point, Foote writes, "A Mexican brought our wood—of course a

Chinaman chopped it" (490). Like this "of course" moment, the illustration, "Dump of the Great Eastern Tunnel" does not include any explanation: at New Almaden, "of course" these are Chinese laborers exposed to toxic dust.¹²⁰

Foote never names the Quicksilver Mining Company's practices concerning race and risk; in fact, she only names the company once. In a footnote, she explains the protocol for burial expenses: "Often those who die at New Almaden are buried at the Company's expense or by the charity of the neighbors. Many of the graves are those of strangers,—only a short time at the mine,—their friends unknown or out of reach" (492). In other words, the Quicksilver Mining Company did not always cover the cost for burials, and Foote's grammar creates excuses for the company's treatment of miners, as shown at one point by her passive voice: "friends [are] unknown or out of reach." At the least, her passive voice ambiguously describes the company's faults. In her letters, Foote claimed she was apprehensive to put any criticism of the Quicksilver Mining Company in print, but when she does critique the company, it is most often for their treatment of the land, not the miners, even though the two have merged.

"Fantastic Intrusions": The Dusty Specters of Conrad's *Nostromo*

New Almaden's Mary Hallock Foote and Arthur De Wint Foote resemble a later, fictional couple: Emilia and Charles Gould of Conrad's *Nostromo* (1904). Arthur, as the head mining engineer, and Charles, as the owner of the San Tomé mine, are mining administrators; both Mary and Emilia record mining histories and turn their observations of the mining landscape into illustrations. While Mary used ink wash to depict the mining landscape of New Almaden, Emilia chooses watercolor to create a "sketch of the San Tomé mountain" (53). She captures the

¹²⁰ It is worth pausing here to connect Foote's assumption regarding mercury to Mel Y. Chen's crucial claim about lead: "an inanimate but migrant entity such as industrial lead can become racialized, even as it can only lie in a notionally peripheral relationship to biological life" (160).

"memory of the waterfall" before the Gould Concession dams the water to power the ore-crushing stamps:

The waterfall existed no longer. The tree-ferns that had luxuriated in its spray had died around the dried-up pool, and the high ravine was only a big trench half filled up with the refuse of excavations and tailings. The torrent, dammed up above, sent its water rushing along the open flumes of scooped tree trunks striding on trestle-legs to the turbines working the stamps on the lower plateau. (79)

Without the waterfall, the landscape dries out, only to then become filled with the "refuse" of the mine. Felled and hollowed-out trees guide the water down the mountain, where the hydropower aids in crushing the silver ore that will then enter the furnace for full silver extraction. This deforestation, in addition to the dammed water and pulverized ore, produces large quantities of dust that appear throughout the novel, and characters, including the Goulds, are frequently covered in it. The Goulds, Hwei-Ju Wang argues, "are haunted by the watercolor sketch," since, having hung it in their home, it daily reminds them of their destruction (11). In my following analysis, I argue that the intrusive dust similarly haunts the residents of Sulaco, since this dust is composed of the mine's metallic and corporeal remains.

Conrad describes the dust on over thirty occasions in *Nostramo*, and in his repeating descriptions of crushing ore, he suggests that much of the dust comes directly from the San Tomé mine.¹²¹ On at least four occasions, Conrad describes the hydro-powered ore stamps in action. The first time that the stamps successfully begin crushing ore, Conrad portrays the ore as completely and violently pulverized: "and only the ceaseless, violent rush of water in the open

¹²¹ Dust particles are a figure of air pollution and water pollution; here, however, the dust is specifically of mined material—some of which, like lead or mercury, is toxic and can be absorbed through skin.

flumes could be heard, murmuring fiercely, with the splash and rumble of revolving turbine-wheels, and the thudding march of the stamps pounding to powder the treasure rock on the plateau below" (76). This crushed ore had to become small enough to fit through a screen, as Conrad confirms with his inclusion of "screeners" positioned near "ore-breakers" (75). Becoming "powder," the ore has been broken apart by the stamps so forcefully that the particulate, powdery components could now disperse in the air. As the stamps continue to crush the ore on this first run, Charles Gould imagines that the force of the stamps reverberates throughout Sulaco, making the entire location endure the effects of the stamping: "There was no mistaking the growling mutter of the mountain pouring its stream of treasure under the stamps; and it came to his heart with the peculiar force of a proclamation thundered forth over the land" (79). The personified, "growling" mountain here offers up its "treasure," as if no miners are even present; the "stream" of silver appears steady, as if the massive supply will never run out. With this steady flow, the stamps must run constantly. Again centering the role of these stamps, Conrad begins the second section of the novel, "The Isabels," by explaining exactly this: the stamps never stop. No matter the surrounding "war," "through good and evil," the Gould Concession "had gone on working; the square mountain had gone on pouring its treasure down the wooden shoots to the unresting batteries of stamps" (99). With numerous stamps constantly running, as well as more trees cut to transport the ore, the powdery cloud constantly grows.

As I analyze the dusty specters in *Nostramo*, my argument continues moving between and within the three sections of Conrad's non-linear novel—a structure that emphasizes the various hauntings in the novel, including the reoccurring uprisings and violent overthrows. Ridge's Joaquín Murieta relocated to California from Mexico since he had become "tired of the uncertain state of affairs in his own country, the usurpations and revolutions which were of such

common occurrence" (8). Conrad's *Nostramo*, published fifty years after *Life and Adventures*, uses "usurpations and revolutions" as a primary plot device, as shown by an arrangement of events so circular that, as Nathan Hensley and Philip Steer explain, the novel has an "antidevelopmental" structure (76). Analyzing Conrad's treatment of coal, they connect the novel's structure to its portrayal of extractive imperialism, explaining that "the energy regime of coal stands as the final, if curiously spectral, material interest driving this dependency-state development narrative" (75). While I do not focus on coal, I emphasize the "curiously spectral" aspects of extraction in the novel, the haunting ruptures that persistently merge the past with the novel's present.

In *Nostramo*, mining specters abound, since the population of Sulaco resembles metal and the San Tomé silver mine houses the dead—two aspects that I argue Conrad links in the novel through dust. Conrad frequently describes a metallic population alongside portrayals of the mine's bloody past to interrupt *Nostramo*'s plot and redirect it to historic and ongoing violence of imperial extraction in Latin America. Wang argues that there are "various forms of haunting in *Nostramo*," primarily "the haunting of the silver and the San Tomé mine" and the haunting "of the foreclosed miners" (2). Wang also asserts that "the language of haunting in *Nostramo* needs to be explained through the material conditions of production that give form and content to it" (6). By focusing on the novel's spectral mining dust, I show that these source of haunting, the silver, the mine, and the miners, are connected, and that the dust shows, materially, Conrad's "language of haunting."

In the third section, "The Lighthouse," Conrad once again directs our attention to the stamps, this time showing that the metallic particles from mining have dispersed widely. As the sun sets, a distinct shimmer covers a wide landscape—a shimmer linked to the mines and the stamps: "The undulating surface of the forests seemed powdered with pale gold dust; and away there, beyond Rincon, hidden from the town by two wooded spurs, the rocks of the San Tomé gorge, with the flat wall of the mountain itself crowned by gigantic ferns, took on warm tones of brown and yellow, with red rusty streaks, and the dark green clumps of bushes rooted in crevices. From the plain the stamp sheds ... appeared dark and small" (282). This is the first time Conrad includes the name "Rincon" in the novel, and while the exact

layout of *Nostramo*'s settings is up for debate, W. R. Martin's map shows that Rincon is fewer than ten miles from the San Tomé mine (165).¹²² The proximity to the mine helps account for Conrad's image: the forests "powdered" with metal particles. While Conrad later reveals that gold is also in the region, the "gold dust" on the forest is notably "pale," and so this could look like silvery dust reflecting a setting sun. There are other metallic shades in the landscape, such as the "red rusty streaks." Conrad moves from the "pale gold dust" to the "tones of ... yellow" in the

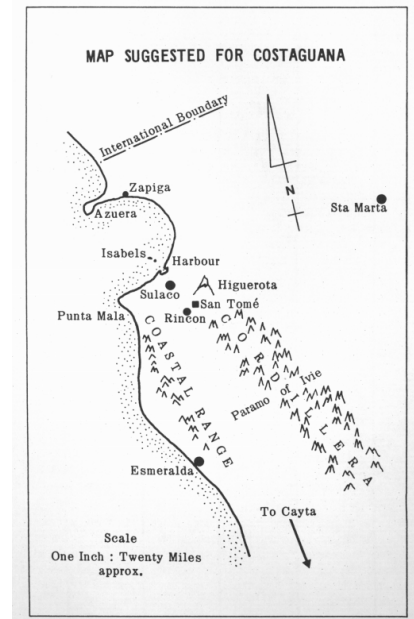


Fig. 3.4: W. R. Martin's "Map Suggested for Costaguana" in "Charting Conrad's Costaguana" (166).

¹²² Martin's map takes up nearly a full page of the article, and so Rincon is, according to Martin's scale, fewer than ten miles from San Tomé. The map of Oxford University Press's 2009 *Nostramo* likewise places Rincon within ten miles of San Tomé (xlii).

San Tomé gorge to the stamp sheds to link these three; as the sound of the stamps had reverberated "over the land" (79), so too does the dust cover a vast area of land.¹²³

As shown by Conrad's descriptions of those in Sulaco, the dust also makes its way beyond Rincon. When the San Tomé mine becomes the "San Tomé Consolidated Mines," Conrad reveals that the area contains "gold, silver, copper, lead, [and] cobalt" (361). Conrad had previously included these metals in *Nostramo*, but they appeared in character descriptions, which, I argue, connects the individuals to the mine materially, as the forest of Rincon is. In these descriptions, the San Tomé metals have leached into the population of Sulaco. Conrad describes both Linda and Giselle as having the appearance of gold and copper. First, Linda "had admirable eyes, brown, with a sparkle of gold in the irises, full of intelligence and meaning, and so clear that they seemed to throw a glow upon her thin, colourless face. There were bronze glints in the sombre clusters of her hair" (23). Later, Conrad nearly repeats these descriptions with Giselle, but Giselle has "coppery glints" of her "gold hair" rather than the copper alloy, bronze, that her sister has. Instead of hair like copper, General Montero has a "coppery tint of his broad face" and "an iron-grey head" (91, 109). Don Pepe, too, is described through iron, having a "cast-iron jaw" (73), and while iron is not in Conrad's list, this metal, especially in its "cast-iron" state, would have been crucial for forming San Tomé's silver bars—making the "cast-iron jaw" an appropriate description of Don Pepe, who gives orders to the mill workers, ensuring that the silver ore becomes silver ingots.

Don Pepe oversees "six hundred" miners, and he "seemed to know each of them individually," but the novel's descriptions of the miners group them together and conflate them

¹²³ While I read the dust as a literal substance here, it is worth noting that Conrad sets this up to be both literal and figurative; the area is also figuratively covered, or burdened by, the mine.

with metal. He could distinguish them, the narrator explains, by the "infinitely graduated shades of reddish-brown, of blackish-brown, of coppery-brown backs" (75). This list of three correlates with the novel's previous sentence explaining the three nearby mining villages where the native miners live, which further emphasizes these groupings based on skin color. By including "coppery-brown," Conrad again uses a metallic description, but the native miners in *Nostramo* become even more conflated with metal than the novel's named characters are. For example, to Emilia Gould, "their flat, joyless faces ... looked all alike, as if run into the same ancestral mould of suffering and patience" (75). The only other time that Conrad uses the word "mould" in *Nostramo* is when describing the initial silver ingots: "the first silver ingot turned out still warm from the mould" (80). In the novel, the mould shapes the native miners as it shapes the silver, suggesting that both can become pulverized, melted, and formed anew.¹²⁴ The novel further makes this comparison by making the silver appear alive and human. As Miller explains, "the mine's first parturition of silver"—as a "spongy lump of silver yielded to the hazards of the world" (Conrad 80)—is the "only birth scene of the novel" (41). Just before Conrad describes the birth of silver, the mine absorbs the native miners. When the two shifts of miners swap positions, "the mountain would swallow one half of the silent crowd" (76). Technically, the shift that had previously been in the mine now makes their way out and down to the gorge below, but the word "swallow" suggests that some miners will be absorbed—broken down by the mine, serving as nutrients.

Conrad's use of "ancestral mould" points to the novel's earlier description of enslaved native miners under Spanish rule who had previously become one with the mine. Conrad reveals

¹²⁴ Stephen Ross observes that the miners in *Nostramo* are "human resources" (121). My argument draws upon this language, as the novel portrays the miners as it portrays the metal.

that the San Tomé mine contains remains from centuries prior to Charles Gould's ownership of the mine. Seated before "vessels of silver," Emilia Gould recalls the horrifying mining history that she now finds herself within: "Mrs Gould knew the history of the San Tomé mine. Worked in the early days mostly by means of lashes on the backs of slaves, its yield had been paid for in its own weight of human bones. Whole tribes of Indians had perished in the exploitation" (40). The number of deaths suggested in this passage is astounding, and Conrad's description, especially the "human bones," shows the individuals merging with the mine, becoming dust, through their decomposition. Emilia then explains that "the mine was abandoned, since with this primitive method it had ceased to make a profitable return, no matter how many corpses were thrown into its maw" (40). The number of "corpses" appears limitless in this description, and we can see that Conrad connects the enslaved miners to the Gould's paid miners: his later use of "swallow" echoes this initial description of the mine devouring enslaved miners, those who are "thrown into its maw," or mouth.¹²⁵ As Luz Elena Ramirez points out, the mine's name, "Tomé," means "I took" (102); the mine takes lives as it swallows. When Emilia Gould connects the Spanish rule of the mine to the English's, her use of "vein," while common in describing a mine, now evokes of the mine's bloody contents: "An English company ... found so rich a vein" that essentially no one "could discourage their perseverance" (40-41). The enslaved miners had perished, decomposed, and been absorbed by the mine, and so it is no surprise that reopening the mine haunts the Goulds.

Indeed, it is Emilia Gould's recounting of the accumulated death that prefaces Charles

¹²⁵ Wang also connects the enslaved miners to the paid miners: "native miners employed by the Gould Concession are also subject to the same process of capitalist/imperial development as the mine and Sulaco" and "it is through the haunting of the native miners, both dead and living, in the narrative that one is alerted to Sulaco's colonial and modern imperial history" (3-4).

Gould's nightmares. Emilia is "haunted by the ghosts of the native miners" (Wang 11), and she is not alone in feeling haunted by the re-opening of the mine. Charles Gould becomes "mine-ridden" and he "also began to dream of vampires" (43). These "fantastic intrusions" of "vampires" and "ghouls" had also disturbed Charles's father, the previous owner of the mine, revealing that the haunting in *Nostramo* is inherited along with the mine itself (45). Conrad's inclusion of vampires may at first seem disconnected from the narrative, like a "fantastic intrusion" in the novel, and yet vampires are fitting for a mine that continues to close and open, dying and coming alive again, as Miller observes: "a sense of undeadness hovers over the San Tomé mine" (37). With their distinct method of violent extraction and focus on blood, vampires are fitting mining figures, as they are in Ridge's *Life and Adventures*; indeed, they are perhaps the most fitting figure for returning to a mine housing the remains of "whole tribes," or their dusty remains.

When Emilia describes the miners as now "paid," Wang explains, "she assumes ... a clean slate" (15), but as Emilia and Charles discuss the mine, Conrad frequently describes them as dirty, covered in dust. The dust, like Charles's vampire dreams, is a "fantastic intrusion" in the novel. Conrad, I argue, uses the dust as a material haunting of the couple, painting them with the spectral dust of the mine. In "The Isabells" section, Emilia describes "an awful sense of unreality" (150). Directly responding to her statement about "unreality," Charles remarks, "the heat and dust must have been awful" (150). Emilia answers that she does indeed have a "headache," since the "heat, the dust, were indeed—" but she interrupts herself: "I suppose you are going back to the mine before the morning?" she asks. Speaking of dust, in other words, makes Emilia think of the mine itself, and there are early examples in the novel that suggest why. For example, Conrad depicts Charles as thoroughly covered in dust as he announces the death of his father, who, he

explains, made "himself ill" in his attempts to end the Concession: when Charles explains this, there is dust "on his boots, on his shoulders, [and] on his cap with two peaks" (47). The mining business killed Gould, sr., and now Charles is covered in it.

The road that links San Tomé to the harbor is particularly dusty, and this too was made by enslaved natives. There is so much dust on this road that at one point Don Pepe is "hardly visible" on the "rattling dust trail" that is key for moving silver from the mine to the port (85). The road, Conrad suggests, also links the enslaved laborers to the paid laborers: "the trudging files of burdened Indians taking off their hats, would lift sad, mute eyes to the cavalcade raising the dust of the crumbling *camino real* made by the hands of their enslaved forefathers. And Mrs. Gould, with each day's journey, seemed to come nearer to the soul of the land" (66). Emilia encounters the dust daily on her way to and from the mine, and as she does, the "soul of the land" gets closer to her. Here, Conrad juxtaposes the dust, the "enslaved forefathers," and the "soul of the land" to again show the miners having merged with the land. Charles asks, "Where could we begin life afresh? We are in now for all that there is in us" (63). The Goulds, notably metallic by name, are also saturated by the mine, covered inside and out with the inescapable dust.

Sarah Cole's reading of the dynamite in *Nostromo* also connects to the mine's dust, since the use of dynamite threatens to exacerbate Sulaco's dust exponentially. By the second section of the novel, dynamite surrounds the mine to ensure no outside force may claim it. Cole suggests that the threat of dynamite in the novel emphasizes the damage already done to the land. Dynamite "creates gashes and tears in the landscape," Cole explains, but Conrad, she points out, had already used the word "scar" to describe the mine's entrance (322): the "treasure" pours forth from the "re-opened scar in the flank of the mountain" (109). In Cole's argument, the mine's fleshy comparison becomes clear: "By surrounding the mine, dynamite creates a safety wall

around it; by promising to explode the mountain completely, it leaves the partial explosion (the gash) intact" (322). In the sentence immediately after opening the "scar" of the mountain, Charles recruits Sulaco's native miners. Again, Conrad's use of juxtaposition here is suggestive; the mine has become human-like with its "scar" tissue since it houses the remains of native miners.

As a key figure in Charles's schemes to protect the silver, Conrad's eponymous Nostromo is also unable to escape the dust. After abandoning Decoud on Great Isabel with the silver they hid, Nostromo senses dust inside himself—dust that seems to be alive: "His mouth was dry. It was dry with heavy sleep and extremely anxious thinking, as it had never been dry before. It may be said that Nostromo tasted the dust and ashes of the fruit of life into which he had bitten deeply in his hunger for praise" (299). Nostromo now only has the bitter remains of what he desired most: not just to obtain the silver, but to be associated with silver.¹²⁶ Throughout the novel, silver functions as a marker of Nostromo's identity. Those who know of the "tried and trusty Nostromo" call him "the Incorruptible," just as silver is incorruptible (97, 160); Nostromo is not only aware of this reputation, but wants to encourage it, and even wears "silver buttons" on the front of his coat (96). Dr. Monygham, not sure whether he can trust Nostromo, repeats this same "popular conception" that Nostromo is incorruptible like silver, telling himself that "it seemed to be a part of the man, like his whiskers or his teeth" (311). Conrad again repeats this reputation midway through the novel, but with a twist. On Great Isabel, before Nostromo abandons Decoud and as they hide silver together under the cover of darkness, he explains to Decoud that "silver is an incorruptible metal," but Decoud responds with a questioning, passive statement: "as some

¹²⁶ Wang claims that "Sotillo and Nostromo are insanely interested in the silver ingots because of their material worth" (7). While this is the case, my analysis of Nostromo's longings shows that his desire goes beyond "material worth."

men are said to be," he says (216). Being left behind, Decoud sees his low estimation of Nostromo to hold true. But in abandoning Decoud, Nostromo is still thinking of himself as silver, which can tarnish. As Pamela Demory clarifies, he leaves Decoud to avoid "tarnishing his reputation" (322).

In Nostromo's silver quest, he instead becomes a mining specter. Like the novel's initial phantoms—"the two gringos, *spectral and alive* ... dwelling to this day amongst the rocks" (6)—Nostromo falls "under the fatal spell" of the metal, which now takes over his soul, now "dead within him ... weighted with silver" (390).¹²⁷ He feels the weight of "silver fetters," and his own retrieval of the silver, in his mind, mirrors the enslaved miners: he must go down into the "ravine" like a "craven slave" (388). Nostromo makes the comparison to the ghosts himself, realizing "the spectre of the unlawful treasure" has made him "neither dead nor alive, like the Gringos on Azuera" (381). Others see Nostromo as a ghost, too, even before these passages. Near the end of Decoud's conversation with Nostromo, right before Nostromo deserts him, Decoud has a telling need: he wants "to hear a human voice" (217), making Nostromo's voice decidedly non-human. This moment echoes an early passage in the novel, where Nostromo "had the appearance of a phantom-like horseman mounted on a silver-grey mare" (72). In Nostromo's proximity to silver and his obsession to be associated with silver, he had become a specter as early as the novel's first section, which emphasizes the novel's complex timeline.

In their proximity to silver, both Nostromo and Decoud become filled with lead, the metal that is most often found alongside silver ore. After Nostromo dies, a "cloud" like a "mass of solid silver" hovers above him during his full transformation to a specter, having been shot by Giorgio Viola. While the word "lead" does not appear in the passages of Nostromo's death, lead

¹²⁷ Being "weighted with silver," as I later discuss, his death resembles Decoud's death.

is one of the metals Conrad lists in the "San Tomé Consolidated Mines," and lead and bullets had become synonymous earlier in the novel (361). Decoud had earlier compared silver and lead, preferring lead because he could use it as a weapon: "Up at the mountain in the strong room of the mine the silver bars were worth less for his purpose than so much lead, from which at least bullets may be run" (159). Decoud later uses one bullet, but on himself. In his own final days on Great Isabel, as he awaits Nostromo's return, he becomes increasingly lethargic. Conrad compares this feeling of heaviness to lead, one of the heaviest metals: "when he got up, gaunt, dirty, white-faced, and looked at [the sun] with his red-rimmed eyes. His limbs obeyed him slowly, as if full of lead, yet without tremor; ... He descended into the gully; for the fascination of all that silver, with its potential power, survived alone outside of himself" (358). Here, Conrad's description of silver, lead, and a "gully" create the image of a mine. Beside the silver, Decoud becomes toxic lead, as Conrad describes the metal's potential hazards through his use of the word "tremor" (358). Decoud may not have a tremor, but he does sense he is going mad, which leads to his death: "weighted by the bars of the San Tomé silver," four of them, he shoots himself in the chest, and sinks to the bottom of the sea (359). Nostromo is figuratively weighted by the silver, while Decoud is literally weighted by silver, and it is the lead bullets that fully transform both men into ghosts. The men's deaths are intertwined, just like the silver and lead ore that lead to their deaths.

The Gould Concession violently intertwines the lives of those in Sulaco, as it unearths the violent history of Spanish rule. As Terry Collits explains, *Nostromo* represents the "coming of capitalism" to Latin America: "individual lives are now shown as relative to greater collective processes, ideals, and life choices that all become absorbed into an impersonal History" (7). I have shown that the individual lives in *Nostromo* violently merge with the mine, a mine that had

consumed and absorbed native miners for centuries. As Derrida's theory of specters has appeared in each chapter, it is perhaps most fitting to connect again to his work in this context: "to learn to live with ghosts," Derrida explains, is "to live otherwise, and better. No, not better, but more justly. But with *them*" (xvii-xviii). Sulaco's mining dust materially connects the violent history to Sulaco's violent present, connecting the novel's figures. Consider Conrad's use of "copper," for example: Conrad's first use of "copper" is to describe the native miners and his last use of the term describes Giselle's hair, which shows the miners haunting the home. As haunting matter, mining dust is one of the novel's "fantastic intrusions," and it disrupts the imperial retelling of Sulaco's history, especially the history told by Captain Mitchell, the "whiggish historian ... who sees progress through time" (Ramirez 97), and who had also "invested in the San Tomé mine" (361).¹²⁸ Captain Mitchell is "positively stony-eyed" (88), and when interrogated by Sotillo about the lost silver, dust gives away his direct involvement: his "hair was full of dust"—in fact, he is "covered" in it (240).

Conclusion

Ruskin had described soil, bodily risk, and the supernatural more than a decade before publishing *Ethics*. I have shown in my first two chapters Ruskin's attention to polluted air and polluted water; in this chapter's closing, I turn to his discussion of polluted soil. In *The Stones of Venice* (1853),¹²⁹ he describes a "theological language" of stones, which he begins with a discussion of pollution—first of water, then of air, and finally of soil:

I have dwelt above on the historical language of stones; let us not forget this, which is their theological language; and, as we would not wantonly pollute the

¹²⁸ Reeder argues that "*Nostramo's* disjointed structure reflects its skepticism about the applicability of master narratives" (27).

¹²⁹ This selection is from the end of the third volume's first chapter.

fresh waters when they issue forth in their clear glory from the rock, nor stay the mountain winds into pestilential stagnancy, ... so let us not, by our own base and barren falsehoods, replace the crystalline strength and burning colour of the earth from which we were born and to which we must return. (41)

Ruskin connects the pollution of water and air to the pollution of the earth, as I have in this dissertation through my chapters on mills, ports, and now mines. To pollute the soil is to pollute a living entity for Ruskin, or at least an entity at varying degrees of "alive." For Ruskin, polluting the earth differs from polluting the air and water because of soil's central role—and theological role—in human life and death: it is the substance "from which we were born and to which we must return," a concept Ruskin refers to in earlier and later works.¹³⁰ Ruskin's discussions of polluted air and polluted water likewise take on a spiritual valence, but the pollution of the soil for Ruskin is the pollution of the self, as he points to soil as the source and destination of the self, including the soul.

In *Unto This Last* (1860), Ruskin again describes the body's return to the earth, but in this text, he also returns to the topic of precious metals and mining. In this fourth and final essay of *Unto This Last*—a section Ruskin claims is “probably the best [he] shall ever write”—Ruskin explicitly connects the polluted earth to the polluted body. Using a line from the Psalms,¹³¹ Ruskin writes of souls "condemned," crying out, "my soul cleaveth unto the dust" (211). This condemnation, he explains, is due to avarice, particularly "the worst examples of the thirst for gold" (211). Fewer than a dozen pages before this line, Ruskin had explicitly discussed mines.

¹³⁰ For example, in *The Queen of the Air* (1869), Ruskin writes of Demeter, "the earth mother" and "the origin of all life," who is "the dust from whence we were taken" and "the receiver of all things back at last into silence."

¹³¹ Ruskin is quoting Psalm 119:25.

"All England may," Ruskin writes, "become one manufacturing town"; then, his scope grows larger and his tone become defiant: "But the world cannot become a factory, nor a mine" (200). Ruskin's reasoning is clear: "Men can neither drink steam, nor eat stone" (200).

This chapter's texts reveal what happens when individuals do indeed "eat stone": they turn into mining specters. The silvery metals of Ridge's, Foote's, and Conrad's works include a combination of the neurotoxins mercury and lead that are absorbed by, or shot into, individuals. These narratives also reveal who *typically* escapes this toxic fate: the white mine owners, administrators, and their families. As Mary Hallock Foote avoids being poisoned by the furnaces at New Almaden, mercury is also notably absent when Emilia Gould holds the first silver ingot, like a newborn baby (Miller 41), and so the Gould's "offspring" do not appear to come into contact with neurotoxins, either. Conrad never names mercury, or any of its synonyms, in this passage, even though the full extraction of silver would not have been possible without it. Conrad does complicate this reading of uneven risk through Decoud and Nostromo, two white characters who become mining specters, infused with lead. Everyone, for Conrad, who becomes connected to the mine may suffer. In addition to lead and mercury, as Myrna Santiago explains, cyanide began to pose "health risks for miners and local communities" during the second half of the nineteenth century, especially in Brazil, which has "one of the biggest open pit mines" of South America, as well as Bolivia, which has "one of the longest histories of mining" (82, 85, 86). This chapter's texts may only show a few nineteenth-century moments of this mining history, but their mining specters, like the mining toxins they have ingested, traverse centuries.

Conclusion

The Enduring Industrial Specters of Air, Water, Earth, and Fire

"Oh, are there spirits, can a mind
Float bodiless and unconfined?
Or can the air, the earth, the sea
Be filled with immortality? . . ."

John Ruskin, "Oh, are there spirits, can there be" (1833)

"The centuries will burn rich loads
With which we groaned . . ."

Wilfred Owen, "Miners" (1918)

This dissertation has brought together nineteenth-century literary depictions of mill specters, port specters, and mine specters, but these distinct apparitions were already intermingling within the project's primary materials. Consider John Rollin Ridge's *The Life and Adventures of Joaquín Murieta* (1854), a novel that served in this project as a representative example of mining specters during the California Gold Rush. In this same text, Ridge also writes of mills—specifically the "Phenix Quartz Mill," which is Ridge's chosen setting for an "evil hour" that left "two dead bodies, lying mutilated with knives and bullets"; the mill itself is "perforated in various places with balls" (106). Another mining text of the project, Joseph Conrad's *Nostramo* (1904), opens with a description of Sulaco's harbour, which, before steamboats, "had never been commercially anything more important than a coasting port with a fairly large local trade in ox-hides and indigo" (5). Famously, "two gringos, spectral and alive, are believed to be dwelling to this day amongst the rocks" (6). Conrad's novel could have been a primary text within my chapter on haunted ports, especially with the mention of indigo, which was a reoccurring raw material featured within that second chapter; indeed, several of Conrad's works could also have figured in the port chapter. The texts of my ports chapter could also have

been in other chapters of the project. Take Mary Seacole's *Wonderful Adventures of Mrs Seacole in Many Lands* (1857) as an example, since her engagement with the California Gold Rush could situate this text in my mining chapter.¹³² A combination of mills, ports, and mines also show up within the literature of single families, such as the Davis family. Richard Harding Davis's *Soldiers of Fortune* (1897), an adventure story of iron mining in Latin America, re-writes his mother's tragic iron narrative, "Life in the Iron-Mills" (1861). These examples show that the boundaries between these industrial locales are even more porous than my three chapters initially show.

With my focus on specters, the permeability between these locations also means that these locations haunt one another, compounding the spectral presence at each location. These layered hauntings may be understood in a literal sense, where the lethal particles of one location, such as the mine, make their way to the port and then to the mill, accumulating as they circulate with other lethal traces within the production network. Mercury dust may merge with the effluent of ports, for example, which can make its way into the water that provides steam for the mills. Or, manufactories may dump this effluent, as my ports chapter shows, into the drinking mains of the city, which could already be connected to dangerous, "leaden service pipes" (Simpson and Newlands 9). Where else do these lethal particles accumulate? Kate Flint, writing of Victorian dust, explains that "dusty dangers lurked within the home"; in fact, "dusty dangers ... quickly built up in the home" (49).

Homes, throughout the dissertation, were present within this industrial network, even if they were not the primary focus of a chapter. In my first chapter, the narrator of Rebecca

¹³² See the second chapter of Miller's *Extraction Ecologies and the Literature of the Long Exhaustion*, which analyzes Seacole's mining endeavors.

Harding Davis's "Life in the Iron-Mills" occupies the home of Hugh and Deborah Wolf, looking out upon the hazy mill air, all while Hugh's korl statue—made from the iron mill's waste—is within the same room. In another mill example, John Barton of Gaskell's *Mary Barton* attempts to keep the mill air from entering his home (54). With the second chapter's analysis of Herman Melville's *Redburn*, I turned to evidence of widespread water pollution in the homes of Liverpool, a port city. In my final chapter, the dust of the mine in Joseph Conrad's *Nostromo* enters the home of Emilia and Charles Gould. In these examples, the home is frequently analogous to the body, as the home is as porous as the individual body, and attempts to keep out harmful particles from the home are done in vain. Owen's "Miners," which is the first text of this dissertation's introduction, all takes place by the hearth; the "steam-phantoms" from the coal accumulate within the speaker's own home (9).

In the final stanza of "Miners," Owen writes of coal's future use, claiming that "The centuries will burn rich loads / With which we groaned" (29-30); the "steam-phantoms" will haunt not only the twentieth century, but also the twenty-first century. While my dissertation research is situated within the nineteenth century, there are haunting echoes that bridge the historical divide between then and now, between the "Age of Coal" and its twenty-first century afterlives. These echoes include the impact of industrial hazards on respiratory illnesses, which was most apparent in my section on Gaskell's *Mary Barton*, and had uncanny connections to our current pandemic. The port's historical role with quarantine was another specific connection to our historical moment, as well as Seacole's depictions of steam-powered illness in Jamaica and Panama, which nearly resemble current attempts at contact tracing.

A recent study has confirmed yet another disturbing way in which humans are merging with industrial hazards: "Researchers say they have found microplastics—tiny pieces of plastic

debris that come as a result of the disposal of industrial waste—deep in the lungs of living humans for the first time" (Torchinsky).¹³³ The findings support the alarming theory that microplastics can enter the body through inhalation, as well as ingestion. These microplastics are not only "deep in the lungs of living humans," but also within human blood. As the groundbreaking study by Heather A. Leslie et al. concludes, "human exposure to plastic particles results in absorption of particles into the bloodstream" (7). Many questions remain, such as the extent that microplastics can travel through the body and lodge into organs, and answering this question hinges on the ability to detect and measure this plastic matter.¹³⁴ What we do know is that microplastics are "ubiquitous" and that the "potential exposure routes" are the "sources in the living environment entering air, water and food" (Leslie et al. 1, 7). In other words, when microplastics merge with any of these environments, they will inevitably enter and merge with the porous human body, especially "occupationally exposed workers" (Leslie et al. 6). This disturbing study is the latest iteration of industrialism turning humans into industrial waste, and it is another reminder of uneven environmental risks and the longstanding impetus to depict these particulate risks.¹³⁵

¹³³ "‘Microplastic’ is a term for plastic particles for which no universally established definition exists. In the literature, microplastic is often defined as plastic particles up to 5 mm in dimensions with no defined lower size limit" (Leslie et al. 1).

¹³⁴ Leslie et al. explain: "Measurement of plastic particle exposure is essential for HRA, yet validated methods sensitive enough to detect trace amounts of especially the small (<10 µm) size fractions of plastic particles in biological tissues have been lacking" (1).

¹³⁵ There have been attempts at depicting flesh composed of plastic, and they predate the confirmation that microplastics have been found in human blood. One recent example is from 2019, where Greenpeace activists constructed "plastic monsters" from the plastic waste of Nestlé products and placed them by Nestlé headquarters; these monsters were the cause of a viral hashtag, "#plasticmonster" (Fela).

One may only guess what Ruskin's exact response would be to the recent findings on microplastics, but his writing on pollution all but confirms it would be highly critical.¹³⁶ His poetry lends even more support to this estimation. In an early poem titled "Oh, are there spirits, can there be" (1833), Ruskin asks if our surroundings are filled with spirits, or, as he writes, "filled with immortality" (5-6). If spirits do exist, Ruskin writes in the final lines, "surely they have their dwelling" in "the air, the earth, the sea" (14, 5). These three spirit dwellings now contain another supernatural being, the industrial specter, whose half-life or decomposition time is nearly akin to immortality. Speaking of the specter's temporality, Derrida explains, "even if the future is its provenance, it must be, like any provenance, absolutely and irreversibly past" (xix). The industrial specter's past is its future; the haunting will continue as the specter seeks "justice" (xviii), refusing to be forgotten until these demands are met. Moreover, the continued relevance of the industrial specter especially makes a case for the study of nineteenth-century environments today.

¹³⁶ As recently as April 28, 2022, Amy Woodson-Boulton gave a talk for the Ruskin Art Club on microplastics titled "Ruskin and the Plastic Crisis: 'Modern Manufacture.'"

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