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Ecologies of War and Fields of Conflict: Re-Imagining the Environment of the Battle of Waterloo

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ABSTRACT

This article investigates how sources in Romantic period literature and the visual arts can help to reconstruct the impact on the nonhuman environment of the Battle of Waterloo. The focus is the field where the battle was fought, although some wider contexts are considered because of the trade and transport in relics and other matter. Primary sources used are published and manuscript accounts from the years following the battle, paintings, and more recent archeological reports. Authors discussed include Charlotte Waldie (later Eaton), who visited the site within a month; Walter Scott, the first major writer to visit the Field; writer and artist Robert Hills; diarist and journalist Henry Crabb Robinson; and poet Robert Southey. Artists include Joseph Mallord William Turner, William Sadler, and late-Victorian specialist in military painting Elizabeth Thompson Butler. The theoretical and methodological approaches are archival, literary historical, art historical, and ecocritical. The article aims to contribute to interdisciplinary studies and, to that end, engages where possible with soil science, battlefield archaeology, military history, and discourses concerning pollution.

> In addition to the immense human cost, war also affects ecology and ecosystems, mostly in negative ways, ranging from contaminated lands and rivers through to devastated and mined forests and collapsed conservation and research projects. (Malhi)

> Approximately 59% of all life on earth depends on spending some or all of its life cycle in soil and below ground level. (Anthony et al.)

The field of Waterloo: 1815–2023

Near Château Hougoumont, at the bottom of an escarpment by the Nivelles road in the Braine-l'Alleud municipality of Belgium, two large sweet chestnut trees stand as remainders from the battle fought there more than two centuries ago. Three such trees survived well beyond the battle, with two dying in recent years. The one that remains alive is rooted beside the standing hollow trunk of its remaining neighbor. All three

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were left after the battle with musket balls, grapeshot, shrapnel, and parts of cannon balls embedded in their trunks, lasting evidence of collateral violence against nonhuman nature that was caught up in war. Project Hougoumont, a charitable restoration project begun in 2007, is using seed gathered from the chestnuts as part of its program to restore woodland lost in the battle to its pre-18 June 1815 condition (Drury). Horticultural restoration experts are replanting the pre-battle orchard within the walls of the chateau with local heritage varieties of apple (the specific varieties that grew there prior to June 1815 are unknown), diversifying the twenty-first-century gene pool and, in doing so, boosting the orchard's future resistance to destruction by disease (Fox). The orchard was destroyed during the battle when French troops used heavy artillery to attack British forces who had taken refuge there. Six years after the inferno at the Battle of Talavera in the Peninsular War in Spain, where many combatants burned to death after ripe corn and parched grass caught fire,[1] hundreds of men, animals, and trees were burned alive in the assault on Hougoumont at Waterloo when the French army set alight to wooden farmyard buildings and the combustible materials stored inside them. That firing of a barn and hayricks within the grounds is well attested in accounts by survivors, including the Duke of Wellington, who wrote, as was commonplace on battlefields, on pieces of donkey skin (Uffindell and Corum 69–70).[2]

Visitors to the site of Waterloo in the months following the battle recalled trees at Hougoumont sundered and still attached to collapsing walls, against which they had been espaliered and fan-trained, anthropomorphically suggesting human victims and challenging the boundaries that differentiate human and nonhuman suffering in conflict situations. For the most part these trees had been blown apart by explosive ordnance. Yet paintings of cavalry and infantrymen that commemorate Waterloo, such as the patriotic late-Victorian *Scotland Forever!* (1881) depicting the charge of the Scots Greys Regiment, by Elizabeth Thompson, Lady Butler, tend to elide the fact that Waterloo was a modern battle in which technological anti-personnel weapons rather than saber and musket warfare ultimately secured victory. Canisters and combustible shells filled with grapeshot and lead-balls (shrapnel), along with Congreve rockets, were used in the incendiary battlefield environment.[3] Wellington enthused about shrapnel munitions, which had been included in the British arsenal since early in the Peninsular campaign because of their ability to disable infantrymen and cavalry.[4] The environmental impact of shrapnel—an air-burst munition—is that lead shot, musket balls, iron from shells, and black gunpowder used as a propellant and for explosive charges, as well as bodies, body parts, and clothing were left behind and incorporated into the earth. French references to "black rain" from the aerial explosions (Lipscombe 26) testify to the chemical fallout onto the soil: black gunpowder combined sulfur, charcoal, and potassium nitrate.

To be fair *Scotland Forever!* depicts two weapons exploding in the air to the top left of center of the painting, and two missile trails in the sky to the right, above the heroically depicted main subject of the cavalry charge (Figure 1). A rifle and scattered pieces of uniform in the foreground are about to be trampled into the soil. But there is little sign of the mud from days of heavy rain that slowed the speed of the attack. Weather played a substantial role at Waterloo, making it difficult to move artillery and cavalry.[5] Captain William Ingilby (Lieutenant in 1815) of the Royal Horse Artillery reflected on the problems that mud caused for horses drawing gun carriages:

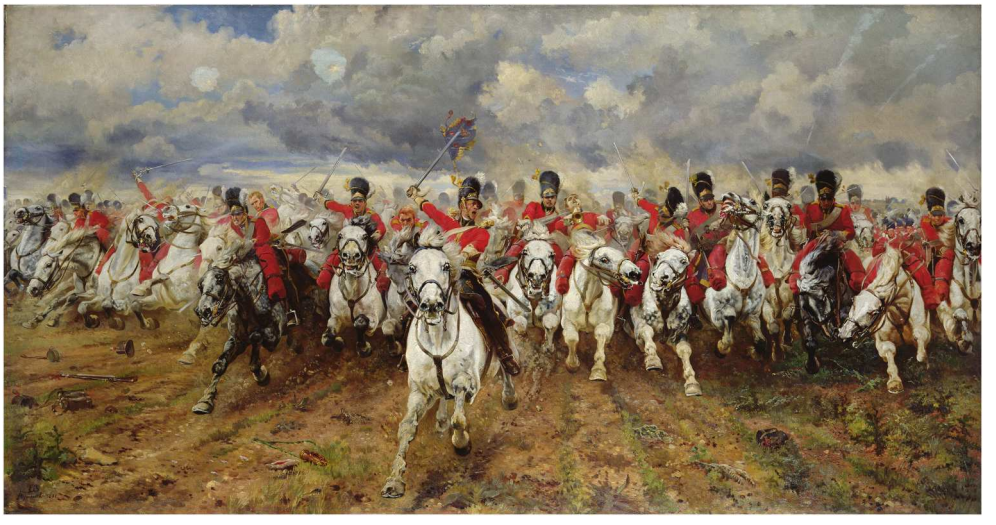

Figure 1. Elizabeth Southerden Thompson, Lady Butler. *Scotland Forever!* 1881. Oil on canvas. ©Leeds Museums and Galleries, UK / Bridgeman Images.

> The ground, however, was so saturated with rain and so little capable of bearing the horses without sinking up to their girths nearly, that we had trouble in bringing the guns into action at all. (Qtd. in Siborne 199)

Other paintings produced closer to the time of the battle more overtly visualize the environmental destruction caused by explosive warfare, as in William Sadler's 1815 painting *The Battle of Waterloo* (Figure 2) and J. M. W. Turner's *The Field of Waterloo*, exhibited in 1818.[6] Smoke and flames erupt to dominate the middle distance of Sadler's painting, with a highlighted area of bare earth in the center foreground drawing attention to the ruin of what had been farmland, while a tree with

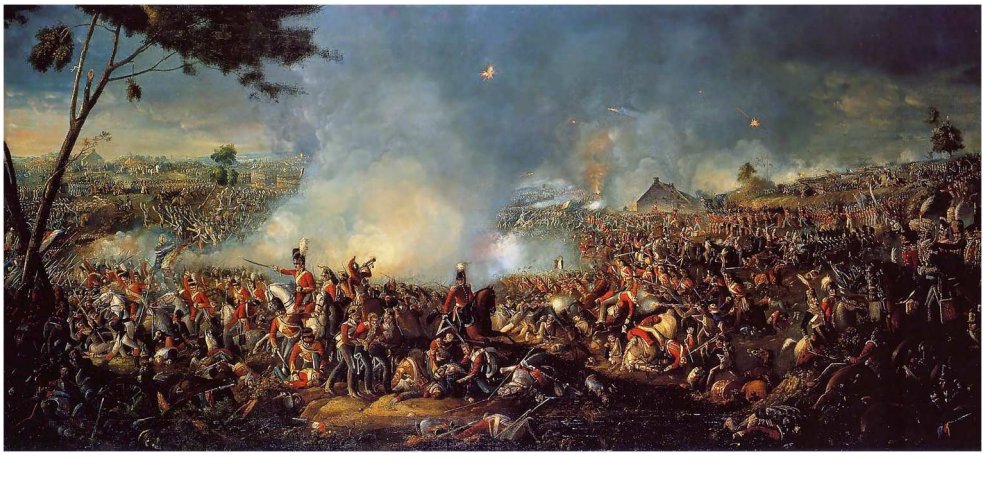

Figure 2. William Sadler II, *The Battle of Waterloo*. 1815. Oil on canvas. Wikimedia Commons. Public Domain.

broken branches and dangling foliage leans inward from the left side. At the front of the painting bodies and foliage form an entangled mass of plant and human tissue, blurring discernible boundaries between human and non-human victims of war. Rockets or shells are shown exploding in the air, again depicting the use of incendiary munitions. Turner, who visited Waterloo on 16 August 1817, includes the inferno of Chateau Hougoumont to the center right of his nocturnal scene in which the aftermath of the battle is lit by a flare while women search by torchlight among a heap of bodies and carry the wounded. In the gloom, bodies of horses and men are difficult to differentiate from one another and from the earth on which they lie. Smoke, cloud, and darkness combine in an oppressive palette of steel gray and browns to give the painting a mood of infernal desolation. The bleak vision of catastrophe denies viewers any clear distinction between bodies, animal and human, and the earth into which many would become incorporated. Turner exhibited the painting at the Royal Academy in 1818, accompanying it with lines from the Waterloo stanzas of Byron's *Childe Harold's Pilgrimage*, Canto the Third, which capture the confusion and horror as well as implications for the soil: "friend, foe,—in one red burial blent!" (*Complete Poetical Works* 86).[7]

Literary accounts that blurred the boundaries between human and nonhuman victims include Charlotte Waldie's *Narrative of a Residence in Belgium During the Campaign of 1815; and of a Visit to the Field of Waterloo* (1817). Waldie (Charlotte Eaton after her marriage in 1822) was an early visitor to the Field, arriving just a month after she and her artist sister Jane spent the day of the battle in nearby Brussels, from where they could hear the artillery.[8] Describing mutilated trees, her account, which is discussed in more detail later in this article, invokes Renaissance paintings of martyrdom while anticipating a modern environmental resilience:

> The trunks of the trees have been pierced in every direction with cannon-balls. In some of them, I counted the holes, where upwards of thirty had lodged: yet they still lived, they still bore their verdant foliage, and the birds still sang amidst their boughs. Beneath their shade, the hare-bell and violet were waving their slender heads; and the wild raspberry at their roots was ripening its fruit. (236)

Walter Scott, arriving on 9 August, described in his epistolary *Paul's Letters to his Kinsfolk* (1816, discussed in more detail later) a similar scene at Hougoumont, where "The shattered and blackened ruins of this little chateau remain among the wreck of its garden [with its] fruit-trees, half torn down, half fastened to the walls." One of the trees "had been struck in twenty different places" and "there was scarce any that had totally escaped" (204). A third visitor, Henry Crabb Robinson who arrived five days after Scott, recorded in his diary on arrival seeing trees on the battlefield, with "arms … hanging down, shattered by cannonballs, and not yet cut off," as if these victims of the conflict still awaited surgery from field doctors (1: 260).

Across the site of battle, soil, water, and plant matter combined with human and equine remains. Military debris included shattered and intact weaponry, and the chemicals from explosive ordinance already mentioned. Iron cannonballs, of which more than 42,000 are believed to have been used at Waterloo (National Army Museum), mostly weighed six or nine pounds (nine the most common).[9] Added to these were scraps of tiger, bear, other animal skin, and feathers from uniforms and harness, buttons made of bone and metal, leather from footwear, paper from books

and letters—even gold, silver, precious and semi-precious stones—miscellaneously left behind from a battle where tens of thousands of men and horses had been killed. The bodies of an estimated 44,000 men and 20,000 horses, an almost unimaginable amount of organic matter, became part of an environment in which they had arrived as strangers only days before. When decomposed through the action of bacteria and fungi, this tissue would have significantly increased nitrogen and phosphate levels in the soil for many years, raising pH levels, leaching into and polluting local water sources, and shaping biodiversity below and above ground.[10]

The accumulation of this matter, along with items subsequently introduced by tourists, became mixed with earth from before the battle, adding to particles of soil at different rates, and in some cases not decaying at all. Battlefield archaeologists are still finding buttons, coins, and other relics, including horse bones embedded with shrapnel and fragments of cannonballs ("Day Two"). Waldie described how in the aftermath of the battle, "bones of unburied horses and pieces of broken carts and harness [lay] scattered about. At every step we met with the remains of some tattered clothes. … Shoes, belts, scabbards, infantry caps battered to pieces, broken feathers and highland bonnets covered with mud were strewn along the road-side, or thrown among the trees" (255).

The assemblage of so many ruined, previously unconnected items, estranged from their place or origin and former purpose, provides an archive of exotic material with a macabrely vibrant agency, like the "glove, pollen, rat, bottle-cap, and stick" that exemplify attention-catching waste as debris, and yet things, in Jane Bennett's theory of nonhuman eco-agency (4). Repulsion, dismay, curiosity, sadness, and other affective emotions are responses to an ecology of surprise and shock, because of the rapidity with which unusual things coalesce on a field of war to produce their own energy. Bennett's re-energized dead and discarded matter, like Bruno Latour's actor network theory, argues that there is a restless agency arising from such coming together. In the context of Waterloo, that agency refuses to let the past remain buried, manifesting an aesthetic of melancholy and loss. Such affect further illumines literary and artistic representations from the wider compass of the Napoleonic Wars by, for example, Byron and Goya, operating in counterpoint to other heroic military narratives that celebrated Wellington's victory.

Given this context, it is helpful to read the soil at Waterloo both forensically and with imagination, using scientific analysis, material ecocriticism, and ecoGothic approaches. The site can, for example, be approached as an environmentally readable paratext to the letters, journals, travelogues, guidebooks, drawings, and paintings produced by tourists—and vice versa. Such reciprocity generates onward energy, resonating like an echo chamber.

Av Seaton captures the extent of tourism to the site which, along with archeology and other forms of visiting, ensured an ongoing intervention in the natural environment. Tourists took souvenirs from the Field while contributing, often unknowingly, new matter of various kinds:

> No other battle attracted comparable public attention or detonated such an immediate spate of visitation—so immediate, in fact, that it started while the battle was taking place. It modified the itinerary of European travel from Britain after 1815, provided one of

> Thomas Cook's earliest European destinations (Brendon 65), stimulated the first English guidebook to Belgium and occupied prime positioning in all the 19th century ones which followed (including those of Baedeker, Murray, and Black), and was for a century the most visited battlefield in Europe until those of the First World War displaced its prominence in the 1920s and 1930s. (130)

Soil

Beyond Hougoumont's walls, on the plain of Waterloo, arable crops grow on the twenty-first-century site. Meanwhile, the whole of the three square miles of land on which the conflict took place is dominated by a conical, grass-covered 43-metre-high mound, 1700-feet in circumference, and topped with a cast iron lion mounted on a stone plinth (Figure 3). Construction of the mound involved moving 300,000 cubic meters of soil containing remains and artifacts from other parts of the battlefield (which had been returned to agricultural use) to the commemorative site, flattening land contours, and altering sight lines that had affected the way the battle was fought. The mound was created during 1825 and 1826, giving rise to an anecdotal comment by the Duke of Wellington that his victory field had been violated: "They have ruined my battlefield" (Hugo; Uffindell and Corum 33–34).[11] However unintended, an irony resonates in those words, since the creation of the battlefield through such a colossal act of violence so obviously ruined what was on the land before it.

Figure 3. Braine-l'Alleud Belgium, Lion's Hillock. The crop in the foreground is sugar beet. 2005. Photograph courtesy of Jean-Pol Grandmont. Wikimedia Commons. CC BY 3.0 Attribution Unported.

Walter Scott and Robert Hills, who arrived at the site on 9 and 22 August 1815, respectively, remarked on the way crops including standing corn almost ready to harvest had been pulverized into the soil to produce a foul-smelling black mud:

> The tall crops of maize and rye were trampled into a thick black paste, under the feet of men and horses. (Scott, *Paul's Letters* 200)

> A most intolerable smell of putrefaction … arose, not as we naturally imagined, from the bodies of the slain, though they might have had some share in it, but principally from vast quantities of decayed leafage, with which, and a mixture of black mud, we saw scores of country people plastering up and repairing the banks by the roadside. (Hills 78)

In addition to this mixture of mud and leaf-mold, Hills also noticed patches of feral corn that were reclaiming parts of the Field, having "sprouted up from seeds in the straw, upon which wounded men had temporarily rested" (78). There is no way of knowing whether the straw came from Waterloo, meaning the corn was regrowth, or was introduced from elsewhere. If the latter, it was yet another intervention. If the former, it represented a form of resilience that also appears in other accounts.

Robert Southey also noticed the regrowth of wild plants and grain during his visit to the field in October 1815. In his long poem *The Poet's Pilgrimage to Waterloo*, published in the following year, Southey lyrically reflects on the speed and biodiversity of environmental renewal, anticipating the symbolic and commemorative status that would become associated with poppies in Flanders after the horror of trench warfare of the First World War:[12]

> The passing seasons had not yet effaced
> The stamp of numerous hoofs impressed by force
> Of cavalry, whose path might still be traced.
> Yet Nature every where resumed her course;
> Low pansies to the sun their purple gave,
> And the soft poppy blossomed on the grave.
> . . . . . .
> Contending feet had trampled down the grain,
> Some hardier roots were found, which of their life
> Tenacious, had put forth a second head,
> And sprung, and eared, and ripened on the dead. (67–68)

This rapid regrowth emphasizes the unruliness of the site's new ecology, by contrast with the once orderly farmed environment. Poppies thrive in disturbed soil, where their seeds may have lain dormant for decades, as James Wearn explains with reference to their growth in Flanders after World War I: "Scientifically, the heavily churned soil, tossed around by so many explosions, had provided the stimulation required for the seeds (which can often remain dormant for up to 80 years) to germinate." Scott described such an environment, drawing attention to the oddness of the condition at Waterloo in correspondent Paul's letter 9 "to his sister Margaret": "the ground was torn in many places by the explosion of shells, and in others strangely broken up and rutted by the wheels of the artillery" (200). This disruption of soil, which involves the mixing of matter and layers, is known as pedoturbation. However, an appropriate and more specific term when enquiring into the effects of Waterloo is "bombturbation," introduced in the twenty-first century by Joseph Hupy and Randall Schaetzl to describe

the cratering and mixing of soil layers with matter caused by explosions on battlefields. Hupy and Schaetzl propose bombturbation as a condition of many war-torn environments, particularly those of First World War Flanders and France (823–36). Descriptions such as Scott's testify to similar conditions at Waterloo. Ecologist and soil specialist Richard Bardgett points out some beneficial effects, including a more rapid breakdown of organic matter and an increase in earthworm activity. Aeration of the soil, especially by earthworms, would likely have contributed to plant regrowth, such as Southey's disorderly florescence of post-war corn and wildflowers, growing where they will rather than in accordance with planned planting by humans. Seen dispassionately and under the right circumstances, blood and bonemeal helps in turning a field of death and destruction into one of new life: nitrogen is an essential component of chlorophyll and phosphate enables plants to trap sunlight, both enabling photosynthesis that produces growth. More than just a pleasing sight or elegiac convention, the flowers of Waterloo recorded by Southey, Waldie, and others emerge as exemplars of bio-resilience in the face of war. In 1815 soil science focused on mineral content, and there was no awareness of the benefit of earthworm activity. Charles Darwin, only six years old at the time of Waterloo, developed his first study of the subject some two decades following the battle, reading a paper on the topic to the Geological Society in November 1837 and publishing an article in their *Transactions* in 1840 ("On the Formation of Mould").[13]

The disarray of post-war Waterloo is epitomized in its soil's resistance to boundaries between the human and non-human world, and in its nurturing of wild and feral plant growth. A fundamental difference arises between an Enlightenment approach to controlling chaos by identifying familiar hierarchies of things (as theorized by Michel Foucault) and Romantic ways of understanding that look for answers in what was changed, unstable, and unusual. The churning of animal, plant, and fungal matter with chemical pollutants after Waterloo is, moreover, profoundly ecoGothic, manifesting monstrosity while it attracts attention.[14]

Reading the environment

How does the Field of Waterloo work as a readable environment at a time when the Book of Nature was more commonly thought of as a means of interpreting relationships between the human and nonhuman world?[15] The stories that Waterloo's Field tells establish its commemorative and fugitive capacities: it both remembers and obscures aspects of its history. Soil and its particles cling to and fall from people, animals, and birds as they come and go. But they also move elementally by blowing in the wind or being washed by water. Heather Sullivan's dirt theory emphasis the restlessness and mobility of soil as matter, showing how environmentally generated narratives are formed and distributed (515–16).

Waldie's account, first published in John Booth's popular 1815 Napoleonic war miscellany *The Battle of Waterloo*, before being revised as a stand-alone book in 1817, begins by using eighteenth-century Georgic conventions to describe the populated, productive farmland of Flanders:

> The country is thickly covered with neat cottages, scattered hamlets, and small farmhouses: the fields were waving with tall luxuriant crops of corn, and far from wearing the appearance of the theatre of war, it seemed to be the abode of peace and plenty. (13–14)

That image of cultivated productivity collapses as the party approached Waterloo. A change in vocabulary contrasts the peaceful bucolic vision with the violence she and her sister saw continuing to impact the land a month after conflict had taken place. Waldie describes the road, previously used mostly for farm traffic and not designed to cope with military traffic, as if it were a mutilated body: "dreadfully cut up with the heavy rains and the incessant traveling upon it," after three weeks of drier summer weather. In the Forest of Soignies, approaching the Field of Waterloo, the "shattered wheels and remains of carriages lay buried in the mud" (251). Nearing the battlefield, she recalled a "broken beaten down hedge" that an army officer tells her "was the hedge of La Haye Sainte" (263). "Effluvia … pervaded the field," carried by a summer west wind that, like Scott's recollection, "seemed pestiferous" as bodies were burned in pits (271). Waldie recalls that the scale of death rendered the cremation pits inadequate for their purpose:

> huge piles of human ashes were heaped up, some of which were still smoking … Pits had been dug, into which [corpses] had been thrown, but they were obliged to be raised far above the surface of the ground. These dreadful heaps were covered with piles of wood which were set on fire, so that underneath the ashes lay numbers of human bodies unconsumed. (287–88)

Ash from the wood used for the pyres and from the bodies was quickly incorporated into the soil, adding potash to the substances already mentioned. Excessive potash (potassium) prevents plants from metabolizing other essential minerals including magnesium and boron, affecting their growth and reproductive yields.

Scott, known for his interest in military history, was also a landowner with an understanding of farming. The first celebrity author to visit the site, his response comprised two heroic poems (one long and one short), a collection of sixteen fictional letters to five equally fictitious correspondents, titled *Paul's Letters to his Kinsfolk*, and personal letters to family and friends. Scott's poems prioritize the heroics of battle. But by 1815 he was mostly writing in prose, and that is where he made his major contribution to the literature of Waterloo. *Paul's Letters* describes the Field as Scott saw and imagined it. Paul's correspondents from different gender, professional, and social backgrounds—his sister Margaret, cousin Peter, another cousin and veteran army major, a landowner, a rural Presbyterian clergyman—enable the letters to represent different aspects of the conflict and site.

The chaos of the Field is captured particularly in letter 9, where Paul writes to his sister that "Bones of horses, quantities of old hats, rags of clothes, scraps of leather, and fragments of books and papers strewed the ground in great profusion especially where the action had been most bloody" (198). That description is comparable with Waldie's. Paul recalls picking up an assorted mass of paper including a French military manual, a German prayer book, and quack doctors' advertisements that offered "universal remedies [but] none against the dangers of such a field" (200).[16] Scott included an almost identical description in a personal letter to the Duke of Buccleuch, written immediately after his visit, in which he adds concern about the potential for disease:

> In this spot vast numbers had fallen; and, being hastily buried, the smell is most offensive at this moment. Indeed, I felt the same annoyance in many parts of the field; and, did I

> live near the field, I should be anxious about the diseases which this steaming carnage might occasion. (80)

These concerns about the health implications of the field are interesting. Scott's anxiety about noxious miasma and Waldie's description of an effluvium are representative of an early nineteenth century in which bad air was still believed to be the cause of pestilential disease.[17]

Environmental economies

The impact of a lost harvest in an economy of local food production raises concerns about hunger. But for the people living near Waterloo the destruction of crops took two adaptive directions, each with environmental consequences. Firstly, a lucrative tourist economy quickly outpaced agriculture, providing a new means of wealth generation that included accommodation for visitors. Secondly, a trade in souvenirs from the Field matched supply with demand, supplemented by tourists collecting relics while visiting the site. Waterloo "cabinets of curiosity" became fashionable, bringing the miscellanea of the battlefield into museums and private homes.[18] Scott captured that shift with Paul writing to his sister that war tourism had benefitted people by "the consequences of an event which menaced them with total ruin" (194). In the other direction, the field was quickly returned to agricultural production: "the plough was already at work in several parts of the field … coming in frequent contact with the corpses of the gallant dead," preparing the soil to "speedily remove from the face of nature the melancholy traces of the strife of man" (201).

Paul's Letters recall the green pre-battle landscape which, unlike Waldie, Scott had not visited. Fields of tall corn—maize, wheat, and rye—were beginning to ripen in a fertile loam soil. Alternating the language of a military historian with the vocabulary of a nineteenth-century improving farmer, Paul explains to his veteran Major correspondent in letter 6, how "several fields of rye, which grows in Flanders to an unusual and gigantic height," provided cover for British soldiers and cavalrymen. The same crop impeded the troops' ability to see and respond to the French Army, as the "soldiers, sunk to the shoulders among the tall rye, could not return the [French] vollies [sic] with the same precision of aim" (103). While this suggests a two-way relationship between the nonhuman environment and troops, the protection only lasted as long as the men remained concealed in, and by, the healthy crop. A form of conscription ensues when Paul describes how Napoleon's army turned "every tree, every bush, every ditch, but more especially a small rivulet which runs through the wood [into] posts of determined and deadly defence" (102). The biotic community is here forced into the conflict.

As mentioned earlier, the weather played a substantial part in how Waterloo was fought and how the land was affected by the battle. While no contemporary accounts associate the weather in Belgium in mid-June with the eruption in April of the volcano Mount Tambora in what is now Indonesia, plumes of sulfate gas and ash thrown into the atmosphere by the latter caused three years of global climate deterioration. Although distant, the Tambora eruption would have contributed to the lack of sunshine and heavy rain.[19] Scott describes an electrical storm, emphasizing links between weather, war, and spectacle of the kind that Rob Nixon has shown to be

so central to the first-world's fascination with violence: fast-paced, visible, and devastating, Paul imagines the "violent and rapid motion" with which "rank rush'd on rank" while "the thunder ceased not, nor the fire reposed" (200). Written accounts of the scene such as this anticipate Turner's dark visualization of environmental and human confusion.

Ecologies can enable or obscure the commemoration of war. As Paul, Scott observed that "The field of battle plainly told the history of the fight … [T]he manoeuvres could be traced with the eye upon the field itself" (198). In that remark he echoes his address a year earlier of the danger to memory when environmental reminders of violence are removed. In *Waverley*, two horse chestnut trees are gratuitously blown apart by soldiers after the 1746 Battle of Culloden. As a result, their visual testimony tells a powerful story. But the soldiers return to remove all evidence of their action, cutting down the trees (one was still alive) and removing their roots "so that every trace of their existence is obliterated" (356; Oliver 75–79). This evisceration of the soil, followed by the flattening of land contours, is designed to render the site "unreadable." However, the author of *Waverley* assures readers that to "an eye intimately acquainted with the spot" the violence is retraceable. In that moment, Scott nominates fiction as the guardian of truth. Eighteen months later in arguably his most violent novel, *Old Mortality*, trees and grass grow unusually tall and darker than usual, due to an unseen, excessive supply of blood and bonemeal following a massacre in the Killing Times after the English Civil War: the highly visible post-massacre growth owes its unsettlingly verdant luxuriance to "the foul and festering remnants of mortality which ferment beneath" (6–7; Oliver 83–87). These accounts of a hidden or environmentally commemorated violence bear comparison with the Field of Waterloo, supporting the value of the novel genre in keeping interest alive. Stendhal's *La Chartreuse de Parme* (1839), William Makepeace Thackeray's *Vanity Fair* (1848), and Victor Hugo's *Les Miserables* (1862) contain episodes involving Waterloo that, while not necessarily accurate in their precise detail, capture the horror of the Field of Battle.

As suggested above, Waterloo's trees have been victims of both fast and slow violence. An elm tree—beside which the Duke of Wellington is reputed to have commanded his troops—became a target for souvenir hunters who stripped its branches, ultimately causing its death by 1818. The incremental loss of leaves left it unable adequately to photosynthesize. Put starkly, while the human population prospered from war tourism, the tree died of starvation. It was then felled and shipped to Britain by natural scientist John George Children, where it was cut into further pieces that were either sold or given away. Children's daughter Anna (after her marriage, Anna Atkins the botanist and photographer whose cyanotypes would break new ground in art) drew it before it was cut apart (Figure 4).

Paul's letter 8, to the Major, observes that early in the battle the Waterloo Elm was already a victim of gratuitous violence:

> While he stood on the centre of the high-road in front of Mount St John, several guns were levelled against him. … The balls repeatedly grazed a tree on the right-hand side of the road, that now hears his name. "That's good practice," observed the Duke. (168)

Scott's complicity in violence against the tree consisted in his having a piece from it made into a quaich, or drinking cup, that can still be seen at Abbotsford.

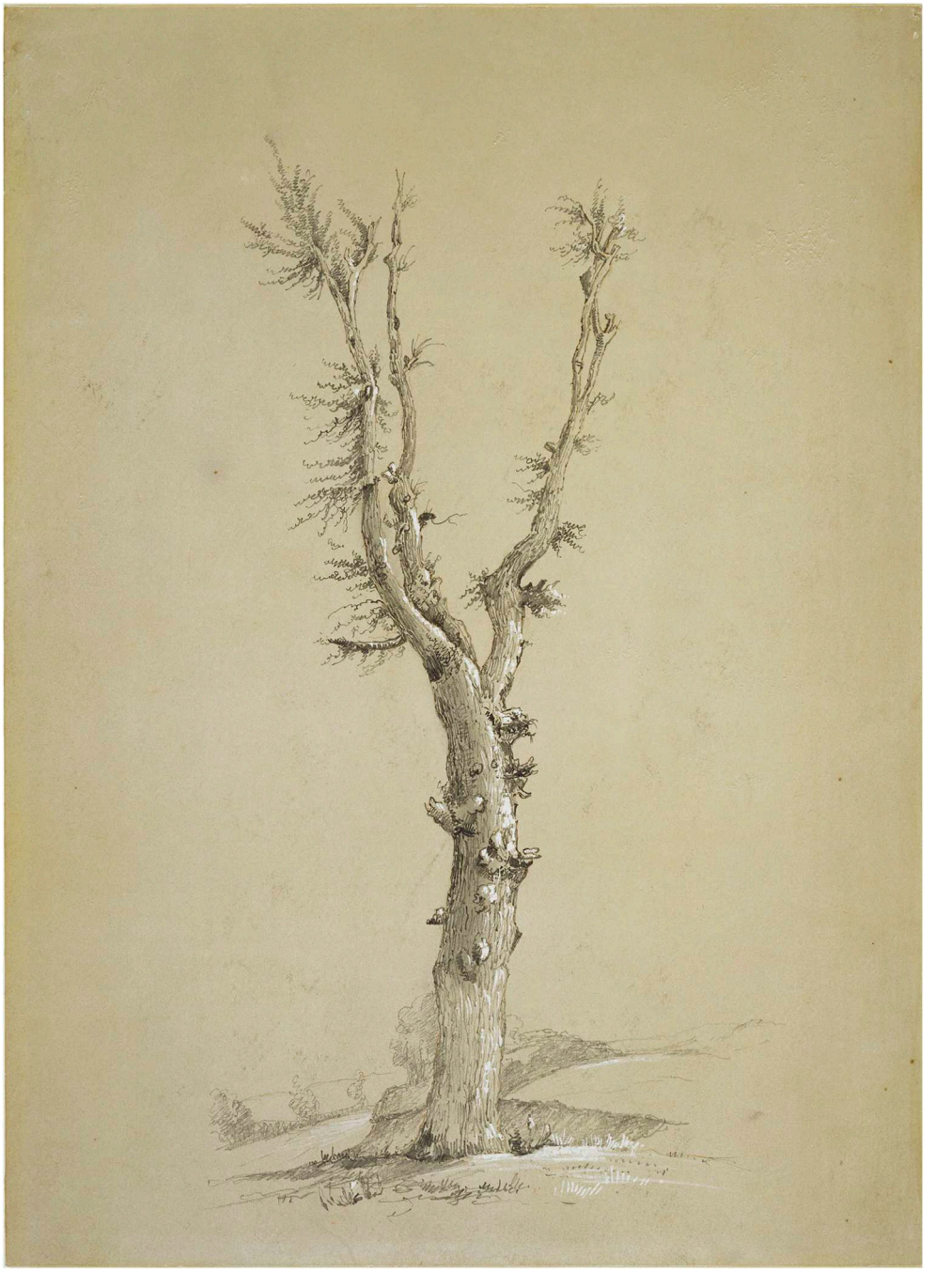

Figure 4. Anna Children. *The Waterloo Elm*. 1818. Pencil and scraper on paper. © Royal Collection Enterprises Limited 2024 | Royal Collection Trust.

Bones

This article began by discussing trees that were destroyed or survived Waterloo. It concludes with the matter of what happened to human and equine skeletons. The *Gentleman's Magazine* for November 1822 cites a report from the previous year's *Nautical Register*:

> It is estimated that more than a million of bushels of human and inhuman bones were imported last year from the continent of Europe, into the port of Hull. The neighbourhood of Leipsic, Austerlitz, Waterloo, and of all the places where, during the late bloody war, the principal battles were fought, have been swept alike of the bones of the hero, and the horse which he rode. Thus collected from every quarter, they have been shipped to the port of Hull, and thence forwarded to the Yorkshire bone-grinders, who have erected steam-engines and powerful machinery for the purpose of reducing them to a granulary state. In this condition they are sent chiefly to Doncaster, one of the largest agricultural markets in that part of the country, and are there sold to the farmers to manure their lands. The oily substance of the bone … makes a more permanent and substantial manure than almost any other substance—particularly human bones. (Qtd. in "Intelligence" 461)

The *Imperial Magazine* for May 1823 included the same report, adding its own gothic heading "*Cannibalism*" to question the ethics of the food supply chain ("Gleanings" col. 486).[20]

These mobile organic remains from Waterloo and other Napoleonic sites emphasize an ecoGothic reality about what happens over time to remains left at battlefields. Moreover, the transformation of organic matter into new forms that "live on" in different ways makes tracing the story ecologically compelling. Rumors that some of the fertilizer was exported to India add an imperial plantationocene dimension to Waterloo's ecological diaspora, to invoke Donna Haraway and Anna Tsing's theorization and critique of plantation farming in an Anthropocene age.[21]

The place of bio-products in dispersed ecologies of war extends to long term, slow forms of violence. The story of Waterloo's bones and their place in ecologies of war does not, then, end with new crops and the regeneration of farmland at the location of the battle. As with pieces of trees that were taken from the site, the bones of soldiers and their horses probably participated in an ecology of war that continued in dispersed, diasporic ways. Stories of the exhumation of bones have become part of Waterloo's ecoGothic legacy. Battlefield archaeologists conclude that there is a probable basis in fact for these stories by press reports and by the relative lack of bones found during recent investigation into the sites of mass graves (Pollard).

The wider ecological impact of war at Waterloo requires a more in-depth enquiry than I have been able to present in this article. For example, a study of the environmental implications arising from sugar-beet production would be fascinating. The European sugar beet industry has its roots in the Napoleonic wars. Napoleon responded to the British naval blockade of imported sugar from the Caribbean and Americas by accelerating the nascent industry and providing an alternative to cane sugar produced on plantations by enslaved labor (Nuwer; Harveson n. pag.). Between 1810 and 1815 almost 80,000 acres were turned over to growing beet for processing in more than three hundred sugar factories. *Blackwood's Edinburgh Magazine*'s August 1818 Literary and Scientific Intelligence section included an entry titled "Sugar of the Beet-root," which reported on the success of the industry in terms of quantity and quality of

produce (611). However, demand and production dropped in the post-war period before increasing again in the 1850s (Harveson n. pag.). Tony Pollard, Bernard Wilkin, and Robin Schafer of the Waterloo Uncovered project are investigating the veracity of further reports in periodicals during the 1830s that bones from Waterloo were ground to make char, a whitening agent, for use in a sugar refinery built within sight of the Field, for which beet were grown locally (Ford; and Figure 5). Again, a war-generated ecological change had wider human, environmental, and ecoGothic consequences. Sugar beet is now one of the crop rotations used on the Field.

Global Waterloo

Roland Robertson and Ursula Heise have each used the theoretical term "glocal" to show how specific, local events and contexts elucidate wider, larger scale problems (Robertson 25–44; Heise 3–5). Robertson shows how different temporalities connect to resonate onwards, while Heise explores ecocritical geographical connections across distance. I end by asking a question: how can a study such as this, of Romantic-period written and visual accounts of the Field of Waterloo, speak to a global world in the third decade of

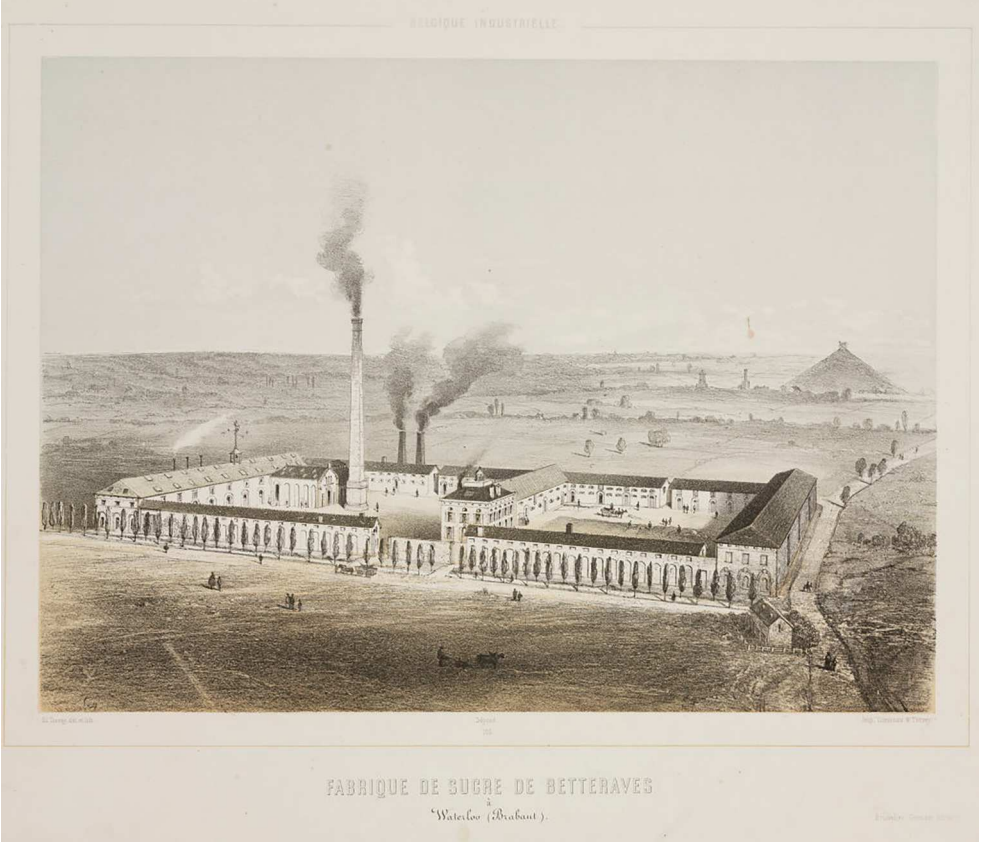

Figure 5. Sugar beet works and refinery at Waterloo, Belgium, 1830–1860. Lithograph drawn by Edwin Toovey. The Field of Waterloo with the Lion Mound is shown in the distance. Photo: Science and Society Picture Library. Licensed by Getty Images.

the twenty-first century? An obvious answer would be that wars still assault land and the ecologies it supports, creating ecocidal and ecoGothic situations alongside human suffering.[22] Dark tourism is a term used of travel motivated by curiosity to active and former war zones, where violence and pollution often remain dangerous. It is extraordinary to think of the Waldie sisters, Scott, Hill, Crabbe Robinson, Southey, Byron, Sadler, and Turner as dark tourists, but that is what they were, along with thousands of other visitors to Belgium. The Field of Waterloo has been restored to profitable agricultural production, with crops grown around, but not on, the grass-covered commemorative mound. Those crops enter the local and global marketplace. The restoration of the orchard at Chateau Hougoumont is an ongoing experiment in the recovery of older fruit varieties as means of building resistance to future devastation through disease. What is learned from that project can inform similar work toward ecological resilience around the world. Meanwhile, the last chestnut tree from the battle stands as a living war memorial that will sometime soon be lost.

In all these respects the ecological changes brought about by a single day of extreme violence on the Field of Waterloo have meaning that is grounded in, but resonates onward far beyond, the compass of European Romantic studies.

Notes

1. See Elley for an eye-witness account of the fire at Talavera.
2. These items are in the collection of The Wellington Museum, Apsley House, London.
3. Lipscombe gives a detailed study of the canisters, shrapnel, shells, rockets, and other weapons used at Waterloo, including eyewitness accounts (*passim*). Shrapnel, named after its inventor, was devised in 1784. Congreve rockets were developed in 1804 from Indian and Chinese technology.
4. Wellington, letter to the Earl of Liverpool, dd. 3 April 1812 (32).
5. See Bardgett 111–13 and Lipscombe 364–68, 381.
6. See the Tate website: https://www.tate.org.uk/art/artworks/turner-the-field-of-waterloo-n00500.
7. Byron's Waterloo stanzas require treatment of their own. For the purpose of this article Harold witnesses resilience, seeing the "field revive / With fruits and fertile promise" (87).
8. For Waldie/Eaton generally, see Colbert.
9. Waterloo veteran Major General Alexander Dixon said in interview that "at Waterloo, both foot and horse artillery, almost all had nine-pounders" (qtd. in Lipscombe 25). The National Army Museum has a six-pounder from Waterloo in its *Conflict in Europe Gallery*.
10. See Bardgett for a concise account of the decomposition of organic matter in soil (24–25). There are no analyses of nitrogen and phosphate content in the years following Waterloo because soil science was not sufficiently developed. However, many recent good journal articles address soil and water pollution from the decomposition of organic remains (e.g. Taylor et al.; Yu et al.).
11. Hugo included this widely reported anecdote in *Les Misérables*. There is no known documentary evidence (Uffindell and Corum 33–34).
12. Waterloo is situated on the border between Wallonia and Flanders.
13. Darwin shelved this work, returning to it with his influential O*n the Formation of Vegetable Mould through the Actions of Worms* (1881).
14. Simon Estok theorizes ecoGothic as a means of understanding how horror is produced by environmental conditions.
15. See Harvey ("Reading the 'Book of Nature'"; *Transatlantic Transcendentalism* 78–81) for the significance of the Book of Nature in Europe and North America during the Romantic period and longer nineteenth century.

16. This chaos of printed and written matter anticipates the "dangerous" contents strewn on the floor of Jonathan Oldbuck's study in Scott's 1816 novel *The Antiquary* (21).
17. Pathogens were known to cause disease from the late seventeenth century, but the association of bad air with infection still dominated popular understanding in early-nineteenth-century Britain and Europe.
18. The Armoury of St James website shows an example.
19. See Behringer, Higgins, and Wood for accounts of the Tambora eruption and its impact on weather, including in Europe.
20. Tropes of vicarious cannibalism and vampirism were commonplace in the abolitionist movement. For example, see Samuel Taylor Coleridge's "Essay on the Slave Trade." In *Old Mortality* Scott hints at something similar where nutrients from decomposed bodies are washed by a stream from a site of massacre into the water and food supply (6–8; Oliver 83–85). See Pollard for discussion of other reports of bones from Waterloo used in the fertilizer industry and for accounts of skepticism.
21. The concept of the Plantationocene arose from collective discussions with Donna Haraway, Anna Tsing, and members of the Anthropocene Research Group at Aarhus University in 2014. Haraway further theorizes the concept ("Anthropocene").
22. The European Law Institute proposes a legal definition of ecocide during war.

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